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Designing and assessing experiential learning pedagogy for an intercultural communicative competence training module: a quasi-experimental study

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Intercultural communicative competence (ICC) is crucial for future workers in the global job market, where many feels unprepared to communicate effectively with culturally diverse colleagues. Therefore, university students must develop this skill to stay competitive. Experiential learning pedagogy, focused on ICC training, can enhance final-year students' abilities, offering an alternative to traditional teaching methods. To examine the effectiveness of experiential learning pedagogy in a redesigned ICC module for undergraduates, a multiple-group pre-test and post-test quasi-experimental design was adopted. Data were collected from 31 undergraduate students at two public universities in Indonesia. The module was redesigned to incorporate experiential learning pedagogy, providing various opportunities through face-to-face training workshops. Validated and reliable instruments measured students' experiential level with the pedagogy and their competencies in intercultural communication. Descriptive and inferential statistics were used to analyze the data. Participants showed a substantial enhancement in the Intercultural Communicative Competency Scale after the training workshop, as evidenced by higher post-test scores compared to pre-test scores. Additionally, the post-test data demonstrated a moderate improvement in participants' expectations from the pre-test for the experiential learning pedagogy. The findings prove the effectiveness of both the content and the pedagogy of the module. Furthermore, these modules should continually integrate more interactive elements to better meet learners' needs.

KEYWORDS

intercultural communication, experiential learning, intercultural communicative competence, diversity workplace, Indonesia

1 Introduction

Intercultural communicative competence (ICC) is rooted in theories that emphasize the ability to interact effectively and appropriately across diverse cultural contexts. Byram (1997) defines ICC as the combination of linguistic skills, cultural knowledge, and attitudes that enable individuals to engage meaningfully with cultural diversity while maintaining respect and understanding. In today's globalized workplace, where employees frequently interact with colleagues from different cultural backgrounds, ICC is crucial for fostering better relationships,

reducing misunderstandings, and improving overall productivity (Matveev and Nelson, 2004). Experiential learning, as described by Kolb and Plovnick (1974), plays a key role in developing ICC by involving learners in reflective and hands-on experiences. This approach helps individuals practice communication in intercultural scenarios, enhancing their practical skills through reflection, conceptualization, and application. By incorporating experiential learning into training programs, university students—who are future employees—can develop the intercultural skills needed for effective collaboration in diverse work environments (Kolb, 1984).

Research shows that workers who communicate effectively with employers and peers from different cultures experience greater confidence and acceptance in the workplace (Lustig and Koester, 2010). However, many workers feel stressed due to their lack of skills in communicating with people from diverse backgrounds (ATD, 2021). To address this issue, it is essential that university students, as future professionals, develop strong intercultural communicative competence. Researchers have explored worker experiences to design training guidelines, but there remains a significant shortage of specialized intercultural communication training for both workers and students. Training modules that use experiential learning techniques—such as simulations and role-playing exercises—allow participants to practice and internalize intercultural skills in realistic settings (Lustig and Koester, 2010). These activities not only enhance self-awareness, empathy, and adaptability but are also crucial for effective intercultural communication.

Despite the clear benefits, specialized training in intercultural communication remains underdeveloped. Both students and workers would benefit from more targeted training programs. Studies have shown that focused training can significantly enhance intercultural communication with employers and colleagues from different cultures (British Council, 2021; Gudykunst, 2005). This study seeks to evaluate a redesigned training module titled "Effective Intercultural Communicative Competency for Current and Future Workers." The module integrates experiential learning pedagogy, based on the framework by Kolb and Plovnick (1974), and is tailored to improve intercultural communication skills specifically among final-year students preparing to enter the workforce.

2 Background

Intercultural communication skills are essential for workers in diverse workplaces and form the foundation for high-quality communication (Gudykunst and Mody, 2002). Poor intercultural communication in multicultural contexts has been directly linked to high turnover rates and low morale among workers (Culture Wise, 2023). It often results in misunderstandings, marginalization, and lower communication satisfaction levels. Research has confirmed that poor intercultural communication is a primary cause of communication breakdowns, leading to increased conflicts, reduced collaboration, and lowered productivity (Gudykunst and Mody, 2002; Corporate Wellness Magazine, 2023). Employees may feel isolated and stressed, further increasing turnover rates. Additionally, companies may face diminished team cohesion and impaired problem-solving abilities, hindering their ability to leverage diverse perspectives and affecting innovation and global competitiveness (Mohamad et al., 2018; Culture Wise, 2023; OJIN: The Online Journal of Issues in Nursing, 2023). Therefore, effective intercultural communication is crucial for enhancing positive outcomes for workers, their superiors, and co-workers.

Digital competencies are essential for enhancing intercultural communication skills among students in higher education. As educational environments become increasingly globalized, students must effectively navigate diverse cultural contexts (Guerrero-Quiñonez et al., 2023). This requires not only traditional intercultural skills but also strong digital literacy. Digital competencies allow students to engage with and understand various cultural perspectives through online platforms, social media, and digital communication tools (Guillén-Gámez et al., 2024; Palacios-Rodríguez et al., 2025). These skills foster meaningful interactions and collaborations with peers from different backgrounds, enabling students to adapt their communication styles to various cultural contexts. Moreover, digital tools provide access to a wider range of cultural content and learning resources, helping students develop a nuanced understanding of intercultural dynamics (Parker et al., 2024). Consequently, integrating digital competencies into educational programs is crucial for preparing students to thrive in multicultural and digital environments.

Previous literature (Gudykunst and Kim, 2003; Lustig and Koester, 2010) has emphasized the crucial role of education and experience in fostering effective intercultural communication. It is observed that students and recent graduates often encounter challenges in communicating with others due to their limited exposure and training in intercultural communicative competency (Gudykunst and Kim, 2003; Lustig and Koester, 2010). This lack of proficiency was identified as a significant factor contributing to the perceived inefficacy in communication among final-year students (Gudykunst and Kim, 2003; Lustig and Koester, 2010). Additionally, scholars have underscored the importance of developing intercultural communication competency during internships and early career stages as pivotal educational endeavors (Deardorff, 2006; Samovar et al., 2014). Consequently, it becomes imperative to impart effective intercultural communication skills to final undergraduate students, enabling them to practice and refine their intercultural communicative competence, thereby enriching their experiences in the global working environment (Gudykunst and Kim, 2003; Deardorff, 2006; Lustig and Koester, 2010; Samovar et al., 2014).

Currently, there is a lack of intercultural communicative competency training for final-year undergraduates (Smith and Johnson, 2015; Brown and Lee, 2019), primarily because such training is not integrated into classroom settings (Smith and Johnson, 2015; Brown and Lee, 2019). There is a pressing need to introduce standalone workshops that incorporate innovative pedagogies, enabling intercultural communicative competency training to be both participatory and experiential (Parry, 2008). Experiential learning, as an advanced constructivist pedagogical approach, proves to be an effective strategy (Smith and Johnson, 2015; Brown and Lee, 2019). The experiential learning cycle involves systematically integrating face-to-face engagements to facilitate meaningful interactions among resources, instructors, and students (Smith and Johnson, 2015; Brown and Lee, 2019). By employing a variety of techniques in pedagogy, a flexible, student-centered teaching environment can be created, fostering synchronous communication between students and their educational facilitators (Smith and Johnson, 2015; Brown and Lee, 2019).

Indonesian universities are actively promoting enhancement programs for their students to foster holistic development and competitiveness. For example, The Ministry of Education, Culture, Research, and Technology in Indonesia has implemented policies aimed at integrating character education into higher education curricula. These policies emphasize the development of moral values, ethics, and national character among university students. The goal is to cultivate a holistic educational environment that not only imparts academic knowledge but also fosters personal and social responsibility (Ministry of Education, Culture, Research, and Technology, 2021). Addressing the diverse learning needs presents a challenge, but experiential learning emerges as a promising approach in the local context. Previous studies underscore the importance of integrating theory-based and well-planned contextualized innovative approaches into experiential learning, particularly concerning specific subject matters (Hellebrandt et al., 2017; Kolb, 2014). The effectiveness of experiential learning cycles has been demonstrated in intercultural communication training across various settings (Bennett, 2008; Deardorff, 2006). However, it's crucial to acknowledge that while experiential learning offers strengths, its effectiveness is highly contextual, which poses challenges in generalizing findings across subjects and geographical areas (Hellebrandt et al., 2017; Kolb, 2014). Therefore, successful implementation among students from one cultural background may not necessarily translate to similar outcomes for another population. This study represents the first endeavor to evaluate the effectiveness of a theory-based experiential learning cycle in an intercultural communicative competence module designed for final-year undergraduates.

3 Literature review

3.1 The intercultural communicative competence (ICC)

Intercultural Communicative Competence (ICC) plays a crucial role in facilitating successful interactions across diverse cultural contexts. Over the past three decades, numerous models have been developed to guide individuals in navigating such encounters (e.g., Ladegaard, 2018; Arasaratnam, 2016). Among these models, Byram's framework (1997, 2008; Byram et al., 2001) stands out as particularly noteworthy. Byram's approach extends beyond mere language proficiency to encompass cultural dimensions of communication, making it especially relevant in intercultural settings (Matsuo, 2014). Rather than solely focusing on linguistic skills, Byram emphasizes the importance of effective communication in a foreign language with individuals embracing diverse cultural values, assumptions, and viewpoints.

Byram's model delineates five variables, also known as savoirs, pivotal to Intercultural Communicative Competence (ICC). The first variable, attitude (savoir être), is characterized by "curiosity and openness, readiness to suspend disbelief about other cultures and belief about one's own" (Byram, 1997, p. 91), necessitating the capacity to perceive the world through diverse perspectives. Knowledge (savoir), the second aspect, encompasses "knowledge of social groups and their products and practices in one's own and one's interlocutor's country, as well as knowledge of general processes of societal and individual interaction" (Byram, 1997, p. 94), emphasizing comprehension of social dynamics and interaction mechanisms. Interpreting and related skills (savoir comprendre), the third aspect, denote the "ability to interpret a document or event from another culture, explain it, and relate it to documents or events from one's own" (Byram, 1997, p. 98), highlighting the importance of assimilating and integrating new information with existing knowledge.

The fourth element, discovery and interaction skills (savoir apprendre/faire), encompasses the "capacity to gain new insights into a culture and its practices, and the ability to employ knowledge, attitudes, and skills in real-time communication and interaction" (Byram, 1997, p. 98), underscoring the interactive nature of the model. Finally, critical cultural awareness (savoir engager) is defined as "the aptitude to critically evaluate perspectives, practices, and products in one's own and other cultures and countries, based on explicit criteria" (Byram, 1997, p. 101). This ideally fosters receptiveness to novel ideas and values. Individuals who develop ICC—known as intercultural speakers—are thus adept at "effectively and appropriately bridging their own cultural background with encountered cultural distinctions" (Young and Sachdev, 2011, p. 83).

3.2 Experiential learning cycle

The Experiential Learning cycle, introduced by Kolb and Plovnick (1974), outlines a systematic approach to learning through experience. The cycle begins with Concrete Experience, where learners immerse themselves in intercultural interactions, engaging in activities like role-playing scenarios or cultural immersion exercises. Subsequently, the Reflective Observation stage prompts learners to reflect on their experiences, often through journaling or group discussions, facilitating the internalization and understanding of their reactions and observations. Moving to the Abstract Conceptualization stage, learners integrate theoretical frameworks and concepts, such as Hofstede's cultural dimensions, to contextualize their experiences within broader intercultural communication theories. Finally, the Active Experimentation stage encourages learners to apply their newfound knowledge and skills in real-world settings, promoting continuous learning and adaptation (Kolb and Plovnick, 1974). This cyclical process not only enhances learners' intercultural competence but also fosters a deeper, more personal understanding of cultural diversity and communication dynamics.

Integrating Byram's Intercultural Communicative Competence (ICC) model with Kolb and Plovnick's experiential learning cycle provides a comprehensive framework for developing intercultural communication skills through practical experiences. Byram's model emphasizes five key variables: attitude, knowledge, interpreting and related skills, discovery and interaction skills, and critical cultural awareness (Byram, 1997). These variables highlight the importance of adopting an open attitude, acquiring cultural knowledge, interpreting cultural cues, actively engaging in intercultural interactions, and critically evaluating cultural perspectives. Kolb and Plovnick's experiential learning cycle, on the other hand, consists of four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). This cycle emphasizes the iterative process of learning through experience, reflection, conceptualization, and action. By integrating these models, learners can engage in experiential activities such as cultural immersion programs or intercultural group projects, reflecting on their

experiences, conceptualizing strategies for effective communication based on Byram's variables, and actively experimenting with new approaches in real-world intercultural interactions (Young and Sachdev, 2011). This integrated approach fosters holistic learning and development in intercultural communicative competence, empowering individuals to navigate diverse cultural contexts with confidence and effectiveness.

4 Research framework

This study utilizes Byram's intercultural communicative competence framework (1997) along with the Experiential Learning Cycle (Kolb and Plovnick, 1974). In designing the module to enhance experiential learning among final-year university students, a comprehensive framework emphasizing learning through direct experience, reflection, conceptualization, and experimentation was adopted. This model proves particularly effective in the context of intercultural communication, facilitating the development of practical skills and cultural sensitivity through a structured yet dynamic process. Additionally, the module integrates five elements of authentic ICC (Byram, 1997) to expose students to real-life scenarios and prepare them for their future professional endeavors. The inclusion of ICC learning concepts aims to provide final-year students, who may lack prior exposure to intercultural work environments, with a practical and relevant learning experience. The conceptual framework of the study is illustrated in Figure 1.

5 Research method

The study aimed to assess the effectiveness of a redesigned intercultural communicative competence module for final-year university undergraduate students. The hypothesis tested was as follows: Students are expected to demonstrate significantly higher scores on both the Experiential Learning Scale and the Intercultural Communicative Competence Scale from baseline to the end of their exposure to the Experiential Learning Cycle (ELC) program.

5.1 Design

A multiple group pre-test and post-test quasi-experimental design was used.

5.2 Participants

The study targeted final-year undergraduate students from two public universities in Indonesia, specifically in Surakarta (16 participants) and Madura (15 participants). All eligible final-year students were invited to join the training program, which was structured as a standalone intercultural communicative competence module, separate from their compulsory academic courses. Inclusion criteria required participants to be in their final semester of undergraduate study, regardless of their specialization or major, and to possess proficiency in reading, writing, and understanding English. Students from lower academic levels (below year three) were excluded from the study.

5.3 Sample size calculation

Convenience sampling was adopted to recruit 31 enrolled final-year students. Determining the minimum sample size for quasi-experimental studies is crucial for ensuring adequate statistical power and validity of the results. Quasi-experimental designs often lack randomization, increasing the risk of biases and necessitating a sufficiently large sample size to obtain reliable results. A commonly referenced rule of thumb is a minimum of 30 participants per group for detecting medium effect sizes with sufficient power (Cohen, 1992). This benchmark is supported by additional research. For example, Bujang et al. (2017) and van Belle (2011) note that a minimum sample size of 30 per group is often used in preliminary studies to ensure sufficient power and reliability of statistical tests. Similarly, Julious (2005) and Adamu et al. (2018) emphasizes that having at least 12 participants per group is essential for a pilot study, but for full-scale quasi-experimental studies, at least 30 participants per group is

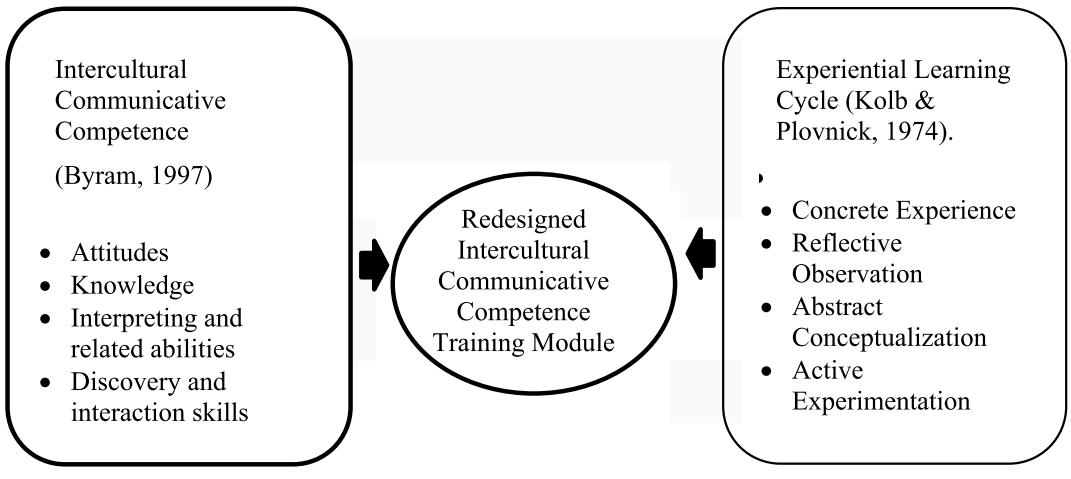

FIGURE 1
Theoretical framework to guide intercultural communication learning pedagogy.

recommended to achieve more robust findings. These recommendations underscore the importance of having an adequate sample size in quasi-experimental studies to enhance the internal and external validity of the findings.

5.4 Intervention

The module was revamped into an experiential learning cycle (ELC) training module and introduced to students through a one-day workshop. This module delved into five parts: (1) Concrete Experience, (2) Reflective Observation, (3) Abstract Conceptualization, (4) Active Experimentation, and (5) Debriefing and Closing, requiring approximately 6 h, including preparation time, as mandated for this communication module. The content of the module is based on Byram's (1997) model and data from a previous study on intercultural communicative competency among Indonesian migrant workers in Malaysia (Djatmika et al., 2024). During the workshop, students and facilitators convened face-to-face, adhering to the prescribed guidelines. Eighty percent of the original didactic face-to-face workshop content was transformed into an iterative learning process involving experience, reflection, conceptualization, and action, delivered within an integrated face-to-face learning environment. To bolster students' engagement with the course material, various activities, simulations, discussion forums, and reflection exercises were incorporated into the training program. In an effort to infuse theoretical content with practical significance, face-to-face lectures presented authentic intercultural scenarios relevant to the topics covered. Role-playing and multimedia served as the primary pedagogical tools for experiential learning during these sessions. Students' intercultural competencies were evaluated through both formative assessments, including class participation, and summative assessments involving authentic evaluations. The latter encompassed the analysis of real-life intercultural communication scenarios through video analysis and role-playing exercises.

5.5 Outcome measures

The study utilized the Experiential Learning Cycle (ELC) instrument, an 11-item, 7-point Likert scale, to assess students' expectations prior to exposure (pre-test) and their actual experiences following exposure (post-test) to the ELC. The total score range for this scale is 11–77 points. The ELC is divided into four dimensions: Concrete Experience (two items), Reflective Observation (three items), Abstract Conceptualization (three items), and Active Experimentation (three items). Higher scores indicated higher experiential levels. The Cronbach's alpha reliability coefficients for this instrument were 0.70 at pre-test and 0.89 at post-test, indicating a significant improvement in internal consistency. While the pre-test showed moderate reliability, the post-test reflected strong consistency, likely due to better item alignment or increased respondent familiarity with the construct, making the instrument more reliable after the intervention.

Additionally, the study employed the Intercultural Communicative Competence Scale (ICCS) developed by Byram (1997). This 25-item, 7-point Likert scale, with a total score range of 25–175 points, was used to measure students' competency in the intercultural communication module before (pre-test) and after (post-test) the training module. The ICCS is categorized into five dimensions: Attitudes (five items), Knowledge (five items), Interpreting and Related Abilities (five items), Discovery and Interaction Skills (five items), and Critical Cultural Awareness (five items). Higher scores corresponded to greater levels of intercultural communicative competence. The Cronbach's alpha values for the ICCS improved from 0.83 at pre-test to 0.91 at post-test, reflecting enhanced internal consistency. While the pre-test indicated good reliability, the post-test demonstrated even stronger consistency, likely due to refined item alignment or increased participant familiarity with the construct after the intervention.

In addition, face validity was conducted for all items of ELC and ICCS in the measurement to ensure they appeared relevant and appropriate for assessing the intended construct. This process involved expert review, which is a common approach for establishing face validity (Taherdoost, 2016), confirming that the items were clear, understandable, and aligned with the study's objectives, enhancing the instrument's overall credibility.

5.6 Data collection

The study design included a pre-test and post-test data collection procedure. One week prior to the intervention program (a one-day training workshop), a questionnaire survey was distributed to the participants. Detailed explanations were provided regarding the data collection process, the level of involvement required, and the signing of informed consent forms. Emphasis was placed on voluntary participation, clarifying that choosing not to participate would not affect their learning journey. Each participant provided written informed consent. Participants were informed about their participation in the one-day intercultural communicative competence workshop and were instructed to complete a second round of questionnaires immediately after the workshop (post-test).

5.7 Ethical considerations

The institutional review board granted ethics approval prior to the initiation of the study. Written consent was obtained from each participant before data collection commenced. The study adhered rigorously to the ethical principles of beneficence, justice, and respect for participants throughout. All students were equally eligible to participate, and those who chose not to take part experienced no adverse effects on their learning experience.

5.8 Data analysis

Using IBM SPSS version 29.0, data were analyzed with a significance threshold of $p < 0.05$. The listwise deletion method managed missing data. To illustrate demographic information, descriptive statistics such as means, frequencies, and standard deviations were employed (Mohamad et al., 2022). Mean and frequency differences were employed to present scores from the Experiential Learning Cycle (ELC) and Intercultural Communicative Competence Scale (ICCS). Correlations and paired t-tests examined

relationships between demographic variables and outcomes. Percentages illustrated experiential levels with the module (Table 1).

6 Results

The data collection phase spanned from June 21 to July 7, 2024. The study involved 31 final-year undergraduate students from various disciplines, all in their final semester. Each of these students ($n = 31$) participated in the pre-test survey administered 1 week before the intervention program. Upon completing the training workshop, all participants ($n = 31$) also completed the post-test survey. Figure 2 outlines the recruitment process and the subsequent data collection steps.

Each student actively participated in classroom and discussion activities. Among the 31 participants, a significant majority were female (74.2%, $n = 23$), while males comprised 25.8% ($n = 8$). Most participants (93.5%, $n = 29$) were aged between 18 and 22 years, with a smaller group (6.5%, $n = 2$) aged between 23 and 27 years. Slightly more than half were in their fourth year (51.6%, $n = 16$), followed closely by those in their third year (45.2%, $n = 14$), and one participant (3.2%) had been in their academic program for 5 years or more. Household income levels were fairly evenly distributed: 35.5% ($n = 11$) reported incomes of less than Rp 2,500,000, 35.5% ($n = 11$) reported incomes between Rp 2,500,000 and 5,000,000, 12.9% ($n = 4$) reported incomes between Rp 5,000,000 and 7,500,000, and 16.1% ($n = 5$) reported incomes exceeding Rp 7,500,000. Data were collected from two training programs, one in Surakarta (51.6%, $n = 16$) and one in Madura (48.4%, $n = 15$). Additionally, 93.5% had no overseas travel experience, suggesting a low level of exposure to different cultures, which could influence their baseline competence and the extent of improvement observed.

The quasi-experimental study involved two groups of students from different universities and location (Surakarta and Madura), and tests were conducted to ensure there were no significant differences between the received questionnaires from both groups, aiming to address non-response bias. Following Field's (2024) recommendations, the researcher used t-test analysis to compare the means of all measurable variables collected using two different methods. The first group comprised questionnaires from university students in Surakarta, while the second group included questionnaires from students in Madura. The independent t-test results showed that $t(31) = -1.695$, with $p > 0.05$, indicating no statistically significant differences between the variables of the two groups. These results confirm that non-response bias was not a significant concern in this study, thereby bolstering the statistical robustness of the research findings.

The study investigates the impact of experiential learning cycle pedagogy and an educational intervention on various learning and intercultural competence measures, using a pre-test and post-test design. The results in Table 2 indicate significant improvements across most outcome variables, suggesting that the intervention was effective.

Overall, the Experiential Learning Cycle Scale showed a significant increase from pre-test ($M = 68.19$, SD = 6.11) to post-test ($M = 71.54$, SD = 6.59), $t(30) = -2.43$, $p = 0.021$, with a medium effect size (Cohen's $d = -0.437$). The magnitude in the difference of the means (mean difference = −3.35, 95% CI: −6.160 to 0.54) was moderate. This finding

TABLE 1 Demographic characteristic of the participants ($n = 31$).

Item	Characteristic	*f*	Percentage
Gender	Male	8	25.8
	Female	23	74.2
Age	Less than 17 year	0	0
	18–22	29	93.5
	23–27	2	6.5
	28–32	0	0
	More than 33 year	0	0
Current year	First year	0	0
	Second year	0	0
	Third year	14	45.2
	Fourth year	16	51.6
	5 year and more	1	3.2
Household income	Less than Rp 2,500,000	11	35.5
	Rp 2,500,000–5,000,000	11	35.5
	Rp 5,000,000–7,500,000	4	12.9
	More than Rp 7,500,000	5	16.1
Location	Surakarta	16	51.6
	Madura	15	48.4
Experience traveling overseas	Yes	2	6.5
	No	29	93.5

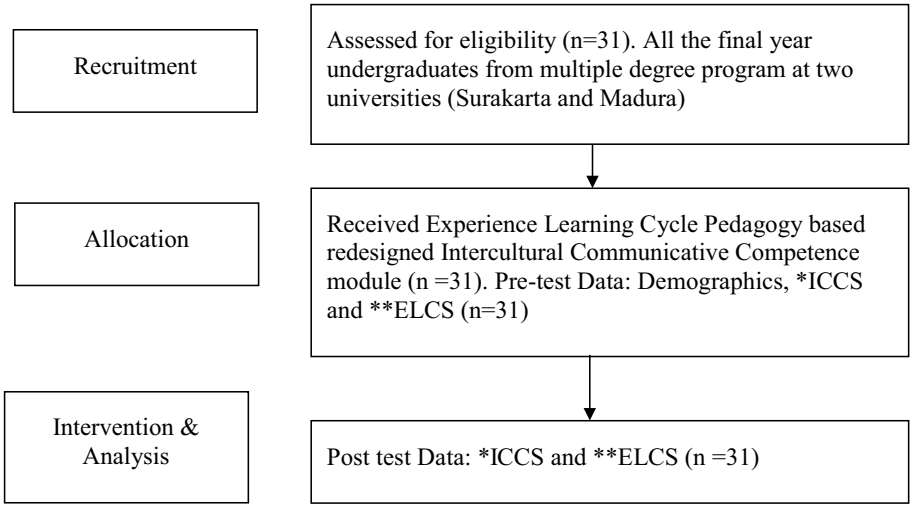

FIGURE 2
Participants flow chart. *ICCS, Intercultural Communicative Competence Scale; **ELCS, Experience Learning Cycle Scale.

TABLE 2 Outcome measures.

Outcome variables	Pre-test mean (SD) range (n = 31)	Post-test mean (SD) range (n = 31)	Mean differences	95% confidence interval range	t (p-value)	Cohen (d) Effect size
Experiential learning cycle scale	68.19 (6.11)	71.54 (6.59)	−3.35	−6.160 to −0.54	−2.43 (0.021)	−0.437
Concrete experience	10.77 (2.44)	12.93 (1.52)	−2.16	−3.13 to −1.18	−4.525 (0.001)	−0.813
Reflective observation	19.06 (2.18)	19.74 (2.06)	−0.68	−1.72 to 0.37	−1.320 (0.197)	−0.237
Abstract conceptualization	19.03 (2.04)	19.64 (1.76)	−0.61	−1.60 to 0.37	−1.268 (0.215)	−0.228
Active experimentation	19.32 (1.95)	19.22 (2.20)	0.10	−0.79 to 0.99	0.221 (0.827)	0.040
Intercultural communication competence scale	130.54 (15.25)	152.00 (17.51)	−21.45	−28.89 to −14.01	−5.88 (0.001)	−1.06
Attitudes	30.83 (3.19)	33.25 (2.26)	−2.41	−3.81 to −1.02	−3.535 (0.001)	−0.635
Knowledge	23.48 (3.83)	28.61 (5.20)	−5.13	−7.03 to −3.22	−5.491 (0.001)	−0.986
Interpreting and related abilities	23.38 (4.20)	29.16 (4.29)	−5.77	−7.77 to −3.77	−5.891 (0.001)	−1.058
Discovery and interaction skills	26.93 (4.75)	30.80 (3.74)	−3.86	−6.18 to −1.55	−3.417 (0.002)	−0.614
Critical cultural awareness.	25.90 (3.46)	30.16 (4.81)	−4.26	−6.29 to −2.22	−4.277 (0.001)	−0.768

Significant level $p < 0.001$ (two tails).

aligns with Kolb's experiential learning theory, which posits that effective learning involves a cyclical process of experiencing, reflecting, thinking, and acting (Kolb, 1984). The observed increase suggests that the intervention successfully enhanced participants' experiential learning abilities. The next section is the discussion based on the four dimensions of ELC that include concrete experience, reflective observation, abstract conceptualization and active experimentation.

Participants showed a significant improvement in Concrete Experience scores, increasing from pre-test (M = 10.77, SD = 2.44) to post-test (M = 12.93, SD = 1.52), $t(30) = -4.525$, $p = 0.001$, with a large effect size (Cohen's $d = -0.813$). Concrete Experience, a crucial component of Kolb's learning cycle, emphasizes the importance of direct experience in learning. The substantial increase in scores indicates that the intervention effectively provided participants with

meaningful hands-on experiences. The large effect size (Cohen's $d = -0.813$) also underscores the practical significance of the intervention. In educational research, an effect size greater than 0.8 is considered large, indicating that the intervention had a strong impact on enhancing concrete experiential learning (Cohen, 1988). This suggests that the educational activities were not only well-designed but also effectively implemented to facilitate active participation and hands-on learning.

The other two dimensions showed insignificant increases from pre-test to post-test. For instance, Reflective Observation scores showed a slight, non-significant increase from pre-test ($M = 19.06$, SD = 2.18) to post-test ($M = 19.74$, SD = 2.06), $t(30) = -1.320$, $p = 0.197$, Cohen's $d = -0.237$. The small effect size indicates that the intervention had a minimal impact on enhancing participants' expected experiences. Similarly, Abstract Conceptualization scores also showed a slight, non-significant increase from pre-test ($M = 19.03$, SD = 2.04) to post-test ($M = 19.64$, SD = 1.76), $t(30) = -1.268$, $p = 0.215$, Cohen's $d = -0.228$. This small effect size similarly indicates a minimal impact on participants' experiences with abstract concepts and generalizations after the training program. Although the changes were small and not significant, the module's delivery met participants' early expectations (pre-test).

The Active Experimentation scores did not show significant changes, with pre-test ($M = 19.32$, SD = 1.95) and post-test ($M = 19.22$, SD = 2.20) scores, $t(30) = 0.221$, $p = 0.827$, Cohen's $d = 0.040$. The negligible mean difference (0.10) and very small effect size suggest that the intervention did not significantly impact participants' Active Experimentation abilities. These findings indicate that participants' expectations for this dimension at pre-test matched their real experience at post-test.

Overall, Intercultural Communicative Competence showed a significant improvement, with scores increasing from pre-test ($M = 130.54$, SD = 15.25) to post-test ($M = 152.00$, SD = 17.51), $t(30) = -5.88$, $p = 0.001$, Cohen's $d = -1.06$. The magnitude in the difference of the means (mean difference = −21.45, 95% CI: −28.89 to −14.01) indicates a substantial difference between the means. This large effect size suggests that the intervention was highly effective in enhancing participants' intercultural communication skills. This finding supports the literature that emphasizes the importance of structured intercultural training programs in developing intercultural competencies (Deardorff, 2006). This substantial improvement indicates that the educational intervention effectively enhanced participants' ability to communicate effectively across cultures.

Similar to the overall ICC, each of dimension also has shown the significant improvement. For example, significant improvements were also observed in the Attitudes scores showed a significant increase from pre-test ($M = 30.83$, SD = 3.19) to post-test ($M = 33.25$, SD = 2.26), $t(30) = -3.535$, $p = 0.001$, with a medium effect size (Cohen's $d = -0.635$). This significant improvement suggests that the educational intervention effectively enhanced participants' attitudes toward the subject matter or context being studied. The medium effect size observed in this study further underscores the practical significance of the intervention in enhancing participants' attitudes. According to Cohen (1988), effect sizes between 0.5 and 0.8 are considered medium, reflecting a substantial impact of the intervention on participants' attitudes.

The Knowledge scores showed a significant increase from pre-test ($M = 25.64$, SD = 2.31) to post-test ($M = 27.67$, SD = 2.37), $t(30) = -5.502$, $p < 0.001$, with a large effect size (Cohen's $d = -0.988$). This substantial improvement indicates that the educational intervention was highly effective in enhancing participants' knowledge related to the subject matter. The large effect size (Cohen's $d = -0.988$) further underscores the practical significance of the intervention. According to Cohen (1988), an effect size greater than 0.8 is considered large, indicating a strong impact of the intervention on participants' knowledge acquisition. This suggests that the educational activities were not only well-designed but also effectively implemented to facilitate substantial cognitive gains.

The Interpreting and Related Abilities scores showed a significant increase from pre-test ($M = 21.38$, SD = 2.89) to post-test ($M = 23.71$, SD = 2.45), $t(30) = -4.334$, $p < 0.001$, with a large effect size (Cohen's $d = -0.779$). This substantial improvement indicates that the educational intervention effectively enhanced participants' abilities to interpret and relate to intercultural contexts. The large effect size (Cohen's $d = -0.779$) further underscores the practical significance of the intervention. According to Cohen (1988), an effect size between 0.5 and 0.8 is considered large, indicating a strong impact of the intervention on participants' interpretive abilities. This suggests that the educational activities were well-designed and effectively implemented to facilitate substantial gains in these skills.

The Discovery and Interaction Skills scores showed a significant increase from pre-test ($M = 30.19$, SD = 3.17) to post-test ($M = 32.35$, SD = 2.79), $t(30) = -4.397$, $p < 0.001$, with a large effect size (Cohen's $d = -0.795$). This substantial improvement indicates that the educational intervention effectively enhanced participants' skills in discovering and interacting within intercultural contexts. The large effect size (Cohen's $d = -0.795$) further underscores the practical significance of the intervention. According to Cohen (1988), an effect size between 0.5 and 0.8 is considered large, indicating a strong impact of the intervention on participants' discovery and interaction skills. This suggests that the educational activities were well-designed and effectively implemented to facilitate substantial gains in these skills.

The Critical Cultural Awareness scores showed a significant increase from pre-test ($M = 20.67$, SD = 3.01) to post-test ($M = 22.96$, SD = 2.44), $t(30) = -4.001$, $p < 0.001$, with a large effect size (Cohen's $d = -0.719$). This substantial improvement indicates that the educational intervention effectively enhanced participants' critical awareness of cultural differences and their implications. The large effect size (Cohen's $d = -0.719$) further underscores the practical significance of the intervention. According to Cohen (1988), an effect size between 0.5 and 0.8 is considered large, indicating a strong impact of the intervention on participants' critical cultural awareness. This suggests that the educational activities were well-designed and effectively implemented to facilitate substantial gains in this area.

7 Discussion

This study aimed to assess the effectiveness of incorporating the Experiential Learning Cycle (ELC) into an intercultural communicative competence (ICC) module for final-year undergraduate students, focusing on their experiential learning levels and intercultural communicative competence skills. The participants demonstrated improved experiential levels following the introduction

of the ELC. These findings are consistent with previous research, which also reported enhanced intercultural communicative competencies outcomes when using the ELC framework.

7.1 Experiential learning cycle scale

In this study, the physical training workshop activities were carefully aligned with face-to-face interactions, likely contributing to the students' high experiential levels with the ELC. The implementation of student-centered teaching approaches, which took into account various learning styles (Fleming, 2001), played a significant role. As observed in previous studies (Norgaard et al., 2012; Ammentorp et al., 2007; McConville and Lane, 2006), participants exhibited improved self-efficacy in communication skills. Additionally, providing timely feedback on each student's engagement was identified as a crucial component of the ELC's success.

The Concrete Experience part, involves learning through direct experience and participation. This mode of learning is essential for developing practical skills and gaining first-hand knowledge. The significant increase in Concrete Experience scores indicates that the intervention successfully provided opportunities for participants to engage in hands-on activities, which are crucial for experiential learning. Participants also engaged in role-playing exercises designed to analyze real-life scenarios and practice communicating with individuals from different cultures. This approach likely provided them with contextualized information, enhancing their learning experiences (McConville and Lane, 2006; Mafinejad et al., 2017). Incorporating authentic case scenarios and using actors to add realism have been recommended to improve self-efficacy in communication skills (Pike and O'Donnell, 2010).

Reflective Observation is a key component of Kolb's experiential learning cycle, involving the observation and reflection on experiences from various perspectives (Kolb, 1984). The lack of significant improvement in the post-test data suggests that the real experiences during the training matched participants' expectations from the pre-test data. However, the findings also imply that the intervention may not have adequately emphasized reflective activities or enhanced participants' actual experiences. To improve this aspect of learning, reflective practices such as journaling, group discussions, and debriefing sessions could be integrated more thoroughly (Boud et al., 1985). Additionally, feedback—both verbal and from peers and facilitators during face-to-face sessions—along with practice opportunities, likely helped alleviate participants' anxiety and boost their confidence in their communication skills.

Abstract Conceptualization involves developing theories and models to explain observations and experiences (Kolb, 1984). The insignificant change suggests that the pre-test expectations were consistent with the post-test data (real experiences). Although improvements in experiential learning were anticipated, the findings indicate that the intervention may not have sufficiently promoted theoretical and conceptual understanding. Incorporating activities that require students to create and apply theoretical models, such as case studies or concept mapping, could enhance this aspect of the learning process (Ausubel et al., 1978). The non-significant changes in these areas suggest that while the intervention improved concrete experiences, it may not have adequately addressed reflective and abstract thinking processes.

Active Experimentation involves applying new ideas to solve problems or make decisions (Kolb, 1984). Although the pre-test data on participation expectations were consistent with the real experiences reported in the post-test, the lack of significant change in this domain suggests that the intervention may not have provided adequate opportunities for participants to apply what they learned in a practical, hands-on manner. It is possible that the intervention emphasized theoretical knowledge and reflective practices more than it encouraged active, experiential activities. This finding highlights a potential area for improvement in the intervention design. To enhance Active Experimentation, future interventions could incorporate more project-based learning, simulations, or real-world problem-solving activities. Such methods have been shown to effectively develop students' abilities to apply knowledge in practical contexts (Prince, 2004).

In conclusion, Kolb's Experiential Learning Cycle (1984) posits that learning is a continuous process involving four stages: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. The increase in the Experiential Learning Cycle Scale indicates the intervention positively impacted participants' engagement and benefit from the learning process. The significant improvement in the scale scores suggests the intervention promoted balanced development across all four stages. This aligns with research showing that educational programs with diverse activities tailored to each stage of Kolb's cycle enhance learning outcomes (Yardley et al., 2012). The results underscore the importance of comprehensive curriculum design addressing all stages of Kolb's cycle, promoting holistic learning. Educators should aim for incremental enhancements across the learning cycle to achieve cumulative improvements in students' outcomes. The findings are supported by existing literature on experiential learning and educational effectiveness.

7.2 Intercultural communicative competence

Participants enhanced their attitudes toward intercultural communicative competence skills after the training workshop, highlighting the significance of effective intercultural communication for professionals working abroad. The intercultural communicative competence module was conducted as a one-day workshop for final-year students, as recommended in the literature, given that most participants had limited prior experience with intercultural communication or exposure to other cultures. The face-to-face component of the redesigned module included experiential learning activities such as simulations and role-playing exercises, which involved authentic scenarios. These activities likely stimulated students' curiosity and provided essential exposure to future professional expectations (Rees and Garrud, 2001). Additionally, the reflection component utilized discussion forums to foster collaboration in both individual and group settings (Herrington et al., 2010). Consequently, the varied exposure through the Experiential Learning Cycle (ELC) likely influenced students' attitudes toward the importance of acquiring intercultural communication skills.

The results strongly indicate that the training module was highly effective in enhancing participants' intercultural communication skills. Specifically, the improved attitudes reflect participants' feelings, beliefs, and predispositions toward

intercultural communication and experiential learning. Positive attitudes are essential for effective learning and intercultural competence, as they boost motivation, engagement, and willingness to participate in learning activities (Ajzen, 1991). This improvement aligns with the Theory of Planned Behavior, which asserts that attitudes significantly influence individuals' intentions and behaviors (Ajzen, 1991). Research shows that educational interventions aiming to improve intercultural competence often focus on cultivating positive attitudes toward cultural diversity and cross-cultural engagement (Bennett, 2009). Deardorff (2006) emphasizes that traits like openness, curiosity, and respect are fundamental to intercultural competence. The significant increase in attitude scores suggests that the intervention successfully nurtured these positive dispositions, crucial for effective intercultural interactions (Deardorff, 2006).

Second, the significant increase in knowledge scores suggests that the intervention effectively conveyed important concepts, enhancing participants' cognitive understanding of intercultural competence. Acquiring knowledge is crucial, particularly during the Abstract Conceptualization stage, where learners integrate their experiences into theories and concepts (Kolb, 1984; Byram, 1997; Moon, 2006). The substantial improvement in knowledge scores supports this theory, indicating that the intervention successfully provided opportunities for participants to learn and internalize new information (Deardorff, 2006). Research on intercultural competence further underscores the importance of knowledge acquisition, including understanding cultural differences, communication styles, and cultural self-awareness as essential components (Deardorff, 2006; Soedarsono et al., 2020; Fantini, 2009). This aligns with previous studies highlighting the role of intercultural training in developing cognitive and affective skills necessary for effective intercultural interactions (Byram, 1997; Kolb, 1984; Bennett and Bennett, 2004). Effective intercultural training programs often focus on enhancing these aspects to foster better intercultural understanding and communication (Fantini, 2009; Deardorff, 2006). Furthermore, incorporating interactive and digital tools to address evolving learner needs is essential for maintaining the relevance and effectiveness of ICC training, particularly in diverse educational environments, especially within higher education (Talan et al., 2024; Palacios-Rodríguez et al., 2025).

Third, the significant improvement in interpreting and relating abilities indicates that the intervention successfully developed participants' interpretive skills, which are vital for effective intercultural communication. According to Kolb's Experiential Learning Theory, interpreting and relating are key stages in the learning cycle, particularly during Reflective Observation and Abstract Conceptualization (Kolb, 1984; Byram, 2009; Moon, 2006; Kolb and Kolb, 2009). This notable enhancement aligns with the theory, suggesting that the intervention offered valuable opportunities for participants to reflect on their experiences and gain a deeper understanding of intercultural interactions (Deardorff, 2006; Bennett and Bennett, 2004). These interpretive skills are essential for navigating and understanding cultural differences, ultimately facilitating effective communication and interaction in diverse contexts (Bakar et al., 2016; Bakar et al., 2007; Deardorff, 2006; Fantini, 2009; Bennett, 1993; Spitzberg and Changnon, 2009). The development of these skills is crucial for fostering intercultural competence and improving the quality of interactions in multicultural settings (Byram, 2009; Deardorff, 2006; Hammer et al., 2003).

Fourth, the significant improvement in discovery and interaction skills suggests that the intervention effectively developed these competencies, enabling participants to engage and interact proficiently in intercultural contexts. Experiential Learning Theory highlights the importance of active engagement and experimentation in the learning process (Kolb, 1984; Byram et al., 2001; Kolb and Kolb, 2005; Moon, 2006). The substantial progress in these skills supports this theory, indicating that the intervention provided participants with opportunities to actively explore and interact with diverse cultural contexts (Kolb, 1984; Bennett and Bennett, 2004; Kolb and Kolb, 2009). According to Deardorff (2006), discovery and interaction skills are essential for intercultural competence, as they help individuals navigate new cultural environments, build meaningful relationships across diverse backgrounds, and adapt their behavior to fit different cultural norms (Deardorff, 2006; Fantini, 2009; Hammer et al., 2003). These skills are further emphasized in intercultural communication research, which underscores their role in facilitating effective and meaningful interactions in multicultural settings (Spitzberg and Changnon, 2009; Byram, 1997; Bennett, 1993).

Fifth, the significant increase in critical cultural awareness scores indicates that the intervention effectively deepened participants' understanding of these complexities. Kolb's Experiential Learning Theory (1984) supports this development by emphasizing reflective observation and abstract conceptualization (Kolb, 1984; Byram, 2008; Kolb and Kolb, 2009; Kolb and Kolb, 2017). The notable improvement aligns with this theory, suggesting that the intervention enabled participants to reflect on their cultural experiences and gain a critical perspective on intercultural issues (Deardorff, 2006; Fantini, 2020). Critical cultural awareness is vital for intercultural competence as it encompasses understanding the social and political contexts influencing cultural interactions and engaging in critical self-reflection (Deardorff, 2006; Byram, 1997; Fantini, 2020; Spitzberg and Changnon, 2009). This awareness allows individuals to navigate complex intercultural scenarios more effectively, promoting better communication and understanding in diverse settings (Byram, 2008; Hammer et al., 2003; Jackson, 2019).

Overall, Kolb's Experiential Learning Theory (1984) underpins the development of intercultural communicative competence (Byram, 1997) by emphasizing concrete experience and active experimentation. The significant improvement in intercultural communicative competence (ICC) supports this theory, suggesting that the intervention successfully allowed participants to engage in real-world intercultural interactions and apply their learning practically (Kolb, 1984; Byram and Golubeva, 2020). In alignment with earlier research (Norgaard et al., 2012; Ammentorp et al., 2007; McConville and Lane, 2006), participants demonstrated enhanced self-efficacy in communication skills. ICC is a multifaceted construct encompassing attitudes (e.g., openness, respect), knowledge (e.g., cultural self-awareness, in-depth cultural understanding), and skills (e.g., listening, observing, interpreting). The significant increase in ICC scores indicates that the intervention effectively addressed these components, equipping participants with the tools needed for effective cross-cultural communication (Deardorff, 2006).

7.3 Implication

The study highlighted the importance of a comprehensive approach to Intercultural Communicative Competence (ICC) that integrated attitudes, knowledge, skills, and critical cultural awareness. Effective ICC workshops, as evidenced by the study, should have focused on nurturing attitudes of curiosity, openness, empathy, and respect toward diverse cultures (Byram, 1997, 2008). These workshops aimed to foster a nuanced understanding of cultural differences and similarities, enabling participants to apply communicative and interactional skills effectively (Byram, 1997, 2008). Furthermore, the workshops stressed the importance of promoting critical cultural awareness by encouraging reflection on power dynamics, stereotypes, and biases, which deepened participants' understanding of cultural complexities (Byram, 2008).

The significant improvement observed in the study underscored the need for educators to design curricula that incorporated all stages of Kolb's Experiential Learning Cycle—Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation (Kolb, 1984; Byram, 2008). This approach ensured a comprehensive learning experience through hands-on activities, critical reflection, and theoretical application. To enhance ICC, educators were encouraged to integrate interactive learning methods such as role-plays and simulations, along with ongoing practice and feedback (Deardorff, 2006; Byram, 1997). The study suggested that curricula should be structured to promote openness, respect, and practical intercultural skills, with assessments aligned to evaluate attitudes, knowledge, and skills related to ICC (Deardorff, 2006; Byram and Golubeva, 2020). By applying these principles, educators could better prepare students for effective communication and interaction in diverse cultural settings, thereby fostering global citizenship and understanding.

This study has several limitations that must be acknowledged. Firstly, the small sample size restricts the generalizability of the findings, making it difficult to apply the results to broader populations (Cohen et al., 2002). As a result, the insights gained may not fully represent the diverse experiences of all students in higher education. Additionally, the study's focus on a specific context may limit its applicability to different educational environments or cultural settings. Future research could address these limitations by exploring how experiential learning pedagogy can be adapted for larger and more diverse populations. Furthermore, investigating the integration of digital elements into intercultural communication training may provide valuable insights into enhancing these competencies across various educational contexts.

8 Conclusion

The use of the Experiential Learning Cycle (ELC) in redesigning the intercultural communicative competence module for final-year undergraduates proved effective in enhancing their experiential learning and self-efficacy. The students demonstrated positive attitudes toward acquiring intercultural communicative competence skills and achieved significantly higher scores on both the Experiential Learning Cycle Scale and the Intercultural Communicative Competence skills assessments. By applying a theory-based approach that provided authentic learning contexts and incorporating role-play exercises and problem-based activities, the module successfully underscored the importance of effective intercultural communication skills. Future research should explore the long-term impact of these skills on final-year students and assess their relevance from the perspective of the current workforce.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors without undue reservation.

Ethics statement

The studies involving humans were approved by The Ethic Committee, Faculty of Culture Science, Sebelas Maret University, Surakarta, Indonesia. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

AW: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. BM: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. Djatmika: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. RS: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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