Examining the effects of international mindedness among prospective teachers on intercultural competence in higher education institutions: an empirical analysis

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Abstract
Purpose – The purpose of this empirical study is to examine prospective teachers’ international mindedness and intercultural competence, grounded in sociocultural theory. The research aims to understand the factors that foster these traits in prospective teachers and their significance in promoting competence in culturally diverse environments.

Design/methodology/approach – The study utilized structured equation modeling with maximum likelihood estimation to analyze data from 425 participants of two higher education institutions. The participants were selected through simple random probability sampling. This methodology allowed the researchers to explore the relationship between international mindedness and intercultural competence in prospective teachers.

Findings – The results of the study demonstrated a positive correlation between international mindedness and intercultural competence in prospective teachers. The findings suggest that by cultivating international mindedness, educators can enhance their intercultural competence, thereby fostering more effective interactions in diverse settings.

Practical implications – The present research holds practical implications for teacher education programs and higher education institutions. By understanding how international mindedness impacts intercultural competence, educators can implement targeted interventions and training to nurture these traits among prospective teachers. This can lead to the creation of culturally inclusive learning environments, promoting mutual respect and appreciation of diversity among students.

Originality/value – The originality of this study lies in its investigation of the link between international mindedness and intercultural competence in the context of prospective teachers enrolled in B.Ed program in higher education institution. By establishing a causal relationship between these traits, the research adds to the understanding of how teachers can be prepared to engage effectively in culturally diverse classrooms. The findings hold value for educators and policymakers seeking to improve teaching practices and foster global citizenship among future educators and their students.

Keywords International mindedness, Intercultural competence, Prospective teachers

Paper type Research paper

Introduction
In the era characterized by Education 4.0, the overarching goal of higher education and globalization is to equip students with the skills and knowledge essential for thriving in an
interconnected, global society (Jain and Jain, 2022). Achieving success in an international community requires incorporating a global perspective into the processes of teaching and learning (Bozkurt et al., 2020). The phenomenon of globalization manifests when human actions are no longer constrained by geographical locations or political entities (Antrás et al., 2023). Globalization is one of the most powerful forces that will shape the future world in which our children will live (Goodwin, 2021). Researchers acknowledged that globalization has significantly altered the world over the past two decades. To meet globalization challenges, education in general and higher education, in particular, must adapt their approaches to teaching and learning (Strielkowski et al., 2021). Many educators and their institutions strive to help students develop a local/global awareness or an international perspective in light of the rapid changes in the world (Karanikola et al., 2022). However, preparing future generations to live successfully in globalized world has become challenging for educators (Torres and Bosio, 2020).

International-mindedness is the mindset of being open, respectful, and curious about different cultures, perspectives, and ways of life from around the world. It involves valuing diversity, embracing tolerance, and fostering empathy towards people from diverse backgrounds (Budrow, 2021). In simpler terms, international-mindedness means having an appreciation for global diversity and a willingness to learn from and engage with people from all walks of life, regardless of their nationality, ethnicity, or beliefs. It is believed that international mindedness encompasses the information and critical thinking abilities required to assess and offer solutions to global challenges and their interdependence, particularly cultural diversity (Metli and Lane, 2020). Globalization has transformed the landscape of higher education, bringing forth an era where cultural diversity is not only celebrated but is also integral to the educational experience (Tight, 2022). In this context, the concept of international mindedness has emerged as a crucial facet of teacher preparation programs, aiming to equip prospective educators with the skills and perspectives necessary to navigate intercultural interactions within higher education institutions. As higher education becomes increasingly interconnected on a global scale, understanding the effects of international mindedness among prospective teachers is paramount for fostering effective intercultural competence within the academic community (Papadopoulou et al., 2022).

Intercultural competence is the ability to effectively communicate and interact with people from different cultural backgrounds. It involves understanding and respecting diverse cultural perspectives, norms, and values, as well as adapting one’s behavior and communication style to bridge cultural differences (Schwarzenthal et al., 2020). Essentially, it’s about being able to navigate and work harmoniously in multicultural environments, fostering mutual understanding and collaboration. Intercultural competence enables individuals to work successfully with people across different cultures, living at home or abroad (de Hei et al., 2020; UNESCO, 2013). Intercultural competence skills are required in both national and international contexts (Ji, 2020). Embedding and facilitating intercultural competence development in internationalization of the curriculum of higher education. Along with this mass migrations are observed globally, and the question is how the natives of a country will prepare to coexist with migrants of various cultures. Pakistan’s local population comprises heterogeneous cultural groups (Sindhi, Punjabi, Baloch, Pakhtons and Siraki). Therefore, a core group of teachers and teacher educators must be in place to assist prospective teachers in developing intercultural competency, both domestically and internationally, to ensure that the young people in their care have the necessary sensitivity and expertise (Thapa, 2020). Research has demonstrated that exposure to and participation in other people’s cultural practices can help shape individuals into compassionate global citizens (Andrews and Aydin, 2020).

In the context of evolving educational landscapes and increasing cultural diversity, it becomes imperative to explore the relationship between international mindedness and the development of intercultural competence among prospective teachers within higher
education institutions (Deardorff and Jones, 2022). While the importance of these constructs is acknowledged, a significant research gap exists regarding the specific impact of international mindedness on the intercultural competence of prospective teachers (Lash et al., 2022). The central problem revolves around the need for empirical evidence to understand how international mindedness influences the ability of prospective teachers to engage effectively in intercultural interactions within higher education settings (Medora et al., 2020). The lack of clarity on the causal relationships, underlying mechanisms, and contextual factors hinders the development of targeted interventions and strategies to enhance intercultural competence among future educators (Dimitrov and Deardorff, 2023).

This study aims to address this gap by conducting an empirical analysis that delves into the nuanced dynamics between international mindedness and intercultural competence. The research problem involves the identification of the specific dimensions of international mindedness that significantly contribute to the development of intercultural competence among prospective teachers. Additionally, the study seeks to explore potential challenges and facilitators in the integration of international mindedness into the professional development and training programs for future educators.

Understanding the effects of international mindedness on intercultural competence has far-reaching implications for curriculum design, teacher training, and the overall quality of education in higher institutions (Ockerman et al., 2023). By elucidating these connections through empirical analysis, this research endeavors to provide actionable insights that can inform educational policies, practices, and programs aimed at fostering a culturally inclusive and globally aware teaching community within higher education institutions. Following are the research questions of this study.

**RQ1.** To what extent does exposure to international mindedness impact the intercultural competence of prospective teachers in higher education institutions?

**RQ2.** What are the key factors within the concept of international mindedness that significantly contribute to the development of intercultural competence among prospective teachers in the context of higher education?

**Theoretical background**

This study used the sociocultural theory by Vygotsky (1987) to investigate prospective teachers’ international mindedness and intercultural competence. As the growth of international mindedness results from individual interaction with others (i.e. society), sociocultural theory supports this notion that learning is a product of the interaction between the individual and the social contexts (Vygotsky, 1987). Prospective teachers are expected to teach under conditions where students come from diverse ethnic, sociocultural, socio-economic, and religious backgrounds. Vygotsky’s emphasis on the Zone of Proximal Development (ZPD) aligns with fostering international-minded learners who collaborate to bridge cultural gaps. The ZPD underscores the role of peers, educators, and the broader community in knowledge construction (Relmasira et al., 2023).

**Responsibility in sociocultural context**

Vygotsky’s theory encourages a shared responsibility for learning within a social context. Applying this to international education involves promoting collaborative responsibility for cultural understanding. Learners actively engage in shaping a global perspective, fostering a sense of shared responsibility for a culturally diverse world (Casmana et al., 2023). This theory provides a foundation for understanding how individuals, within their socio-cultural context, internalize societal norms and values, including a sense of responsibility (Rustamova, 2023).
Cultural pluralism and sociocultural theory
Cultural pluralism aligns with Vygotsky’s idea that learning is culturally mediated. Recognizing and valuing diverse cultural backgrounds within the learning process enhances cognitive development and promotes a multicultural mindset (Rodríguez-Izquierdo, 2021). Moreover, the combination of cultural pluralism and sociocultural theory encourages educators to employ diverse instructional strategies that resonate with learners from different cultural contexts. It emphasizes the creation of an inclusive learning space where students feel their cultural identities are recognized and respected (Markey et al., 2021).

Efficacy and sociocultural theory
Integrating efficacy with Vygotsky’s Sociocultural Theory involves recognizing the reciprocal relationship between learners’ belief in their capabilities and the social and cultural context of learning. Vygotsky’s theory emphasizes that cognitive development occurs through social interaction, and this aligns with Bandura’s concept of self-efficacy (Locklear, 2020). Learners’ efficacy beliefs are shaped through collaborative activities, guidance from knowledgeable individuals, and cultural influences within the learning environment (Grant and Hill, 2020).

The cultural context plays a vital role in the development of efficacy beliefs, as diverse cultural backgrounds contribute to shaping these beliefs (Alam and Mohanty, 2023). Acknowledging and valuing cultural pluralism within the learning process can enhance not only cognitive development but also foster a sense of efficacy across different student populations. Collaborative learning, a key component of Vygotsky’s theory, not only promotes cognitive skills but also contributes to collective efficacy within a group (Ghavifekr, 2020). Learners engaging in collaborative activities experience a shared belief in their collective ability to accomplish tasks, reinforcing the sociocultural aspects of learning.

Global centrism through sociocultural lens
Vygotsky’s sociocultural theory serves as a robust framework for comprehending global centrism. As learners engage in social interactions guided by this theory, they not only acquire cognitive skills but also cultivate a profound global perspective (Henderson and Cunningham, 2023). The exchange of cultural experiences within these interactions becomes a transformative force, enabling individuals to transcend cultural boundaries and fostering a sense of interconnectedness. Through Vygotsky’s lens, the learning process becomes a dynamic journey where the amalgamation of diverse cultural insights contributes to the formation of a more inclusive and expansive worldview.

This sociocultural approach emphasizes the reciprocal relationship between individual development and cultural influences, highlighting the role of social interactions in shaping cognitive abilities (Thyssen et al., 2023). By embracing this perspective, learners not only gain a better understanding of their own cultural context but also actively participate in a broader cultural dialog that transcends geographical and societal boundaries. Ultimately, Vygotsky’s sociocultural theory promotes a holistic educational experience that nurtures individuals capable of contributing to a more interconnected and harmonious global society.

Interconnectedness in sociocultural learning
Vygotsky’s theory inherently recognizes the interconnected nature of learning, emphasizing the role of social interactions in cognitive development. Extending this concept to intercultural competence involves cultivating meaningful connections between diverse cultures (de Hei et al., 2020). In the context of sociocultural learning, learners engage in collaborative experiences that go beyond the acquisition of knowledge. These experiences
serve as a bridge, fostering mutual understanding and appreciation for the rich tapestry of global cultures.

Collaborative learning, as advocated by Vygotsky, becomes a dynamic platform for intercultural dialog, enabling individuals to navigate and appreciate cultural differences (Liu et al., 2023). Through shared experiences and collective problem-solving, learners not only gain insights into the cultural nuances of their peers but also develop the skills necessary for effective intercultural communication. Vygotsky’s sociocultural lens is rooted in the idea that human development is deeply connected to social and cultural contexts. This perspective becomes a catalyst for fostering not only cognitive growth but also intercultural competencies. These competencies are essential in our increasingly interconnected global societies.

Literature review and hypotheses

International mindedness

Globalization has cast its shadow in every nook and cranny. Amid the cut-throat global competition, every nation faces new challenges and problems (Swanson and Gamal, 2021). It has made the life of people, especially in developing countries like Pakistan, challenging and complicated, where the key to survival is hidden in integration (Malik et al., 2021). The nations that have shown an upward trend have adapted to globalization by developing international-mindedness (Budrow, 2021). International-mindedness requires being open, polite, and interested in learning about different cultures and lifestyles throughout the world. It’s about accepting differences, being tolerant, and understanding other people’s histories and emotions (Bunnell et al., 2022). In basic terms, accepting of the diversity of the world and being prepared to relate to and comprehend people from different backgrounds, regardless of their origins or beliefs.

There are different ways to cultivate international mindedness (Roiha and Sommier, 2021). Informal practices for developing international mindedness are not accessible to an ordinary local person or family; it is unorganized, unsystematic, unplanned, lifelong, and costly (Skelton, 2015). In this process, people must live, interact and communicate with people from different countries and nations. While non-formal way, unlike the informal one, is organized, systematic, and planned, although it takes place outside formally established institutions. However, the formal way to develop international mindedness occurs in formal educational institutions. According to this, international mindedness is institutionalized into the institution’s vision, mission, objectives, and curriculum (Metli and Lane, 2020). This is where teacher education institutions play a vital role, intending to make education internationally acceptable and learners globally welcomed.

Educational institutions must cover additional skills while preparing future teachers for the global market (Strong et al., 2020). As an essential part of their role, teacher education institutions must keep abreast with the global scenario and align their approach and content with the world’s emerging needs (Diano et al., 2023). The importance of teacher education institutions is increasing because interdependency among nations and societies has made it a prerequisite for everyone to develop international mindedness and intercultural competence for survival (Oztabak, 2022). International mindedness promotes global nationality as it develops an understanding of respecting one another (Hacking and Taylor, 2020). In this regard, Lantz-Deaton and Golubeva (2020) believe that individuals and communities with limited international mindedness and intercultural competence face several obstacles in survival, and success becomes increasingly inaccessible.

A teacher can integrate international mindedness into the classroom in several ways like, introduce literature, history, and current events from various countries to broaden students’ perspectives. For example, reading books written by authors from different cultural
dimensions of international mindedness

Responsibility
In the context of international mindedness, responsibility denotes a profound personal care for individuals across the globe. This responsibility is accompanied by a moral obligation to actively contribute to the enhancement of their well-being and living conditions (Žižek et al., 2021). When discussing issues of racism, sexism, and classism, Brown and Kysilka (2009) make an intriguing point about responsibility by pointing out that they are frequently complicated and deeply ingrained in people and organizations, necessitating comprehensive reform. Some teachers do not need to worry about multicultural and global education since no students of color are in their classrooms (Baggett, 2020). Their ignorance that ethnicity, gender, sexual orientation, class, and other demographic factors are also included in intercultural and global education should not absolve them of their responsibilities (Singh, 2021). To get over their lack of knowledge of these ideas and their unwillingness to accept responsibility for their implementation, these prospective and those from other racial and cultural groups need considerable, in-depth instruction (Lasater et al., 2020).

HI. Prospective teachers showing responsible behavior towards international mindedness

Cultural pluralism
Cultural Pluralism refers to the ability to appreciate other cultures and the recognition that, regardless of where people come from, everyone has something to contribute (Nurman et al., 2022). Cultural pluralism emphasizes embracing and appreciating cultural diversity within educational contexts. Prospective teachers displaying cultural pluralism are expected to recognize, respect, and incorporate diverse cultural perspectives (Kim and Choi, 2020). In their study Metli and Lane (2020) introduces the Global Mindedness Scale (GMS), identifying
attitudes, beliefs, and behaviors related to global mindedness. It emphasizes the role of cultural pluralism in fostering international perspectives. Jurasaite-O'Keefe (2022) research paper delves into the definition and cultivation of international mindedness, emphasizing understanding, respecting, and appreciating diverse cultures. It provides insights into the cultural pluralism aspects of global mindedness.

The research conducted by Habib (2018) examines global mindedness and dispositions towards diversity in prospective teachers. It contributes to understanding how cultural pluralism behaviors impact interactions in diverse classrooms. These studies collectively contribute to the existing literature, supporting the hypothesis that prospective teachers exhibiting cultural pluralism behavior are more likely to embrace international mindedness in their educational practices.

**H2.** Prospective teachers showing a Cultural Pluralism behavior towards international mindedness

**Efficacy (self-efficacy)**

Bandura (1982) defines self-efficacy as the belief that one can organize and execute what is required to confront and handle situations in one’s life. Teachers with high level of self-efficacy are assured of their abilities to influence students’ learning in the classroom. Teachers with high self-efficacy give their prospective teachers more praise, are better at motivating them, and can better direct students’ learning by providing prompts and posing insightful questions (In’am and Sutrisno, 2021). This literature review aims to examine existing studies that explore the relationship between prospective teachers’ self-efficacy and their attitudes, behaviors, and actions towards cultivating international mindedness in educational settings.

**Understanding efficacy and international mindedness**

Self-efficacy, within the context of teaching, refers to the extent to which teachers believe in their own abilities to effectively execute instructional strategies, engage students, and positively impact their learning outcomes. On the other hand, international mindedness involves having an open-minded approach towards diverse cultures, perspectives, and global issues. Numerous studies have suggested a positive relationship between self-efficacy beliefs and the expression of international mindedness among prospective teachers. For instance, a study by Kennedy (2010) found that teachers with higher self-efficacy were more inclined to demonstrate international mindedness by infusing multicultural content into their curriculum, utilizing diverse teaching strategies, and fostering inclusive classroom environments.

Numerous studies have suggested a positive relationship between self-efficacy beliefs and the expression of international mindedness among prospective teachers. For instance, a study by Mo et al. (2021) found that teachers with higher self-efficacy were more inclined to demonstrate international mindedness by infusing multicultural content into their curriculum, utilizing diverse teaching strategies, and fostering inclusive classroom environments. Research conducted by Morris et al. (2017) showed that participation in professional development programs tailored towards promoting international mindedness led to a significant increase in self-efficacy among prospective teachers. These teachers reported feeling more confident in their abilities to embrace diversity, incorporate global perspectives in their lessons, and engage students in cross-cultural experiences. A study by Nganga (2016) emphasized the importance of cultural competence on prospective teachers’ efficacy and international mindedness. Findings revealed that teachers who possessed a higher level of cultural competence were more likely to demonstrate self-efficacy in
intercultural situations and incorporate diverse perspectives in their teaching practices. Studies have also shown that teacher education programs play a crucial role in fostering efficacy behavior towards international mindedness. In a study by Mo et al. (2021), it was found that the inclusion of multicultural education courses within the teacher training curriculum significantly enhanced prospective teachers’ self-efficacy and their ability to promote international mindedness in their future classrooms.

The literature supports the hypothesis that prospective teachers exhibit efficacy behavior towards international mindedness. Strong self-efficacy beliefs, gained through professional development programs, cultural competence, and teacher education programs, are associated with a higher likelihood of prospective teachers embracing diverse perspectives, promoting intercultural understanding, and cultivating international mindedness within their educational practices. These findings highlight the importance of nurturing teachers’ self-beliefs in order to foster global citizenship and prepare students for the challenges and opportunities of living in an interconnected world. However, further research is needed to explore the nuanced factors and dynamics that influence the relationship between efficacy behavior and international mindedness in prospective teachers.

H3. Prospective teachers showing a self-efficacy behavior towards international mindedness

Global centrism
Global-centrism behavior refers to an individual's orientation towards recognizing and valuing global perspectives (Bozkurt et al., 2020). This behavioral aspect encompasses a range of attitudes, beliefs, and behaviors that indicate an individual's openness to diverse cultures, global issues, and interconnectedness. The study by Medora et al. (2020) have suggested that prospective teachers demonstrating positive global-centrism contribute to inclusive and dynamic classroom environments. Their openness to global perspectives enriches discussions, fostering a more comprehensive understanding of diverse cultures. In another study by indicates that teachers with a positive global-centrism behavior are more likely to incorporate international perspectives into their teaching practices. This includes using diverse examples, multicultural literature, and global issues, enhancing students' global awareness (Metli and Lane, 2020). The study by Divček (2020) highlights the importance of integrating global-centric approaches into teacher education curricula. Exposure to global experiences and diverse teaching strategies equips prospective teachers with the skills to instil international mindedness in their prospective teachers (Ainscow, 2020).

The evidence suggests a strong correlation between prospective teachers’ positive global-centrism behavior and their potential to foster international mindedness in educational settings. Integrating global-centric perspectives into teacher education programs emerges as a crucial step in preparing educators who can contribute meaningfully to the development of globally competent citizens.

H4. Prospective teachers showing a positive global-centrism behavior towards international mindedness

Interconnectedness
Interconnectedness refers to the degree of connection and interrelation between different elements. In the context of prospective teachers, interconnectedness encompasses the depth and breadth of their understanding and engagement with global perspectives, cultures, and educational practices (Dimitrov and Deardorff, 2023). The study of Myers and Rivero (2020)
suggest that prospective teachers with a high level of interconnectedness exhibit a more profound understanding of global perspectives. According to Zidny and Eilks (2020) prospective teachers interconnected worldview allows them to integrate diverse cultural elements into their teaching practices, contributing to a richer educational experience. The study of da Ponte et al. (2022) highlights the influence of interconnected teachers on curriculum development. Prospective teachers with high interconnectedness are more likely to incorporate international perspectives seamlessly into the curriculum, fostering a global mindset among students. Teacher education programs play a pivotal role in nurturing interconnectedness among prospective teachers (Diano et al., 2023). Exposure to diverse teaching strategies, global experiences, and collaborative learning environments equips educators with the skills necessary to instil international mindedness in their future classrooms. While interconnectedness is vital, challenges such as varying definitions and applications of international mindedness exist among educators (Metli and Lane, 2020). Addressing these challenges presents an opportunity for refining teacher education programs to ensure a consistent and effective approach. The literature suggests a strong link between prospective teachers’ high interconnectedness and their ability to promote international mindedness (Elerian and Solomou, 2022). Fostering interconnectedness through comprehensive teacher education programs emerges as a key strategy to prepare educators for the globalized educational landscape.

H5. Prospective teachers having high Interconnectedness towards International mindedness

**Intercultural competence**

International mindedness and intercultural competence represent pivotal constructs in the context of global education. This literature review aims to investigate the hypothesized positive relationship between international mindedness and intercultural competence, shedding light on the interplay between these concepts.

International mindedness is not merely a cognitive attribute but a holistic worldview that encompasses openness, curiosity, and respect for diverse cultures (Metli and Lane, 2020). It involves a deep awareness of global interdependencies, encouraging individuals to transcend cultural boundaries (Akkari and Maleq, 2021). This perspective is considered fundamental for fostering a sense of global citizenship. Intercultural competence, on the other hand, is defined as the ability to effectively communicate and engage with individuals from different cultural backgrounds (Deardorff, 2020). This involves not only a cognitive understanding of diverse cultures but also the development of interpersonal skills for meaningful cross-cultural interactions (Shadiev et al., 2021).

Empirical study of Wang et al. (2022) has begun to explore the relationship between international mindedness and intercultural competence. Initial findings suggest a positive correlation, emphasizing that individuals with a heightened sense of international mindedness tend to exhibit greater intercultural competence. To comprehend the observed relationship more thoroughly, it is essential to consider various influencing factors. Educational interventions, cross-cultural experiences, and the role of cultural intelligence (Majda et al., 2021) emerge as critical determinants. Interventions that actively cultivate international mindedness, coupled with immersive cross-cultural experiences, can significantly enhance intercultural competence.

While existing literature provides a foundational understanding, there is a need for continued research to unravel the intricacies of this relationship. Exploring the impact of specific educational interventions, assessing the long-term development of these constructs, and considering the role of technology in facilitating cross-cultural interactions are avenues
In conclusion, the literature overwhelmingly supports the hypothesis of a positive relationship between international mindedness and intercultural competence. This review not only synthesizes existing knowledge but also highlights avenues for future research, contributing to the ongoing discourse on global education. The research framework for study is presented in Figure 1.

**H6.** There is a positive relationship between International Mindedness and Intercultural competence

### Research methodology

The present study employed cross-sectional research design and the population under investigation comprised prospective teachers enrolled in the two public universities Sukkur IBA University and Shaikh Ayaz University of Sindh province, Pakistan. To ensure a robust and unbiased representation, we employed a systematic approach to data collection. A total of 425 respondents were selected using simple random probability sampling, emphasizing the principle that, all members of the population have an equal and independent chance of being included in the random sample (Creswell and Creswell, 2017). The utilization of simple random probability sampling ensures the equitable and unbiased representation of the prospective teachers within the studied institutions. Efforts to minimize research bias were conscientiously implemented, aligning with best practices in scholarly research.

The comprehensive data collection process involved meticulous steps, including the acquisition and validation of primary data. Expert opinions and questionnaire items were carefully sourced and vetted to establish the credibility and reliability of the information gathered. Prior to the major data gathering, a preliminary test involving 30 respondents was conducted to assess the clarity of the questionnaire. Respondents provided valuable feedback, affirming that the questions were perceived as straightforward and comprehensible.

### Collinearity and common method variance

To address potential common method variance, we applied Harman’s single-factor test, revealing that the initial factor accounted for only 34.4% of the total variance. This result indicates that common method bias was not a significant concern. Additionally, we conducted a collinearity assessment using the Variance Inflation Factor (VIF) method. Across all three studies, VIF values ranged from 2.24 to 3.02 (Table 2), well below the threshold of

![Figure 1. Research framework](source(s): Authors’ own creation/work)
3.33. These findings suggest that neither collinearity nor common method variance posed significant issues in our analysis (Kock, 2015).

### Measurement

Based on previous research, a questionnaire was adapted and modified in the context of this study. Two Assistant Professors from Mehran University and Sukkur IBA University respectively examined the questionnaire to confirm its validity in assessing the research variables. Many past studies measure international mindedness with a global mindedness scale (GMS). They are interchangeably used in previous research (Kehl and Morris, 2007; McGaha and Linder, 2014). This study adapted the GMS developed by Hett (1993), consisting of items based on a 5-point Likert scale ranging from strongly disagree to strongly agree. All the items of the scale measure the five dimensions of international mindedness: (1) responsibility, which denotes empathy and positive feeling towards others across the world; (2) cultural Pluralism, which shows one’s volitional appreciation for different cultures and acknowledgment for the disparities between the cultures; (3) efficacy, which refers to individual’s readiness for the participation in the global activities and holding a view that one’s efforts would make the world a better living place; (4) global-centrism, it encourages individuals to think globally rather than locally and adopt a sense of full global consideration when making decisions; and (5) interconnectedness, it refers to one’s enthusiastic participation in the global activities to bring the whole together. The Global Perspective Inventory (GPI) designed by Merill et al. (2012) was adapted to measure intercultural competence. This inventory has also been widely used in prior research (Merrill et al., 2012; Fantini, 2009; Anderson and Lawton, 2011) to assess individuals’ intercultural competence. GPI uses a five-point Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. Further, Table 1 presents the demographic profile of the research participants.

### Data analysis and results

In Smart PLS-4, structural equation modeling (SEM) with maximum likelihood (ML) estimation was used to evaluate determinants. SEM allows researchers to test hypotheses regarding a complete system of variables (Byrne, 2013). The normality assumption was tested by adopting skewness and kurtosis values, as suggested by Peterson and Kim (2013), before using testing methodologies (validity and reliability). Skewness values range from 0.044 to –0.287, while kurtosis values are between –0.531 and –1.129 (Table 2). The results support the normality assumption. The multi-item scales of this study were reliable, and the Cronbach alpha values of all variables were more than 0.70 (Table 3). An acceptable measurement model must investigate convergent and discriminate validity, according to Bagozzi and Yi (1988). After screening and processing the data, we employed a two-step procedure to identify anomalies and ensure normality. After reviewing a measurement model to assess the measurement quality of the endogenous variables in the theoretical model,
Constructs (CR) | M | SD | SFL | Kur | Ske | T-value | VIF
--- | --- | --- | --- | --- | --- | --- | ---
International mindedness (IM) (0.957)
Responsibility (R) (0.782)
I feel obligated to speak out when I see our government doing something I consider wrong internationally
3.95 | 0.61 | 0.756 | -0.966 | -0.153 | 27.58 | 3.133 |
When I hear thousands of people starving in an African county, I feel very frustrated
3.96 | 0.84 | 0.736 | -0.642 | -0.254 | 29.96 | 2.966 |
When I see the conditions some people in the world live under in poverty, I feel a responsibility to do something about it
3.74 | 0.77 | 0.731 | -0.645 | -0.246 | 28.24 | 2.943 |
The fact that a flood can kill 50,000 people in Bangladesh is very depressing to me
3.66 | 0.75 | 0.741 | -0.634 | -0.163 | 36.66 | 2.993 |
Cultural pluralism (CP) (0.921)
I generally find it stimulating to spend an evening talking with people from another culture
4.13 | 0.753 | 0.771 | -0.846 | -0.255 | 42.68 | 2.845 |
Pakistan is enriched by the fact that it is comprised of many people from different cultures
3.78 | 0.742 | 0.760 | -0.876 | -0.174 | 48.74 | 2.929 |
Pakistanis learn something of value from all cultures
3.65 | 0.613 | 0.833 | 1.169 | -0.074 | 43.35 | 3.021 |
I enjoy trying to understand people’s behavior in the context of their culture
3.68 | 0.58 | 0.844 | -1.045 | -0.086 | 61.57 | 2.486 |
Efficacy (E) (0.789)
There is nothing I can do about the problems of world
3.73 | 0.614 | 0.842 | -1.139 | -0.055 | 37.33 | 2.274 |
Generally, an individual’s actions are too small to have a significant effect on the global ecosystem
3.87 | 0.79 | 0.854 | -1.047 | -0.095 | 62.76 | 2.386 |
It is important to choose a career in which I have a positive effect on quality of life for future generations
3.50 | 0.82 | 0.813 | -1.066 | -0.089 | 81.44 | 2.247 |
I am able to affect what happens on a global level by what I do in my own community
3.61 | 0.81 | 0.847 | -1.062 | -0.096 | 77.94 | 2.453 |
Global centrism (GC) (0.881)
The needs of the Pakistan must continue to be our highest priority in negotiating with other countries
4.02 | 0.777 | 0.762 | -0.754 | -0.283 | 46.56 | 2.479 |
Pakistanis be permitted to pursue the standard of living they can afford if it only has a slight negative impact on the environment
3.76 | 0.769 | 0.754 | -0.775 | -0.226 | 48.84 | 2.535 |
Pakistan values are probably the best
3.72 | 0.845 | 0.821 | -1.075 | -0.086 | 55.43 | 2.944 |
The present distribution of the world’s wealth and resources should be maintained because it promotes survival of the fittest
3.64 | 0.742 | 0.725 | -0.685 | 0.065 | 38.57 | 2.417 |
Interconnectedness (I) (0.867)
I often think about the kind of world we are creating for future generations
3.94 | 0.836 | 0.763 | -0.688 | -0.193 | 36.93 | 2.971 |
I think of myself, not only as a citizen of my county but also as a citizen of the world
3.86 | 0.873 | 0.785 | -0.723 | -0.184 | 36.95 | 2.991 |

Table 2.
CFA results
(continued)
confirmatory factor analysis (CFA) was conducted for each scale to evaluate the convergent and discriminant validity of the various indicators (Anderson and Gerbing, 1991).

The second step is to analyze a structural model for determining the associations between latent variables. Root means square error of approximation (RMSEA) (Steiger and Lind, 1980), normed fit indices (NFIs) (Bentler and Bonett, 1980), and the normed chi-square statistic (NCS) were used to examine the model’s goodness of fit (Hu and Bentler, 1998). A good fit is indicated by NFI values of 0.9 (0.927), RMSEA values less than 0.06 (0.045), and 2/df values less than 3 (1.83) (Hu and Bentler, 1998). Early research revealed that all items had beta coefficients greater than 0.5 and were statistically significant \( p < 0.01 \) (Kline, 2005), establishing the scales’ convergent validity (Steenkamp and Van Trijp, 1991).

NFI and RMSEA values for all scales were below the stated threshold, indicating a robust model fit. For discriminating validity, the average variance recovered for each construct must be greater than the square of the correlation coefficients demonstrating its link with other components (Fornell and Larcker, 1981). Table 4 indicates that the average variance extracted (AVE) for each component met the minimum criteria of 0.5 for AVE and 0.7 for composite reliability (CR) in (Table 2) (Fornell and Larcker, 1981), indicating adequate discriminating validity. Thus, the instrument’s discriminant, convergent, and construct validity were satisfactory.

The subsequent step involved analyzing a structural model to ascertain the associations between latent variables. Model fit was assessed using root mean square error of approximation (RMSEA), normed fit indices (NFIs), and the normed chi-square statistic (NCS) (Hu and Bentler, 1998). A good fit is indicated by NFI values of 0.9 (0.927), RMSEA

### Table 2.

<table>
<thead>
<tr>
<th>Constructs (CR)</th>
<th>M</th>
<th>SD</th>
<th>SFL</th>
<th>Kur</th>
<th>Ske</th>
<th>T-value</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the long run, Pakistan will probably benefit from the fact that the world is becoming more interconnected</td>
<td>4.16</td>
<td>0.76</td>
<td>0.715</td>
<td>-0.532</td>
<td>-0.435</td>
<td>32.26</td>
<td>2.274</td>
</tr>
<tr>
<td>I feel strong kinship with worldwide human family</td>
<td>4.05</td>
<td>0.857</td>
<td>0.645</td>
<td>-0.922</td>
<td>-0.288</td>
<td>31.96</td>
<td>2.650</td>
</tr>
</tbody>
</table>

### Table 3.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s alpha</th>
<th>Composite reliability</th>
<th>Average variance extracted</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM</td>
<td>0.945</td>
<td>0.969</td>
<td>0.571</td>
<td>425</td>
</tr>
<tr>
<td>ICC</td>
<td>0.844</td>
<td>0.845</td>
<td>0.731</td>
<td>425</td>
</tr>
</tbody>
</table>

| Note(s): | p < 0.01 |
| Source(s): | Authors’ own creation/work |
values below 0.06 (0.045), and \(2/\text{df}\) values less than 3 (1.83) (Hu and Bentler, 1998). Initial research revealed that all items had beta coefficients exceeding 0.5 and were statistically significant \((p < 0.01)\) (Kline, 2005), confirming the convergent validity of the scales (Steenkamp and Van Trijp, 1991). NFI and RMSEA values for all scales were below the specified thresholds, indicating a robust model fit.

**Structure-equation modeling**

Next, the structural model was developed using confirmatory factor analysis (CFA) outcomes and assessed using maximum likelihood (ML). To examine the research hypotheses, path coefficients were assessed using a 2-tailed test at a significance level of 0.001, following the method outlined by Hair *et al.* (2017). The model’s predictive accuracy was gauged by the coefficient of determination \(R^2\), showing values between 0.144 and 0.404 (Table 5). Additionally, effect sizes, denoted by \(F^2\), varied from 0.262 to 0.664 (Table 5), offering insights into the magnitude of the effects. The model's performance was satisfactory \((p < 0.001, \text{NFI} = 0.92, \text{RMSEA} = 0.046)\) (Hair *et al.*, 2013). The conclusion of the structural model confirms all predicted correlations with standardized coefficients. The results for each hypothesis are presented in Table 6, offering an overview of the findings.

The findings demonstrated that prospective teachers showing responsible behavior towards international mindedness \((\beta = 0.195, p < 0.001)\), indicating that H1 was supported. Prospective teachers showed Cultural Pluralism behavior toward international mindedness \((\beta = 0.232, p < 0.001)\), indicating that H2 was significant. H3 was significant due to positive self-efficacy in prospective teachers toward international mindedness \((\beta = 0.221, p < 0.001)\). Prospective teachers showing a positive global-centrism behavior towards international mindedness \((\beta = 0.228, p < 0.001)\), indicating that H4 was significant. Prospective teachers having high Interconnectedness towards International Mindedness \((\beta = 0.168, p < 0.001)\), H5 was significant. There is a positive relationship between International Mindedness and

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Coefficient of determination (R^2)</th>
<th>Effect sizes (F^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GC</td>
<td>0.224</td>
<td>0.262</td>
</tr>
<tr>
<td>IC</td>
<td>0.324</td>
<td>0.476</td>
</tr>
<tr>
<td>CP</td>
<td>0.253</td>
<td>0.375</td>
</tr>
<tr>
<td>R</td>
<td>0.261</td>
<td>0.316</td>
</tr>
<tr>
<td>I</td>
<td>0.144</td>
<td>0.342</td>
</tr>
</tbody>
</table>

**Table 4.** Correlation of constructs

**Table 5.** Model’s predictive accuracy and magnitude of the effects

**Note(s):** Correlations are significant at the 0.001 level (2-tailed)

**Source(s):** Authors’ own creation/work
Intercultural competence, H6 was therefore significant ($\beta = 0.626, p < 0.001$). These approaches demonstrated that all characteristics of International Mindedness are vital in developing positive Intercultural competence.

**Discussion and implications**

The findings revealed that prospective teachers, having high mean scores and low standard deviation, were well aware of the dimensions of international mindedness. They could work and integrate with students from diverse social and cultural backgrounds because they showed the highest mean score in efficacy, followed by cultural Pluralism. The result of the current study is in line with Matheus and Gaugler (2020), Marion (1980) and Hadis (2005) which revealed that students had been provided with an excellent opportunity to develop particular dimensions like responsibility, cultural Pluralism, efficacy, global centrism and interconnectedness essential for international mindedness.

The result of the current study is also in line with de Hei et al. (2020), Medina-López-Portillo (2004), Engle and Engle (2004). They have found a significant intercultural competence in students and teachers. However, contrary to this, Salazar and Aguero’s (2016) study on European student teachers found that European student teachers exhibited an intermediate level of intercultural competence. Likewise, Barrett (2013) added that the Council of Europe has underscored the pressing need to cultivate intercultural competence as a proactive measure against the growing occurrences of prejudice, discrimination, and hate speech. Intercultural competence is required worldwide, from education to economy and diplomacy (Deardorff, 2015). On the other hand, Anderson and Lawton (2011) stated that there is no standardized mechanism for assessing intercultural competence. The study is in line with Medina-Lopez-Portillo (2004) Lewis and Niesenbaum (2005) Chieffo and Griffiths (2004) and Saghafi (2001) which have found high intercultural competence in the students.

**Theoretical contribution**

The findings align with existing theoretical frameworks, reinforcing the interconnected nature of responsible behavior, cultural pluralism, positive self-efficacy, global-centrism, and interconnectedness in shaping international mindedness. The study contributes to the expansion of theoretical perspectives on the development of intercultural competence among prospective teacher. Despite the valuable contributions outlined, there is a notable gap in the study. The research does not explicitly address the potential challenges or limitations of applying Vygotsky’s sociocultural theory to the investigation of international mindedness and intercultural competence among prospective teachers. Understanding these challenges could provide a more comprehensive picture of the practical implications and potential areas for refinement in future research.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>PC ($\beta$)</th>
<th>T</th>
<th>Sig. (2-Tailed) $p$</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>0.0195</td>
<td>30.443</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>0.232</td>
<td>23.106</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>0.221</td>
<td>28.825</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>0.228</td>
<td>4.797</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>0.168</td>
<td>2.61</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>H6</td>
<td>0.626</td>
<td>2.654</td>
<td>0.000</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Source(s): Authors’ own creation/work

Table 6. Results of the structural model test
Managerial implications

Educational institutions can leverage these findings to design targeted interventions and professional development programs that cultivate responsible behavior, cultural pluralism, positive self-efficacy, global-centrism, and interconnectedness among prospective teachers. This, in turn, will enhance their international mindedness and, consequently, their intercultural competence. Managers and administrators should consider integrating these dimensions into curriculum, teacher training programs, fostering a global perspective and enriching the cultural competence of prospective teachers.

Significance of the study

The paper addresses a critical gap in understanding and practicing international mindedness and intercultural competence in prospective teachers enrolled in teacher education programs in higher education institutes of Sindh, Pakistan. This research is significant for several reasons: This research delves into the specific cultural context of Pakistan, providing insights into how international mindedness is perceived and cultivated within the higher education system. This cultural specificity enhances the applicability of findings. Understanding faculty perceptions informs potential policy changes and educational strategies. The study’s insights can guide the development of programs aimed at enhancing international mindedness and intercultural competence within Pakistani higher education.

Limitations and future scope

The study’s focus on higher education institutions may limit the transferability of findings to other educational settings or levels of education. Different cultural dynamics, teaching approaches and curriculum requirements in other contexts may influence the effects on international mindedness and intercultural competence. Another limitation is that the present study included only public universities. Therefore, the results may not be generalized to those prospective teachers who are enrolled in private universities.

Future research should explore international mindedness in private sector higher education institutes and also in other education settings, particularly within a general education system context at both a primary and secondary school level. This study used a cross-sectional method to measure international mindedness and intercultural competence; in future studies for in-depth understanding, a longitudinal study can be employed that could provide a clearer picture of the effect of international mindedness on prospective teachers intercultural competence. This would also provide insights into the long-term effects of teacher education programs on fostering these traits. Moreover, qualitative studies can be conducted to gain a deeper understanding of the experiences and perspectives of prospective teachers in developing international mindedness and intercultural competence. In addition, mixed-methods research that includes qualitative and quantitative analysis could assist in further explaining the study results.

References


Alam, A. and Mohanty, A. (2023), “Cultural beliefs and equity in educational institutions: exploring the social and philosophical notions of ability groupings in teaching and learning of


Further reading


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