

Promoting Intercultural Awareness among Thai EFL Tertiary Students through Inquiry-Based Learning and Digital Platforms in a Virtual Classroom

Nattharmma Namfah

Faculty of Education, Burapha University, Thailand

Supaporn Kulsitthiboon*

International College for Sustainability Studies (SWUIC), Srinakharinwirot University, Thailand

*Corresponding author's email: supapornku@g.swu.ac.th

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Abstract

This study examines how inquiry-based learning (IBL) combined with digital platforms affects Thai EFL tertiary students' intercultural awareness growth in remote areas. 54 third-year Business English majors participated in a 12-week intercultural course where inquiry-driven activities were shaped by the 5E Instructional Model. Teacher's notes, participant reflections, and a perceived intercultural awareness questionnaire were used to collect data. The findings indicate that improving intercultural awareness can be achieved through the use of both IBL and remote digital learning settings. While qualitative reflections showed a transition from a superficial comprehension of intercultural differences to a more comprehensive appreciation of intercultural dynamics, quantitative studies showed a statistically significant improvement in participants' intercultural awareness. By providing insights into pedagogical practices supporting intercultural competence in EFL instruction, this study advances the corpus of knowledge. It highlights digital platforms' potential to foster deeper intercultural connections and requires further research to evaluate the long-term impacts and broader applicability of these approaches, particularly in remote learning contexts. The findings offer practical implications for EFL educators, suggesting that the integration of digital tools can enrich classroom interactions and promote a more inclusive, culturally responsive teaching environment.

Keywords: intercultural awareness, virtual classroom, inquiry-based learning, digital platforms, Thai EFL tertiary students

Introduction

Intercultural awareness is defined by Byram (1997; 2021) and Deardorff (2020) as the ability to recognize, understand, and appreciate cultural differences, leading to polite and meaningful interactions in multicultural environments. It is essential for English as a Foreign Language (EFL)

students who must interact effectively across diverse cultural contexts. Although research on enhancing intercultural awareness is gaining momentum, studies combining inquiry-based learning (IBL) with digital platforms remain limited. This gap may exist because intercultural awareness is traditionally examined in disciplines such as applied linguistics, language education, and communication studies, whereas IBL is more associated with STEM fields (e.g., Lotter & Ramnarain, 2025; Nemadziva et al., 2023; Onyema et al., 2019; Segun & Ramnarain, 2023).

IBL stresses a student-centered method that encourages exploration, questioning, and critical thinking (Keselman, 2003), which can foster a deeper understanding of cultural differences. Moreover, integrating digital tools with IBL helps students actively engage with and analyze cultural issues, rather than merely collecting information passively. In the Thai tertiary EFL context, the underexplored integration of IBL and digital platforms presents unique challenges and opportunities for developing intercultural competence. A key challenge is that many Thai EFL learners may have limited prior exposure to open-ended inquiry tasks, making it difficult to critically engage with diverse cultural perspectives. Additionally, most digital tools focus more on language skills rather than meaningful intercultural dialogue. However, this integration offers valuable opportunities—IBL can promote autonomy and real-world cultural exploration, while digital platforms can connect them with authentic global content and diverse voices beyond the classroom.

Although virtual learning environments can enhance intercultural awareness through online interaction, research has prioritized language proficiency over cultural understanding. For instance, Noor et al. (2022) showed that digital platforms can boost student motivation and content knowledge. Velinov and Bleicher (2023) demonstrated that experiential learning combined with digital tools supports engagement in global teams. However, these studies do not directly address how learners develop intercultural awareness. Awang-Rozaimie et al. (2012) highlighted the importance of assessing multicultural awareness in education. Building on these insights, this study examines how combining IBL with digital platforms can promote intercultural competence in Thai EFL learners.

This study aims to investigate how inquiry-based learning, the 5E Instructional Model, and virtual classroom environments can enhance EFL students' intercultural comprehension, particularly in Thai contexts. By engaging in virtual classrooms, students actively explore and reflect on cultural themes in a dynamic, interactive setting. The 5E model (Engage, Explore, Explain, Elaborate, Evaluate) provides a structured approach that goes beyond traditional methods focused solely on language proficiency (Duran & Duran, 2004). In contrast, this integrated approach guides students from initial cultural engagement to critical reflection and evaluation of intercultural interactions, thereby fostering deeper cultural sensitivity. In Thai EFL contexts—where conventional instruction often emphasizes grammar and vocabulary—this novel combination of IBL and virtual classroom addresses the gap by building practical intercultural competence.

The following two research questions are as follows.

1. To what extent does participation in inquiry-based learning through digital platforms in a virtual classroom enhance the intercultural awareness of Thai tertiary EFL students?
2. How does the integration of inquiry-based learning and digital platforms in a virtual classroom facilitate the development of intercultural awareness among Thai tertiary EFL students?

Literature Review

Intercultural Awareness

Intercultural awareness is crucial in EFL settings where students face both language and cultural challenges. It extends beyond cultural facts to examining one's own assumptions and developing intercultural skills. Byram (1997) defines it as attitudes, knowledge, and skills of discovery that help people understand and work with cultural differences. Moreover, critical cultural awareness involves questioning ability and reflecting on cultural biases and power differences. Deardorff (2020) adds that intercultural competence develops in levels, including cultural self-awareness, curiosity, and openness to different views. Emotional factors like empathy enable learners to connect with and understand different cultural expressions. These cognitive and emotional aspects improve intercultural competence and support language learning by deepening students' appreciation of cultural contexts in communication.

Research shows that increasing intercultural awareness improves cross-cultural understanding and language learning. Structured assignments and reflective exercises promote cultural sensitivity and critical thinking. For example, Esmaili and Kuhi (2023) used pedagogical intercultural tasks—such as reflective journals, classroom observations, and critical incident activities—to demonstrate significant improvements in students' ability to learn from cross-cultural experiences. However, due to their small group of Iranian EFL learners, it is uncertain whether these findings can be generalized to Thai contexts or other EFL settings. Similarly, Deardorff's (2020) manual on Story Circles offers guidelines for using storytelling to develop intercultural competencies and build empathy, but its effectiveness in large classrooms or virtual settings, where direct interaction may be limited, remains unclear.

In EFL contexts, developing intercultural awareness is essential for preparing students to interact effectively in a globalized society. In addition to language skills, they must understand how cultural norms, attitudes, and practices shape communication. Integrating intercultural competence into the curriculum promotes both critical thinking and language proficiency in Thai tertiary English education. Namsaeng and Ambele (2024) suggest that exposure to cross-cultural material encourages students to challenge their preconceptions, reflect on their beliefs, and develop a deeper understanding of cultural diversity. This introspective process enhances their insights into language and culture,

building their confidence in cross-cultural interactions. These combined approaches are particularly useful for Thai tertiary students entering the global workforce, where managing cross-cultural relationships is as crucial as mastering English. To effectively integrate multicultural awareness into EFL instruction, educators should create spaces that encourage active engagement with cultural variety.

Inquiry-Based Learning and its Potential Role in Promoting Intercultural Awareness

Inquiry-based learning (IBL) is an interactive teaching strategy that promotes student-driven inquiry, questioning, and critical thinking (Keselman, 2003). It increases intercultural awareness by encouraging students to critically examine cultural norms, beliefs, and practices (Byram, 1997). Research supports IBL's effectiveness in developing students' intercultural communication skills through investigation, justification, and assessment. Guth and Helm (2010) found that these activities help students understand different cultures while recognizing the influence of their own cultural identities on their perspectives. Similarly, Pedaste et al. (2015) and Ismailov (2021) state that structured inquiry fosters deeper engagement in intercultural discussions, enhancing both intra- and intercultural awareness. IBL can improve intercultural awareness by fostering self-reflection and deepening students' understanding of both their own and other cultures, especially in virtual learning environments such as virtual exchanges (Guth & Helm, 2010). Esmaili and Kuhl (2023) implemented IBL techniques—using reflective journals and critical incident tasks—with Iranian EFL learners and found that students showed significant qualitative improvements in analyzing cross-cultural experiences.

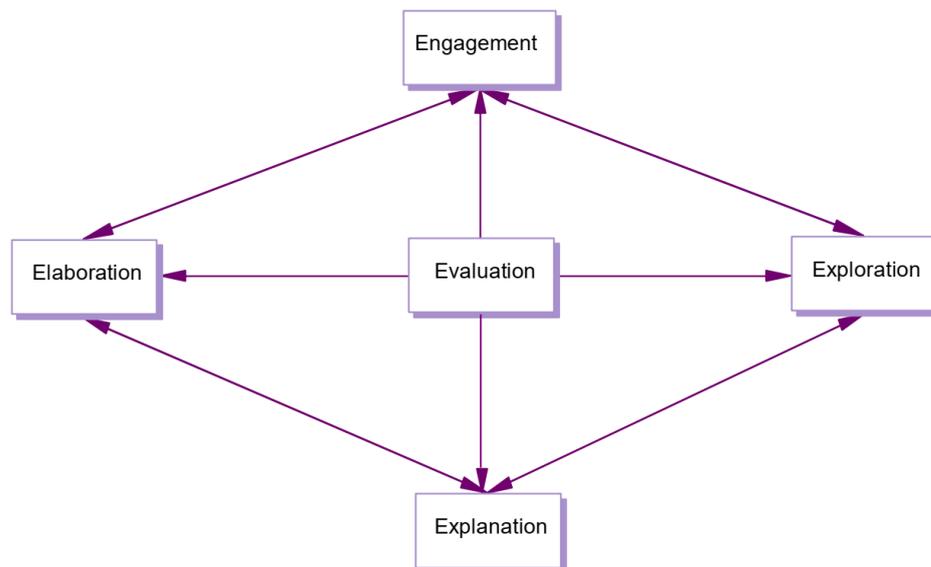
The 5E Instructional Model (Duran & Duran, 2004) offers a structured approach to IBL, particularly in virtual exchanges (Ismailov, 2021). Its five stages—Engage, Explore, Explain, Elaborate, and Evaluate guide students through a critical engagement with intercultural themes (Figure 1). In Engage, students consider their own cultural presumptions, while Explore involves research and teamwork to examine cultural differences. Students clarify their comprehension of multicultural ideas and apply these understandings to actual situations during the Explain and Elaborate stages. Ultimately, in Evaluate, students contemplate their educational path and appraise their development in cross-cultural proficiency, resulting in a more profound self-awareness and improved cross-cultural comprehension (Duran & Duran, 2004).

IBL activities in online learning stimulate students to critically reflect on their own cultural traditions, attitudes, and actions while exploring other cultures (Ismailov, 2021). The ability to assess one's own culture and its significance in cross-cultural communication known as "critical cultural awareness," results from deep self-reflection (Byram, 1997). IBL's reflective and research-focused qualities promote a deeper understanding of intercultural communication in both traditional and online settings (Byram, 1997; Risager, 2007). Additionally, digital tools in inquiry-based telecollaboration create culturally immersive environments where students engage in meaningful cross-cultural

interactions (Ismailov, 2021). O'Dowd and Waire (2009) suggest that such digital platforms can enhance intercultural awareness by promoting collaboration, easing communication among diverse students, and supporting the application of cultural insights in real-world contexts. Integrating IBL with digital tools is a promising approach to foster critical cultural awareness, equipping learners with the essential skills in a globalized world.

Figure 1

The 5E Instructional Model by Duran and Duran (2004, p. 52)



Virtual Education, Digital Platforms, and IBL

Online learning, or virtual education, refers to the use of digital platforms to deliver instructional content and facilitate interaction across geographical boundaries. With increasing adaptability and accessibility, digital platforms have become essential in supporting diverse learning needs. Recent studies highlight their evolving role in enhancing engagement, collaboration, and IBL. Abaniel (2021) found that digital tools used in open inquiry models improved learners' conceptual understanding, learning attitudes, and 21st-century skills. Similarly, Onyema et al. (2019) demonstrated how mobile technologies strengthen flexible, student-centered inquiry. Lotter and Ramnarain (2025) showed that a flipped classroom model using digital tools can deepen inquiry in science education. These findings highlight that modern digital platforms extend beyond content delivery, enabling student-led exploration, critical thinking, and deeper cognitive engagement across disciplines.

A major benefit of digital platforms is their ability to support both synchronous and asynchronous interaction, allowing real-time discussions, group projects, and independent learning regardless of location. This flexibility helps students balance academic, personal, and professional

responsibilities. Furthermore, digital learning fosters intercultural competence by creating opportunities for cross-cultural dialogue and collaboration in global virtual settings (Ismailov, 2021). When paired with student-centered pedagogies, digital platforms can significantly improve inquiry engagement and academic outcomes (Abaniel, 2021; Lotter & Ramnarain, 2025; Onyema et al., 2019). Multimedia tools such as collaborative documents, interactive simulations, and video conferencing also support differentiated instruction and active participation. These affordances make digital education more inclusive and effective in cultivating critical thinking and collaboration skills.

Despite these advantages, the increasing reliance on digital platforms presents challenges related to equity and inclusion. The digital divide—unequal access to reliable internet and digital devices—can limit student participation, particularly for learners from under-resourced backgrounds (Bates, 2019). Additionally, gaps in digital literacy and a lack of technological support can hinder engagement, especially among struggling learners. Marshall and DeCapua (2013) emphasize that educators must adopt culturally responsive and inclusive teaching approaches to ensure students benefit from digital learning environments. Addressing these challenges is essential for promoting equal opportunity and maintaining educational quality. By designing inclusive digital spaces that acknowledge learners' diverse needs and contexts, educators can create more equitable and effective online learning experiences that support long-term academic success.

Methodology

Context of Virtual Classroom

Although this study was conducted by two authors, one of them served as both the course lecturer and the researcher. Due to the geographic distance, the course was delivered online. The students were enrolled at a satellite campus located three hours away from the main campus, where the lecturer-researcher was based. Importantly, there were no in-person meetings or interactions outside of the virtual classroom. All consultations were conducted through the Line application, which the participants used to schedule appointments. This separation helped maintain professional boundaries and minimize potential bias in data collection and interpretation.

Participants

The participants were 54 third-year Business English majors enrolled in a university's Intercultural Competence course in Thailand during the first semester of 2023. The group included nine male and forty-five female students. Using intact group sampling, the entire existing class was included in the study, as students were already grouped by course enrollment. Since the course was conducted through digital platforms, all participants were familiar with online learning tools and had no difficulty accessing the virtual classroom.

Virtual Classroom with the Inquiry-based Integrative Activities

The final goals of the 12-week course were to increase participants' critical thinking abilities and intercultural sensitivity. It was designed using inquiry-based learning, allowing participants to engage in open-ended activities that encouraged diverse viewpoints while exploring, questioning, and researching intercultural topics. While Google Meet was utilized for online conferencing, lectures, and other educational activities, an interactive online platform was used to support discussions, group projects, and multimedia presentations. The Line application served as the main communication channel.

Moreover, materials, tasks, reflections, and tests pertaining to participants' multicultural awareness were distributed and gathered via Google Forms and Google Classroom. The course resources — including articles, films, case studies, and real-world examples pertinent to the students' cultural backgrounds, were chosen to reflect a broad spectrum of cultural perspectives. The participants were required to complete three intercultural assignments following clear training on surface, shallow, and deep cultural ideas. These assignments, designed to promote group cooperation and a comprehension of the complex layers of culture, were organized as online collaborative activities. The main objective was to take participants beyond the level of casual observations and involve them in a more in-depth investigation of the different factors influencing cultural identities and relationships.

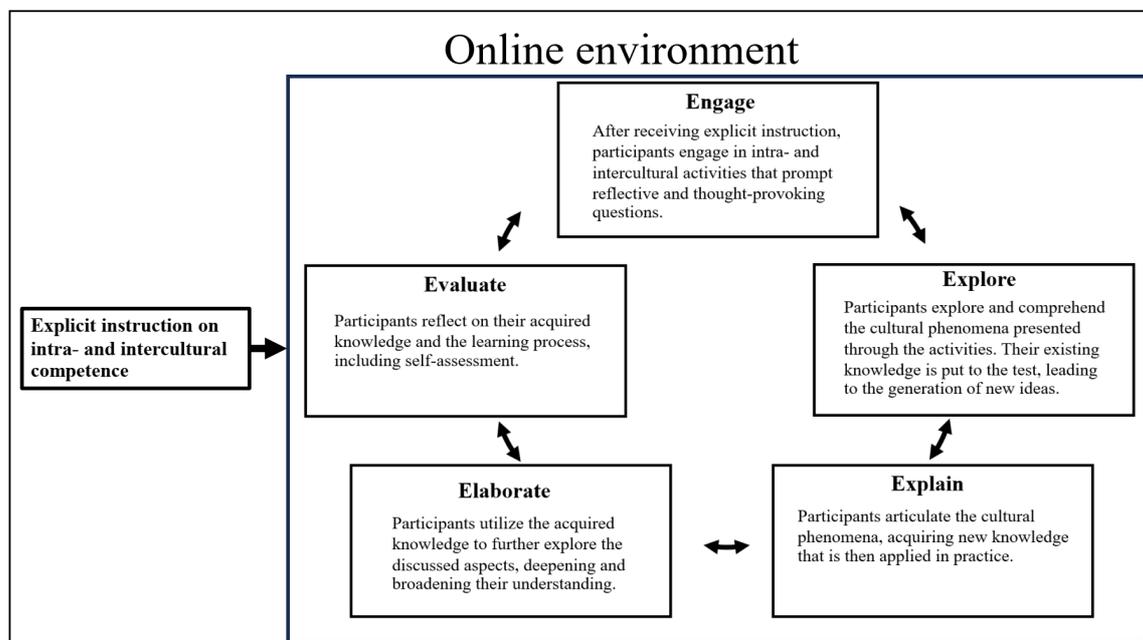
The purpose of these reflections was to record the participants' critical assessments of their educational experience, the realizations they made from taking part in cross-cultural activities, and the ways in which the assignments influenced their comprehension of cultural dynamics. Documenting the participants' changing viewpoints on intercultural awareness required a thoughtful effort. After submitting their reflections, the researcher shared the anonymous responses with the group for discussion. By removing personal identifiers, participants were able to participate in free-flowing, objective conversations without worrying about being judged. This created a secure and productive atmosphere for discussing delicate cultural subjects and promoted meaningful conversation based on common experiences and viewpoints.

Figure 2 depicts a learning cycle based on the 5E Instructional Model (Duran & Duran, 2004), chosen for its alignment with inquiry-based and active learning principles—key elements in fostering intercultural awareness. Following clear instruction, the cycle begins with Engage, where participants reflect on cultural assumptions through thought-provoking questions (Byram, 1997). In Explore, they investigate cultural phenomena to challenge existing understandings and gain insights. The Explain phase involves articulations of interpretations and application of new knowledge to practical situations. In Elaborate, they extend their learning to related areas, deepening their grasp of multicultural concepts. Finally, in Evaluate, participants assess their progress through self-reflection and evaluation. This iterative process underscores that learning is dynamic and continuous, promoting

active engagement, critical thinking, and ongoing reflection—qualities essential for developing intercultural competence (Byram, 1997; Ismailov, 2021).

Figure 2

Inquiry-based Learning through Digital Platforms in a Virtual Classroom



Research Instruments

Questionnaire

The nine-item survey was adapted from Awang-Rozaimie et al. (2011) to measure participants' perceived intercultural awareness. Chosen for its relevance to the Thai context, it was also previously validated, with the Multicultural Awareness Scale (MAS) reporting a reliability coefficient of 0.81 (Awang-Rozaimie et al., 2011). To improve comprehension, the survey was translated into both English and Thai, with minor wording adjustments to align with the Thai educational and cultural context. For instance, the item "I understand and accept that family is defined differently by different cultures (e.g., extended family members, fictive kin, godparents)," was modified to include "stepparents" (พ่อเลี้ยงแม่เลี้ยง) after "godparents" (พ่อทูนหัวแม่ทูนหัว) as the concept of godparents is less common in Thai culture. The original five-point Likert scale (1 = strongly disagree to 5 = strongly agree) was retained. These modifications aimed to reduce language barriers and improve response accuracy. Additionally, three experts validated the content, resulting in an Item-Objective Congruence (IOC) score of 0.94, indicating the survey items are highly relevant and valid.

Participants' reflections (PR)

Following the completion of the in-class projects, the participants were required to engage in a systematic process of reflection regarding their comprehension of intercultural ideas. They submitted written responses via Google Forms and Google Classroom in Week 3, Week 5, and Week 7. These reflections prompted participants to critically evaluate how their intercultural awareness had evolved through collaborative activities, encouraging deeper thought beyond merely completing the tasks. Sample reflection questions included: "Explain how learning has deepened your understanding of different cultures," and "Share specific experiences where you interacted with individuals from different cultural backgrounds, either inside or outside the classroom."

Teacher's note (TN)

The dynamics of the online classroom were captured using the teacher's notes (Figure 3), allowing the researcher to evaluate the usefulness of instructional materials and participants' responses. These notes were systematically recorded after each session, focusing on student engagement, task completion, and any observable difficulties. This regular documentation helped identify learning patterns, challenges students faced during activities, and areas requiring additional support or feedback.

Figure 3

Samples of Teacher's Note

In terms of class participation, students engaged actively with the material presented in the pre-test, particularly in the short-answer sections. This level of involvement reflects their interest in exploring the complexities of intercultural communication. As we continue through the course, I will focus on encouraging students to move beyond surface-level observations and engage more critically with deeper cultural issues.

Many students mentioned that their motivation to learn English stems from different sources, including a desire to understand English media (such as songs, movies, and games), ambitions for better career prospects, and personal encounters with foreigners. Some students also mentioned personal aspirations, such as studying or living abroad, as their driving force.

Teacher's Note for Survey on Important Values (1/23 ChanMon9 ICC)

- Personal experiences (family support, education opening opportunities).
- Societal expectations (money, career influence from family).
- Intrinsic beliefs (freedom and respect as foundations for fulfilling lives).
- Shared values exist, but students also have unique perspectives shaped by experiences.
- Encourages discussions on personal values, societal influences, and cultural impact.
- Activity promoted deeper self-awareness and intercultural understanding.
- some students missing class since they claimed that cannot access to suite -> ask them to renew ID

Data Collection

To determine a baseline of participants' perceived intercultural awareness, a Google Forms questionnaire was administered before the first formal instruction on intercultural elements. Lectures and instructions were delivered via Google Meet. During the instruction session, participants worked individually and in groups using Google Classroom and Google Forms, encouraging reflection and collaboration on cross-cultural assignments. After completing these assignments, each participant submitted a personal reflection via Google Form, allowing for an in-depth evaluation of their educational experience. The teacher's note was also used to record the dynamics of the online classroom, enabling the researcher to monitor participant involvement and interactions and evaluate the overall efficacy of the material presented. To assess if participants' perceptions of intercultural awareness had changed, the Google Forms questionnaire was given out once more during the last week of training.

Data Analysis

The mean and standard deviation (SD) for the questionnaire were computed as part of a quantitative analysis to ascertain the central tendency and response variability of the participants. To determine whether the participants' intercultural awareness had significantly improved after the lesson, a paired-sample *t*-test was used. In addition to the quantitative method, content analysis was used to examine the participants' reflections. These reflections were gathered using Google Forms, and they were divided into recurrent themes that demonstrated how participants' comprehension of intercultural ideas had changed over time. Prior to analysis, all identifying information was eliminated from the data to protect privacy and confidentiality. In a similar vein, content analysis was used to examine the teacher's note. To verify intercoder reliability and bolster the validity of the study's conclusions, two coders completed the initial coding. Their degree of agreement was evaluated using Cohen's Kappa. With a Cohen's Kappa value of 0.831, which indicates a high degree of agreement between the coders, the intercoder reliability was significant.

Findings

Research question 1: To what extent does participation in inquiry-based learning through digital platforms in a virtual classroom enhance the intercultural awareness of Thai tertiary EFL students?

This section explores the differences in the participants' assessed degrees of intercultural awareness before and after participating in IBL in a virtual classroom using digital platforms. Five levels of perceived intercultural awareness were created from the questionnaire results, ranging from "very low" to "very high." (Table 1).

These levels are defined as follows:

Range	Interpretation
4.21 – 5.00	Perceived intercultural awareness at the very high level
3.41 – 4.20	Perceived intercultural awareness at the high level
2.61 – 3.40	Perceived intercultural awareness at the moderate level
1.81 – 2.60	Perceived intercultural awareness at the low level
1.00 – 1.80	Perceived intercultural awareness at the very low level

Table 1

The Perceived Levels of Intercultural Awareness among Participants Before and After They Participated in Inquiry-based Learning through Digital Platforms in a Virtual Classroom (n = 54)

Intercultural Awareness	Before			After		
	M	SD	Level	M	SD	Level
I believe my culture is different from the others around me.	3.46	.86	High	3.63	1.14	High
There are times when racial statements should be ignored.	3.35	1.01	Moderate	3.67	1.08	High
It is important to identify the ethnic groups of a person we meet immediately.	2.96	1.03	Moderate	2.96	1.18	Moderate
I discourage people from using racially insulting statements or behavior.	3.83	1.33	High	4.15	1.00	High
I understand and accept that family is defined differently by different cultures (e.g., extended family members, fictive kin, godparents or stepparents).	3.96	1.06	High	4.22	.74	Very high
I accept and respect that male-female roles in families may vary significantly among different cultures.	3.91	1.03	High	4.17	.80	High
I understand that age and seniority must be considered in interactions with individuals and families.	3.72	.88	High	4.00	.75	High
I accept that religion and other beliefs may influence people's reactions.	4.06	1.00	High	4.37	.73	Very high
I accept and respect that customs and beliefs about daily life vary from culture to culture.	4.02	.94	High	4.37	.76	Very high
Total	3.70	.52	High	3.95	.49	High

Table 1 demonstrates how IBL via digital platforms enhanced participants' intercultural awareness and resulted in notable changes in a number of areas. Prior to the intervention, the mean score for perceived intercultural awareness was high ($M = 3.70$, $SD = .52$), but after the intervention, it improved to a high of $M = 3.95$, $SD = .49$. After the intervention, the means of two items—"I accept that customs and beliefs about daily life vary from culture to culture" and "I understand that family is defined differently by different cultures"—went from 3.96 to 4.22 and 4.02 to 4.37, respectively, moving to the "Very High" level. "I accept that religion and other beliefs may influence people's reactions" had a mean score that rose from high ($M = 4.06$, $SD = 1.00$) to very high ($M = 4.37$, $SD = .73$). Participants' increasing recognition of the significance of religion and personal beliefs in cross-cultural interactions is shown in this significant improvement. "I respect that male-female roles in families may vary significantly among different cultures" (mean increase from 3.91 to 4.17) and "I understand that age must be considered in interactions" (mean increase from 3.72 to 4.00) are two items that consistently maintained a "High" level of intercultural awareness both before and after the intervention. These items show individuals are still aware of age and gender roles in various cultural situations.

Table 2

Paired Sample t-test Results Comparing Before and After Participating in Inquiry-based Learning through Digital Platforms in a Virtual Classroom (n = 54)

Intercultural Awareness	Mean	SD	df	Mean		
				difference	t	p
Pre-instruction	3.70	.52	53	0.25	2.764	.008*
Post-instruction	3.95	.49				

* Significant (2-tailed) $p < 0.05$.

The paired sample t -test produced a t -value of 2.764 and a p -value of 0.008, as seen in Table 2. The statistical significance of the development in intercultural awareness is indicated by the fact that the p -value is less than the significance level of 0.05. As a result, the findings show a noteworthy rise in intercultural awareness.

Research question 2: How does the integration of inquiry-based learning and digital platforms in a virtual classroom facilitate the development of intercultural awareness among Thai tertiary EFL students?

Before the course began, the participants used their first reflection during the introductory week to reflect on how they understood different facets of intercultural awareness. Table 3 provides a useful baseline for comprehending the participants' intercultural awareness starting points based on this first round of reflections. Participants might not have completely realized how language can both

help and hinder cross-cultural communication, even though they were aware of language variations. Their early observations seemed to be limited to acknowledging the presence of cultural differences rather than exploring the subtle ways in which these variations are reflected in social norms. Some participants had preconceived notions about particular cultures that were influenced by how they were portrayed in the media. Furthermore, there did not seem to be much understanding of the variation among cultures and the ways in which personalities might affect actions.

Table 3

The Participants' Understanding of Interculture Aspects Before the Inquiry-based Learning Through Digital Platforms in a Virtual Classroom (n = 54)

No.	Interculture Aspects	Sample excerpts from participants' reflection (PR)
1.	Diverse beliefs and practices	"...People who have different beliefs or customs..." "...People who have different cultures..." "...People who have different beliefs or ways of life..." "...People from different cultures have different practices, such as food, living, clothing, and religion..."
2.	Language differences	"...People who speak, eat, and dress differently...." "...People who speak different languages or who already have their own culture..."
3.	Lifestyle variations	"...People whose lifestyles or activities differ due to their country or birthplace..." "...People who have some differences from us, such as climate..." "...People who have different lifestyles from ours..."
4.	Cultural heritage	"...Practices that have been done since the past and passed down to the present..." "...People who were born in different societies..." "...Differences that can still coexist harmoniously..."
5.	Interaction and exchange	"...They are individuals with different cultures from ours but are ready to exchange cultures and communicate with each other..." "...Groups with different beliefs that can still exchange with each other..."

The following samples show how well participants engage in IBL using digital platforms in a virtual classroom, as noted in the teacher's note (TN) during the lesson. These quotes from the teacher's note show how students' learning journeys are shaped by their prior intercultural experiences,

which inspires them to investigate and value diversity of viewpoints—a fundamental component of IBL.

Active engagement

The participants' active involvement with intricate and open-ended intercultural subjects indicated the effectiveness of IBL. In addition to taking part in debates, this engagement required them to critically reflect on how they understood different components of culture. These extracts show that, in line with the core principles of IBL, participants were critically investigating and evaluating cultural issues rather than just passively taking in information.

TN Excerpt 1: “Students were actively engaging with intercultural topics, reflecting on their understanding of culture, communication, and societal norms.”

TN Excerpt 2: The class, consisting of 51 responses, reflected an active engagement in the discussion of intercultural topics, particularly focusing on surface, shallow, and deep cultural concepts."

TN Excerpt 3: "Many students highlighted cultural diversity, communication practices, and societal norms as key takeaways from the course content thus far."

Use of digital platforms

The incorporation of Google Classroom as an online platform is essential for promoting IBL. It facilitates group discussions as well as solitary inquiry, giving students a forum to exchange ideas and expand their comprehension of challenging subjects. These claims attest to the efficient use of digital platforms in creating an interactive learning environment where students can participate deeply in the course material.

TN Excerpt 4: Participation in Google Classroom is consistent, with students using it to submit assignments and engage in discussions.

TN Excerpt 5: "From the teacher's perspective, the participation in Google Classroom has been promising, with most students submitting their reflections and engaging in online discussions."

TN Excerpt 6: "Throughout the pre-test, students exhibited an interest in understanding the layered nature of culture... This level of involvement reflects their interest in exploring the complexities of intercultural communication."

Critical thinking and reflection

While some students might only interact superficially, many are starting to acquire the critical thinking abilities needed for further in-depth research on cultural subjects. There is a rising recognition of the complexity of international encounters as seen by the comments on topics like stereotypes and communication failures. The aforementioned passages underscore the significance of critical reflection

in the educational process, stressing the need for students to be able to apply theoretical knowledge to real-world situations to build intercultural competence.

TN Excerpt 7: Some students reflect on deeper cultural issues, such as stereotypes and communication breakdowns.

TN Excerpt 8: "Responses regarding the concept of 'face' in intercultural communication varied widely... indicating a need to revisit and expand on this topic in future discussions to ensure a clearer, more nuanced understanding."

TN Excerpt 9: "Students also seemed to value the inclusion of practical examples in the curriculum, which helped connect theoretical content with real-life applications."

Challenges and solutions

The teacher's remark lists difficulties that pupils encounter, such as focusing and handling their homework in a virtual setting. It also emphasizes how proactive they were in resolving these challenges, which is essential for encouraging adaptation and resilience in IBL.

TN Excerpt 10: Students use tools like translation apps to overcome language barriers and manage communication during discussions.

TN Excerpt 11: "Some students noted difficulties in maintaining focus during online classes and voiced concerns about the frequency and intensity of assignments. This highlights a potential area for adjustment—finding a balance between engaging content and manageable workloads to ensure students can fully absorb the material."

TN Excerpt 12: "These challenges sometimes created communication barriers, but students developed strategies, such as using translation apps, context clues, and body language, to overcome these obstacles.

Roles of past intercultural experiences

Students' participation in debates about personal values and cultural exchanges exemplifies how real-world experiences enrich IBL. By connecting abstract ideas with real-world situations, these reflections help students gain a deeper awareness of diversity and intercultural interactions.

TN Excerpt 13: Students discuss personal values and share their experiences with people from different backgrounds, enriching the inquiry-based learning process.

TN Excerpt 14: "Many students mentioned their motivation to learn English stems from different sources, including a desire to understand English media... and personal encounters with foreigners."

TN Excerpt 15: "A significant number of students discussed their experiences interacting with people from different cultural backgrounds, both inside and outside the classroom."

Following the lesson, participants have a better understanding of their own and other cultures, which greatly advances intercultural awareness. The above snippets present strong proof of how participants' multicultural awareness improved following education. They show a shift from a rudimentary awareness of cultural differences to a more profound comprehension of language as a tool for connection, the significance of dispelling stereotypes, and the necessity of tact in cross-cultural communication. This development shows how well the instructional strategy involved participants in meaningful learning experiences and critical reflection. The following is how their reflections demonstrated their increasing international awareness:

Cultural differences in social norms

To better understand cultural identities, participants consider the value of visual manifestations of culture, such as clothing. Their recognition of sharing different cultural facets shows they are aware of the complexity of social norms and have engaged with them. This admission denotes a greater consciousness of cultural differences in social conventions. Participant exposure to diverse cultural practices broadens their perspectives and improves their ability to negotiate social interactions.

PR Excerpt 1: "I have also exchanged many aspects of culture, whether it be language or cultural understanding, food, living, beliefs, including jokes about the countries we are exchanging with."

PR Excerpt 2: "I was surprised to see how people from different countries dress, especially in religious or traditional attire. It's a visual reminder of their cultural identity."

PR Excerpt 3: "I learned about the significance of certain cultural practices (such as food customs, religious attire, and familial norms) and developed an appreciation for the diversity in communication styles."

Challenging stereotypes and misconceptions

Participants' preconceived beliefs about different cultures are confronted and challenged during the learning process, which results in a more respectful and knowledgeable understanding of diversity.

PR Excerpt 4: "I have to admit that at first, I thought Chinese people were fast and messy eaters because of what I saw on TikTok, but you can't judge everyone based on that."

PR Excerpt 5: "At first, I thought all Chinese people were probably loud, but now I understand that it depends more on the individual."

Language as a bridge for cultural exchange

Participants show a renewed sense of confidence when negotiating language hurdles, indicating a realization that hard work and flexibility may lead to productive communication. They now acknowledge the variations in communication methods, suggesting a more complex understanding of how language affects cross-cultural relationships.

PR Excerpt 6: "During the last 2 weeks, it really challenged me. It is about first time I being a buddy to a Malaysian friend. At first, I wasn't sure if we could communicate, but because I was confident, I can do it, I got through it."

PR Excerpt 7: "Language is an obvious barrier, and when I met my Malaysian buddy, I realized the way we greet and communicate is different. They use more formal ways, while we are more casual."

PR Excerpt 8: "Because most people in the world can speak English, we can share the culture with each other from another country even online easily."

PR Excerpt 9: "I would like to share a case from my experience of interacting with people from different countries and cultures. I want to emphasize that language learning is incredibly important for me, regardless of the language itself. Culture is deeply rooted within individuals, so it's not just about adapting on culture myself to fit in, but also about adapting oneself to the culture."

Discussion

Inquiry-based Activities and Intercultural Awareness in Thai EFL Tertiary Education

This study provides evidence that IBL may contribute to the development of students' intercultural awareness in EFL contexts. The findings align with Byram's (1997, 2021) emphasis on intercultural communicative competence (ICC) as an essential component of language education. Thai learners require more than memorization of grammar and vocabulary; they benefit from actively engaging with cultural perspectives that shape language use (Bates, 2019). IBL, through exploration and reflective discussion, encourages such engagement by prompting learners to question assumptions and consider diverse viewpoints. Previous studies (e.g., Abaniel, 2021; Lotter & Ramnarain, 2025; Onyema et al., 2019) reveal that IBL models integrated with digital tools support critical thinking, collaboration, and the development of 21st-century skills. Although the present findings are context-specific, they suggest IBL can serve as a promising approach to enhancing intercultural

understanding—particularly when combined with culturally responsive teaching strategies (Marshall & DeCapua, 2013)—in today’s globally connected classrooms.

IBL significantly increases intercultural awareness among Thai EFL students, an important outcome given that, even in culturally rich environments, traditional language instruction in Thailand often shields students from a range of global perspectives (Namsaeng & Ambele, 2024). In this study, the participants showed a significant change from a superficial recognition of cultural differences to a deeper understanding of intercultural connections. Initially relying on media-driven stereotypes, participants later revealed critical engagement with cultural issues and a growing ability to challenge assumptions in the qualitative reflections after the IBL lessons. This supports Keselman's (2003) findings that inquiry-based education fosters critical thinking. Participants' ability to articulate their thoughts regarding communication philosophies, cultural norms, and the importance of cultural sensitivity suggests there is a developing understanding of language as a cross-cultural communication tool. O'Dowd (2012) similarly emphasizes that understanding language barriers and diverse communication styles is essential for intercultural competence and successful international relationships.

Esmaeili and Kuhi (2023) state the importance of instructional tasks in developing intercultural proficiency. The inquiry-based activities in this study provided Thai EFL students with opportunities to collaborate, analyze, and reflect on cultural differences, resulting in significant shifts in their perspectives. The inquiry-based activities on these digital platforms enhance students' ability to assess cultural issues and they encourage active learning as opposed to information absorption. Taking on tasks that require research, analysis, and reflection fosters the critical thinking skills necessary to navigate complex cross-cultural scenarios (Keselman, 2003). Such active involvement is crucial for promoting intercultural awareness because it forces students to critically assess their own cultural preconceptions and acknowledge the complexity of other cultures (Keselman, 2003).

For Thai university students with limited exposure to other cultures, these tasks can be eye-opening, promoting intercultural understanding and personal development (Risager, 2007). Participants in this study exhibited greater reflective and critical thinking skills, supporting Keselman's (2003) assertion that inquiry-based learning environments foster more in-depth conversation about challenging topics like cultural differences. Guth and Helm (2010) highlight the importance of telecollaboration, which confirms our findings that active engagement with intercultural themes leads to valuable learning experiences. The participants’ opinions regarding stereotypes and cultural norms reveal the value of inquiry-based techniques in fostering intercultural understanding.

Feasibility of Virtual Classrooms in Promoting Complex Concepts in the Context of Remote Areas

Digital platforms like Google Classroom and telecollaboration have influenced virtual classrooms, especially in developing intercultural awareness among Thai EFL students. These tools

facilitate collaboration, material organization, and reflection. Google Classroom is useful for managing coursework and assignments, enabling self-paced study, easy submissions, and discussions. This flexibility helps students process intercultural concepts before sharing their thoughts. Also, the platform supports reflective learning, letting students review discussions, check feedback, and refine their understanding. Noor et al. (2022) explain that digital platforms improve motivation and knowledge by offering structured yet flexible learning.

Besides managing coursework, digital tools enable the understanding of complex intercultural topics, leading to valuable learning experiences. IBL, supported by digital tools, facilitates critical thinking and cultural engagement, aligning with Byram's (1997, 2020) intercultural education framework. Encouraging discussions about cultural differences and interaction with people from different backgrounds leads to a deeper understanding of culture. Research on IBL confirms that students learn better when exploring topics independently and reflecting on their learning (Duran & Duran, 2004; Namsaeng & Ambele, 2024; Ismailov, 2021).

Despite these advantages, virtual classrooms present some challenges. One key issue is the lack of real-time interaction in Google Classroom, limiting students' active discussions. While providing a comment section and discussion boards, the platform does not replace face-to-face or live online talks, where students get quick responses and exchange ideas naturally. Some students lose motivation due to less interactive learning. Similarly, telecollaboration connects students with classmates and teachers from different places, exposing them to various communication styles, but there are technology-related challenges. Some students face internet instability, or must share devices, making online sessions difficult and learning experiences uneven. Velinov and Bleicher (2023) claim that while digital learning can motivate students in global virtual teams, technical problems can hinder participation.

Digital learning enhances intercultural competence by promoting multicultural discussions and providing access to various cultural materials. Technology create space for collaboration and self-reflection (Becker et al., 2020; Dabbagh & Bannan-Ritland, 2005). Due to global connectivity, education must equip students with skills to handle various cultural situations (Risager, 2007). The expansion of digital tools in education increases chances for IBL and multicultural awareness. Many Thai EFL students, already familiar with technology, can now communicate with international peers and access different cultural content (Bozkurt et al., 2020). Ismailov (2021) supports that digital learning improves students' cultural comprehension. To address these issues, incorporating more real-time activities, such as live discussions or small group work, can stimulate engagement. Additionally, providing offline materials could help those with weak internet access. A balanced workload with more interactive lessons rather than traditional assignments can also help. Finally, training students, especially in rural areas, in digital skills will help them use online learning platforms effectively.

Limitations and Suggestions for Future Study

This study has several limitations. Firstly, the small sample size and focus on Thai EFL tertiary students limit its generalizability. While the findings suggest that IBL may support the development of intercultural awareness, larger and more diverse samples are needed to explore its effectiveness across different contexts. Additionally, the short intervention period may not capture IBL's long-term impact; longitudinal designs could provide more comprehensive insights. The reliance on self-reported data introduces potential bias; incorporating qualitative methods, such as interviews or classroom observations could enhance validity through data triangulation. Another limitation involves the use of an intact class. Future research could strengthen validity by using comparison groups or randomized controlled trials.

Technology barriers, particularly in remote areas, may affect student engagement and performance. More research is needed to address these challenges and improve accessibility. Future research should explore IBL's long-term impacts in EFL contexts on intercultural competence, compare different cultural contexts, explore teacher preparation, and use mixed-methods designs with broader demographics. Digital platforms and IBL are essential for promoting abstract ideas like intercultural sensitivity. Understanding their broader impact and assessing their long-term benefits on students' intercultural competency and engagement in a variety of cultural situations is crucial.

Conclusion

Intercultural competency is essential in globalized society for effective communication in various cultural contexts. This study demonstrates IBL when paired with digital platforms, has the potential to promote intercultural awareness among Thai EFL tertiary students. The findings demonstrate that via structured study and engaged engagement with intercultural concepts, students developed a deeper understanding of intercultural dynamics and transcended superficial recognition of cultural differences. Digital technology and virtual classrooms facilitated meaningful student conversations and prompted critical reflection on their personal cultural assumptions and prejudices.

Despite the study's promising findings, further research is needed to address its limitations and explore IBL's long-term impacts in diverse contexts. Future studies should adopt mixed-methods designs, include diverse demographics, and utilize longitudinal approaches to assess IBL's effects on intercultural competence. In summary, integrating digital platforms with IBL is a transformative approach to EFL teaching that enhances intercultural awareness. As education evolves in a globalized society, it is imperative to create effective frameworks that allow students to thrive in a range of cultural situations.

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Ethical statement

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