



## **Developing the Intercultural Communicative Competence of Iranian Medical ESP Students Through Explicit Instruction**

**Farhad Mardaneh** 

*Department of English Language Teaching, Imam Khomeini International University, Iran*  
Mardaneh@znu.ac.ir

**Rajab Esfandiari**  (Corresponding author)

*Department of English Language Teaching, Imam Khomeini International University, Iran*  
esfandiari@hum.ikiu.ac.ir

**Abbas Ali Zarei** 

*Department of English Language Teaching, Imam Khomeini International University, Iran*  
zarei@hum.ikiu.ac.ir

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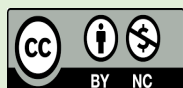
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### **Abstract**

As the world evolves into more globalized, ethnically, and linguistically mixed societies, Intercultural Communicative Competence (ICC) stages itself as a crucial asset. This fact holds particularly true when it comes to increasingly globalized healthcare academic milieux, where cultivating ICC is crucial for healthcare professionals to interact effectively with patients from diverse cultural backgrounds. The present study, employing a quasi-experimental pretest-posttest control group design, explored the development of ICC among nursing, as the control group (27 participants), and medical students (32), as the experimental one through explicit ICC training at Zanzan University of Medical Sciences in Zanzan, Iran. Hence, targeted ICC training effectiveness in enhancing the cultural empathy (CE), flexibility (F), social initiative (SI), open-mindedness (OM), and emotional stability (ES) of medical students was investigated employing the Multicultural Personality Questionnaire (MPQ) as a key tool to gauge learners' ICC before and after the training. The findings showed a significant improvement in the participants' all ICC sub-scales, indicating the positive impact of explicit training on the development of CE, F, SI, and OM.

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## Introduction

Intercultural communicative competence (ICC) is essential in today's globalized world, where cross-cultural interactions are common in education, business, and diplomacy (Peacock & Harrison, 2018). ICC involves the ability to interact effectively and appropriately with individuals from diverse cultural backgrounds by integrating sociolinguistic, pragmatic, and linguistic competencies (Deardorff, 2006, 2018). Chen and Starosta (2000) state that it encompasses cultural sensitivity, adaptability in communications, and linguistic skills to foster effective interactions. Fantini (2009) states that ICC consists of attitudes (e.g., empathy), knowledge (cultural awareness), and skills (e.g., linguistic fluency) necessary for successful cross-cultural interactions. Byram (1997) highlights that ICC includes both linguistic and cultural communication aspects, requiring effectiveness and appropriateness in interactions (Deardorff, 2006; Ghorbani & Dowlatabadi, 2023). Lustig and Koester (2019) define ICC as appropriate and effective communication ability before individuals from varied cultures use culturally norm-sensitive verbal and non-verbal skills.

The definition of ICC can vary based on context and specific needs. A comprehensive definition by Alred et al. (2020) describes it as a dynamic construct involving effective communication and interaction ability with people from varied cultural backgrounds, staging cultural sensitivity, linguistic proficiency, empathy and adaptability in intercultural encounters, which encompass key elements crucial for academic and professional settings.

ICC is vital for navigating cultural differences, fostering meaningful relationships, and promoting understanding among students and educators. Increasingly, educational institutions emphasize the importance of global citizenship and intercultural competence in education. Learning English as a lingua franca is particularly significant for facilitating cross-border communication and collaboration (Sercu, 2017). In addition to ICC, Multicultural Personality (MP) is vital for helping learners adapt to new cultural contexts, which is crucial for effective language use. MP consists of five traits: Cultural Empathy (CE), Open-Mindedness (OM), Social Initiative (SI), Emotional Stability (ES), and Flexibility (F) (Leone, Van der Zee, & Van Oudenhoven, 2018). Notably, CE, OM, and F significantly influence the ability of EFL learners to thrive in multicultural environments (Van der Zee & Van Oudenhoven, 2000).

Dewaele and MacIntyre (2019) found that EFL learners with strong MP traits adapt better to diverse cultural settings, improving their language learning experiences and fostering positive attitudes towards both language acquisition and intercultural interactions. Jiang, Garcia and Willis (2019) reported that motivated learners with robust MP traits are more engaged in their studies. Additionally, ES helps learners manage the stress and uncertainties of intercultural interactions (Bektaş, 2020). Li and Hu (2020) emphasize that emotionally stable learners are more resilient and successful in EFL learning.

## Literature review

### Theoretical Framework: ICC Versus IC in Relation to Foreign Language Education

The theoretical framework of ICC can be seen as a subset of Intercultural Competence (IC), with distinct features. While IC refers to the development of individuals to engage and collaborate in a global society, it often lacks emphasis on foreign language (FL) proficiency. On the contrary, ICC specifically addresses the ability to manage complicated intercultural interactions, necessitating proficiency in a FL and analysis of both one's own culture and that of the target language speakers.

Several models for IC development have been proposed, including Bennett's (1993) Developmental Model of Intercultural Sensitivity, Gudykunst's (2005, 2017) Anxiety and Uncertainty Measurement Model, Byram's (1997) Multidimensional Models of Intercultural Competence, and Deardorff's (2006) Process Model of Intercultural Competence. Notably, Byram's model emphasizes ICC in the context of FL use, highlighting attitudes, knowledge, and skills vital for effective intercultural communication.

Byram (1997) argues that ICC involves attitudes towards "the other," encouraging learners to examine preconceived notions and fostering a willingness to explore differences within themselves, ultimately promoting reciprocity in cross-cultural interactions (Moeller & Nugent, 2014). Competence in ICC integrates language proficiency with cultural understanding, necessitating awareness of cultural nuances on semantic and value levels (Wilberschied & Lee, 2015). Thus, ICC goes beyond mere communication; it embodies a philosophy of critical engagement and reflective self-analysis (Moeller & Nugent, 2014).

The process of ICC development focuses on exploring similarities and differences between one's own culture and the target culture, covering aspects like history, geography, and social institutions. This fosters connections across diverse backgrounds and requires strong interpretative skills (Wilberschied & Lee, 2015). Identifying ethnocentric perspectives allows students to grasp the root causes of conflicts, leading to effective mediation (Byram, 1997). Giroux (2005) notes that acknowledging differences involves recognizing the complexities of analyzing them, emphasizing the importance of scrutinizing misunderstandings for personal growth (Wilberschied & Lee, 2015). Ultimately, appreciating differences and anticipating future interactions is crucial in ICC development, where reflection and critical analysis are defining characteristics of the ICC model (Lázár et al., 2007; Wilberschied & Lee, 2015).

Given the role of English as an international language for interaction, it is vital to incorporate ICC development in language courses (Khalili et al., 2025). Matsuda (2003) emphasizes integrating ICC into language teacher education programs to prepare educators to promote intercultural understanding. Effective measures to enhance ICC among learners include: learners' cultural background and experience integration in the classroom (Gay, 2018), authentic material incorporation into lessons (Byram, 1997), direct integration of IC skills into language activities (Deardorff, 2009, 2020), awareness-enhancing reflections towards personal cultural perspectives to reduce biases (Jackson, 2019), innovative opportunity creation using digital technology (Godwin-Jones, 2019), teachers' intercultural competence enhancing via culturally-responsive-teaching strategies (Murray & Scarino, 2020), and beyond-classroom language learning initiatives through cultural immersion experiences (Guo & Qian, 2019;

Kramersch, 1993). This means that ICC is to be combined with MP and incorporated into language learning programs, through findings obtained from well-implemented studies.

### **Impact of Explicit ICC Instruction**

On a broader outlook, Khalili et al. (2025) take the necessity of language teaching one more step further and underscore the collaboration between medical experts and language professionals. One of these interdisciplinary collaborations could be ICC development amongst healthcare staff. It has been indicated that explicit ICC teaching may effectively enhance intercultural understanding and adaptability, even in settings with limited direct interaction with other cultures. A study conducted by Ziegler and Moeller (2018) discovered that structured instruction in intercultural communication and cultural sensitivity within culturally homogeneous environments led to notable improvements in students' ICC. Participants exhibited greater awareness of cultural differences and enhanced capabilities for engaging in hypothetical intercultural scenarios. This research underscores the importance of structured educational interventions in cultivating the cognitive and emotional foundations necessary for intercultural competence, regardless of the frequency of intercultural interactions (Ziegler & Moeller, 2018).

In a related study conducted in South Korea—a nation characterized by relatively low levels of cultural diversity—researchers explored the impact of explicit teaching interventions on Multicultural Personality (MP) traits (Kim & Lee, 2021). Their findings revealed that students who engaged in a curriculum aimed at fostering OM, F, and CE demonstrated significant improvements in these traits. Importantly, these enhancements transcended theoretical knowledge; students reported increased preparedness and confidence in their ability to interact with individuals from diverse cultural backgrounds in future scenarios. This suggests that MP traits, including OM and CE, can be effectively cultivated through educational initiatives, even in contexts where direct cultural interactions are limited (Kim & Lee, 2021).

ICC has become a central focus in academic research, particularly concerning the development of essential components such as knowledge, skills, attitudes, awareness, and empathy through experimental interventions. The MP construct encompasses traits necessary for ICC, including CE, OM, ES, F, and SI. Investigating these components through experimental studies can yield valuable insights into both ICC and MP development. Sercu et al. (2023) employed digital simulations as a method to enhance participants' ICC knowledge, demonstrating significant gains in understanding cultural differences. However, the study's reliance on digital simulations raises questions regarding the generalizability of its findings, as it did not investigate the effects of such interventions in real-world settings. Similarly, Moghaddam et al. (2021) focused on skills development in ICC through role-playing exercises integrated into a cross-cultural communication course. The study concluded that participants exhibited notable improvements in navigating intercultural interactions; however, the controlled nature of the environment may not fully reflect the complexities and unpredictable variables present in genuine intercultural communication situations.

Further emphasizing the development of attitudes towards other cultures, Griffith et al. (2022) examined the effects of intercultural dialogue programs. The results showed enhanced openness and reduced cultural prejudice among participants. Lastly, Weber and Döring (2020)

investigated awareness through reflective journaling, which successfully enhanced participants' understanding of their cultural biases. However, the reliance on qualitative data from journals poses challenges in quantitatively measuring the degree of awareness gained.

Pedersen et al. (2022) investigated the role of empathy training in enhancing intercultural competence, finding that empathy-building exercises significantly improved participants' abilities to understand diverse cultural backgrounds. However, the absence of a control group limited the ability to attribute changes solely to the training, and the study did not examine how these gains in empathy translated into actual intercultural interactions. Similarly, Malek et al. (2020) found that sensitivity training increased empathy and improved interpersonal relationships in multicultural settings, but the homogeneous sample limited the generalizability of the findings to more diverse populations.

Breugelmans et al. (2021) explored open-mindedness through cultural exchange programs, revealing that exposure to foreign cultures significantly increased participants' open-mindedness. However, the reliance on short-term programs limited the depth of cultural immersion and did not account for pre-existing levels of open-mindedness. Roberts et al. (2019) examined emotional stability in multicultural environments through resilience training, which helped participants manage stress during intercultural interactions. Yet, the narrow focus on stress management may have overlooked other contributing factors, such as inherent personality traits.

Van Hemert et al. (2021) focused on flexibility through adaptive thinking strategies, finding improved flexibility in culturally diverse situations. However, the lack of diversity in the participant pool limited the applicability of the findings. Lastly, Van der Zee and Van Oudenhoven (2022) explored social initiative through a social skills training program, which increased proactive behavior in multicultural settings. Nonetheless, the focus on young adults limited the applicability of the findings to other demographics, and the study did not assess the long-term impact of the training on social initiative.

### **Objectives of The Current Study**

The present study aims to assess multiple components of ICC, including participants who are non-English as a Foreign Language (EFL) student, which could be a distinctive feature of this research. To achieve this goal, various instructional methods will be employed, including class discussions, teacher explanations, the application of relevant materials, and homework assignments. This multifaceted approach seeks to provide a comprehensive understanding of ICC development across diverse student populations. Thus, the objectives could be garnered in one research question:

RQ: What is the effect of explicit instruction on the intercultural competence and its sub scales?

### **Method**

#### **Participants**

Both of groups were selected from 207 first-year students of Nursing (95 students) and Medicine (112 students) whose language proficiency had not met the Entrance Exam of English

Proficiency (EEEP)—which is a part of Screening Scheme at Zanzan University of Medical Sciences (ZUMS). Students were assigned into each group based on randomization. To elaborate, having received the results of the mentioned students' English proficiency scores, the ones who had failed to meet the cut-off English proficiency score of 50% were assigned to two groups. To do so, 40 students were randomly assigned to an experimental group and 30 were included in the control group using random sampling method. Since each class was to be labeled by a major or a field of study to evade bureaucratic issues, the experimental group was labeled "Medicine Students" and the control group was called "Nursing Class", although both classes included learners from both majors.

While A total of 70 students from Zanzan University of Medical Sciences (ZUMS) were divided into an experimental group and a control group, in the process, 32 students (21 males, and 11 females) remained in the experimental group and the control group finished the semester with 27 students (16 females, and 11 males). The reasons included time overlap, transfer limitations and personal reasons. Written informed consent was obtained from all participants prior to the study. Table presents the demographic information of the participants.

**Table 1.** *Characteristics of Participants*

| <b>Gender</b>        | <b>Frequency</b> | <b>Percentage</b> |
|----------------------|------------------|-------------------|
| Female               | 27               | 45.8              |
| Male                 | 32               | 54.2              |
| <b>Age</b>           | <b>Frequency</b> | <b>Percentage</b> |
| 18                   | 20               | 33.9              |
| 19                   | 25               | 42.4              |
| 20                   | 8                | 13.6              |
| 21                   | 3                | 5.1               |
| 22                   | 3                | 5.1               |
| <b>Education</b>     | <b>Frequency</b> | <b>Percentage</b> |
| Medicine             | 31               | 52.5              |
| Nursing              | 28               | 47.5              |
| <b>Mother Tongue</b> | <b>Frequency</b> | <b>Percentage</b> |
| Turkish              | 35               | 59.3              |
| Gilaki               | 12               | 20.3              |
| Persian              | 7                | 11.9              |
| Mazani               | 3                | 5.1               |
| Kurdish              | 2                | 3.4               |

### **Instrumentation**

To measure intercultural communicative competence (ICC), the Multicultural Personality Questionnaire (MPQ), a comprehensive 91-item multidimensional tool developed by Van der Zee and Van Oudenhoven (2000), was administered as both a pretest and posttest at the beginning and end of the semester. This questionnaire assesses key personality traits such as cultural empathy, open-mindedness, emotional stability, flexibility, and social initiative. Academic support for the MPQ's validity is substantiated by factor analyses, including confirmatory factor analysis by Burch et al. (2018), and criterion-related studies by Miville et



al. (2009), demonstrating that higher MPQ scores correlate with favorable intercultural outcomes. Moreover, cross-cultural validation by Hu and Kim (2015) confirms its applicability across diverse contexts. Reliability metrics indicate good internal consistency for each dimension, with Cronbach's alpha values above 0.78, reinforcing the MPQ's suitability for evaluating readiness for effective intercultural interactions (Burch & Ng, 2018; Miville & Ferguson, 2009; Van der Zee & van Oudenhoven, 2000).

### **Procedure**

Besides the regular program implemented for the control group, the experimental one participated in a structured ICC training program using the textbook *Mirrors and Windows* (Huber-Kriegler et al., 2003), which emphasizes cultural awareness and incorporates a variety of reflective discussions to deepen understanding of intercultural dynamics. Activities included lectures on cultural narratives, differences, and practices across various nations, followed by guided class discussions designed to encourage public speaking and critical thinking (Byram, 2009). Additionally, the experimental group engaged in culture-related assignments that required them to analyze intercultural situations and reflect on their experiences, subsequently submitting these assignments through social networking platforms for enhanced engagement (Kearney et al., 2024). The whole interventive procedure added 30 minutes to each regular session.

In contrast, the control group followed a regular syllabus that included grammar, reading comprehension, and vocabulary instruction. Classes met twice a week, each session lasting 90 minutes. During each session, grammatical points were taught, followed by a review of vocabulary homework and the introduction of new vocabulary. To improve reading comprehension skills, students utilized *SAMT English for Medical Students Book 1* to work on technical vocabulary, grammar structures, translation, and comprehension exercises. This approach ensured that the control group received standard language instruction without any supplementary cultural training. The intervention commenced after student orientation, which included an introduction to course objectives and the MPQ, ensuring all queries were addressed before data collection began. The semester concluded with final assessments in both language proficiency and the MPQ, providing a comprehensive evaluation of the impact of the explicit ICC instruction on students' competencies.

### **Research Design**

This study employed a quasi-experimental design with a non-equivalent control group to investigate the effects of explicit training on ICC development among Iranian Non-TEFL freshmen students compared to a peer control group.

### **Data Analysis**

Data analysis employed multivariate ANCOVA (MANCOVA) via SPSS (Ver.26) to evaluate changes in ICC levels, establishing significance at  $< .05$  and calculating effect sizes to determine the impact of the intervention.

## Results

The research question of this study asked about the effect of explicit instruction on the ICC and its sub-scales. To explore this research question, multivariate ANCOVA (MANCOVA) was applied. In fact, according to Pallant (2013), MANCOVA is a statistical technique that is the extension of the analysis of covariance (ANCOVA), i.e., it is the multivariate analysis of variance (MANOVA) with a covariate(s). In MANCOVA, we measure for statistical differences on multiple continuous dependent sub-scales (post-test scores gained on different sub-scales of ICC in the social and cultural capital questionnaire: Cultural Empathy (CE), Emotional Stability (ES), Flexibility (F), Open-mindedness (OM), and Social Initiative (SI) in the current study) by an independent grouping sub-scale (explicit instruction), while controlling for a third sub-scale called the covariate (pre-test scores of CE, ES, F, OM, and SI). Covariates are added in order to diminish error terms, so that the analysis eliminates the covariates' effect on the relationship between the independent grouping sub-scale and the continuous dependent sub-scales.

It is necessary to mention that the pre-test scores were considered covariate to control the effect of the pre-test scores on the post-test scores. The descriptive statistics for the pre-test of CE, ES, F, OM, and SI in the experimental and control groups were computed before explaining the results of MANOVA (Table 2). Table 2 indicates that the experimental and control groups' pre-test mean scores on almost all sub-scales of intercultural competence are on the same level. For instance, the students of the experimental group achieved the mean score of 3.37 ( $SD = .38$ ) concerning CE, which is close to the control group with the mean score of 3.39 ( $SD = .47$ ). As it is evident from Table 2, the same pattern is observed in the other four sub-scales.

**Table 2.** Descriptive Statistics for Different Sub-scales of ICC by Group on Pre-test

| Sub scale           | Group        | N  | Mean | SD  | SEM  |
|---------------------|--------------|----|------|-----|------|
| Cultural empathy    | Experimental | 32 | 3.37 | .38 | .067 |
|                     | Control      | 27 | 3.39 | .47 | .090 |
| Emotional stability | Experimental | 32 | 2.96 | .40 | .070 |
|                     | Control      | 27 | 2.89 | .36 | .069 |
| Flexibility         | Experimental | 32 | 2.98 | .34 | .061 |
|                     | Control      | 27 | 2.91 | .34 | .066 |
| Open-mindedness     | Experimental | 32 | 3.33 | .38 | .068 |
|                     | Control      | 27 | 3.24 | .55 | .106 |
| Social initiative   | Experimental | 32 | 3.03 | .35 | .062 |
|                     | Control      | 27 | 2.98 | .41 | .078 |

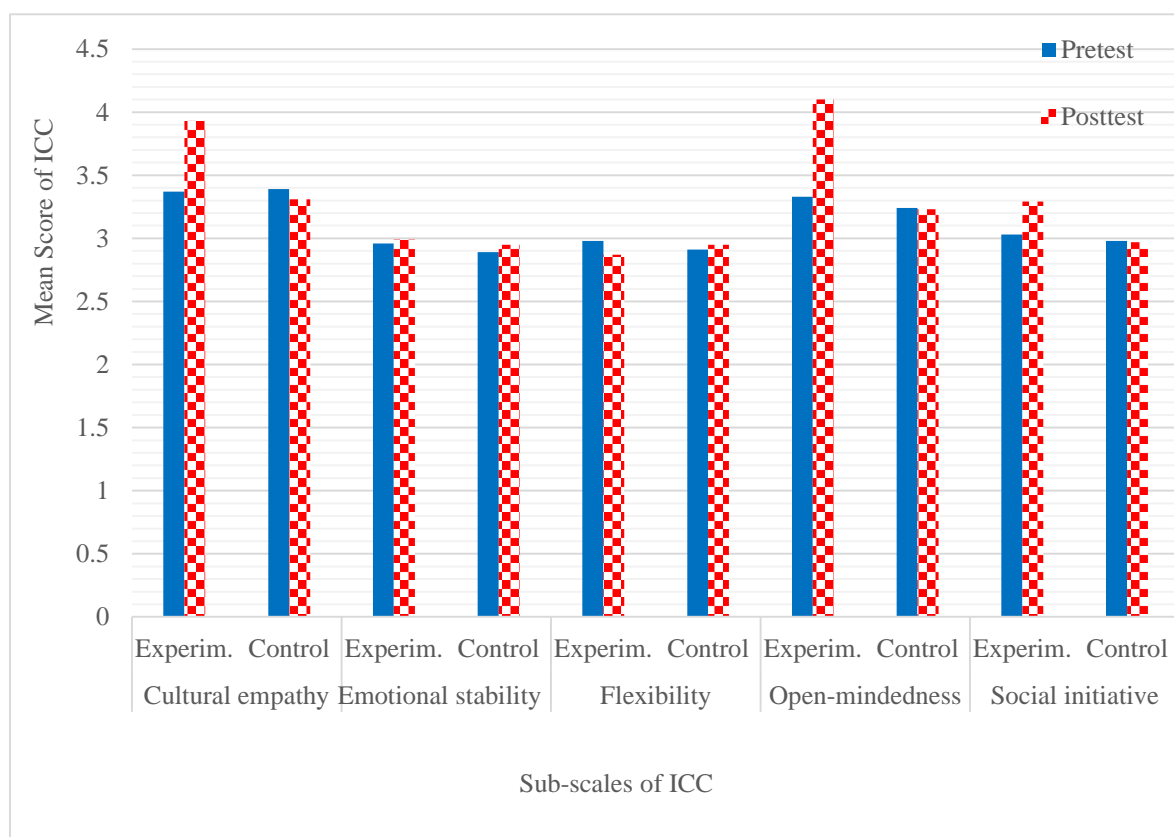
Furthermore, Table 3 provides the descriptive statistics for the post-test scores. As seen in Table 3, the students of the experimental group achieved a higher mean score in almost all the sub-scales of ICC in compared to those of the control group. For example, Table 3 indicates that, in terms of CE sub-scale, the experimental group ( $M = 3.93$ ,  $SD = .29$ ) achieved a noticeably greater mean score than control group ( $M = 3.31$ ,  $SD = .48$ ). Almost the same pattern



is observed for the other sub-scales except for ES sub-scale in which the two groups performed almost the same (experimental:  $M = 2.99$ ,  $SD = .27$ ; control:  $M = 2.95$ ,  $SD = .39$ ).

**Table 3.** Descriptive Statistics for Different Sub-scales of ICC by Group on Post-test

| Sub scale           | Group        | N  | Mean | SD  | SEM  |
|---------------------|--------------|----|------|-----|------|
| Cultural empathy    | Experimental | 32 | 3.93 | .29 | .052 |
|                     | Control      | 27 | 3.31 | .48 | .093 |
| Emotional stability | Experimental | 32 | 2.99 | .27 | .047 |
|                     | Control      | 27 | 2.95 | .39 | .076 |
| Flexibility         | Experimental | 32 | 2.87 | .29 | .051 |
|                     | Control      | 27 | 2.95 | .30 | .058 |
| Open-mindedness     | Experimental | 32 | 4.10 | .32 | .057 |
|                     | Control      | 27 | 3.23 | .47 | .091 |
| Social initiative   | Experimental | 32 | 3.29 | .30 | .052 |
|                     | Control      | 27 | 2.97 | .36 | .070 |



**Figure 1.** Bar Graph for Different Sub-scales of ICC by Group on both Pre-test and Post-test

To depict the results more obviously, a Bar Graph (Figure 1) was drawn. As shown in this diagram, the increase in mean score from the pre-test to the post-test in the experimental group is more paramount in the four out of five ICC sub-scales, namely CE, F, OM, and SI, but not ES.

### Testing Assumptions

According to Field (2009), four assumptions (i.e., interval data, independence of subjects, normality, and homogeneity of variances) should be checked before one decides to perform parametric statistical tests. In the present study, the first assumption is not violated as the present data are measured on an interval scale.

Additionally, Bachman (2005, 236) believes that the participants independence assumption is met when each individual's performance is independent of others' performance, which was the case in this research. The third assumption relates to the data normality which was examined via the ratios of skewness and kurtosis for pre-test and post-test scores. According to Field (2017), the ratios of skewness and kurtosis over their respective standard errors are analogous to standardized scores (z-scores) that can be compared against the critical values of +/- 1.96 at .05 levels. Since all ratios for all sub-scales of ICC were within the ranges of +/- 1.96, it was concluded that the assumption of normality was met.

Furthermore, homogeneity of variances is presented below. Based on the results reflected in Table 4, the significant value associated with Levene's test for all ICC sub-scales ( $p > .05$ ) was higher than the selected significant level of .05 showing that the homogeneity of variance assumption was not violated for any of them.

**Table 4.** *Levene's Test of Equality of Error Variances for Different Sub-scales of ICC*

| Sub scale           | F     | df1 | df2 | Sig. |
|---------------------|-------|-----|-----|------|
| Cultural empathy    | 1.241 | 1   | 57  | .270 |
| Emotional stability | .092  | 1   | 57  | .763 |
| Emotional stability | 1.591 | 1   | 57  | .212 |
| Open-mindedness     | 1.949 | 1   | 57  | .168 |
| Flexibility         | 4.182 | 1   | 57  | .065 |

Table 5 below reveals that the assumption of homogeneity of covariance was violated (Box's  $M = 30.57$ ,  $F = 1.84$ ,  $p = .02$ ,  $p < .05$ ). To compensate for this shortcoming, and still use MANCOVA, the significance level decreased from .05 to .01 in analyzing the data (Tabachnick & Fidell, 2014).

**Table 5.** *Box's Test of Equality of Covariance Matrices*

| Box's M | F    | df1 | df2      | Sig. |
|---------|------|-----|----------|------|
| 30.57   | 1.84 | 15  | 12263.16 | .024 |

As shown in Table 6, multivariate tests revealed that there was a statistically significant difference (Wilks' Lambda = .17,  $F(5, 48) = 47.93$ ;  $p = .000$ ,  $p < .01$ ) in the overall ICC scores between the two groups on the post-test while controlling the effect of the pre-test. The Partial  $\eta^2$  was .83 expressing a large effect size according to Cohen's guidelines (1988, pp. 284-7).

**Table 6.** *Multivariate Tests for the Effect of Explicit Instruction on ICC*

| Effect             | Value | F      | Hypothesis df | Error df | Sig. | Partial Eta Squared |
|--------------------|-------|--------|---------------|----------|------|---------------------|
| Pillai's Trace     | .833  | 47.936 | 5.00          | 48.00    | .000 | .833                |
| Wilks' Lambda      | .167  | 47.935 | 5.00          | 48.00    | .000 | .833                |
| Hotelling's Trace  | 4.993 | 47.936 | 5.00          | 48.00    | .000 | .833                |
| Roy's Largest Root | 4.993 | 47.936 | 5.00          | 48.00    | .000 | .833                |

However, multivariate tests do not specify the precise place of difference between the two groups in terms of different ICC sub-scales. Therefore, tests of between-subjects' effects were run (Table 7). As represented in Table 7, tests of between-subjects' effects showed a statistically significant difference in the four out of five sub-scales of ICC i.e., *CE*:  $F(1, 52) = 184.71, p = .000, p < .01, \eta^2 = .78$ , *flexibility*:  $F(1, 52) = 6.66, p = .008, p < .01, \eta^2 = .11$ , *OM*:  $F(1, 52) = 208.75, p = .000, p < .01, \eta^2 = .80$ , and *SI*:  $F(1, 52) = 40.00, p = .000, p < .01, \eta^2 = .43$  between the students in the experimental group who received explicit instruction and those in the control group who lacked explicit instruction. However, as seen in Table 6, tests of between-subjects' effects failed to find a statistically significant difference in the sub scale of *ES*,  $F(1, 52) = .04, p = .84, p > .01, \eta^2 = .001$ , between the two groups.

**Table 7.** *Tests of Between-Subjects Effects for the Effect of Explicit Instruction on ICC*

| Source          | Dependent Sub-scale      | Subscale III Sum of Squares | df | Mean Square | F       | Sig. | Partial Eta Squared |
|-----------------|--------------------------|-----------------------------|----|-------------|---------|------|---------------------|
| Corrected Model | Post-cultural empathy    | 12.780                      | 6  | 2.130       | 74.692  | .000 | .896                |
|                 | Post-emotional stability | 4.389                       | 6  | .732        | 19.995  | .000 | .698                |
|                 | Post-flexibility         | 3.533                       | 6  | .589        | 21.076  | .000 | .709                |
|                 | Post-open-mindedness     | 17.672                      | 6  | 2.945       | 65.413  | .000 | .883                |
|                 | Post-Social initiative   | 6.246                       | 6  | 1.041       | 36.994  | .000 | .810                |
| Group           | Post-cultural empathy    | 5.267                       | 1  | 5.267       | 184.708 | .000 | .780                |
|                 | Post-emotional stability | .001                        | 1  | .001        | .040    | .843 | .001                |
|                 | Post-flexibility         | .186                        | 1  | .186        | 6.657   | .008 | .113                |
|                 | Post-open-mindedness     | 9.399                       | 1  | 9.399       | 208.752 | .000 | .801                |
|                 | Post-Social initiative   | 1.126                       | 1  | 1.126       | 40.004  | .000 | .435                |
| Error           | Post-cultural empathy    | 1.483                       | 52 | .029        |         |      |                     |
|                 | Post-emotional stability | 1.903                       | 52 | .037        |         |      |                     |
|                 | Post-flexibility         | 1.453                       | 52 | .028        |         |      |                     |
|                 | Post-open-mindedness     | 2.341                       | 52 | .045        |         |      |                     |
|                 | Post-Social initiative   | 1.463                       | 52 | .028        |         |      |                     |
| Total           | Post-cultural empathy    | 799.358                     | 59 |             |         |      |                     |
|                 | Post-emotional stability | 528.033                     | 59 |             |         |      |                     |
|                 | Post-flexibility         | 502.207                     | 59 |             |         |      |                     |
|                 | Post-open-mindedness     | 827.559                     | 59 |             |         |      |                     |
|                 | Post-Social initiative   | 589.640                     | 59 |             |         |      |                     |

## Discussion

ICC exploration suggests valuable insights into how individuals adapt and respond to diverse cultural settings. Results of the present study indicated that four sub-scales of MP, namely Cultural Empathy, Flexibility, Social Initiatives, and Open-mindedness, showed statistically significant improvement, yet Emotional Stability remained almost unchanged.

Focusing on each sub-scale and juxtaposing the findings with those of other investigations, in a Spanish validation study, cultural empathy emerged as a highly dominant factor among university students (MDPI, 2020), cultural empathy emerged as a highly dominant factor among university students. The researchers found that students, particularly women, scored highly in this dimension, suggesting that cultural empathy plays a significant role in predicting positive attitudes toward multicultural environments. Disregarding gender factor, the findings were in line with findings in the present study. In the same vogue, Alghizzi and Alshahrani (2022) found that EFL learners' cultural empathy grew. However, instead of being explicitly trained in cultural empathy, this growth was measured in terms of their academic progression. Another noteworthy finding was that the study employed a pre- and post-test design but did not find significant differences between the groups, suggesting a gradual development rather than a direct correlation between English as a Medium of Instruction (EMI) exposure and the improvement of this trait (Alghizzi & Alshahrani, 2022), rather than explicit training of ICC.

Associated with reducing cultural bias and fostering favorable attitudes toward other cultures, in a study conducted in Spain (MDPI, 2022), open-mindedness was among the highest-scoring traits. Alghizzi and Alshahrani (2022) also found that open-mindedness also showed improvements across academic levels, particularly among students exposed to EMI. This trait plays a key role in intercultural success, with high levels often observed in university students across different contexts (Frontiers, 2022; MDPI, 2022). This could justify the similarity of findings between the present study and those of the discussed ones. However, the improvement in this trait was not linear in the research carried out by Alghizzi and Alshahrani (2022), and no significant differences were found between pre- and post-test groups in most cases, suggesting that factors other than EMI may influence the development of this trait (Alghizzi & Alshahrani, 2022), with explicit training being as one of them.

While flexibility improved significantly in the present study, it did not show consistent improvement across different levels of EMI exposure in Alghizzi and Alshahrani's (2022) investigation, suggesting that its development may not be linear or directly influenced by academic progression. To elaborate, the researchers observed random patterns in flexibility development, which may suggest that it is not heavily influenced by educational settings alone. The findings imply that targeted interventions may be needed to enhance this trait (Alghizzi & Alshahrani, 2022), explicit training being one of them. In the Spanish validation study, flexibility was found to be less dominant compared with empathy and open-mindedness, with variability observed based on sex and age; women tended to score higher in flexibility, indicating that gender may influence this trait's development (MDPI, 2022; Frontiers, 2022). This is at variance with the present study's findings, where the majority of participants were male learners. One factor to be proposed for this discrepancy could be explicit training of ICC.

Whereas the findings on social initiative improvement as a result of explicit training was significant, the findings by Alghizzi and Alshahrani (2022) showed although shivering improvement, like flexibility, its development was inconsistent across different academic levels (Frontiers, 2022). This suggests that simply being in an EMI environment does not necessarily enhance this trait (Alghizzi & Alshahrani, 2022). MDPI (2022) did also touch upon social initiative, although it was not a chief focus. It was noted that social initiative could be elevated through greater opportunities for cross-cultural engagement, but the study did not utilize pre- and post-test methods to assess its development (MDPI, 2022). Again, the absence of explicit training on ICC could be put forth as a contributing factor to the discrepancy of findings between the present and the discussed research.

As for Emotional Stability, the results found in the present study were comparable to the ones found by Alghizzi and Alshahrani (2022), and MDPI (2022). Though emotional stability improved over time in the former investigation, the study did not report significant differences between pre- and post-test measures. Taking the latter study into account, this trait did not show significant differences between men and women or across age groups (DMPI, 2022). This aligns with the idea that emotional stability develops through continuous exposure to challenging situations rather than through one-time educational interventions.

These findings align with prior research that underscores the importance of cultural empathy, flexibility, and the challenges associated with altering inherent personality traits such as emotional stability. As established by Deardorff (2006), IC is vital for effective communication in increasingly globalized contexts, demonstrating that structured training programs can significantly enhance students' cultural empathy and adaptability (Norouzi, et al., 2022). This enhancement is echoed in Bennett's (2009, 2014) work, upholding the effects of training on cultural sensitivity which suggests that engagement with diverse perspectives has potentials to enhance interpersonal relations.

Moreover, van der Zee and van Oudenhoven (2013) support a multidimensional approach to intercultural effectiveness through their multicultural personality questionnaire, which emphasizes that while flexibility and empathy can be nurtured, more stable traits like emotional stability remain less susceptible to change in brief training interventions. This observation is consistent with Roberts and Mroczek (2008), who assert that personality traits, including emotional stability, are relatively enduring across contexts, suggesting that interventions may need to extend over longer periods to effect meaningful change in these traits.

The distinction between teachable skills and stable personality traits is further highlighted by Fitzgerald and Kappra (2020), who found significant improvements in social initiative and cultural empathy among social work students following a dedicated intercultural training program, yet noted limited shifts in emotional stability. Similarly, Pettigrew and Tropp (2006) confirm that while intercultural contact can reduce prejudice and enhance empathy, it does not necessarily lead to changes in underlying personality traits, including emotional stability.

Cultural theories by Hofstede and Hofstede (2005) provide a critical lens for understanding how emotional responses are shaped by cultural context, indicating that deeper engagement is required to affect emotional traits. This complexity is further elaborated by Chen and Starosta

(2000), who emphasize that the multidimensional nature of cross-cultural adaptation warrants consideration of both individual personality characteristics and environmental influences.

In light of these varied contributions, it is evident that training interventions can successfully cultivate intercultural empathy and flexibility. However, the less pronounced improvements in emotional stability suggest that these traits require deeper introspective and experiential learning over time. Therefore, while ICC training plays a vital role in preparing individuals for intercultural interactions, the nuanced relationship between cultural competencies and stable personality traits calls for a more integrative approach that combines skill-building with long-term personal development strategies. Future research should aim to determine the optimal duration and nature of training programs that might facilitate these shifts, especially in traits that are traditionally more resistant to change.

The study further discussed the potential for using the MPQ in educational and organizational settings to assess individuals' readiness for intercultural experiences. However, it noted that while cultural empathy and open-mindedness may be easily enhanced through exposure to diversity, flexibility and emotional stability might require more targeted interventions (MDPI, 2022).

The findings of this study demonstrate the effectiveness of explicit ICC training in enhancing specific MPQ subscales—cultural empathy, flexibility, social initiative, and open-mindedness—among medical and nursing students. These results align with prior research emphasizing the malleability of certain ICC-related traits through targeted interventions (Deardorff, 2006; Van der Zee & van Oudenhoven, 2000). For instance, cultural empathy consistently emerges as a key factor in cross-cultural contexts, as evidenced by studies in Spain and Saudi Arabia, where its development correlated with multicultural exposure, though often without explicit training (MDPI, 2020; Alghizzi & Alshahrani, 2022). However, the nuanced development of traits like flexibility and open-mindedness suggests that their improvement may depend on contextual and instructional factors beyond short-term interventions, such as gender, age, and sustained intercultural engagement (Alghizzi & Alshahrani, 2022; MDPI, 2022). The unchanged emotional stability dimension reinforces the distinction between adaptable skills and stable personality traits. Consistent with prior findings (Roberts & Mroczek, 2008; Van der Zee & Van Oudenhoven, 2013), this result highlights the need for prolonged or experiential approaches to foster significant change in enduring traits.

These findings underscore the importance of a multidimensional approach to ICC development, integrating skill-building activities with reflective and experiential learning to address both malleable and stable traits (Deardorff, 2006; Bennett, 2009). While this study validates the role of explicit ICC training in cultivating cultural empathy and adaptability, future research should explore optimal training durations and methods to influence traits like emotional stability that resist short-term interventions (Fitzgerald & Kappra, 2020; Pettigrew & Tropp, 2006). Furthermore, cultural theories by Hofstede and Hofstede (2005) and frameworks by Chen and Starosta (2000) highlight the influence of cultural norms and environmental factors in shaping emotional traits, suggesting the need for more comprehensive strategies. By situating these findings within the broader discourse, this study contributes to the ongoing conversation on ICC training, emphasizing the potential for explicit instruction to



enhance intercultural readiness while calling for integrative approaches to address the interplay between cultural competencies and stable personality traits.

### **Conclusion**

The results revealed a significant improvement in four sub-scales of ICC, namely Cultural Empathy, Social Initiative, Flexibility, and Open-mindedness. However, Emotional Stability did not show statistically significant enhancement. Several reasons could be offered for this lack of change, including the long-term alteration nature of this feature. This study's findings are based on a homogeneous group of students from a single institution, which may limit the generalizability to broader populations. Future research should explore the impacts of explicit ICC training across different educational settings and disciplines to determine whether similar improvements can be observed in more diverse student populations. Additionally, including participants from various cultural backgrounds could provide a richer understanding of how intercultural training effects vary based on individual differences. Longitudinal studies could also offer insights into the long-term impact of such training, particularly regarding personality traits like emotional stability, which may require more sustained interventions to facilitate change. By broadening the scope of future studies, we can better ascertain the relevance and effectiveness of ICC competence training across varied contexts.

Analogous to almost any investigation, the present study faced several limitations that may have influenced the outcomes. This study could not include different students from different faculties from the ZUMS. Researchers could not make sure that they have prevented the on- or off-campus discussions and exchanges of information among and between control and experimental students regarding the course intervention differences. Notably, potential confounding variables such as students' prior intercultural exposure were not accounted for, which may have affected their ICC outcomes. The participant group comprised students exclusively from one institution, limiting the diversity of experiences that could enrich the findings. Moreover, it is challenging to ensure that there were no on- or off-campus discussions and exchanges of information regarding the intervention between control and experimental group members, which may have influenced their perceptions and learning. Additionally, while initial discrepancies in the students' levels of ICC were neutralized during data analysis, they could not be entirely eliminated, potentially impacting the validity of the results. Future studies should seek to include a more diverse range of participants, assess prior intercultural experiences, and implement measures to minimize interaction between groups to enhance the overall reliability and generalizability of the findings regarding the effectiveness of explicit ICC training.

Future research should adopt longitudinal designs to better track the development of intercultural traits over time. Also, interventions aimed at improving traits like flexibility and social initiative should focus on providing deeper, more immersive intercultural experiences, beyond mere academic exposure to foreign languages or international settings.

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