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Enhancing Intercultural Communication Competence through Situated Learning: A Mixed- Methods Study of International Students in Taiwan

Lin, Pei-chih
National Tsing Hua University, Taiwan

pclin@mx.nthu.edu.tw
ORCID 0000-0003-1688-3867

ABSTRACT: *This study investigated the development of intercultural communication competence (ICC) among international students in Taiwan, examining the role of situated learning in fostering adaptation within authentic, nonclassroom contexts. A convergent parallel mixed-methods design was employed across two student cohorts. Quantitative data were collected through pre- and post-surveys using the Integrated Model of Intercultural Communication Competence (IMICC) and the Intercultural Adjustment Potential Scale (ICAPS). Qualitative data were gathered from students' reflective journals, posters, and semistructured interviews. In a two-phase study structure, the first phase implemented a sequential situated learning experience, while the second phase compared the effects of direct (market visits) and indirect (documentary viewing) situated learning approaches. Quantitative findings revealed a modest overall increase in students' self-assessed ICCs but a notable decrease in the cognitive competence subscale. Thematic analysis of the qualitative data explained this paradox, identifying cognitive disequilibrium as the central mechanism of development. Students' prior assumptions were destabilized, leading to a critical shift from unconscious to conscious incompetence. The study concludes that ICC development is a nonlinear process catalyzed by the productive struggle of cognitive disequilibrium. Situated learning effectively facilitates this by immersing students in authentic challenges that dismantle oversimplified cultural assumptions. Pedagogical implications for designing intercultural curricula that embrace productive disequilibrium are discussed.*

Keywords: Cognitive Disequilibrium, Intercultural Adjustment, Intercultural Communication Competence, International Students, Mixed Methods, Situated Learning, Transformative Learning

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INTRODUCTION

Global mobility is a hallmark of contemporary globalization. Recent data from the IOM (2024) and UNESCO (2023) reveal a record 6.9 million international students, with tertiary-level migration more than doubling over two decades. For economies such as Taiwan, this growth positions international student recruitment and retention as vital to competitiveness and innovation.

Despite these opportunities, international students, defined as individuals pursuing a degree at a higher education institution outside their country of citizenship (OECD, 2023), frequently encounter substantial challenges in cross-cultural adaptation. Successful adaptation, defined as individuals' adjustment of communication behaviors to facilitate effective intercultural interaction (Gebregergis et al., 2020), remains uneven. Empirical research has demonstrated that higher levels of intercultural communication competence (ICC) are positively correlated with better adaptation outcomes and psychological well-being (Wang et al., 2020). However, traditional pedagogical approaches, such as lectures and discussion-based instruction, have a limited impact on the cultivation of these competencies.

Situated learning theory (Brown et al., 1989) offers an alternative, positing that knowledge and skills are best developed through active participation in authentic contexts. This approach emphasizes engagement in real-world activities and integration into communities of practice (Lave & Wenger, 1991), where learners acquire knowledge through direct immersion and practical problem-solving, processes that are particularly relevant to adapting across cultures.

This study adopts a situated learning approach within an intercultural communication course in Taiwan, immersing students in authentic environments and culturally meaningful activities to develop communicative competence and adaptive capacity. By embedding learning in real-world contexts, this intervention

addresses gaps in traditional pedagogy and offers a more effective framework for fostering intercultural skills among globally mobile students.

Research Questions

The following research questions are proposed:

- Q1: What are the principal adaptation challenges encountered by international students, and how do these challenges impact their communication and adaptability?
- Q2: In what ways can situated learning, through both direct (market visits) and indirect (documentary viewing) methods, facilitate understanding and integration into new cultural contexts, thereby enhancing intercultural adaptive potential?

LITERATURE REVIEW

Intercultural Communication Competence (ICC)

As cross-cultural interaction expands globally, ICCs, defined as individuals' ability to understand, adapt, and interact successfully in intercultural contexts (Gudykunst & Kim, 2003), become essential. Cultural differences frequently generate misunderstandings and conflicts in intercultural interactions. Research has demonstrated that the mastery of ICCs effectively reduces these conflicts (Munezane, 2021) while simultaneously enhancing individuals' adaptability in diverse intercultural contexts (Gebregergis et al., 2020).

The ICC comprises three interrelated dimensions (Arasaratnam, 2009). The cognitive dimension encompasses knowledge and critical awareness of cultural norms, values, and communication systems, enabling individuals to recognize and analyze cultural differences (Chen & Starosta, 1998; Spitzberg & Changnon, 2009). The affective dimension involves attitudes, empathy, and emotional resilience that foster openness to cultural diversity and the capacity to manage intercultural encounters constructively (Arasaratnam, 2009; Chen & Starosta, 1998). The skill dimension captures behavioral competencies—verbal and nonverbal communication strategies, active listening, conflict resolution, and adaptability—required for effective interaction across cultural contexts (Deardorff, 2006; Spitzberg & Changnon, 2009). In higher education, these dimensions collectively predict international students' ability to collaborate, manage culture shock, and achieve academic success.

Given that ICCs directly facilitate cross-cultural adaptation and academic success, identifying effective pedagogical strategies is imperative. While intercultural training enhances cultural sensitivity (Landis & Bhagat, 1996), traditional classroom methods remain insufficient for developing these competencies. Situated learning offers a promising alternative by embedding skill development in authentic contexts (Lave & Wenger, 1991).

Situated Learning Theory

Situated learning theory (Brown et al., 1989) posits that meaningful learning occurs through active participation in real-world contexts, where knowledge is inseparable from the activity, context, and culture in which it is developed. Learners progress from peripheral participation to fuller membership in communities of practice (Lave & Wenger, 1991).

Situated learning is particularly relevant for the development of ICCs, which encompasses not only factual knowledge but also the ability to interpret cultural cues, manage emotions, and adapt behavior across diverse contexts (Deardorff, 2006; Spitzberg & Changnon, 2009). Intercultural learning inherently requires situated action—participants must shift perspectives, adjust values, and respond appropriately to fluid, real-life situations. The focus on practice and authentic participation thus aligns with the contextual and experiential demands of ICC development.

Perkins (1992) argues that education enables learners to retain, comprehend, and apply knowledge actively, balancing acquisition and practical use. This is particularly relevant where lecture-based instruction is dominant, as in many East Asian classrooms, which can build conceptual knowledge but may leave students ill equipped for unpredictable real-world situations (Shinnar & Chang, 2025). In second language acquisition, for example, immersive, context-rich activities have proven superior to purely didactic methods for promoting communicative competence. This principle extends to cultural specificity, where an emic, or insider, approach is crucial. Zhu and Bargiela-Chiappini (2013) introduced the situated cultural learning approach (SiCuLA) to emphasize active participation in diverse cultural environments, enhancing learners' ability to recognize cultural variation and adapt meaningfully within and beyond classroom settings.

The pedagogical benefits of situated learning are well documented: it connects theory and practice, promotes engagement, and encourages peer and expert collaboration (Brown et al., 1989; Herrington & Oliver, 2000). For international students, it offers unique advantages by providing contextualized opportunities for intercultural communication and adaptability (Avcılar & Gök, 2022), catalyzing knowledge transfer while enhancing intercultural sensitivity and resilience in unfamiliar settings.

Direct and Indirect Situated Learning: Market Visits and Documentary Views

Market visits and documentary viewing represent two distinct yet complementary situated learning strategies for advancing intercultural competence. Market visits offer direct situated learning, immersing students in authentic sociocultural environments where communication and observation of cultural values occur organically (Kolb, 1984; Lave & Wenger, 1991). As cultural microcosms, local markets require learners to navigate the nuances of everyday interaction (Avcılar & Gök, 2022), challenging them to adapt spontaneously and fostering the

cognitive development and affective empathy essential for intercultural communication (Deardorff, 2006).

Conversely, documentary viewing provides indirectly situated learning through structured, mediated access to diverse cultural narratives. Functioning as curated cultural windows, documentaries facilitate reflective observation and critical analysis of historical and societal dynamics in a controlled environment (Aufderheide, 2008; Herrington & Oliver, 2000), allowing students to examine stereotypes and consider multiple perspectives without the unpredictability of direct field engagement (Arasaratnam, 2009).

Integrating direct immersion with media-based analysis creates a balanced learning experience, combining the immediacy of lived cultural engagement with structured opportunities for reflection. This dual approach frames the present investigation of how different situated learning modes cultivate the competencies necessary for adaptation. Therefore, this study addresses two central research questions: (1) What are the principal adaptation challenges encountered by international students, and how do these challenges impact their communication and adaptability? (2) In what ways can situated learning, through both direct (market visits) and indirect (documentary viewing) methods, facilitate understanding and integration into new cultural contexts, thereby enhancing intercultural adaptive potential?

RESEARCH DESIGN

Two-phase study structure

This study employed a two-phase analysis. Phase one (spring 2024) involved a collective situated learning experience that combined documentary viewing and market visits for all students. Phase Two (spring 2025) divided students into two learning tracks: Track A (market visits first) and Track B (documentary viewing first), enabling direct comparison of intervention sequences.

Mixed-methods approach

This study employed a convergent parallel mixed-methods design (Johnson et al., 2007), enabling robust triangulation: qualitative findings contextualize and explain quantitative results, revealing both the effectiveness and the mechanisms of situated learning interventions from participants' perspectives.

Course Design and Research Procedure

This study was conducted within a 16-week English-taught intercultural communication course offered as a general education elective in an international program at a national university in northern Taiwan. The research design implemented two distinct pedagogical approaches in consecutive academic years.

Phase One (2024): The curriculum followed a sequential structure: theoretical instruction (weeks 1–7), situated learning activities (weeks 8–10), and continued theoretical learning (weeks 11–16). Throughout phase one, the students

were organized into groups with evenly distributed nationalities to foster intercultural collaboration. In week 8, all groups viewed documentaries on Taiwanese and Indonesian street food cultures; weeks 9–10 involved collaborative field visits to local markets for direct cultural observation and interaction. Pretest assessments were administered at week 6, and posttests were administered at week 11 to evaluate the impact of these integrated, situated learning activities.

Phase Two (2025): This experimental design maintained theoretical instruction (weeks 1–10, 13–14) covering identical curricular content supplemented by guest lectures on local Taiwanese and Indonesian cultures (weeks 9–10). To ensure balanced representation and maximize intercultural interaction, students were assigned to two learning tracks during the situated learning phase (weeks 11–12) by evenly distributing nationalities across groups: Track A participated in market field visits, while Track B engaged in documentary viewing in classroom settings. This design enabled a direct comparison of experiential and mediated cultural learning approaches. Pre- and posttest assessments were administered at weeks 8 and 11, respectively.

Direct and indirect situated learning interventions

The direct intervention involved nationality-mixed team visits to local Taiwanese and Indonesian markets for authentic sensory engagement and cultural observation. The indirect intervention consisted of classroom screenings of curated documentaries on Taiwanese (33 min) and Indonesian (31 min) street food cultures, providing structured cultural narratives and guided reflection in a controlled setting.

Research Participants

The participants were international students enrolled in the Intercultural Communication course (2024: $n=30$; 2025: $n=29$; see Table 1). All met the English proficiency requirement (IELTS 6.0+). Students were organized into six nationality-balanced groups to enable intercultural collaboration and controlled comparisons of interventions.

At the start of each phase, the students were informed about the situated learning activities and associated surveys. This study was reviewed and approved through expedited review by the Research Ethics Review Committee of National Tsing Hua University (REC approval No. 11307HS125). All participants provided written informed consent prior to data collection. Participation was voluntary and did not affect course grades. No personally identifiable information was collected; all survey, interview, and reflection data used coded identifiers (e.g., 24-CR-1 for course reflections, 25-I-001 for interviews).

Table 1: Class Participants' Demographics

Category		2024 (N=30)	2025(N=29)
Gender	Male	60%	59%
	Female	40%	41%
Nationality	Indonesia	57%	38%
	Vietnam	7%	21%
	Thailand	20%	14%
	Asia-Others	10%	17%
	Non-Asia	7%	10%
Grade	Freshman	23%	41%
	Sophomore	57%	17%
	Junior	13%	17%
	Senior	7%	24%
Major	Humanities	17%	38%
	Business	40%	14%
	Engineering	43%	41%
	Others	0%	7%

Data Collection Instruments

This study employed validated quantitative instruments to assess changes in students' intercultural communication competence and adaptation. In phase one, the Integrated Model of Intercultural Communication Competence (IMICC) questionnaire was administered, while phase two included both the IMICC and Intercultural Adjustment Potential Scale (ICAPS) instruments. The IMICC scale (Arasaratnam et al., 2010) assesses the cognitive, affective, and skill domains of intercultural competence through 15 items rated on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The ICAPS questionnaire (Matsumoto et al., 2001; Humintell, 2023), administered in Phase two, evaluates psychological factors integral to intercultural adjustment through 55 items across four subscales: Emotional Regulation, Openness, Flexibility, and Critical Thinking (seven-point Likert scale).

Qualitative data collection included semistructured interviews, end-of-course reflections, and student posters to explore the processes underlying intercultural communication and adaptation. A random sample of students participated in interviews guided by a flexible protocol covering educational background, intercultural experience, learning processes, and adaptation (Kvale, 2007). This approach enabled in-depth exploration of students' perspectives and experiences. Course reflections and final-term posters, submitted at the semester's end, were analyzed using qualitative content analysis with established coding procedures (Braun & Clarke, 2022). This method facilitated the identification of thematic patterns related to intercultural competence development and adaptation outcomes. Triangulating these sources enriched the understanding of how students engaged with situated learning interventions (Creswell & Creswell, 2023).

Data Analysis Procedures

During Phase One, 28 participants completed the IMICC pretest, and 23 completed the posttest. In Phase Two, 26 participants completed both the IMICC and ICAPS pretests, and 24 participants, comprising 11 from Track A and 13 from Track B, completed the posttests. All the quantitative data were analyzed using SPSS statistical software. However, owing to the limited number of participants in both phases, a descriptive analysis was employed to outline trends in students' intercultural communication competence and adjustment potential.

In Phase One, reflections from 29 participants were collected and coded; in Phase Two, interviews were conducted with 11 students, and 16 additional participants submitted class reflections. All the interviews were transcribed and, together with reflections and posters, anonymized and coded in MAXQDA. Coding involved an initial review by a trained assistant to highlight relevant content related to situated learning and intercultural competence, followed by a second coder to confirm and assign keywords (Schreier, 2012). The coding scheme was refined iteratively for reliability (Hsieh & Shannon, 2005). The analysis utilized nine thematic categories (Table 2) derived from the literature. The lead researcher conducted a final review, and keyword frequencies were quantified across the multicoder coding framework.

Table 2: Content Analysis Category

Category	Definition
Knowledge Application	The ability to apply intercultural knowledge to analyze situations and interpret cultural phenomena (Spitzberg & Changnon, 2009).
Intercultural Observation	Direct awareness and interpretation of intercultural dynamics through analytical and evaluative reflection (Spitzberg & Changnon, 2009).
Cultural Comparison	Analysis and synthesis of cultural similarities and differences, involving critical evaluation of assumptions (Spitzberg & Changnon, 2009).
Emotional Connection	Emotional engagement and empathy that facilitates affective depth and emotion management in intercultural adaptation (Matsumoto et al., 2001).
Cultural Coexistence	Willingness to engage in harmonious, empathetic, and nonjudgmental interaction with cultural diversity (Chen & Starosta, 1998; Matsumoto et al., 2001).
Learning Motivation	Curiosity and willingness to engage across cultures, indicating positive intercultural dispositions (Chen & Starosta, 1998).
Intercultural Empathy	Emotional resonance and perspective-taking that bridges affective and regulatory dimensions of

	adaptation (Arasaratnam, 2009; Matsumoto et al., 2001).
Sensory Experience	Immersion in novel sensory and cultural contexts that engage affective and behavioral domains through open-mindedness and adaptability (Matsumoto et al., 2001).
Communicative Interaction	Verbal, nonverbal, and behavioral adaptation in real contexts, reflecting flexibility essential for effective intercultural action (Deardorff, 2006).

Note. *M* = mean, *SD* = standard deviation. No internal table lines; just for header and final line. 5 pts of space above and 10 pts of space below Note.

An important methodological note concerns the relationship between thematic categories and framework-specific frequency counts in Table 3. The qualitative content analysis employed a two-stage remapping procedure. In the first stage, all highlighted content was classified into nine thematic categories derived from the literature (see Table 2). In the second stage, these thematic categories were independently mapped onto the dimensional structures of each quantitative instrument: the three IMICC dimensions (cognitive, affective, skill) and the four ICAPS dimensions (critical thinking, emotional regulation, openness, flexibility). Each framework's dimensional criteria served as an evaluative filter; consequently, a given thematic category could yield different frequency counts across the IMICC and ICAPS columns if the relevant student statements met the threshold of one framework's dimension but not the other. For example, intercultural empathy is classified under the affective dimension in the IMICC, which captures emotional resonance and perspective-taking, but under the openness dimension in the ICAPS, which requires evidence of cognitive readiness and adaptive willingness. This distinction means that statements coded as empathetic under IMICC's broader affective criterion may not satisfy ICAPS's narrower openness threshold, producing legitimate differences in counts. Additionally, within each framework, codes were further distinguished by context: "competence" captures students' broad discussion of their intercultural communication abilities, whereas "situated learning" captures statements specifically referencing documentary viewing or market visit activities.

RESULTS

Quantitative Findings

IMICC Questionnaire Results

The IMICC results revealed contrasting patterns between the 2024 and 2025 cohorts. The 2024 cohort began with higher baseline intercultural competence (pre $M = 4.78$), with minimal change at posttest ($M = 4.75$; -0.03). In 2025, students started with lower mean scores ($M = 4.48$), and outcomes varied by intervention: the market group showed a slight increase (post $M = 4.50$; $+0.02$),

while the documentary-first group exhibited a minor decrease (post $M = 4.45$; -0.03).

Postintervention, compared with both the 2025 market and documentary groups, the 2024 cohort maintained the highest mean score. However, this difference reflects the 2024 cohort's higher initial competence. Notably, only the 2025 market intervention produced a net gain, narrowing the preexisting performance gap across cohorts. The market sequence thus emerged as the more effective scenario for modestly improving intercultural competence from a lower starting point.

Dimension-level analysis

Dimension-level analysis revealed sequence- and dimension-specific effects. In 2024, the sequential intervention (lecture \rightarrow documentary \rightarrow market) led to the greatest change in the cognitive dimension, which declined by 0.34 points ($M = 4.72$ to 4.38), indicating that the sequence likely challenged students' initial cognitive assumptions. The affective dimension experienced a slight positive change ($M = 4.98$ to 5.01 ; $+0.03$), whereas the skills dimension improved the most ($M = 4.58$ to 4.73 ; $+0.15$), reflecting greater development in intercultural behavioral competence.

For 2025, the sequence differed across dimensions. In the cognitive dimension, the market group declined ($M = 4.16$ to 3.96 ; -0.20), whereas the documentary group increased ($M = 4.16$ to 4.25 ; $+0.09$). In the affective domain, the market group increased ($M = 4.76$ to 4.88 ; $+0.12$), and the documentary group decreased ($M = 4.76$ to 4.60 ; -0.16). Both groups experienced modest gains in skills: market ($M = 4.39$ to 4.46 ; $+0.07$) and documentary ($M = 4.39$ to 4.43 ; $+0.04$). These findings suggest that market visits improved affective outcomes but reduced cognitive self-assessment, whereas documentary viewing enhanced cognitive scores but reduced affective gains.

2024 and 2025 Overall Cross-Year Comparison

A cross-year comparison revealed clear sequence effects. Direct market exposure consistently challenged cognitive schemas, resulting in declines in both 2024's (-0.34) and 2025's market groups (-0.20), while documentary viewing preserved or improved cognitive scores. Affective outcomes were more variable: direct engagement promoted positive attitudes, whereas media-based interventions sometimes reduced them. Skill growth was most pronounced in 2024's comprehensive sequential design, with more modest gains from individual modalities in 2025. These patterns suggest that the order and combination of experiential activities meaningfully shape the nature of intercultural development.

An important caveat for interpreting these cross-cohort differences concerns the demographic composition of each sample. The 2024 cohort was predominantly composed of sophomores (57%), while the 2025 cohort included a substantially larger proportion of freshmen (41%) and a more varied grade distribution. This demographic shift has meaningful implications. Sophomores,

by definition, have completed at least one full academic year in the host country, affording them greater accumulated exposure to Taiwanese cultural norms, social networks, and daily communicative routines. This extended residence period is a well-established facilitator of intercultural competence development (Gebregergis et al., 2020; Wang et al., 2018). Consequently, the higher baseline scores observed in the 2024 cohort ($M = 4.78$ vs. $M = 4.48$) may partially reflect this greater academic maturity and accumulated host country experience rather than differences in latent intercultural aptitude. Furthermore, the 2024 cohort's minimal postintervention change (-0.03) may represent a ceiling effect, wherein students who have already achieved a moderate level of intercultural adaptation through daily immersion have less room for measurable growth on self-report instruments. In contrast, the lower starting point and greater responsiveness to market-based intervention in 2025 ($+0.02$) may indicate that situated learning is particularly impactful for students at earlier stages of their sojourn, when intercultural schemas are still actively forming. Given these compositional differences, the cross-year comparisons in this study should be interpreted as illustrative of intervention-related trends rather than as controlled experimental contrasts.

ICAPS Questionnaire Results

The ICAPS results for the 2025 cohort indicated a pretest mean of $M = 4.10$. Following the interventions, the market-first group showed a slight decline to $M = 4.04$, whereas the documentary-first group maintained its overall mean at $M = 4.10$. Accordingly, further analysis focuses on dimension-specific patterns rather than overall mean changes.

2025 Cohort Performance by Dimension

The 2025 cohort displayed distinct patterns across the four ICAPS dimensions in response to direct (market-first) and indirect (documentary-first) interventions.

The outcomes differed according to the intervention. The market-first group experienced a slight decline in Emotional Regulation ($M = 4.13$ to 4.06 ; -0.07), whereas the documentary-first group experienced a substantial increase ($M = 4.13$ to 4.33 ; $+0.20$). These findings suggest that documentary-based situated learning enhances students' ability to manage emotions during intercultural adjustment more effectively than direct market experience does, possibly because of the opportunity for reflection and emotional distance that films provide.

Both interventions resulted in reduced openness. The scores decreased from $M = 4.24$ to 4.18 in the market-first group and from $M = 4.24$ to 4.14 in the documentary-first group. This consistent decrease may indicate that exposure to new or complex cultural dynamics, whether experienced directly or via documentaries, prompted students to reassess and become more cautious in self-rating their openness, reflecting heightened awareness of intercultural challenges.

The change in flexibility depended on the intervention. In the market-first group, scores remained stable, whereas the documentary-first group showed a modest gain ($M = 3.64$ to 3.77). The improvement associated with documentary-first exposure suggests that mediated experiences facilitate some increase in adaptive capacity, whereas direct interaction alone may not be sufficient for short-term development in this domain. This could imply that flexibility, as measured here, is a trait-like quality that is less reactive to singular direct experiences and may benefit from scaffolded, reflective learning contexts.

Both groups experienced a decline in critical thinking, with the market-first group decreasing from $M = 4.44$ to 4.31 and the documentary-first group declining more markedly from $M = 4.44$ to 4.25 . These findings align with similar patterns seen in the IMICC cognitive dimension, particularly after market-based interventions. This reduction may reflect an initial destabilization of analytical confidence or a shift toward experiential, rather than strictly cognitive, processing when confronted with novel cultural situations.

Overall, the ICAPS results reveal nuanced, dimension-specific effects of both direct and indirect situated learning: documentary viewing was associated with improved emotional regulation and flexibility, whereas both interventions led to greater caution in self-reported openness and a reduction in critical thinking scores.

The results of the joint quantitative analyses reveal that the intervention sequence meaningfully shapes development: direct immersion strengthens affective confidence but destabilizes cognitive self-assessment, whereas mediated observation bolsters cognitive frameworks but may temper affective growth. The ICAPS data added a critical layer by showing that self-perceived communication competence does not always align with psychological adaptation potential. For example, the market-first group's affective confidence (IMICC) increased even as ICAPS Emotional Regulation and Openness decreased, suggesting possible affective overestimation during intense immersion. These patterns challenge linear models of intercultural development, revealing a dynamic interplay where temporary regression in one area may catalyze progress in another—which is what the results frame as “productive disequilibrium”. These patterns now set the stage for qualitative findings, which explore the lived experience underlying these quantitative shifts.

Quantitative Findings

IMICC Questionnaire Results

A content analysis of student work revealed consistent thematic patterns and important variations across the 2024 and 2025 cohorts (Table 3). In 2024, posters and reflections showed a near-equal focus on the affective ($n=21$) and cognitive ($n=20$) dimensions, whereas skills ($n=6$) were referenced much less frequently. Cognitive responses centered on cultural comparison and intercultural observation, whereas affective themes highlighted cultural coexistence and emotional connection. Communicative interaction was the sole skill referenced.

This distribution illustrates that reflective and presentational tasks encouraged students to analyze and express perceptions and feelings about intercultural experiences but rarely prompted detailed discussions of their own behavioral adaptations.

In 2025, the introduction of semistructured interviews added analytical depth, revealing new insights into students' meaning-making. Postactivity interviews revealed that classroom synthesis played a key role in helping students transform direct sensory experiences into cognitive insights. This metacognitive layer became visible as students explicitly described how structured reflection consolidated learning and clarified the link between affective and analytical engagement. The data demonstrated an enhanced awareness of the processes by which emotional and observational experiences are integrated into intellectual understanding—a nuance less evident in the 2024 poster and reflection data alone.

Across both years, the cognitive and affective dimensions dominated qualitative narratives, whereas skill development remained underrepresented. The 2024 cohort, following a sequential design, emphasized cultural comparison through poster-based reflections. The 2025 cohort, particularly through interviews, prioritized intercultural observation and emotional connection. The metacognitive awareness captured in 2025 likely reflects the methodological advantages of interviews rather than a fundamental difference in learning, emphasizing the value of layered qualitative approaches to capture student sense-making after situated learning interventions.

ICAPS Content Analysis

Content analysis of the posters and interviews of the 2025 cohort yielded rich qualitative data corresponding to the four ICAPS dimensions (Table 3). The distribution of themes revealed a strong emphasis on cognitive and analytical processes as mechanisms for managing intercultural encounters.

Critical thinking (n=90) was the most frequently articulated ICAPS dimension, indicating its central role in the students' learning process. The thematic content was overwhelmingly characterized by sensory experience (n=58), as the students consistently grounded their analysis in direct observations, sounds, and other sensory details. This was complemented by references to cultural comparison (n=17) and knowledge adaptation (n=15). This pattern suggests that students' critical thinking was not an abstract exercise but a situated process of making sense of lived, interactive experiences and attempting to understand them from multiple perspectives.

The dimension of Emotional Regulation (n=45) was the second most common dimension, with thematic analysis revealing how students managed their responses to unfamiliar stimuli. The vast majority of the references fell under Emotional Connection (n=39), alongside mentions of Intercultural Empathy (n=6). This finding indicates that students regulated their emotional states primarily by forming affective bonds and making a conscious effort to understand the feelings of others rather than relying solely on detached analytical frameworks.

Openness (n=38) was characterized by students' cultural differences in terms of their level of cognitive engagement. The dominant themes were learning motivation (n=20) and sensory experience (n=18), indicating that students actively sought to understand diverse cultural practices through both curiosity-driven engagement and direct sensory immersion. Notably, there were no references coded as Intercultural Empathy (n=0) within the Openness dimension, suggesting that while students demonstrated a cognitive willingness to engage with new ideas, their articulated openness was more analytical and motivational than empathetic—their expressions of empathy, when present, were better captured under the affective criteria of the IMICC framework rather than the cognitive-adaptive threshold of ICAPS Openness.

Flexibility (n=34), the least frequently coded dimension, was expressed entirely through a single theme: communicative interaction (n=34). These findings suggest that, for this cohort, flexibility was demonstrated behaviorally through engagement in real-time intercultural dialog. Rather than articulating a general willingness to adapt, the students' responses indicated that their flexibility was enacted and proven through the practical act of communicating with others in the situated context.

Together, these patterns suggest that intercultural development for these learners was a process of actively making sense of lived experiences, managing emotions through connection, and enacting adaptation through dialog.

Table 3: IMICC and ICAPS Content Analysis Results

Content Analysis Category	IMICC	ICAPS	IMICC		ICAPS	
	Dimension	Dimension	Competence	Situated Learning	Competence	Situated Learning
Knowledge Application			19	7	8	7
Intercultural Observation	<i>Cognitive</i>	Critical Thinking	8	29	29	29
Cultural Comparison			6	9	8	9
Emotional Connection			11	19	19	20
Cultural Coexistence		Emotional Regulation	1	3	3	3
Learning Motivation	<i>Affective</i>		17	9	11	9
Intercultural Empathy			Openness	3	0	0
Sensory Experience		0		10	8	10
Communicative Interaction	<i>Skill</i>	Flexibility	14	18	16	18

Note. Frequency counts for the same category may differ across IMICC and ICAPS columns because each framework's dimensional criteria served as an independent

evaluative filter (e.g., Intercultural Empathy: IMICC Competence = 3, ICAPS Competence = 0; see Data Analysis Procedures). "Competence" = students' broad discussion of ICC abilities; "Situated Learning" = statements specifically referencing documentary or market activities.

Explanatory insights from qualitative data for quantitative trends

Table 4 integrates quantitative scores with qualitative theme frequencies, providing a comparative framework for the convergence and divergence analysis that follows.

Integrating IMICC Qualitative and Quantitative Findings

The most consistent finding across both datasets was the prominence of the affective dimension. This domain was the second most frequently referenced domain in students' qualitative reflections, with a combined total of 73 mentions, indicating that emotional and attitudinal responses were central to the learning experience. This qualitative emphasis aligns with the quantitative data, which show that the affective dimension was a site of notable change. For instance, the 2025 market group demonstrated a notable increase in affective scores (+0.12), and the 2024 cohort sustained exceptionally high scores. While the 2025 documentary group saw a slight decline (-0.16), the overall quantitative volatility in this area, paired with the high volume of qualitative comments, confirms that the interventions consistently and powerfully engaged students on an emotional level.

A marked divergence appears in the cognitive dimensions. Qualitatively, this was the most frequently discussed topic, with 78 references, demonstrating intense cognitive engagement, observation, and analysis. However, deep processing did not translate into uniform quantitative gains. In fact, both the 2024 cohort (-0.34) and the 2025 market group (-0.20) experienced decreases in their cognitive scores, whereas only the documentary group experienced an increase (+0.09). This apparent contradiction suggests that the intervention initiated a "cognitive shock," challenging students' preexisting schemas. The high volume of qualitative reflections captures the active mental work involved in this process, while the decrease in the score reflects the unsettling but productive experience of moving away from simplistic cultural categories toward greater cognitive complexity.

The second key difference is found in the skills dimension of the framework. Quantitatively, the students showed modest but consistent improvement in their behavioral skills across all the conditions (2024: +0.15; 2025 market: +0.07; 2025 documentary: +0.04). However, this was the least-mentioned theme in the qualitative data, with only 32 references.

Table 4: Quantitative and Qualitative Results of IMICC and ICAPS

Quantitative Result										Qualitative Result				
IMICC					ICAPS					IMICC		ICAPS		
Dimension	2024		2025			Dimension	2025			Content Analysis Category	Com	Situating Learning	Com	Situating Learning
	Pre	Post	Pre	Post A	Post B		Pre	Post A	Post B					
Cognitive	4.72	4.38	4.16	3.96	4.25	Critical Thinking	4.44	4.31	4.25	Knowledge Application	19	7	8	7
										Intercultural Observation	8	29	29	29
										Cultural Comparison	6	9	8	9
Affective	4.98	5.01	4.76	4.88	4.6	Emotional Regulation	4.13	4.06	4.33	Emotional Connection	11	19	19	20
										Cultural Coexistence	1	3	3	3
										Learning Motivation	17	9	11	9
Skill	4.58	4.73	4.39	4.46	4.43	Flexibility	3.64	3.64	3.77	Intercultural Empathy	3	0	0	0
										Sensory Experience	0	10	8	10
										Communicative Interaction	14	18	16	18

Note. Com refers to competence.

This discrepancy indicates that while students were developing practical communication and interaction abilities, this growth largely occurred outside their conscious, reflective focus. Their self-reported experiences centered on the internal work of thinking and feeling, even as their external behaviors subtly improved. This highlights how quantitative metrics can successfully capture behavioral developments that self-reflection may overlook.

Together, these convergences and divergences demonstrate that only a mixed-methods approach can fully capture the complex interplay of internal and external development— affective engagement, productive cognitive restructuring, and implicit behavioral growth.

Integration of ICAPS Qualitative and Quantitative Findings

ICAPS quantitative and qualitative data reveal a complex landscape of intercultural adjustment characterized by instructive divergence rather than straightforward convergence. The relationship between students' qualitative reflections and their self-assessed competence varied considerably across dimensions, offering nuanced insights into the learning process.

The most striking divergences occurred where high qualitative engagement coincided with decreased quantitative scores. For instance, in critical thinking, the most frequently discussed theme (n=90), self-ratings declined for both the market (-0.13) and documentary (-0.19) groups. A similar pattern emerged for Openness, a moderately discussed theme (n=38), where scores also decreased (-0.06 and -0.10, respectively). This paradox does not indicate a failure to develop these competencies. Instead, it suggests that the interventions prompted a substantial cognitive load, compelling students to confront the limitations of their existing frameworks. The resulting decrease in confidence, therefore, reflects a shift from unexamined assumptions to a more realistic self-assessment—a hallmark of productive struggle.

Other dimensions demonstrated context-dependent development. Emotional Regulation was the second most frequent qualitative theme (n=45), yet the quantitative results differed: the market group's score decreased slightly (-0.07), while the documentary group's score increased notably (+0.20). This suggests that the narrative-based film provided effective coping strategies, whereas the direct market experience proved more emotionally taxing. Similarly, the flexibility scores improved for the documentary group (+0.13) but remained stable for the market group, despite it being a less central theme in student reflections (n=34), indicating that skill acquisition can occur implicitly and is influenced by the specific learning modality.

This analysis confirms that declining scores coupled with high reflection signify deep engagement with intercultural complexity rather than regression—a pattern further illuminated by the synthesis of both frameworks.

Synthesizing IMICC and ICAPS Findings

Synthesizing both frameworks reveals that intercultural learning is a nonlinear, multifaceted process. The shared paradox between Cognitive/Critical Thinking dimensions—high reflective engagement alongside declining self-ratings—reframes development as productive destabilization rather than linear acquisition. Affective and regulatory domains were context dependent, reflecting the emotional challenges of adjustment, whereas the skill and flexibility dimensions demonstrated implicit behavioral improvement outside students' conscious reflection. This integrated analysis underscores the necessity of mixed-methods designs to capture the counterintuitive interplay between internal experience and external competence.

DISCUSSION

Our integrated findings reveal that intercultural development is a complex, nonlinear process rooted in cognitive disequilibrium. This discussion interprets this central finding as the primary adaptation challenge (RQ1), delineates how situated learning facilitates this process (RQ2), and outlines the theoretical and pedagogical implications.

The Primary Adaptation Challenge: Navigating Cognitive Disequilibrium

Our first research question addressed the principal challenges students face and their impact on communication. The findings converge to indicate that the most pronounced challenge is a state of cognitive disequilibrium. This is most clearly evidenced by the paradoxical quantitative result: while overall ICC scores increased modestly, students' self-assessed cognitive competence scores (both IMICC and ICAPS) decreased notably postintervention.

We interpret this statistical decline not as a regression but as empirical support for a shift from unconscious incompetence to conscious incompetence (Howell, 1982). The qualitative findings illuminate this process vividly through students' own voices. Students' reflections revealed that immersive experiences, such as the market visit, acted as a “disorienting dilemma” (Mezirow, 1991), shattering their preconceived and abstract notions of cultural understanding. One participant articulated this shift with striking clarity:

Before, I thought if food tastes good, just eat it; if people are nice, just chat with them...we never questioned how things came to be, how they developed, or what we did not know behind them. However, [after the activities], when we encounter issues, we approach them without directly judging people by our own values. (25-I-004)

This account captures the essence of productive disequilibrium: a prior state of unexamined assumptions (“we never questioned”) is disrupted by direct cultural engagement, giving way to a conscious recognition of one's limited

perspective. Similarly, another student recounted how her instinctive reaction at the market shifted during the visit itself:

My first reaction was not 'Is this hygienic?' but rather 'Oh, this is their culture! ...For me, this is a kind of growth. (25-I-002)

Direct engagement forced them to confront the inadequacy of their existing mental frameworks, leading to a more realistic—and lower—self-assessment of their cognitive abilities. This state of heightened awareness, while uncomfortable, is the foundational step for authentic learning. Thus, in answering RQ1, the primary challenge is the internal cognitive struggle itself, which impacts communication by revealing the gap between knowing about a culture and knowing how to act within it.

Mechanisms of Development: Situated Learning as a Catalyst for Transformative Insight

Our second research question asked how situated learning facilitates intercultural adaptation. Our findings indicate that its primary mechanism is the intentional induction of the cognitive disequilibrium described above. The program's effectiveness lies not in providing cultural answers but in creating authentic problem spaces that compel students to generate new, more complex questions about their own perspectives.

The study's two-phase design clarified the complementary roles of direct (market visit) and indirect (documentary viewing) methods. As demonstrated across both cohorts, direct immersion served as the primary catalyst for disequilibrium by providing immediate, embodied feedback on communication attempts that made students' cognitive gaps apparent. In contrast, the indirect method offered a scaffolded context for reflection, allowing students to analyze their experiences and connect them to broader cultural themes. This design provides a nuanced answer to RQ2: situated learning enhances adaptive potential by leveraging direct immersion to trigger essential cognitive dissonance while utilizing indirect methods to facilitate the crucial processes of reflection and integration that guide students toward a more sophisticated cultural understanding.

Implications

Theoretically, these findings challenge linear, stage-based models of intercultural development. Our data suggest a more recursive and dynamic process in which learners can simultaneously exhibit sophisticated analytical insight and low levels of cognitive confidence. This resonates more strongly with cyclical models of experiential learning (Kolb, 1984) and, most notably, the theory of transformative learning (Mezirow, 1991), where a “disorienting dilemma” is the prerequisite for perspective transformation.

Furthermore, the combined use of the IMICC (competence) and ICAPS (adjustment potential) frameworks proved highly insightful. This allowed us to empirically distinguish between having knowledge and possessing the adaptive

potential to use it under stress. The decline in cognitive scores alongside a stable or increasing overall ICC score suggests that true competence development requires first deconstructing a learner's initial, often inflated, sense of knowledge.

Pedagogically, the key implication is the need for intercultural educators to embrace and facilitate “productive disequilibrium”. The goal should not be to protect students from discomfort but to create challenging yet supportive environments where they can safely confront their own limitations. This requires balancing high-impact immersive experiences with structured, critically reflective practices such as guided journaling, debriefing sessions, and facilitated peer dialog. Ultimately, fostering intercultural competence is less about teaching cultural facts and more about cultivating the capacity to thrive in ambiguity.

CONCLUSION

This study demonstrates that situated learning enhances intercultural competence not through a simple accumulation of skills but by immersing students in a state of productive disequilibrium. This process compels a fundamental recalibration of self-assessed competence, where a quantitative decline in cognitive scores signals a deeper, more authentic engagement with cultural complexity. By revealing this recursive interplay between experience and self-reflection, our findings challenge linear developmental models and instead support theories of transformative learning. Ultimately, this research underscores the indispensable value of mixed-methods approaches. Integrating quantitative and qualitative data was crucial for capturing the gap between abstract knowledge and the messy, embodied reality of adaptation, offering a more nuanced framework for educators and theorists alike.

The interpretations of this study's findings are contextualized by three primary limitations. First, the modest sample size constrains the statistical power of our analyses and limits the generalizability of the findings. Second, the cultural heterogeneity of the cohorts, while ecologically valid, introduces unaccounted-for variance. The absence of baseline cultural dimension assessments complicates disentangling intervention effects from prior orientations. Additionally, the demographic shift between cohorts (predominantly sophomores in 2024 vs. freshmen in 2025) introduces host country residence duration as a confound. Future studies should control for these variables as covariates. Finally, the study's cross-sectional design, confined to a single semester, offers only a preliminary glimpse into developmental processes, thereby precluding definitive claims about the intervention's long-term efficacy. These limitations suggest several directions for future research. Larger samples would enhance statistical validity and enable systematic assessment of cultural dimensions, permitting robust analysis of how these variables moderate developmental trajectories. Moreover, longitudinal designs are needed to determine whether these initial shifts develop into durable competencies.

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Author bio

PEI-CHIH LIN, PhD, is an Assistant Professor in the International Bachelor Degree Program, Tsing Hua College at National Tsing Hua University, Taiwan. Her major research interests include intercultural communication, international student adjustment, international student performance prediction, and English as a medium of instruction (EMI) teaching strategies. Email: pclin@mx.nthu.edu.tw
