

The importance of international mindedness in promoting intercultural communication within international schools

Diana Trisnawati^{1,2}, Abd Razak Zakaria¹, Azni Yati Kamaruddin¹

¹Department of Educational Foundations and Humanities, Faculty of Education, University of Malaya, Kuala Lumpur, Malaysia

²Department of History Education, Faculty of Social Sciences, Law, and Political Science, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

Article Info

Article history:

Received Jul 18, 2024

Revised Feb 7, 2025

Accepted Mar 5, 2025

Keywords:

Intercultural communication

International baccalaureate

International mindedness

Middle year program

Teachers

ABSTRACT

The globalization has led to an increasing number of international schools worldwide, comprising individuals from diverse cultures. This trend presented numerous multicultural challenges, particularly for those who experience difficulties adapting to multicultural environments. International mindedness (IM) is a crucial aspect of the international baccalaureate (IB) curriculum, playing a significant role in promoting intercultural communication at international schools. This study aimed to explore the significance of IM in fostering intercultural communication, with a specific focus on five teachers in the middle year program (MYP) of two IB schools using a phenomenological approach. Data collection was conducted through semi-structured interviews, and the study employed thematic analysis to address research questions systematically. The findings revealed that participants recognize several elements of IM, including open-mindedness, acceptance of different cultures, empathy, and tolerance. Teachers were identified as vital in developing IM, necessitating them to be respected figures accepted by students and to provide effective teaching strategies. The study highlighted the importance of self-awareness and adaptability skills for teachers in fostering intercultural interactions. A cultural training program can be recommended for developing teachers' IM, particularly to enhance teachers' knowledge and perspectives in promoting intercultural communications.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Abd Razak Zakaria

Department of Educational Foundations and Humanities, Faculty of Education, University of Malaya

50603 Kuala Lumpur, Malaysia

Email: abdrazak@um.edu.my

1. INTRODUCTION

The current era is marked by heightened interconnectedness, globalization, and multiculturalism [1]. As a result, individuals in today's society have increased opportunities and independence [2] to engage in seamless communication with people from diverse cultural backgrounds and nationalities, in great part due to the increasing number of international schools [3]. There are currently 5,175 international baccalaureate (IB) international schools operating in 157 countries around the world [4]. This growth is also reflected in the substantial increase in the number of international students [5]. To ensure that these interactions are meaningful, positive, and constructive, it is essential for global citizens to be lifelong learners who continuously examine their knowledge, thoughts, and feelings about the global society [6], [7]. Unfortunately, every individual possesses a unique culture and features that may result in varying interpretations and approaches for adapting to multicultural settings, particularly teachers and students in

international schools. The empirical data has demonstrated that international students encounter complex challenges during their acculturation process, particularly with the cultural values, beliefs, and customs of the host country [8]. Alanay and Aydin [9] suggested that it is difficult to eliminate the obstacles and disparities that arise from cultural differences and ensure that students have equal opportunities and possibilities in a democratic setting. Furthermore, Yanto *et al.* [10] argued that intolerance is a contributing factor to disputes that arise from cultural diversity. Students' awareness of stereotypes of one's group as a minority in the classroom might happen because of discrimination from the majority group [11]. This is a common problem faced by schools, but only some schools have succeeded in finding solutions to overcome these issues [12].

On the other hand, teaching in a culturally diverse environment can pose challenges that may result in diversity-related burnout, as indicated by Akcin [13]. In addition, Mahali and Sevigny [14] also revealed many teachers lack sufficient cross-cultural awareness and have poor levels of confidence in accommodating cultural diversity when they enter classes. These situations are attributed to the stress and efforts required of teachers to accommodate the diverse needs of their students [15]. Rather, teachers must exhibit self-awareness and the ability to analyze their own thoughts and behaviors [16]. Ruffin and Simon [17] pointed out that diversity encompasses not only variations in ethnicity and socioeconomic background, but also language, gender, and sexual orientation, which may present difficulties for teachers who lack familiarity with these aspects of personal and cultural identity. Regrettably, teachers are often expected to foster a sense of community within their classrooms and may lack understanding of global perspectives and cultural diversity [18], [19]. Kang [20] also suggested that contemporary teachers must equip students with literacy and critical skills, while also nurturing a deep appreciation for diversity that enables them to interact effectively with individuals from various cultural backgrounds and instill a global mindset. Therefore, teachers are crucial in helping students develop intercultural understanding [21], acceptance, and respect for diversity; however, they must serve as role models for students, as well [22].

To foster an inclusive learning environment, it is necessary for teachers to devise a culturally sensitive approach that incorporates diverse viewpoints into their teaching strategies and assignments [4]. In addition, they aim to promote conceptual comprehension of subject matter that is relevant to their students' lives and experiences [23]. The manner in which teachers implement these strategies, and the factors that influence their approaches, remains an important yet open topic of discussion [24]. The concept of international mindedness (IM) was initially introduced in IB schools during the 1960s as a key characteristic of students in an intricate and continuously evolving global society [25]. Literature commonly identifies intercultural understanding and addressing global issues as crucial aspects of IM [6]. IM is a sensitivity that international school teachers both possess and can cultivate during their overseas assignments [16]. To have IM, teachers must be receptive and empathetic towards the viewpoints and behaviors of individuals from diverse cultural backgrounds, and actively seek to understand these intercultural dynamics within a global context [7]. Thus, studies on the role of IM in fostering intercultural communication in international schools are relevant, particularly in examining teachers' perceptions of IM and their role in preparing the learning process to encourage the development of IM among students.

A number of studies have been conducted to examine the extent of the IB's dedication to fostering IM [26]–[28], although only a limited number of studies have specifically investigated the implementation of IM from teachers' perspectives [3], [25], [26], [29], [30]. A study suggested that the most commonly discussed topics in defining IM were comprehension, consciousness, and embracing different cultures [25]. Similar to Bittencourt's study, it was discovered that participants from different social backgrounds had a comparable sense of IM [31]. Elerian, *et al.* [30] also argued that IM is applicable in various contexts of international schooling and that factors other than the curriculum can affect its development within a school. Another study revealed that individuals emphasized the importance of gaining knowledge and a worldly perspective, yet they placed less emphasis on the idea of active global citizenship, including IM [26]. However, this tendency led these participants to adopt a more lenient rather than critical form of international education, with a focus on individual growth and self-awareness rather than on making a personal impact and promoting broader societal change. Several studies [3], [26], [32] also discovered that students often lack sufficient time during their rigorous academic programs to fully explore the concept of being IM in their own lives and through their coursework. As a result, Metli [3] recommended that teachers specifically seek out strategies to promote the development of IM in both curricular and extracurricular activities.

The importance of the learning process in developing IM remains a topic of concern. Budrow [16] discovered that students failed to take advantage of the learning opportunities available to them in their international school settings. Despite showing openness and flexibility in certain areas, these teachers experienced difficulties adapting to other aspects of their surroundings. Mehmood [33] also believed that teachers confront significant challenges, such as resource limitations, resistance to change, and balancing local and global perspectives. Furthermore, experts caution that being immersed in a culturally diverse environment does not automatically result in increased levels of respect, tolerance, and understanding [6].

Teachers were hindered by a lack of self-awareness and an inability to comprehend or acknowledge their role in the specific circumstances of the local environment [16]. These findings align with Belal's study [27], which revealed that school administrators struggled to connect the cultivation of IM, global citizenship, or local citizenship to students' academic achievements. This challenge arose due to the overall school curriculum or the presence of an international student body. Therefore, it is crucial to emphasize that IM permeates every aspect of students' lives, including their family background, peer relationships, and the school culture. In this sense, IM serves as the central element for shaping students' identities [31].

There is a wide range of opinions regarding the advantages and potential disadvantages of adopting IM as a personal trait. Belal [27] argued that the diversity of the student body at school played a crucial role in helping students develop a broader perspective and IM, while a different study found that individuals were proficient in discussing the various elements that contribute to IM, such as knowledge, values, and skills [7]. Fluency in multiple languages was also identified as an important transferable skill for IM. The participants indicated that their IM was largely influenced by their home and school experiences, with travel being a significant factor in both contexts [25]. Poonosamy [34] suggested that cultural traditions of learning at school significantly contributes to developing IM, particularly through meaningful, inclusive, broad, rich, and fulfilling learning experiences. However, further research is needed to determine the specific factors that contribute to developing IM.

The main objective of this research was to explore the significance of IM in fostering intercultural communication with a specific focus on teachers in the middle year program (MYP) of two IB schools. This phenomenological study investigated five multinational teachers from two international schools in Indonesia to answer three research questions. The research questions posed in this study are as:

- i) How do the experiences of teachers in IB schools shape their perspectives on IM?
- ii) How does the process of learning contribute to the development of IM?
- iii) What factors are instrumental in cultivating IM?

2. METHOD

Phenomenology is a philosophical approach that concentrates on the examination of human experiences, such as emotional, affective, and general experiences [35]. As per Sundler *et al.* [36], phenomenological inquiry is an effective method for uncovering meaning and articulating the essence of a particular phenomenon. Therefore, the current study utilized this approach to investigate the importance of IM in fostering intercultural communication with a particular emphasis on the perspectives of five teachers in the MYP program of two IB schools. According to Johnson and Christensen [37], the researcher begins with narrative data, distills the stories and descriptions to their essential themes, and systematically examines the words and concepts utilized to describe the phenomenon.

2.1. Participants

The current research was part of a comprehensive study involving 16 participants. Nonetheless, five IB teachers provided insightful nuances regarding their understanding of the concept of IM, the pivotal role that the learning process plays in cultivating students' IM, and the internal and external factors that influence students' IM. To ensure the selection of participants with a minimum of 10 years of teaching experience, purposive sampling was utilized. The five teachers were identified from two IB schools situated in Jakarta, Indonesia, as detailed in Table 1.

Table 1. Participants of the study

No	Participants (Pseudonym)	Abbreviation of names	Gender	County of origin	Living abroad experiences	Teaching experiences
1	Teacher 1	T1	F	New Zealand	13 years	11 years
2	Teacher 2	T2	M	India	17 years	20 years
3	Teacher 3	T3	F	Indonesia	5 years	15 years
4	Teacher 4	T4	F	Kenya	8 years	22 years
5	Teacher 5	T5	F	United States	10 years	15 years

2.2. Procedure

The process of data collection in this study comprised face-to-face semi-structured interviews that were divided into three distinct phases for each participant. To guarantee the validity and reliability of the research findings, the investigators undertook several measures. These include: i) the development of interview protocols aimed at addressing the three research questions previously mentioned; ii) the validation of the interview protocols by three specialists in the field of intercultural educational studies; iii) the

provision of supporting documentation to obtain research ethical approval from the Independent Research Institute at the University of Malaya (UM-REC) with approval number UM.TNC2/UMREC_2340; and iv) the acquisition of informed consent from each participant prior to the interview through the completion of a consent form. To enhance the credibility of the findings, the researcher implemented member checking, also known as respondent validation [35]. To accomplish this, the final transcript results of the study were presented to the participants, and their feedback was solicited. Specifically, the researcher approached five teachers as participants to review and sign the interview transcripts as evidence of the collected data. All participants consented to the use of their data and confirmed that the researcher had accurately represented the findings in the study's results.

2.3. Data analysis

Thematic analysis was conducted to analyze the data from the interview transcriptions in this study. Braun and Clarke [38] proposed that thematic analysis is a systematic approach that identifies, examines, and communicates recurring patterns or themes within data. Thematic analysis is a valuable method for researchers to analyze interview data that has been transcribed. It aids in organizing and exploring the findings and facilitating discussions. Thematic analysis involves six stages [23] that are: i) familiarizing oneself with the data; ii) generating initial codes; iii) searching for themes; iv) reviewing themes; v) defining and naming themes; and vi) producing the report. To aid in the process of conducting thematic analysis, the researchers utilized Nvivo12 software, particularly for functions such as transcribing, reading and reviewing, coding, and generating themes.

3. RESULTS AND DISCUSSION

3.1. Results

The results of this study address three research questions that are described as: the findings regarding how participants conceptualized IM based on their experiences, how teachers employed learning activities to foster students' IM, and the factors contributing to the development of IM.

3.1.1. Teachers' perspectives on IM

Participants acknowledged that IB provides substantial support to teachers and students in fostering IM. The IB curriculum includes a dedicated portion aimed at enhancing IM among teachers and students. One of the foundations for individuals to effectively socialize across cultural differences is to develop IM. Participants expressed various definitions of IM as illustrated in Figure 1.

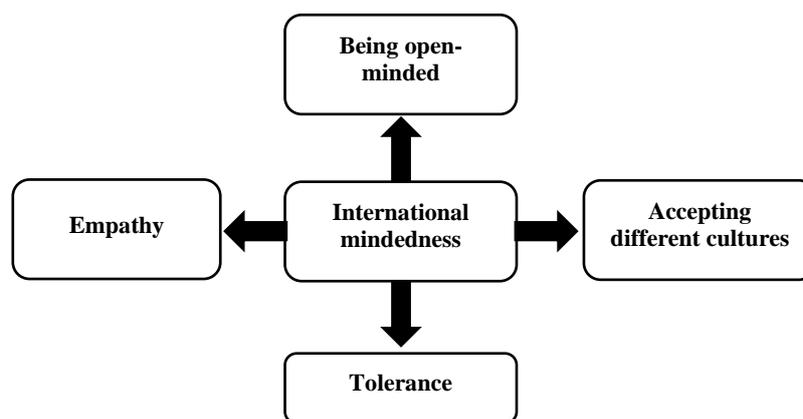


Figure 1. The points of IM in teachers' perspectives

The data presented in Figure 1 indicates that teachers at international schools following the IB curriculum define IM based on their personal experiences. These individuals identified four key characteristics of IM; being open-minded, accepting different cultures, demonstrating tolerance, and showing empathy. According to T1, IM refers to an individual's capacity to possess a genuine desire to acquire knowledge and understanding of those with diverse perspectives. An individual's curiosity can be conveyed through physical movements, facial expressions, and interactions with others. IM is the essential ability to effectively engage with individuals from diverse cultural backgrounds.

“I think IM is the ability to understand from a different perspective. It is a basic value, and also the curiosity to want to understand from a different perspective and being open-minded.” (T1)

T2 defined IM as the ability to recognize and appreciate various cultural elements in a multicultural setting. Cultural competence entails embracing diverse perspectives, beliefs, and values while demonstrating respect for each culture's unique attributes. T2 was unsure about the relevance of any information, as it may or may not hold significance for them.

“IM, what I believe is, like, giving importance to all the cultures, giving, be ready to accept others' views, ideas, etc., and give your ideas to the things, all the religions, all the cultures, all the countries are equally important, so, it may not be that important for you, but it may be important for the person himself, right, it is important, it is pride, it is nationality, so, that's what that means.” (T2)

Developing an understanding of IM will allow individuals to gain insight into the perspectives of others. As per T3, the notion of IM can be compared to an individual cultivating open-mindedness, which involves embracing and accepting cultural variations among people. Moreover, such individuals exhibit tolerance towards concepts and values that are significant to others, even when they hold a different interpretation from our own viewpoint.

“I think by being international minded, it helps us as a person to see others, other people's perspectives. By doing that, we are being open-minded. We try to accept, if there are people who are different from us, if they really feel different from us, it helps us to be more tolerant to that other person.” (T3)

On the contrary, T1, a teacher from New Zealand, highlighted that the term ‘tolerance’ often has a negative connotation. T1 defines ‘tolerant’ as the act of performing a task despite personal dislike, demonstrating tolerance. From T1's perspective, it would be better for this to be transformed into an individual's endeavor to understand something rather than simply performing it. T1 believes that the term ‘tolerant’ carries an unfavorable implication. According to T1, this is merely a matter of semantics. Therefore, T1 will avoid using the word ‘tolerant’ and instead use phrases such as ‘accepting’ and ‘understanding’.

“Sure. I don't know if tolerance is a good thing to be honest, because tolerance means you don't like something, but you will put up with it. And I think it is better to try to understand something rather than just put up with it. So, I'm not sure what word that would be. But for me, tolerance is a little bit negative.” (T1)

T4's perspective proposes that fostering IM can be accomplished by embracing a receptive disposition towards diverse perspectives and ideas. Moreover, an individual's demonstrated appreciation for concepts originating from individuals with varied cultural backgrounds serves as evidence of their cultivation of IM.

“What is international mindedness? It is the ability to be open-minded towards other people's points of view and other people's perspectives. And to accept that there's just no one way of looking at something. And that diverse backgrounds will look at things from their perspective and bring that in together in terms of being caring and open minded to other people's perspectives and being principled.” (T4)

In contrast, the T5 data suggests that IM has a strong correlation with individuals who possess an empathetic mindset. This conclusion was drawn from T5's observation of an IB video that highlighted the significance of empathy in the context of IM. Additionally, T5 noted that the COVID-19 pandemic led to an increased sense of empathy among people, including the younger generation. This implies that the lessons learned from the pandemic can foster greater international understanding within global society.

“I was just watching this video from the IB and they talked about international mindedness as empathy. And I think that's a really good way to look at it, that by trying to understand different cultures, that you can promote empathy in that way.” (T5)

3.1.2. Influence of the learning process on developing international mindedness

The IB curriculum places significant emphasis on the development of IM which is deeply rooted in the learning process. It is the responsibility of IB teachers to incorporate the principles of IM into all subjects, including individual and societies (I&S), by employing effective teaching strategies. As suggested by T5, I&S can serve as a valuable medium for fostering the values of diversity, including empathy, as exemplified by the following quotation.

“I think that Individuals and Societies is a great course to develop critical thinking. Because for students, international mindedness is a part of all the courses. And for me, international mindedness is seeing things in different perspectives, but also trying to learn empathy for others. And I think that that's a key part of the INS course. In the INS classes in particular, but in IB classes in general.” (T5)

The implementation of IM is actually adopted to reach the 10 principles in the learning profile as stated in the IB curriculum. There are 10 principles in the list of learner profiles such as inquirers, knowledgeable, thinkers, open-minded, caring, risk-takers, balanced, communicators, principled, and reflective [39]. According to T1's teaching experience, she typically employed a range of materials and connected them to the Learner Profile by highlighting relevant aspects. She also emphasized the importance of reflection for students and creating open-minded environments that involve all students, as highlighted in the following quotation.

“I think international mindedness, again, through the choice of materials, tries to give them a variety. The learner profile, pointing out what and when the materials relate to them, but also having the students reflect on whether they are being open minded or thought thinkers or things like that. I think these things are difficult to have an activity for, but as you study and work, you bring them up a little bit every now and then and they start to understand.” (T1)

In order to foster a sense of unity in the classroom and capitalize on the diversity of cultures present among students, T2 has implemented learning strategies that involve collaboration among all students. This approach has been particularly effective in international schools, where students come from a variety of backgrounds. By encouraging group work and incorporating fun, interactive games into the learning process, T2 aimed to harness the power of diversity in the classroom and create a more inclusive and engaging learning environment as described.

“Like, sports, they go together, they work together, they play together, without, like, nationality or this and that, so, the sports team has all, whoever wants to play, they play together, ...discuss together, plan, so, there's more dealing with the environmental issues, and there are, like, the World Scholars Cup, MUN, all those types of clubs, and all those things, where they do discussions on different cultures, different current events, global issues, that way, yeah, like, when you discuss in the, like, for example, MUN. They're talking about a particular problem, a student's given a chance to represent a particular country, so, when the person is representing a particular country, he will work on that country, research that country, look at the culture, languages, problems, this and that, on that country, so that he can get familiar, and, like, put his views on this.” (T2)

The role of teachers in disseminating knowledge and promoting academic success was widely acknowledged. They played a crucial part in providing guidance and resources to students who often rely heavily on their teachers. In addition to imparting information, teachers are instrumental in fostering IM by helping students understand and appreciate cultural differences, thereby highlighting the importance of respecting these variations. It was incumbent upon IB teachers not only to acquire knowledge through learning activities, but also to inculcate character values through utilizing the magic words as suggested by T4 in the quotation.

“Well. It is important to me, one, as a teacher, because I realized just how powerful my role is in the classroom and how I have a lot of influence as a teacher. Yes, I can teach grammar, I can teach noun phrases, I can teach verb phrases, I can teach how to write a good essay. But at the bottom of it all, the most important thing is to make a connection with whatever I'm teaching to the bigger world and to let my students know that whatever it is that they are learning, they have a greater role in the society to use their learning to effect some sort of change in the society.”

That's me as a teacher because I would focus on again very basic things like what are the magical words, you know, say thank you, say please..." (T4)

Based on T3's extensive experience, interacting with students can greatly enhance the learning process and foster the development of interpersonal skills. To this end, T3 utilized a variety of communication channels, including email, as well as direct interactions both within and beyond the classroom. To guarantee a positive and constructive learning environment, T3 must always maintain a respectful and courteous manner when engaging in dialogue, refraining from any actions or language that may potentially cause offense to colleagues or students as described in this following quotation.

"Okay, usually when we work together there are some projects or some events that we have to collaborate on, so usually what I do is when I have to collaborate with someone, I make sure I communicate with that person. I communicate of course not only by email but also like verbally – maybe come to their workplace to discuss the plan and of course I have to be able to listen carefully and also try to first put, like, a positive mindset when we're working together because sometimes there are some teachers who have a negative perception with others that will affect the communication." (T3)

3.1.3. Factors influencing development of international mindedness

The research conducted in this study demonstrated that a variety of elements can affect participants' development of IM. Aside from a student's cultural background and the influence of their family in providing examples for adjusting to multicultural settings, their individual characteristics also significantly impact the development of IM. The data analysis revealed that there are five actionable steps that participants can take to improve their IM, beginning with their personal attributes. The five essential personal traits for fostering IM are depicted in Figure 2.

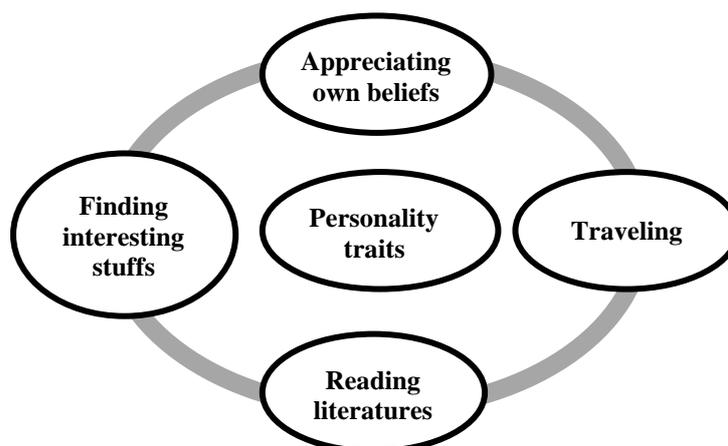


Figure 2. The personality traits in developing IM

a. Appreciating own cultural beliefs

This research highlights the importance of recognizing and appreciating one's own cultural beliefs as a crucial prerequisite for individuals to familiarize themselves with other cultures. It is evident that individuals tend to initially draw upon the cultural values of their own upbringing before they can effectively embrace and understand the customs of other societies. T2, for instance, holds a deep admiration for his Indian cultural heritage. His family, who is of modest means, has consistently adhered to the teachings of their ancestors, demonstrating obedience and observing religious holidays. T2 endeavors to instill cultural values in his children through daily routines and practices.

"So, for us, at home, we celebrate all the things here, so, like my wife was fasting yesterday, it is like, the culture, right, for the, it should be for the kids, something, so, she had a fast, my kids, that all the fast for this, we do this thing in India, tell the story, it is a background, the other day, yeah, we had Diwali...to celebrate this one, we decorate our houses, and all these things, clean this and that, so, everything." (T2)

In addition, T4 expressed a strong sense of pride in her Kenyan culture. She stated that the Kenyan people consistently demonstrate a friendly demeanor towards all individuals, which contributes to her sense of ease within the community. Furthermore, Kenya boasts unique and captivating elements that, in her opinion, are exclusive to the country. One such example is the matatu, a local transportation option that consists of a small bus. However, what distinguishes it from other forms of transportation is that the vehicle always features loud music, which aims to entertain passengers during their journey.

“Okay, so we have a very unique culture in Kenya, something that I don't think you find anywhere else, such that if you're not a Kenyan, you really don't understand this. And this is the, I call it the matatu culture. Matatu is a word in Swahili, which is a national language in Kenya. It means public transport. But this public transport is just not your normal public transport. We call it moving discotheques because the busses play loud music. It is like you have this dancing place inside a moving vehicle, and that is something you will not find anywhere else. So that is something that I find unique about Kenya. We find it so normal, but I don't think anybody else finds it normal. So that's, again, for me, that's an indication of our culture, the Kenyan culture. Now the other thing that comes to mind when I think about culture is warmth. Kenyans are warm people. We're very warm people.” (T4)

In contrast, T5 acknowledges that the United States has a penchant for things that do not involve wearing uniforms. The donning of school uniforms is not a conventional practice in America, hence students in the US are not required to wear them. Nevertheless, T5 recognizes the importance of uniforms when instructing at locations outside of America, such as school 2. Therefore, it is essential for T5 to possess the ability to embrace diversity and adhere to the prevailing regulations at school 2.

“I would say also, for example, in America it is very common not to wear a uniform and that's a part of our culture. And so, when I work with other teachers in a different international context, the uniform is very important to them. But I realize that's a cultural difference.” (T5)

b. Traveling

Traveling enables individuals to become acquainted with new surroundings, particularly those that possess a distinct culture from their own. Frequent travelers gain a wealth of fresh knowledge, fostering an appreciation for diversity and promoting further learning. Traveling nurtures open-mindedness among individuals. T5's experiences demonstrate a strong desire to explore the cultural practices and activities of others. Although T5 may not consider these things to be entirely real, T5 seeks to acquire knowledge or novel insights that can be utilized as valuable assets. T5 typically acquires these activities by visiting enjoyable destinations.

“I wonder why they do things in that way. It is not that my way is right, but what can I learn from the way people do things? So, I think trying to frame things in that way and being excited to learn about other cultures is through travel. I think the more people travel...” (T5)

T2's experience underscores the fact that traveling to a new location and adapting to unfamiliar surroundings is a daunting task that requires acquiring necessary skills. Prior to joining school 1, T2 had taught at a school in a rural area of India. T2 found the circumstances and environment at the school to be extremely dull, leading him to seek a new opportunity by relocating to a more favorable location. Ultimately, T2 received an invitation from a friend to move to Indonesia and work as a teacher at school 1.

“I'd done my schooling in a small town in India. And, like, the life was a little boring there, because, you know, a small hill town in the seasonal time, that's summertime, a lot of tourists came, but in the winter, it is very cold, nobody's there, schools are closed, you have holidays. I was a little bored with that life. So, I wanted to move out of my city. So, I planned to do some big cities like maybe Delhi, Mumbai, or some other way. And then one of my friends said he just had just come to Jakarta like a year before me. So, he told me, why don't you join, like, go to Jakarta? So, I said, I was thinking like, okay, anyways, because I'm moving to Delhi or Mumbai, it is the same as to Jakarta, because for me, it is a, I mean, a new situation, new surrounding and everything, right? And what's the harm in trying overseas? And let's see, like, if I succeed, it is fine. If not, then I could come back.” (T2)

Interacting with people in a new setting can be challenging for individuals to quickly adapt. T3 encountered this difficulty when she accompanied her parents to live in Australia for a week. This experience motivated her to acquire new knowledge, such as seeking information from local residents, particularly regarding transportation and directions. As a result, traveling to foreign countries has enhanced T3's self-assurance and fostered intercultural sensitivity and appreciation for different cultures.

“I went to Australia with my parents for like a week. And then I had like one day where I decided to go around on my own. I met new people. I asked for directions. I asked where I could go if I wanted to get this and that. So, I think that's the first experience. I was in an environment with various cultures. I got to know two new people, who were totally strangers. And then they gave me information of what bus I should take. And yeah, things like that.” (T3)

c. Reading literature

T5 suggests that reading literature can be a valuable means of gaining insight into different cultures, even beyond the opportunity for travel. The availability of numerous literary works has provided a wealth of information on cultural practices, captivating travel destinations, art, and unique aspects of communities or nations. Therefore, reading books serves as an accessible and cost-effective alternative to physical travel.

“I hate to say this, but very teachery, I think through books, I think the more people read, the more perspectives they get, the more points of view you can get from reading books. I mean, films, of course, but I think reading is just so fantastic for really opening up people's minds when they can't travel.” (T5)

As a teacher of English, T1 has found that reading works that elucidate the cultural plurality that exists in the world can enhance one's understanding of cultural values, particularly those pertaining to society and humanity. To facilitate this understanding, T1 frequently incorporates these books as instructional resources in the classroom with the aim of familiarizing students with the process of acquiring knowledge about individuals from diverse cultural backgrounds. Furthermore, T1 recommends that individuals who are unable to travel consider reading about cultural differences as an alternative means of gaining this knowledge.

“But also I think reading, as an English teacher, of course I say, but reading books written by people from different cultures and learning from them will always be a good way for me to gain more multicultural understanding. If I can't meet people from other places or travel to other places, then reading books from those perspectives is a very good way.” (T1)

In addition to studying cultural differences, T4 stresses the significance of linking classroom learning to global issues. As an English teacher, he consistently integrates global topics into his lessons. T4 connects various aspects of the global context, including personal and cultural expression, globalization and sustainability, scientific and technological advancements, as well as fairness and development.

“All our lessons are designed along these global contexts and there are six global contexts... they read very clearly, focusing on global issues. The first one is personal and cultural expression. The second one is, I've forgotten the second one, but I know the third one is globalization and sustainability and then we have scientific and technical innovations and then we have fairness and development. If you really think about all of these, you realize that these global contexts are basically to do with all human beings.” (T4)

d. Finding interesting stuff

Enhancing cross-cultural social interactions can be accomplished by proactively identifying shared interests or commonalities among participants and individuals from different cultural backgrounds. For example, T1, a New Zealander, regularly watches television programs aired by British and American channels. Therefore, this leisure activity can serve as a suitable topic for discussion when she interacts with individuals from the United Kingdom or the United States.

“In New Zealand we had both British and American television shows. We didn't make many of our own. So now when I meet someone who is my age from England or America, we have something in common. We can talk about the same TV shows. So, even though we're from cultures that are a little bit different, we have similar experiences to share and expectations, I think. Yeah, that would be one of the big influences.” (T1)

Identifying shared characteristics or experiences can be a useful strategy for participants to engage with individuals from various cultural backgrounds, as it can serve as a starting point for conversation and foster mutual understanding and connection. T4 was able to establish friendships at a new workplace by recognizing commonalities in their status and role with a recently introduced colleague, which facilitated T4's assimilation into the new environment.

"I made friends with this lady called Lily. I don't know her full name, but Lily. And Lily is a teacher of Math. And we started talking, I think, the first week that I arrived in School and what did we have in common? We are both single parents, and we also are raising boys. So, she has three boys, I have two boys, and our boys are roughly, you know, like the same age. So, that was something that we had in common." (T4)

Individuals can enhance their ability to interact with people from various cultural backgrounds by recognizing shared traits that can serve as starting points for conversation and fostering mutual comprehension and rapport. T4 was able to form friendships in a new work environment by identifying similarities in position and function with a recently introduced colleague, which contributed to T4's capacity to adjust to novel environments.

"Food is always a great joiner. Food. Food. And I work with somebody in my office from India and he said, oh, come try this food. My wife made it. And food is always a great connector. But just saying sure, being open and trying it. And if I said, oh no, I don't want to try that, then I would have closed the door to that conversation and getting to know him better. I sat down, I asked all these questions, what is this food?" (T4)

3.2. Discussion

The findings clearly outline that participant conceptualized IM into four primary principles: open-mindedness, acceptance of diverse cultures, tolerance, and empathy. They formulated IM perspectives as influenced by their own experiences as international teachers. International schools can be recognized as natural environments for developing IM due to the diverse backgrounds of school community members. Consequently, IM played a significant role in promoting intercultural communication, as evidenced by the findings addressing the research questions. The learning process, guided by the IB curriculum, has strongly advocated for supporting the cultivation of IM. The participants acknowledged that all subjects should be integrated to internalize the values of IM, with the ultimate goal of achieving the learner profile. Each teacher explained the necessity of employing creative teaching strategies to cultivate IM, such as incorporating technology and selecting relevant materials to engage all students in the classroom. Collaborative teamwork was also implemented in developing intercultural skills for each student. The findings revealed several influencing factors on developing IM through personality traits, including appreciation of one's own beliefs, traveling, reading literature, and finding out interesting stuff. Consequently, it is recommended that training be conducted on topics such as managing diverse classrooms, fostering cultural empathy, and integrating global perspectives into curricula to enable educators to effectively cultivate IM in students. This approach also enhances teachers' intercultural competence, which subsequently improves student engagement and comprehension in multicultural learning environments.

According to current studies, IM was defined by participants from multinational backgrounds, which encompasses various perspectives, and is consistent with the findings of previous studies [29], [40]. Several participants believed that IM involves individuals' ability to understand, respect, and accept different cultures, which is consistent with a study by Jurasaitė-O'Keefe [25]. However, the participants in the study argued that everyone should have equal representation, and inclusivity is essential. As IB teachers, the participants emphasized that IM involves making logical guesses about what is happening based on previous experiences, which encourages individuals to be self-learners and self-aware in multicultural environments, particularly in international schools. Almost all of the participants, as IB teachers, had faced unusual situations when they first began teaching caused by the diversity of cultures. However, they were successful in adjusting through curiosity about other cultures, gaining knowledge, and always using a worldly perspective, in line with the recommendations put forth by Scott [26]. Furthermore, the participants suggested that the heart of IM is the learner profile. Therefore, the implementation of IM can be applicable in various contexts, as Elerian, *et al.* [30] found.

IM is typically integrated into the curriculum of IB schools across all subject areas, including the primary years programmed (PYP), MYP, and the diploma programmed (DP). While each school is independent in developing IM through various options, the faculty plays a significant role in determining these choices. This study suggested that I&S is an effective subject to introduce MYP students to the

concepts of surviving as an individual and as a part of society, as well. According to the participants, students can learn these concepts and then apply them to other areas of their learning. The participants emphasized that I&S has a powerful role in engaging with both local and global communities. Co-curricular activities, such as school trips with service learning, conducting research outside of the classroom, and bonding events, have also been identified as contributing to the development of I&S. This finding is consistent with Metli [3], who advocates for developing I&S through strategies in both academic and non-academic activities. The participants acknowledged that IB teachers play a crucial role in preparing a learning process that encourages all students to feel involved in classroom activities. They appreciated providing students with choices in learning materials, taking into account different times, sources, backgrounds, and contexts. The participants, each with over a decade of teaching experience, found it easy to manage classes without encountering difficulties. This finding contradicted the previous study [16], [33], as evidence from the study showed that successful teachers were able to connect the value of learning with local societies and the global environment. This finding aligned with the results of Bunnell [40] who found that developing students' identities through IM was significant in developing IM.

The learning activities that were found to be most effective in developing IM were those that included teaching life skills, incorporating technology into the teaching process, and using magic words such as "thank you," "please," and "may I ask for permission." The participants in this study made use of a variety of inquiry-based methods, including research, group discussions, and presentations in order to cultivate critical thinking skills in their students. They also provided instruction in multiple languages in order to create students who are mindful of others and understand that the world is a shared space. Therefore, this finding contradicts the findings of Metli [3] who suggests that teachers should continue to teach about respect, tolerance, and understanding. The implications of the study findings suggest that establishing a school environment that celebrates diversity through events such as international days, cultural exchanges, and student-led initiatives may render IM a daily, lived experience. These activities create an environment wherein students can engage with different cultures in meaningful ways, thereby fostering respect, curiosity, and appreciation for diversity.

The participants posited that increased interaction with individuals from diverse cultural backgrounds can enhance IM in a natural manner. According to the participants, there were no difficulties in intercultural communication, particularly in international schools. This finding aligned with Belal [27], who demonstrated that multicultural environments can motivate students to adopt broader perspectives and develop IM. By adopting a lifelong learning perspective in their daily lives through being open-minded, positive, and excited about cultural differences, individuals can significantly contribute to developing IM, as per the findings of Hacking *et al.* [7]. Additionally, the participants' experiences living abroad also instilled good habits, such as practicing mindful learning, inclusivity, and actively participating in their communities, which aligns with Poonosamy [34]. Conversely, the findings of this study were consistent with earlier research by Bittencourt [29] that suggested that familial background plays a significant role in shaping a person's character and viewpoints [25]. Each participant possessed a unique cultural heritage and childhood memories of their upbringing within their family and community that have contributed to their unwavering commitment to valuing their own culture. Encouraging parental involvement through guidelines or school recommendations also can be one of the practical implications that can enhance the efficacy and sustainability of IM initiatives. Policies that promote school-community partnerships augment the relevance of IM, as students observe these values implemented within their broader social networks. Consequently, IM initiatives become an integral component of students' lives, extending beyond the educational environment and fostering their development as global citizens.

4. CONCLUSION

The thoughts and experiences of living abroad and teaching at international schools shaped the perceptions of IM for the participants. While they concurred that being open-minded was the most accurate interpretation, they also acknowledged that IM encompasses multiple meanings, including accepting different cultures, demonstrating empathy, and practicing tolerance. Teaching in a multicultural classroom presented challenges, such as considering students' perspectives towards their teachers. As teachers, their primary responsibility is to create a positive and inclusive classroom environment where every student feels accepted. To foster IM, teachers can employ intercultural teaching strategies using instructional resources that motivate students to develop their global perspectives, cultivate respect for different cultures, and embrace open-mindedness. Unfortunately, IB teachers typically utilize only an IB curriculum to develop and prepare the learning objectives. Teachers should exercise their own creativity in managing multicultural students in their own ways. Therefore, a cultural training program can be recommended for developing teaching skills, particularly for international teachers. It can enhance teachers' knowledge and perspectives to conduct learning in a meaningful process.

The development of IM in students can be facilitated through designing a pilot project, engaging in discussions, and selecting groups of students. This study suggested schools should consider implementing assessments focused on students' intercultural competencies, as this reinforces IM as a valued educational outcome. Developing frameworks that evaluate intercultural growth will not only guide teachers in identifying areas for improvement, but it will also support students in reflecting on their own intercultural development. Furthermore, a guideline for bridging IM to achieve the learner profile through promoting intercultural communication can be a topic for further study. Various aspects contribute to the development of IM, such as appreciating one's own cultural beliefs, traveling, reading literature, and discovering interesting subjects. These activities can make an individual aware of the importance of continuously improving their personality traits through adopting a lifelong learning approach.

FUNDING INFORMATION

The author gratefully acknowledges the financial support provided by the Indonesia Endowment Fund for Education (LPDP) through the Ph.D. Programme Scholarship 2021, with contract number LOG-3600/LPDP/LPDP.3/2024.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Diana Trisnawati	✓	✓	✓	✓	✓	✓		✓	✓	✓				✓
Abd Razak Zakaria	✓	✓			✓	✓		✓	✓	✓	✓	✓		
Azni Yati Kamaruddin	✓		✓	✓		✓	✓	✓	✓		✓			✓

C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

No potential conflict of interest was reported by the authors.

INFORMED CONSENT

All participants have provided written consent for their information to be published in the journal. A copy of the consent form is available for review upon request.

ETHICAL APPROVAL

This research was conducted in accordance with ethical standards and was approved by the The University of Malaya Research Ethics Committee (UMREC), as evidenced by ethical clearance number UM.TNC2/UMREC_2340.

DATA AVAILABILITY

The data that support the findings of this study consist of interview transcriptions and will be available upon request.

REFERENCES

- [1] T. D. Norman, "A scoping review of international mindedness and related concepts in music education, 2000–2020," *Review of Education*, vol. 10, no. 1, p. e3347, Apr. 2022, doi: 10.1002/rev3.3347.
- [2] N. Medora, R. N. Roy, and T. L. Brown, "Students' global mindedness and cultural sensitivity: examining the implications of a semester at sea study abroad voyage," *International Journal of Teaching and Learning in Higher Education*, vol. 32, no. 2, pp. 305–317, 2020.

- [3] A. Metli, "Assessment of international-mindedness in international baccalaureate diploma program schools: a comparative study in different school contexts in Turkey," *International Education Journal*, vol. 20, no. 1, pp. 20–40, 2021.
- [4] N. G. Bal, "In-service teachers' intercultural sensitivity," *Teaching English as a Second or Foreign Language--TESL-EJ*, vol. 27, no. 2, p. n2, Aug. 2023, doi: 10.55593/ej.27106a2.
- [5] E. B. Hacking and C. A. Taylor, "Reconceptualizing international mindedness in and for a posthuman world," *International Journal of Development Education and Global Learning*, vol. 12, no. 2, pp. 133–151, 2020, doi: 10.14324/ijdegl.12.2.05.
- [6] A. Metli and J. F. Lane, "International mindedness: a revised conceptual framework," *Journal of Research in International Education*, vol. 19, no. 3, pp. 202–219, Dec. 2020, doi: 10.1177/1475240920976229.
- [7] E. B. Hacking, C. Blackmore, K. Bullock, T. Bunnell, M. Donnelly, and S. Martin, "International mindedness in practice: the evidence from international baccalaureate schools," *Journal of Research in International Education*, vol. 17, no. 1, pp. 3–16, Apr. 2018, doi: 10.1177/1475240918764722.
- [8] W. Lulan, P. Muthukrishnan, and I. Mary, "Life satisfaction of international students: intercultural sensitivity and knowledge sharing attitude as determinants," *Universal Journal of Educational Research*, vol. 8, no. 6, pp. 2509–2519, 2020, doi: 10.13189/ujer.2020.080635.
- [9] H. Alanay and H. Aydın, "Multicultural education: the challenges and attitudes of undergraduate students in Turkey," *Eğitim ve Bilim*, vol. 41, no. 184, pp. 169–191, Apr. 2016, doi: 10.15390/EB.2016.6146.
- [10] M. Yanto, I. Warsah, R. Morganna, I. Muttaqin, and Destriani, "Intercultural sensitivity of educational management students as the future's educational leaders in Indonesia," *International Journal of Sociology of Education*, vol. 11, no. 3, pp. 263–290, Oct. 2022, doi: 10.17583/ise.10483.
- [11] J. Walton, "'Korea... it's not really actually an Asian country': Australian children's experiences of an intercultural school partnership programme," *Ethnography and Education*, vol. 14, no. 3, pp. 264–278, Jul. 2019, doi: 10.1080/17457823.2019.1568274.
- [12] W. Etri, "Intercultural sensitivity and its effects on ELT curricula – teacher insights," *Higher Education Evaluation and Development*, vol. 16, no. 1, pp. 32–46, May 2022, doi: 10.1108/heed-03-2021-0027.
- [13] H. V. Akcin, "Turkish language teachers' intercultural sensitivity," *International Journal of Education and Literacy Studies*, vol. 11, no. 3, pp. 145–156, Jul. 2023, doi: 10.7575/aiac.ijels.v.11n.3p.145.
- [14] S. C. Mahali and P. R. Sevigny, "Multicultural classrooms: culturally responsive teaching self-efficacy among a sample of Canadian preservice teachers," *Education and Urban Society*, vol. 54, no. 8, pp. 946–968, Nov. 2022, doi: 10.1177/00131245211062526.
- [15] N. S. Ospina and S. L. Medina, "Living and teaching internationally: teachers talk about personal experiences, benefits, and challenges," *Journal of Research in International Education*, vol. 19, no. 1, pp. 38–53, Apr. 2020, doi: 10.1177/1475240920915013.
- [16] J. Budrow, "Being and becoming internationally minded: snapshots of novice Canadian teachers in international schools," *Journal of Research in International Education*, vol. 20, no. 3, pp. 211–225, Dec. 2021, doi: 10.1177/14752409211060137.
- [17] J. F. Ruffin and M. E. Simon, "Developing culturally proficient leaders developing culturally proficient leaders through graduate through graduate coursework: examining student perspectives," *School Leadership Review*, vol. 16, no. 2, p. 2, 2022.
- [18] K. I. Burkart, "Internationalizing teacher education programs: preservice teachers' perceptions of intercultural sensitivity and global competence," Ph.D. dissertation, University of West Florida, Pensacola, FL, USA, 2014.
- [19] K. Cushner and S. C. Chang, "Developing intercultural competence through overseas student teaching: checking our assumptions," *Intercultural Education*, vol. 26, no. 3, pp. 165–178, May 2015, doi: 10.1080/14675986.2015.1040326.
- [20] S. Kang, "Intercultural development among music students and teachers: a literature review," *Update: Applications of Research in Music Education*, vol. 41, no. 1, pp. 45–53, Oct. 2022, doi: 10.1177/87551233211061483.
- [21] M. L. Halicioglu, "Challenges facing teachers new to working in schools overseas," *Journal of Research in International Education*, vol. 14, no. 3, pp. 242–257, Dec. 2015, doi: 10.1177/1475240915611508.
- [22] T. Gutentag, G. Horenczyk, and M. Tatar, "Teachers' approaches toward cultural diversity predict diversity-related burnout and self-efficacy," *Journal of Teacher Education*, vol. 69, no. 4, pp. 408–419, Sep. 2018, doi: 10.1177/0022487117714244.
- [23] C. Tocci, A. M. Ryan, D. C. Ensminger, C. Rismiati, and A. B. Moughania, "Teaching for international mindedness in Chicago Public Schools International Baccalaureate humanities classes," *Social Studies Research and Practice*, vol. 17, no. 1, pp. 30–49, May 2022, doi: 10.1108/ssrp-09-2020-0040.
- [24] P. Castro, U. Lundgren, and J. Woodin, "International mindedness through the looking glass: reflections on a concept," *Journal of Research in International Education*, vol. 14, no. 3, pp. 187–197, Dec. 2015, doi: 10.1177/1475240915614202.
- [25] E. Jurasite-O'Keefe, "Defining and cultivating international mindedness: perceptions and perspectives of students in the international baccalaureate middle years program," *RMLE Online*, vol. 45, no. 2, pp. 1–17, Feb. 2022, doi: 10.1080/19404476.2022.2024067.
- [26] A. Scott, "Interpreting international mindedness in Dutch State-funded international schools: an educational leadership perspective," *Journal of Research in International Education*, vol. 22, no. 2, pp. 121–135, Aug. 2023, doi: 10.1177/14752409231191570.
- [27] S. Belal, "Participating in the international baccalaureate diploma programme: developing international mindedness and engagement with local communities," *Journal of Research in International Education*, vol. 16, no. 1, pp. 18–35, Apr. 2017, doi: 10.1177/1475240917702789.
- [28] K. Chernoff, "An overview of systematic reviews: International mindedness as a component of the IB Diploma Programme's expansion," *Journal of Research in International Education*, vol. 22, no. 3, pp. 278–290, Dec. 2023, doi: 10.1177/14752409231216651.
- [29] T. Bittencourt, "Social class and the construction of international mindedness: a comparative study of international baccalaureate schools in Ecuador," *Journal of Research in International Education*, vol. 19, no. 2, pp. 91–105, Aug. 2020, doi: 10.1177/1475240920954046.
- [30] M. Elerian, E. C. Papanastasiou, and E. A. Solomou, "International mindedness in emerging contexts of international schooling. Cyprus, a case study," *British Journal of Educational Studies*, vol. 72, no. 6, pp. 783–804, Nov. 2024, doi: 10.1080/00071005.2024.2311717.
- [31] T. Bunnell, M. Donnelly, H. Lauder, and S. Whewall, "International mindedness as a platform for class solidarity," *Compare*, vol. 52, no. 5, pp. 712–728, Jul. 2022, doi: 10.1080/03057925.2020.1811639.
- [32] M. Syeda, "Fostering international mindedness in international baccalaureate classrooms: a case study of two teachers," M.S. thesis, University of Montana, Missoula, USA, 2017.
- [33] T. Mehmood, "Analyzing how school leaders promote cultural competence and global mindedness, key components of the IB (international baccalaureate) philosophy, within their schools," pp. 1–23, Jul. 19, 2024, doi: 10.35542/osf.io/h5wbk.
- [34] M. Poonosamy, "Third culture kids' sense of international mindedness: case studies of students in two international baccalaureate schools," *Journal of Research in International Education*, vol. 17, no. 3, pp. 207–227, Dec. 2018, doi: 10.1177/1475240918806090.

- [35] S. B. Merriam and E. J. Tisdell, *Qualitative research: a guide to design and implementation*. San Francisco, CA: Wiley, 2015.
- [36] A. J. Sundler, E. Lindberg, C. Nilsson, and L. Palmér, "Qualitative thematic analysis based on descriptive phenomenology," *Nursing Open*, vol. 6, no. 3, pp. 733–739, Jul. 2019, doi: 10.1002/nop2.275.
- [37] R. Johnson and L. Christensen, *Educational research: quantitative, qualitative, and mixed approaches*, 5th ed. London: SAGE Publications, 2014.
- [38] V. Braun and V. Clarke, "Using thematic analysis in psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77–101, Jan. 2006, doi: 10.1191/1478088706qp0630a.
- [39] M. Singh and J. Qi, *21st century international mindedness: an exploratory study of its conceptualisation and assessment*. South Penrith, Australia: University of Western Sydney, 2013.
- [40] T. Bunnell, "Developing and institutionalising the 'internationally-minded school': the role of the 'Numerous Fs,'" *Journal of Research in International Education*, vol. 18, no. 2, pp. 186–198, Aug. 2019, doi: 10.1177/1475240919865792.

BIOGRAPHIES OF AUTHORS



Diana Trisnawati    is a Ph.D. candidate in Faculty of Education at Universiti Malaya, Malaysia and lecturer in Universitas Negeri Yogyakarta, Indonesia. She is enthusiastic about Character education and Educational Issues in Indonesia. Her previous research centered on the educational system for implementing special services for vulnerable and minority societies in Indonesia. Now, she consents to global education in order to study intercultural sensitivity in international schools. She would like to learn more about universal education and multi-society-appropriate education. She can be contacted at email: s2038233@siswa.um.edu.my; diana.trisnawati@uny.ac.id.



Abd Razak Zakaria    is a senior lecturer of Faculty Education, Universiti Malaya, Malaysia. He is enthusiast on sociology, history, and culture in Malaysia. His passion for sociology, history, and Malaysian culture. His most recent publications investigate the implications of teacher training and professional learning in Chinese secondary schools in Malaysia. He can be contacted at email: abdrzak@um.edu.my.



Azni Yati Kamaruddin    is a senior lecturer of Faculty Education, Universiti Malaya, Malaysia. She is head of department of Educational Foundations and Humanities, Faculty education, Universiti Malaya, Malaysia. Her doctorate was conferred by La Trobe University in Australia. She focused on civic education and learning strategies in Malaysian secondary institutions. She can be contacted at email: azniyati@um.edu.my.