

Developing a Framework for Evaluating Intercultural Literacy Among University Students: A Comprehensive Study

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Abstract: *Developing an intercultural literacy framework for university students holds significance in evaluating their intercultural proficiency and advancing the efficacy of intercultural education to bolster their global competitiveness. Utilizing Daladierdorff's intercultural competence model as a foundational reference, this study systematically reconstructed competence components to formulate a tailored intercultural literacy model for university students. Subsequently, the model's validity was rigorously examined through exploratory and validation factor analyses, culminating in establishing a robust intercultural literacy framework for university students. This framework provides valuable guidance for subsequent educational initiatives and policy implementations.*

Keywords: University students; Development framework; Intercultural literacy; Model testing.

1. INTRODUCTION

The accelerated pace of economic growth and globalisation has resulted in a heightened prevalence of cross-cultural interactions within the domains of business and education. Recognizing the imperative of effective communication with individuals from diverse cultural backgrounds, there has been a pronounced focus on advancing intercultural competence within academic discourse. Intercultural competence is the proficiency to communicate effectively and judiciously with individuals from distinct cultural backgrounds [1]. In recent years, China has emphasized the significance of cultivating intercultural competence among students. The Outline of the National Plan for Medium- and Long-Term Education Reform and Development, issued by the Ministry of Education of the People's Republic of China, underscores the imperative for Chinese students to acquire intercultural competence, aligning with the imperatives of globalisation and the aspiration to foster "global citizens." Nevertheless, intercultural competence constitutes a complex and multidimensional concept, posing challenges in measurement [2]. Various assessment tools, such as the Intercultural Development Inventory (IDI), Multicultural Personality Questionnaire (MPQ), and Intercultural Sensitivity Scale (ISS), have been developed to gauge intercultural competence. However, these instruments exhibit limitations in terms of cultural adaptability and their capacity to measure specific components of intercultural competence [3].

Despite the widespread acknowledgement of intercultural competence in education, challenges persist in formulating a comprehensive and culturally relevant measurement system for assessing intercultural competence among Chinese university students. Primarily, a lack of consensus exists regarding the definition and constituent elements of intercultural competence [4]. While some scholars underscore cognitive facets such as knowledge and comprehension of other cultures, others emphasize affective components like empathy and receptiveness to diverse cultures. Second, there is a deficiency of culturally appropriate instruments and empirical studies dedicated to measuring intercultural competence [5]. Numerous existing tools were developed within a Western cultural framework and may not be suitable for Chinese students. Furthermore, empirical research results on widely adopted measures of intercultural literacy in Chinese contexts are limited. Consequently, there is a pressing need for the development of a culturally appropriate measurement system that accurately reflects China's distinctive cultural context.

2. RESEARCH REVIEW

2.1 Conceptualization and Theoretical Framework

In the contemporary globalized landscape, characterized by heightened interactions among individuals from diverse cultural backgrounds, the significance of intercultural literacy has grown exponentially. This intricate and multifaceted concept has been delineated by Chinese scholars, who have articulated its various elements and structure. The ensuing compilation presents a noteworthy and influential array of concepts and frameworks of intercultural literacy:

2.1.1 Michael Byram's Intercultural Communicative Competence

Michael Byram's conceptualization of Intercultural Communication Competence (ICC), now widely embraced in academic circles, extends beyond linguistic proficiency to encompass intercultural competence. This entails the capacity to comprehend and value diverse cultural perspectives, adjusting one's behaviors accordingly [6]. Byram delineates three integral components of ICC: knowledge, skills, and attitudes.

Knowledge encompasses an understanding of other cultures, encompassing cultural values, practices, beliefs, history, and politics, attainable through study, communication, and observation. Skills pertain to the abilities necessary for effective intercultural communication, including language proficiency, communication skills, and problem-solving, continuously honed through practice and reflection. Attitudes encompass a disposition favoring intercultural communication, marked by respect, tolerance, openness, curiosity, understanding, and appreciation. Cultivating these attitudes involves self-reflection on one's cultural background and active listening and respect for the cultural backgrounds of others.

Byram asserts the significance of ICC for both individuals and organizations. Individually, mastery of ICC enables adaptation to cross-cultural environments, heightens competitiveness, and refines communication skills. Organizations, in turn, benefit by facilitating international business and augmenting global competitiveness through the development of ICC among their employees.

2.1.2 Christopher's Cultural Intelligence Theory

Cultural intelligence (CQ), a pivotal concept within the realm of intercultural studies, as developed by Christopher and Shun-On, pertains to the capacity to adapt to cultural norms and expectations adeptly and effectively in cross-cultural contexts. Functioning as both an intelligence and a skill, CQ extends across diverse cultures, empowering individuals to comprehensively comprehend, value, and adjust to the behaviors, ideas, values, and beliefs of other cultures. CQ encompasses four integral components: cognitive, physical, emotional, and behavioural [7].

The cognitive dimension involves the capacity to perceive cross-culturally, encompassing a depth of knowledge and understanding of other cultures. It requires a heightened sensitivity and awareness of both cultural differences and similarities, necessitating extensive cultural knowledge. The physical dimension pertains to the ability to perceive and exhibit physical behaviours, such as posture, facial expressions, and body language. Given that these physical characteristics may carry distinct meanings in diverse cultures, adeptness in cross-cultural situations demands a keen perception and adaptability to the physical attributes and behaviors of other cultures.

The emotional dimension involves awareness and comprehension of one's own and others' emotions, including self-perception and the perception of others. This encompasses understanding how emotions are expressed in different cultures and addressing emotional issues in cross-cultural situations, such as communication misunderstandings arising from cultural differences. The behavioral dimension refers to the capacity to adapt and adjust behavior, incorporating modifications to behavioral patterns and effectively addressing challenges stemming from cultural differences. This demands a requisite level of cultural sensitivity, resilience, and practical experience in intercultural communication.

The significance of cultural intelligence lies in its ability to aid individuals and organizations in navigating and comprehending intercultural situations, thereby enhancing the accomplishment of intercultural communication goals and objectives. Furthermore, cultural intelligence can facilitate intercultural collaboration and innovation, thereby positively impacting personal and organizational development and growth.

2.1.3 Milton Bennett's DMIS Model

The Developmental Model of Intercultural Sensitivity, introduced by Milton Bennett in 2003, is a prominent

concept within the intercultural literacy literature that has garnered considerable attention. Intercultural sensitivity denotes the proficiency to discern and value cultural differences, coupled with the capacity to respond aptly in cross-cultural interactions. Bennett's model delineates six progressive stages of intercultural sensitivity: rejection, defense, minimization, acceptance, adaptation, and integration.

The initial three stages of the model, collectively termed the "ethnocentric stage," manifest a lack of comprehension or regard for cultural differences. In the Rejection stage, individuals exhibit unawareness of cultural disparities and a reluctance to acknowledge them, fostering attitudes that may lead to prejudice and discrimination. The Defense stage follows, where individuals, becoming cognizant of cultural differences, may feel discomfort and perceive a threat, prompting a defensive stance to safeguard their cultural identity. The Minimization stage ensues, wherein individuals start recognizing the significance of cultural differences but may downplay their importance.

Conversely, the final three stages, categorized as the "Ethnic Relevance Stages," reflect a heightened understanding and appreciation of cultural differences. The Acceptance stage marks a pivotal moment where individuals begin to value cultural differences. In the subsequent Adaptation stage, individuals endeavor to assimilate into different cultures, adapting their behaviour and attitudes in cross-cultural contexts. Finally, the Integration stage signifies full acclimatization to diverse cultures, with individuals adeptly navigating and communicating in a multicultural environment.

Bennett's model of intercultural sensitivity underscores the progressive development and maturation of an individual's competence in intercultural interactions. This framework aids individuals in comprehending disparities in cultural perceptions between themselves and others, facilitating adept problem-solving in intercultural interactions and fostering effective intercultural communication.

The DMIS has found extensive application in intercultural competence research and has been tailored to diverse settings and populations. Nevertheless, critiques have been raised regarding its linear and hierarchical structure, with concerns that it might not fully capture the intricate and dynamic aspects of intercultural communication [8]. Notwithstanding these criticisms, the DMIS persists as a valuable instrument for comprehending and evaluating intercultural competence.

2.1.4 The Global Competence Literacy Framework of Boix Mansilla and Jackson

Global Competence, developed by Veronica Boix Mansilla and Anthony Jackson, is a pivotal concept in intercultural literacy. It denotes an individual's capacity to comprehend and address problems within the globalized context, coupled with the ability to communicate and collaborate effectively across diverse cultural and social settings. The global competence framework identifies four key components: Intercultural Perspectives, emphasizing the understanding and appreciation of cultural commonalities and differences, enabling effective communication and cooperation across cultures; Global Awareness, focusing on comprehending the impact and challenges of globalization, along with the capacity to adapt to change and uncertainty; Intercultural Communication, involving effective verbal and non-verbal communication across cultures; and Global Action, entailing the ability to take appropriate action, solve problems, and contribute in cross-cultural environments [9].

2.1.5 Darla Deardorff's Model of Intercultural Competence

Darla Deardorff's widely employed Intercultural Competence Model in intercultural literacy encompasses five crucial dimensions for effective intercultural interactions.

Cognitive Dimension involves knowledge and cognitive processes related to intercultural learning, encompassing an understanding of history, values, beliefs, and cultural practices. It enhances awareness of differences and commonalities between cultures.

Affective Dimension focuses on emotions and emotional responses in cross-cultural interactions, aiding individuals in managing emotional reactions to cultural disparities and improving adaptability to such differences.

Behavioural Dimension addresses intercultural behaviour and communication skills, covering effective problem-solving, communication strategies, and adaptation to social rules of other cultures. It facilitates coping with cultural differences and enhances comfort in cross-cultural situations.

Communication Dimension emphasizes the ability to communicate across cultures, encompassing understanding and utilization of various verbal and non-verbal communication styles and adaptation to other cultures' communication methods.

Intergroup Dimension pertains to the ability to interact between groups across cultures, promoting effective collaboration in cross-cultural teams, organizations, and communities. It aids in addressing challenges posed by cultural differences and fostering cross-cultural cooperation.

The intercultural competence model provides a comprehensive framework for a nuanced understanding of the components and evolution of intercultural competence. Encompassing five key dimensions - cognitive, affective, behavioural, communication, and intergroup - the model underscores the interconnectedness of these dimensions as the foundation of intercultural competence. Emphasizing the significance of intercultural communication and intergroup cooperation, these aspects are identified as pivotal components in intercultural interaction.

However, notable limitations exist within the model. Firstly, the interrelationship among the model's five dimensions may lack clarity and specific operational guidance. Secondly, while emphasizing the importance of intercultural communication and intergroup cooperation, the model falls short in providing detailed guidance on specific skills and strategies. Lastly, the model predominantly focuses on individual intercultural competence development, neglecting the consideration of intercultural competence development at the organizational and societal levels [10].

2.2 Summary of Literature

The sorting process above elucidates that intercultural literacy is an intricate and multifaceted concept encompassing knowledge, skills, and attitudes essential for effective communication and interaction with individuals from diverse cultural backgrounds [11]. Conceptual studies on intercultural literacy have underscored facets such as cultural sensitivity, communicative competence, and global competence.

Furthermore, scholars in the field have contributed diverse models and frameworks for evaluating and fostering individuals' intercultural literacy. While there is a consensus on the significance of intercultural literacy in our increasingly interconnected world, there remains a necessity for continuous critical assessment of these models and frameworks and their applicability across varied contexts [12].

It is crucial to recognize that intercultural literacy is not solely a set of skills acquired through training; it also encompasses attitudes and values supporting effective intercultural communication and interaction. Therefore, any initiative to enhance intercultural literacy must account for not only knowledge and skill acquisition but also the cultivation of intercultural sensitivity and a willingness to engage with and learn from diverse cultural perspectives.

3. RESEARCH DESIGN

Considering the analysis and comparative assessment of diverse measurement frameworks, it is discerned that Darla Deardorff's intercultural competence model stands out as particularly fitting for gauging the intercultural literacy of Chinese students. Nevertheless, it is imperative to acknowledge that the demarcation lines among the five dimensions within Deardorff's model lack clarity. Notably, an evident overlap of indicators between the communication and behavioural dimensions exists, rendering an imprecise depiction of the intercultural literacy levels of the research subjects. Consequently, the researcher undertook a comprehensive restructuring of pertinent core competencies to formulate novel dimensions. This initiative culminated in the preliminary construction of a framework delineating the intercultural literacy of university students:

Table 1: Intercultural Literacy Dimensions Analysis Table for University Students

Dimensionality	Connotation
Cultural awareness and cognition	Understanding various cultures, including their values, beliefs, habits, and norms, and how these factors influence people's thoughts and behaviors.
Intercultural communication skills	Skill in communicating with people from diverse cultures, using multiple languages, non-verbal cues, and intercultural communication.
Intercultural adaptability	Adaptability in diverse cultures, including accepting different norms, following local laws, and treating people from various backgrounds with respect and

	tolerance.
Intercultural emotions and attitudes	Embrace an open, respectful, and caring attitude, valuing diverse cultures. Skillful in handling cultural conflicts and communication ambiguities.
Competence in intercultural cooperation	Skilled in leading and collaborating within diverse teams, including problem-solving, building trust, and achieving cross-cultural team goals.

Table 2: Intercultural Literacy Framework for University Students

Dimensionality	Index	Connotation
Cultural awareness and cognition	Cultural self-awareness	Encompassing an individual's awareness and comprehension of their cultural heritage, along with their cultural values and beliefs.
	Awareness of cultural diversity	Encompasses an individual's awareness and comprehension of cultural disparities and diversity.
	Cultural relativism	Denotes proponents of cultural equality, rejecting notions of cultural superiority or inferiority and emphasizing mutual respect and understanding.
	Intercultural communication skills	Involves adept cross-cultural communication skills, including proficiency in verbal and non-verbal communication, along with the application of intercultural communication strategies.
	Intercultural knowledge	Involves an individual's grasp of diverse cultures, covering aspects such as cultural history, geography, values, beliefs, social systems, and customs.
	Cross-cultural experience	Refers to personal experiences in different cultural environments, including travelling, studying, exchanges, etc. study, exchange, etc.
	Cultural sentiment	Entails an individual's emotional attitudes toward other cultures, encompassing curiosity, interest, respect, acceptance, etc.
Intercultural communication skills	Language skills	Attainment of language skills essential for intercultural communication, including phonetics, intonation, vocabulary, grammar, and expressions.
	Nonverbal communication	Comprehend non-verbal communication styles in diverse cultures, including body language, facial expressions, eye contact, etc., and adeptly apply them.
	Manners and etiquette	Grasp cross-cultural etiquette norms to prevent offence or embarrassment and ensure respectful interactions.
	Cross-cultural sensitivity	Attuned to nuances, adept at navigating misunderstandings, prejudices, and cultural conflicts in intercultural communication.
	Flexibility	Proficient in rapid adaptation to diverse cultural backgrounds, adjusting behaviour and communication style flexibly.
	Communication skill	Developing proficient communication skills, including listening, expression, questioning, and feedback, along with conflict resolution and complex situation management capabilities.
Intercultural adaptability	Psychological conditioning	Individuals' capability to adapt to the psychological stress and discomfort inherent in cross-cultural situations.
	Adaptability to life	Individual's ability to adapt to a new living environment and solve a variety of daily problems.
	Intercultural relationship building	Individuals' ability to build mutual trust and interaction in cross-cultural interactions.
	Cultural transformation	Individual's ability to switch between cultures, including language, habits, values, etc. values, etc.
	Adapting to cultural differences	Individuals understand and respect differences between cultures and are open and flexible to attitudes towards cultural differences.
Intercultural emotions and	Respect and acceptance of	At the core of intercultural sentiments is the respect for and acceptance of diverse cultures, encompassing people, values, and behaviors.

attitudes	different cultures	
	Intercultural confidence	Individuals with intercultural sentiments possess the confidence to express opinions and views appropriately when interacting with people from diverse cultural backgrounds.
	Cultural sensitivity	Individuals with intercultural sentiments exhibit heightened awareness of cultural differences and sensitivities, along with an enhanced capacity to understand and appreciate perspectives and practices from other cultures.
	Self-awareness and self-reflection	Individuals with intercultural sentiments engage in self-reflection regarding their cultural biases and prejudices, allowing for the adjustment of attitudes and behaviors in intercultural interactions.
	Humility and open-mindedness	Individuals with intercultural sentiments exhibit humility and an open mind, demonstrating a willingness to accept and learn from the perspectives and practices of other cultures.
Competence in intercultural cooperation	Teamwork skills	Ability to work together in cross-cultural teams, including coordination, cooperation, and communication.
	Cultural sensitivity	Understanding and respecting differences between cultures.
	Decision-making capacity	Make informed cross-cultural decisions, considering cultural differences and interests.
	Leadership	Effectively lead teams, manage cultural conflicts, and facilitate cooperation in cross-cultural environments. cooperation.
	Conflict resolution capacity	Resolving conflicts and disagreements, finding common ground, and negotiating solutions in cross-cultural environments solutions.
	Cultural exchange capacity	Be able to work with people from different cultural backgrounds in a respectful, understanding, and inclusive manner Communicate and co-operate.

Following the cross-cultural literacy framework outlined in Table 2, a concise questionnaire was administered to gather data from students representing three colleges and universities in Shaanxi. Initially, the researcher carried out a pilot study to enhance the robustness of the research framework, eliminating any illogical or redundant indicators. Subsequently, a comprehensive survey was conducted, distributing questionnaires across ten colleges and universities in the Shaanxi region to validate the research framework through exploratory and validation factors.

3.1 Pre-testing Studies

The pre-test questionnaire encompasses three primary sections. The first section captures demographic information, the second section comprises a survey on the intercultural literacy of university students, and the third section gathers feedback on the questionnaire. This feedback is directed towards the questionnaire's structure and other aspects based on participant comments. The scale items for the questionnaire are presented in Table 3 below:

Table 3: Intercultural Literacy Scale for University Students (pre-test version)

Dimensionality	Encodings	Norm	Measurement Title
Cultural awareness and cognition	CA1	Cultural self-awareness	I understand my cultural background.
	CA2	Awareness of cultural diversity	I recognize that there are differences between cultures and can understand enough to be tolerant.
	CA3	Cultural relativism	I don't think cultures are better or worse, they should all be respected.
	CA4	Intercultural communication skills	I can communicate with people of different cultural backgrounds.
	CA5	Intercultural knowledge	I know a few things about other cultures.
	CA6	Cross-cultural	I've travelled and studied abroad.

		experience	
	CA7	Cultural sentiment	I respect other countries' cultures, beliefs, etc.
Intercultural communication skills	ICC1	Verbal ability	I can communicate daily in a foreign language.
	ICC2	Nonverbal communication	I understand some of the non-verbal communication styles of other countries.
	ICC3	Manners and etiquette	I know about social etiquette in other countries.
	ICC4	Cross-cultural sensitivity	I understand the differences between cultures and can effectively avoid misunderstandings.
	ICC5	Flexibility	I can adapt quickly to different cultural backgrounds and environments.
	ICC6	Communication skill	I know how to be able to communicate well with foreigners to achieve objectives.
Intercultural adaptability	ID1	Psychological conditioning	I have been able to adjust to the different cultural backgrounds in foreign countries and some of the psychological discomfort caused by.
	ID2	Adaptability to life	I was able to solve some of the problems I encountered daily abroad.
	ID3	Intercultural relationship building	I've made some friends from other countries.
	ID4	Cultural shift	I can change my state immediately after leaving the country to respond to different cultural contexts.
	ID5	Adapting to cultural differences	I can understand that there are some cultural differences between countries.
Cross-cultural emotions and attitudes	IA1	Respect and acceptance of different cultures	I can respect and accept different cultures of people, values, and behaviors.
	IA2	Intercultural confidence	I can interact with people from different cultures in a way that can appropriate ways to express their opinions and views.
	IA3	Cultural sensitivity	I can understand and appreciate the views and customs of other cultures.
	IA4	Self-awareness and self-reflection	I can be self-conscious about my own cultural biases and prejudices and reassessment.
	IA5	Humility and open-mindedness	I am open to accepting and learning from other cultures' perspectives and practices.
Competence in intercultural cooperation	IC1	Teamwork skills	I have basic cooperation skills in intercultural teams.
	IC2	Cultural sensitivity	Understanding and respecting differences between cultures.
	IC3	Decision-making capacity	I will consider the differences and benefits of different cultures.
	IC4	Leadership	As a team leader, I can manage cultural conflicts and promote cooperation.
	IC5	Conflict resolution capacity	I can resolve conflicts and disagreements in cross-cultural environments finding common ground and negotiating solutions.
	IC6	Cultural exchange capacity	I can work in a respectful, understanding, and inclusive manner with people from the communication and cooperation between people from different cultural backgrounds.

Shaanxi boasts abundant higher education resources, housing 111 higher education institutions and accommodating a student enrollment of 1,981,000. This enrollment figure ranks as the third-highest nationwide in

terms of students per 100,000 population[19]. Consequently, the choice of Shaanxi as the survey location is considered representative. The measurement scale was disseminated in colleges and universities across Shaanxi through the Questionnaire Star platform, yielding a total of 88 valid questionnaires.

3.2 Questionnaire Testing

Following the examination, the Cronbach's coefficients of the pre-test questionnaires all exceeded 0.7, signifying their high reliability. Subsequently, a correlation analysis was performed on the questionnaire, revealing a robust correlation between the variables with a KMO value of 0.749. To assess the independence between variables, Bartlett's test of sphericity was employed, yielding a result of 0.000, which is less than 0.05, thereby meeting the prerequisites for factor analysis.

Table 4: Factor analysis-rotated component matrix

Variant	Ingredient				
	1	2	3	4	5
CA1	0.756	0.441	0.127	0.087	0.195
CA2	0.842	0.587	0.507	0.184	0.176
CA3	0.416	0.397	0.184	0.207	0.385
CA4	0.495	0.877	0.716	0.567	0.197
CA5	0.893	0.451	0.513	0.415	0.237
CA6	0.841	0.453	0.315	0.157	0.085
CA7	0.791	0.186	0.267	0.889	0.143
ICC1	0.175	0.884	0.615	0.168	0.506
ICC2	0.045	0.818	0.014	0.238	0.165
ICC3	0.246	0.841	0.264	0.297	0.174
ICC4	0.765	0.864	0.246	0.084	0.451
ICC5	0.541	0.887	0.891	0.594	0.102
ICC6	0.156	0.901	0.136	0.182	0.177
ID1	0.214	0.105	0.877	0.131	0.246
ID2	0.158	0.117	0.892	0.492	0.256
ID3	0.254	0.843	0.877	0.236	0.568
ID4	0.531	0.165	0.716	0.264	0.454
ID5	0.256	0.415	0.856	0.168	0.026
IA1	0.874	0.235	0.487	0.905	0.126
IA2	0.713	0.265	0.597	0.765	0.526
IA3	0.806	0.118	0.056	0.795	0.505
IA4	0.756	0.056	0.584	0.854	0.154
IA5	0.598	0.645	0.554	0.716	0.165
IC1	0.147	0.192	0.146	0.128	0.871
IC2	0.864	0.216	0.194	0.873	0.106
IC3	0.056	0.187	0.235	0.015	0.916
IC4	0.159	0.171	0.241	0.057	0.841
IC5	0.102	0.095	0.255	0.189	0.716
IC6	0.403	0.771	0.268	0.105	0.657

Upon analyzing the table, it becomes evident that all research variables were categorized into five groups, aligning with the initially constructed dimensions. However, upon closer examination of the distribution of each item, it is observed that the questionnaire exhibits instances of cross-dimensionality among some observational variables. For instance, IA3 demonstrates a proximity in ratio between the first and fourth categories, suggesting an ambiguity in responding to the targeted dimensional measurement. Additionally, items CA4 and ICC6 closely align in the values of the second category despite belonging to different measurement dimensions. Consequently, the researcher will address this issue by excluding certain questions, merging others, and making corrections to enhance the questionnaire's validity.

3.3 Corrections to The Questionnaire

Building on the pre-test analysis outlined above, items that exhibited ambiguity in responding to the designated

dimensions were identified. Subsequently, linguistically ambiguous items were restructured, culminating in the development of the intercultural literacy framework for university students, as presented in Table 5 below.

Table 5: Intercultural Literacy Framework for University Students

Dimensionality	Encodings	Norm
Cultural awareness and cognition	CA1	Cultural self-awareness
	CA2	Awareness of cultural diversity
	CA3	Cultural relativism
	CA4	Intercultural knowledge
	CA5	Cross-cultural experience
Intercultural communication skills	ICC1	Verbal ability
	ICC2	Nonverbal communication
	ICC3	Manners and etiquette
Intercultural adaptability	ID1	Psychological conditioning
	ID2	Adaptability to life
	ID3	Intercultural relationship building
Intercultural emotions and attitudes	IA1	Intercultural confidence
	IA2	Cultural sensitivity
	IA3	Self-awareness and self-reflection
Competence in intercultural cooperation	IC1	Teamwork skills
	IC2	Decision-making capacity
	IC3	Leadership
	IC4	Conflict resolution capacity

4. MEASUREMENT AND TESTING OF INTERCULTURAL LITERACY MODELS FOR UNIVERSITY STUDENTS

4.1 Exploratory Factor Analysis

The questionnaire for the developed intercultural literacy model for university students was administered on the Questionnaire Star platform across 12 colleges and universities in Shaanxi Province, resulting in a total of 723 valid responses. Following the calculation of the questionnaire's reliability, the Cronbach's alpha coefficient exceeded 0.7, and the Kaiser-Meyer-Olkin (KMO) value was 0.873, indicating enhanced overall reliability and validity. Subsequently, 300 randomly chosen questionnaires underwent exploratory factor analysis, while the remaining set underwent validation factor analysis.

Table 6: Factor analysis of the questionnaire - rotated component matrix

Variant	Ingredient				
	1	2	3	4	5
CA1	0.846	0.275	0.243	0.421	0.015
CA2	0.746	0.145	0.314	0.418	0.109
CA3	0.703	0.128	0.257	0.506	0.184
CA4	0.884	0.571	0.224	0.354	0.184
CA5	0.743	0.382	0.272	0.307	0.169
ICC1	0.341	0.871	0.184	0.214	0.354
ICC2	0.298	0.798	0.188	0.187	0.338
ICC3	0.411	0.754	0.054	0.168	0.257
ID1	0.128	0.156	0.881	0.177	0.058
ID2	0.065	0.246	0.816	0.056	0.128
ID3	0.416	0.184	0.791	0.158	0.674
IA1	0.167	0.105	0.187	0.705	0.657
IA2	0.615	0.054	0.165	0.697	0.541
IA3	0.174	0.158	0.259	0.748	0.258
IC1	0.194	0.418	0.348	0.041	0.846
IC2	0.221	0.347	0.274	0.168	0.871
IC3	0.142	0.254	0.085	0.271	0.791

IC4		0.181	0.541	0.185	0.871
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Following the refined intercultural literacy framework, it is evident that Common Factor 1 elucidates that the corresponding structure of CA1-5 pertains to cultural awareness and cognition, encompassing all related indicators. Common Factor 2 delineates the three indicators of intercultural communicative competence, while Common Factor 3 accounts for all indicators of intercultural adaptive competence. Similarly, Common Factor 4 elucidates all indicators related to intercultural emotions and attitudes, and Common Factor 5 explicates all indicators of intercultural cooperation competence. Notably, Factor 5 comprehensively explains all indicators of intercultural cooperation competence. This categorization aligns seamlessly with the pre-test and post-test framework.

4.2 Validation Factor Analysis

Drawing upon the exploratory factor analysis discussed earlier, 5 latent variables and 18 observed variables were modeled using the structural equation modeling software AMOS. The outcomes are illustrated in Figure 1 below:

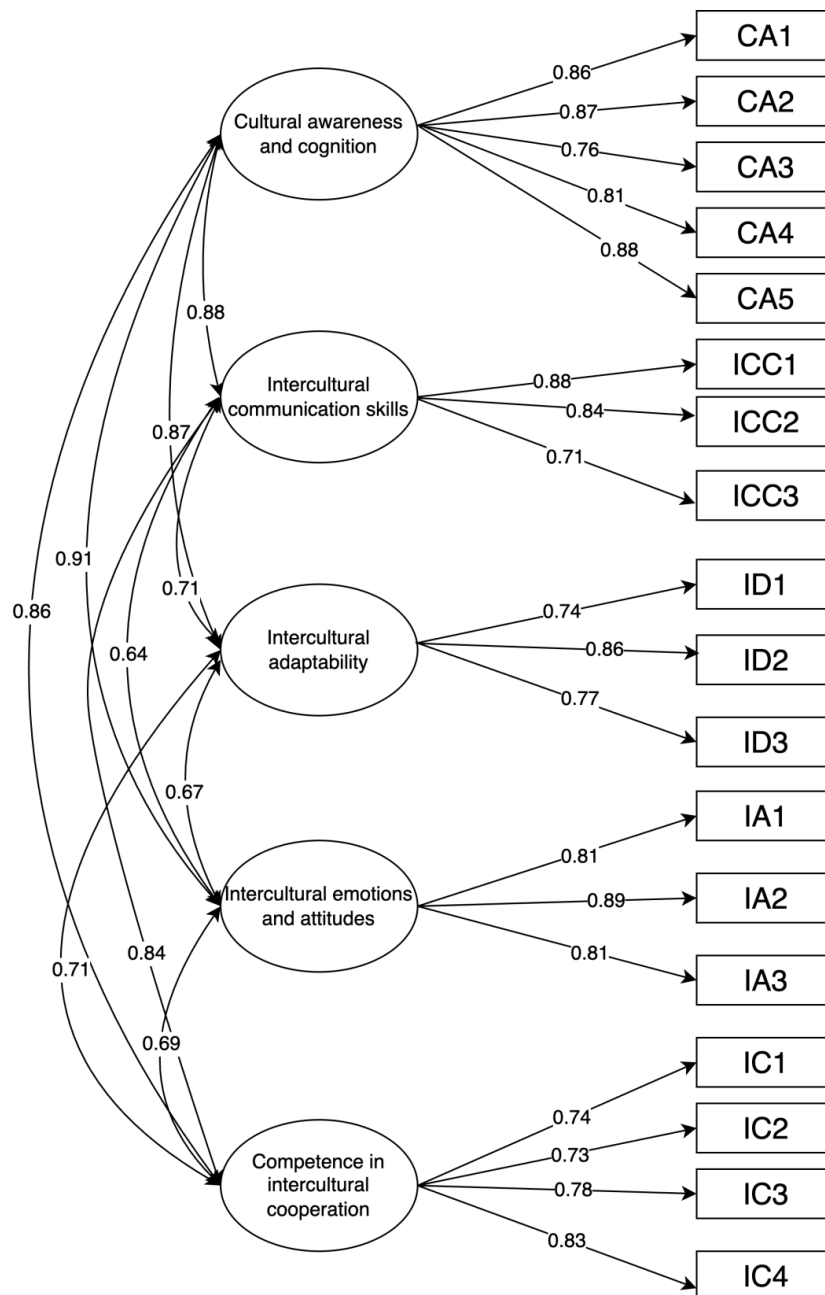


Figure 1: Validated factor analysis mode

Examining the depicted figure, it is evident that the indicators' values in cultural awareness and cognition, intercultural communication ability, adaptability, emotion and attitude, and cooperation ability all surpass 0.71, with satisfactory factor loadings. Simultaneously, the structural integrity is assessed through fitting coefficients of various models such as chi-square, DF, NFI, GFI, etc. The outcomes affirm that these coefficients all adhere to the test requirements, indicating the scientific and rational design of the model.

4.3 Model Finalization

Following the analysis of exploratory and validation factors, it can be inferred that the framework demonstrates good validity. Consequently, this study has ultimately established an assessment framework for the intercultural literacy of university students, comprising five dimensions and 18 specific literacies, as illustrated in Figure 2 below.



Figure 2: Framework model of intercultural literacy for university students

5. CONCLUSION AND OUTLOOK

By synthesizing representative intercultural literacy assessment frameworks and analyzing the specific characteristics of China's national context and contemporary university students, this study employed Darla Deardorff's model of intercultural competence as a foundation. The competence components were then reconfigured to formulate an intercultural literacy model tailored to university students. The framework's validity was subsequently scrutinized through exploratory and validation factor analyses, resulting in the establishment of a definitive intercultural literacy framework for university students. The study's significance lies in the development of a scientifically grounded and locally applicable set of measurement tools for assessing the intercultural competence of university students. This framework serves as a foundation for educators to implement

literacy enhancement education and for policymakers to devise relevant policies.

However, it is important to acknowledge the study's limitations, including a relatively small sample size and the need for further refinement in the sampling analysis of the survey. Future research endeavours will involve expanding the scope of measurement studies to enhance the literacy model. Additionally, recognizing the fluid nature of intercultural competence, ongoing adjustments to the framework will be essential to align with temporal changes.

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