

From meaning to iteration: testing PRME's i5 as a coherent learning system in Southeast Asian business education

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Abstract

Purpose – This study examines how Principles for Responsible Management Education's (PRME's) impactful five (i5) – meaning, joy and well-being, social interaction, active engagement, and iteration – operate as an integrated learning system within a Southeast Asian business school. Addressing calls for more empirically grounded responsible management education (RME) research, the study explores how students experience sustainability-oriented learning and how the five dimensions collectively shape educational outcomes.

Design/methodology/approach – A sequential mixed-methods design comprising three studies was employed. Study-1 used a cross-sectional survey to map students' exposure to i5-aligned pedagogical practices. Study-2 used focus groups to explain the patterns observed and identify key enablers and barriers. Study-3 developed and validated an i5 measurement framework using confirmatory composite analysis through PLS-SEM.

Findings – The five i5 dimensions emerged as distinct yet highly interconnected constructs that collectively influence student learning experiences. Meaningful learning increased participation, joy supported psychological safety, social interaction strengthened engagement, and iteration consolidated learning through feedback and reflection. Students particularly valued locally relevant, collaborative, practical, and developmentally supportive learning environments. The findings further demonstrate how cultural norms, assessment practices, and institutional structures shape RME implementation.

Originality/value – The study advances RME theory by empirically demonstrating the systemic interdependence of the i5 dimensions and introducing a validated measurement framework for evaluating responsible management pedagogy in Southeast Asian business education.

Keywords PRME, i5, ESD, Pedagogy, Iteration, Engagement, Sustainability

Paper type Research article

Introduction

Education for Sustainable Development (ESD) is now a mainstream aspiration in business schools, but is still frequently delivered as an “add-on” rather than a curriculum-wide transformation (Glavič, 2020). In response, Principles for Responsible Management Education's (PRME's) “Impactful Five” (i5) – meaning, joy, social interaction, active engagement, and iteration – offers a creativity-centred pedagogy focused on how students learn responsible management, not only what they learn (Saunders et al., 2022). However, the preponderance of evidence from developed contexts raises questions about the transferability of existing knowledge to Southeast Asian contexts (Hallinger and Chatpinyakoo, 2019). Bibliometric syntheses indicate rapid growth in ESD scholarship. According to Franco et al. (2018), at the policy–practice interface, sustainability is frequently confined to isolated modules, thereby maintaining a gap between the claims made by institutions and classroom realities. Although the “competency turn” clarifies intended graduate outcomes, operationalisation and assessment remain underdeveloped (Cebrián et al., 2020). i5 is



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positioned as a practical design language that can make ESD more engaging, relational, and iterative in business education (Ibrahim and Storey, 2025).

Recent PRME scholarship further positions i5 as more than a collection of pedagogical techniques. Emerging guidance from the PRME community frames i5 as a holistic, human-centred approach that fosters meaningful, socially connected, authentic, and iterative learning experiences while supporting the development of responsible leadership competencies (Kamilah and Wilson, 2023). Similarly, Blair (2024) argues that i5 synthesises insights from constructivist, experiential, sustainability, and transformative pedagogies, positioning it within a broader ecosystem of educational approaches rather than as a standalone framework. Illustrative cases from PRME signatories further demonstrate how the i5 principles are being adapted across diverse disciplinary and regional contexts through authentic assessment, industry engagement, collaborative learning, and sustainability-focused problem-solving (PRME, 2025).

Despite the promise of creativity-led pedagogy, without robust evidence frameworks, it may reproduce ESD's long-criticised rhetoric–practice gap (Glavič, 2020). In Southeast Asian contexts, employability logics and contextual constraints shape how “creative” activities are interpreted and sustained (Kopnina, 2020). This risk is amplified in these settings, particularly in Southeast Asian countries. Whether i5 functions as an interdependent mechanism rather than a collection of disconnected techniques remains unclear (Saunders *et al.*, 2022). Accordingly, this study asks: How do the PRME i5 components function as a system to explain students' iterative learning behaviours in a Southeast Asian business school context? The study aims to explore and validate a student-informed measurement framework for the five i5 components.

Literature review

Education for Sustainable Development

ESD has become a mainstream aspiration in business schools, yet implementation often remains incremental rather than transformative. Although ESD scholarship has grown rapidly, research continues to be dominated by developed-country contexts, raising questions about its transferability to regions such as Southeast Asia (Hallinger and Chatpinyakoo, 2019). Universities frequently incorporate sustainability through isolated modules rather than embedding it across curricula and governance structures, creating a gap between institutional commitments and classroom practice (Franco *et al.*, 2018; Glavič, 2020). While the competency-based approach has clarified key graduate attributes, including systems thinking, anticipatory problem-solving, collaboration, and normative reasoning, their operationalisation and assessment remain underdeveloped, limiting both comparability and continuous improvement efforts (Cebrián *et al.*, 2020; Kioupi and Voulvoulis, 2019).

Pedagogically, ESD advocates learner-centred approaches that combine critical reflection with real-world engagement to foster agency and collective action, particularly within management education where students must navigate competing stakeholder interests (Schnitzler, 2019). Research-based, digitally supported learning has been shown to enhance engagement and perceived relevance, offering scalable opportunities for business schools adopting hybrid delivery models (Ahel and Schirmer, 2023). At the same time, addressing complex sustainability challenges requires moving beyond linear, reductionist thinking towards a complexity-oriented perspective that recognises uncertainty, interdependence, and trade-offs inherent in managerial decision-making (Sigahi *et al.*, 2023).

Conceptual critiques caution that ESD can drift toward instrumentalism and anthropocentrism, serving corporate utility while marginalising ecological integrity, unless curricula explicitly interrogate values, power, and justice alongside skills (Kopnina, 2020; Kopnina and Meijers, 2014). In Southeast Asia, where higher education frequently emphasises employability and competitiveness, this necessitates a rebalancing towards civic responsibility and sustainability leadership while maintaining a culturally grounded

approach (Kioupi and Voulvoulis, 2019; Hallinger and Chatpinyakoo, 2019). These tensions between rhetoric and embedding, competencies and assessment, engagement and complexity, and utility and ethics define the baseline challenges that an approach such as PRME i5 seeks to address through an integrative, participatory, and context-responsive pedagogy in business schools.

Operationalising ESD in business schools: PRME's creative turn via i5

Moving from ESD aspiration to enactment requires designs that link values to learning experiences. PRME provides that institutional scaffold through its six principles, but its recent emphasis on creativity-centred pedagogy, crystallised in the Impactful Five, repositions responsible management education (RME) around how students learn, not only what they learn (Saunders *et al.*, 2022). Early reports from PRME communities indicate that i5 practices foster engagement, collaboration, and reflective capacity among educators, while also providing them with a common design language for sustainability-oriented courses (Eustachio *et al.*, 2025; Radclyffe-Thomas *et al.*, 2025). In this sense, i5 operationalises ESD's competency agenda by embedding relational, iterative, and participatory learning processes that mirror the complexity of sustainability challenges while creating opportunities for learners to critically engage with the interdependence of social, economic, and ecological systems (Ibrahim and Storey, 2025; Kopnina, 2020; Misiaszek, 2025).

Concurrently, a broader wave of creativity pedagogies is consolidating around design-led, arts-based, and narrative approaches that make sustainability salient, situated, and actionable for management students. Recent studies report that creative, multimodal tasks (e.g. storytelling) cultivate perspective-taking and ethical sensitivity while strengthening connections between classroom learning and professional identity (Calabor *et al.*, 2025; Cripps and Bobeva, 2025). Place- and community-oriented practices similarly foreground co-creation and civic imagination, aligning with i5's social interaction and iteration by treating learners as collaborators in shaping sustainable futures (Cho *et al.*, 2025; Wilson and Tewdwr-Jones, 2022). These strands, when taken together, position creativity not as an add-on but rather as a mechanism for integrating PRME principles into the everyday grammar of teaching.

However, the creative turn, in the absence of comprehensive evaluation and institutional backing, has the potential to replicate the rhetoric–practice gap that has been widely criticised in ESD (Cebrián *et al.*, 2020; Glavič, 2020). Moreover, critiques of ESD caution that pedagogical approaches can become instrumental and disconnected from local socio-ecological realities if transferred uncritically across contexts (Kopnina *et al.*, 2018; Manolchev, 2025). By providing shared design heuristics, i5 offers one response to this challenge, but business schools still require evidence frameworks that capture learning transfer, teamwork, and ethical reasoning alongside context-sensitive adaptation for diverse Southeast Asian settings where employability logics are pronounced (Hallinger and Chatpinyakoo, 2019; Kopnina, 2020). The promise of PRME i5, then, lies in coupling creativity with credible evaluation and contextual responsiveness so that RME is both meaningful and accountable.

Context matters: micro-theoretical insights for i5 implementation in Southeast Asia

Implementing PRME's creativity-led pedagogies in Southeast Asia is complicated by a web of structural, cultural, and pedagogical tensions that complicate translation from principle to practice. Paradox analysis in a Malaysian business school shows how profit imperatives collide with environmental and social responsibilities, and how institutional routines constrain individual agency; at the same time, global templates press for convergence while local legitimacy demands contextual fit (Fujimoto *et al.*, 2025). These macro–meso–micro paradoxes are magnified by resource constraints, hierarchical learning cultures, exam-centric assessment, and employability-first narratives that can instrumentalise “creative” activities as

surface-level engagement rather than big curricular change. Without careful design, playful or arts-based tasks risk become a performative add-ons – precisely the rhetoric–practice gap long critiqued in ESD (Cebrián *et al.*, 2020; Glavič, 2020).

Evidence from Southeast Asian students underscores these tensions. Student-derived concept maps and models emphasise a pragmatic, TBL-oriented view of responsibility and highlight the importance of hands-on, community-embedded learning. However, they also reveal misalignments between institutional claims and learner experience, pointing to the need for bottom-up co-design and credible evaluation of learning transfer (Homer *et al.*, 2025). Faculty capacity, time, and assessment regimes remain pivotal bottlenecks: i5's emphasis on meaning, joy, social interaction, active engagement, and iteration requires redesigning timetables, assessment rubrics, and partnership infrastructures, not just classroom activities. Moreover, power asymmetries with industry partners and accreditation-driven signalling can tilt creative pedagogy toward reputation gains rather than transformative learning (Fujimoto *et al.*, 2025).

Taken together, these conditions justify a context-sensitive investigation of i5 implementation that foregrounds emic explanations, focusing on how students and educators within Southeast Asian business schools themselves experience, interpret, and make sense of creativity-centred pedagogical practices, rather than relying solely on externally derived theoretical assumptions. Following Homer and Lim's call to complement macro templates with micro theories, a study grounded in Southeast Asian micro-dynamics can specify how i5 mechanisms operate across the classroom and programme (Homer and Lim, 2024). Such a design can reveal when and why i5 generates genuine agency and ethical reasoning, thereby producing actionable guidance for RME attuned to Southeast Asian realities.

Study-1

Study-1 employed a cross-sectional survey to provide a descriptive profile of students' exposure to PRME i5-aligned pedagogy, establishing a baseline dataset to inform subsequent analyses. While the institution had provided faculty development relating to the i5 framework, i5 was not institutionally mandated, and its adoption remained at the discretion of individual lecturers. Some participant overlap between studies may have occurred; however, this could not be determined because the survey phases were anonymous.

Study-1 methodology

The instrument comprised frequency-of-exposure items mapped to the five i5 design elements, and ethical approval was granted under code 2025/REC0109. The items were adapted from the PRME i5 Toolbox, with only minor wording changes to reflect classroom observations. As the instrument was intended solely to provide a descriptive profile of students' exposure to i5-aligned pedagogy rather than to measure latent constructs, no pilot testing or psychometric validation was undertaken. All survey statements are presented in Table 2.

Participants. A convenience sample was recruited on campus by trained research assistants. Surveys were administered in person on paper during May–August 2025, after which participants' completed survey responses were manually transcribed into a secure spreadsheet for analysis. Table 1 shows that the sample was predominantly female, with a mean age of 20.42 years, and primarily ethnic Chinese.

Study-1 results

The results suggest that students reported broadly consistent, moderate-to-high exposure to i5-aligned pedagogy across all five dimensions, with social interaction emerging as the most prominent feature of their learning experience. In particular, students most frequently

Table 1. Study-1 participant demographics

Gender		Age		Ethnicity	
Female	192	Average	20.42	Chinese	228
Male	82	Std	1.37	Malay	16
Prefer not to say	3	Min	18	Indian	13
		Max	31	Other	12
				Prefer not to say	8

described learning environments that supported peer collaboration, teamwork, and engagement with diverse perspectives. Meaningful and engaging elements were also evident, indicating that courses were generally perceived as relevant to students' backgrounds and future realities, and that digital technologies were commonly used constructively. By contrast, more embodied or kinaesthetic learning activities were less common, suggesting a potential area for pedagogical enhancement. Full descriptive statistics are reported in [Table 2](#).

Study-2

Study-2 qualitatively sought to explain and extend Study-1's survey by probing why certain i5 experiences were observed more or less frequently and co-identifying practical changes to strengthen PRME-aligned pedagogy.

Study-2 methodology

In Study-1, items such as kinaesthetic activities and alternative assessment tended to sit lower within their dimensions, signalling fertile areas for inquiry. Thus, a qualitative focus-group study intentionally sampling across programmes to interpret Study-1 patterns and generate actionable, i5-aligned interventions for courses and assessment. Focus groups are chosen to surface peer-validated experiences of classroom practices.

Participants. Undergraduate business students were recruited via a call for participants via the learning management system. Five online groups comprising 5–8 students, totalling 34 participants, were conducted. Demographic data were not collected, but each student provided informed consent (Ethics approval code: 2025/REC0249), and participants received an RM50 (~US\$10) voucher upon completion.

Procedure. The focus groups ran on MS Teams for approximately 1 hour each, were video-recorded with automatic transcription for analysis, and were moderated by trained researchers. Each session comprised an initial rapport and ground rules, a review of Study 1 summary results, and a guided discussion of each i5 dimension. The sessions were purposely designed to be free-flowing, allowing students to discuss what they commonly experienced, rarely experienced, and wished to see more of in their classes. Analysis proceeded in two stages. First, transcripts were deductively reviewed against the five i5 dimensions to identify how students interpreted and experienced each component in practice. Second, the authors conducted an inductive review of the narratives, leading to the identification of two cross-cutting themes: cultural variation and the interdependence of the i5 components.

Study-2 results and discussion

This section reports the study's key findings and provides an interpretive discussion of their implications for understanding students' learning experiences. We first present the main patterns that emerge from the data, then interpret their implications for pedagogy and curriculum design, drawing on illustrative student quotations to add context and nuance.

Make learning meaningful. Students repeatedly equate "meaningful" with relevance to current events and identity-affirming pedagogy. One student stresses that lecturers should

Table 2. i5 Pedagogy Exposure Results

	Average	Standard dev
<i>Joyful</i>	4.912	1.319
How often do you experience fun, surprise, wonder, and celebration in your learning?	4.996	1.339
How often do you sense and navigate a range of emotions within yourself and others, including frustration, fear, disappointment, and defensiveness?	4.986	1.260
How often do you reflect on your inner, spiritual, and physical self through contemplative practices and meta-reflection?	4.859	1.324
How often do you examine the rippling effects of your individual and collective actions in our interconnected world?	4.809	1.342
<i>Meaningful</i>	5.025	1.177
How often do you observe your lecturer role-modelling self-awareness, reflection, and their personal values?	4.971	1.260
How often do your courses reflect your background, needs, and interests?	5.076	1.161
How often are you guided to surface the values, norms, and biases that exist within yourself, systems, and society?	5.043	1.126
How often do you feel that your identity and perspective—as well as those of marginalised groups—are honoured and supported in your learning environment?	5.011	1.154
<i>Engaging</i>	5.014	1.293
How often do you engage in kinaesthetic activities (i.e. role-play, hands-on, etc.) that help you focus, energise you, or invite you to physically move or act in your space or surroundings?	4.769	1.463
How often are you exposed to real-world issues and engaged in experiences that feel authentic to your current and future realities?	5.069	1.210
How often do you have opportunities to build meaningful connections with industry professionals, local businesses, community organisations, or others?	4.921	1.306
How often are you given the chance to use digital technologies in effective and healthy ways?	5.300	1.108
<i>Iterative</i>	4.937	1.279
How often are you encouraged to explore open-ended experiences where you can experiment with ideas, take risks, and “mess about”?	5.018	1.236
How often are you invited to revisit your thinking or work over time to reflect on how your learning is progressing?	4.935	1.267
How often do you engage in prototyping cycles where you ideate, draft, gather feedback, and revise your work?	4.884	1.300
How often are you offered alternative forms of assessment that help you gauge your understanding and adjust your direction, rather than just focusing on final grades?	4.910	1.306
<i>Social interaction</i>	5.106	1.185
How often do you engage with your peers in a learning community that feels healthy, trustworthy, and productive?	5.069	1.204
How often are you guided to bravely engage in controversial topics, courageous conversations, or complex experiences?	4.953	1.232
How often are you exposed to different cultures, disciplines, or perspectives that broaden and clarify your understanding of the world and others?	5.152	1.146
How often do you participate in team or small group experiences that help you develop critical communication and interpersonal skills?	5.249	1.133

“connect . . . with real world scenarios and . . . current events,” noting that slides often use “really old examples” and calling for fresher links to practice. Others emphasise day-to-day applicability and guidance for professional trajectories, “apply . . . to your daily life . . . for your future,” and build networks with peers and professors that “helped me . . . build up [my] professional life as well as . . . self-identity.” They ask for concrete operational know-how rather than distant showcases: “don’t just say ‘this business is doing that’; show us how,” including step-by-step illustrations like “how they reduce carbon emission,” “what tools they used,” and “what we can actually do tomorrow morning.”

Several call for contextually resonant materials, i.e. “use local cases, not only Western brands,” “bring examples from industries we know,” and “relate topics to what’s happening in Malaysia/SEA this week” and for currency and specificity: “up-to-date cases,” “recent news we can discuss,” and “examples that match our major.” Meaning also deepens when content speaks to identity and purpose: “link the topic to who we want to become” and “explain how this matters for the kind of leader I want to be.” Students distinguish awareness from applicability: “don’t leave us with definitions,” “show the process,” and “give the ‘how’, not just the ‘what’,” including practical artefacts like “checklists,” “maps of stakeholders,” and “simple frameworks we can try in projects.”

This student voice supports criticism that ESD can become rhetorical in add-on modules (Franco *et al.*, 2018; Glavič, 2020). While highlighting the “competency turn” and the assessment gap (Cebrián *et al.*, 2020; Kioupi and Voulvoulis, 2019), their push for current, locally meaningful cases emphasises “meaning” rather than demonstrating transfer to authentic contexts. Southeast Asian relevance, through local industries, current regional issues, and cultural and institutional sensitivity, echoes developed-context scholarship transferability concerns (Hallinger and Chatpinyakoo, 2019) by asking educators to curate timely, place-based, and identity-relevant experiences that foreground the “how” of sustainable management, i5’s “meaning” component connects ESD outcomes to lived student practice.

Foster joy and well-being. Students tie well-being to pacing, breaks, and the emotional climate, such as “Like a 10-minute break or like a 5-minute break so that we can reset our minds . . . so that we can focus on the lesson and what they’re teaching more.” Others point to structural stressors that drain joy: “mid-term test[s] . . . basically clumped together, which makes us more stressed out,” and “does not put the consideration of the students’ stress into the arrangements . . . having some of the time for students to have a break.” Joy rises when teaching feels playful, personal, and human: “the teacher managed to make the slide into a very cute . . . [format]; the classroom become so joyful, and she is so patient to 1 by 1 explain it,” and when there’s light-touch recognition—“she just handed us . . . chocolate . . . we compete to get [it], and it actually was very, very fun.”

Simple gameful tools help, “I truly enjoy using Kahoot . . . it makes class more enjoyable,” and “maybe the lecturer can create a Kahoot . . . or something . . . to get some more engagement,” but students caution against gimmicks: “not just another Kahoot game . . . something hands on.” They also underscore psychological safety: “group activities also help . . . as long as it’s not . . . forceful or too stressful,” while acknowledging the tension that “stress naturally comes . . . especially if [you’re] called on to speak,” which can spur participation but also heighten anxiety.

These patterns support ESD’s focus on learner-centred, emotionally attuned experiences that consider affect and motivation as design variables (Schnitzler, 2019; Ahel and Schirmer, 2023). i5’s creative turn uses joy to engage (Saunders *et al.*, 2022), with student evidence showing that compressed timetables, exam clustering, and face-saving norms can drown out joy and silence voices in Southeast Asian programs. In such situations, “small wins” like short breaks, patient one-on-one explanations, low-stakes competition, and gentle speaking acceleration matter. ESD’s instrumental drift (Kopnina, 2020) undermines transformative goals by sacrificing joy and well-being to throughput and employability signalling. Pacing with playful rigour and anchoring “fun” in meaningful, hands-on tasks rather than novelty makes joy compatible with accountability, advancing RME’s spirit and outcomes.

Develop supportive social interaction. Students value structured mixing that broadens perspectives, but they resist abrupt placement into unfamiliar groups. One suggests rotating tutorial groups to “broaden your perspective,” while another counters that being “grouped up . . . with random people” is “an introvert’s nightmare,” preferring familiar peers. Across responses, a middle ground emerges: “pair us up first . . . then build to bigger groups,” and “let us choose once, then rotate later so it’s fair.” Practical nudges are welcomed as motivation-

enhancing: “pairs work better than big random groups,” “a simple scoreboard makes people try,” and “show the top three examples so we know what good looks like.” Recognition matters too: “when the lecturer highlights a good answer . . . it motivates everyone,” and “seeing other groups’ work helps me compare and improve.”

Students also note that online formats reduce social exchange and preparation, weakening discussion: “in online class, people don’t prepare,” “breakout rooms go quiet,” and “it’s harder to read the room.” Several explicitly link reticence to local norms: “Malaysians . . . do not like to speak up . . . they feel embarrassed,” so tutors should “go . . . group by group” to seed dialogue. Even small movement helps: “stand up, move around, musical chairs style . . . it breaks the ice.” At the same time, some worry about equity in group work: “friends end up carrying the group,” and “random grouping is okay if roles are clear,” suggesting the need for role rotation and transparent contribution tracking. Psychological safety repeatedly surfaces: “don’t force us to speak in front of everyone at once,” “give an opt-in role first,” and “anonymous Q&A helps shy students.” When topics edge toward controversy, students flag cultural boundaries: “We don’t see controversial topics very often . . . Malaysia is quite conservative,” implying the value of graduated exposure and clear discussion norms before moving to adversarial debate.

This ambivalence supports i5’s view of social interaction as pluralistic and ethical problem-solving. Student voices highlight regional hierarchies and face-saving norms, which are translated into design strategies such as working in pairs, scaffolding roles, showcasing exemplars, and creating low-risk entry points (anonymous questions). Creative-pedagogy research emphasises studio-style critique and narrative work to build trust before high-stakes argumentation. In Southeast Asian classrooms, supportive social interaction is more about deliberate scaffolding than increasing group work to boost confidence without compromising inclusion or rigour.

Facilitate active engagement. Students consistently prefer “hands on” over passive slide-reading: “make it really simple,” add “games,” and avoid “just another Kahoot”—they want tactile, collaborative problem-play with “quizzes with small prizes,” “team ball-challenges,” and “role-plays.” Technology is welcomed as a means, not an end: smartboards, Padlet, and live Q&A can help, but “sometimes it’s not fun” if activity is reduced to digitised quizzes; “hands-on experience . . . would be the best,” with role-play that is “interesting,” not perfunctory. Several emphasise currency and authenticity—“sharing the news . . . related to our subject” keeps even morning classes lively, and “show us how they actually do it” turns attention into action. Students also describe simple motivational mechanics—“a small prize makes people try,” “post the top three so we know what good looks like,” and “give us a quick challenge we can build on.” They ask for purposeful use of platforms: “use Padlet to collect ideas, then make us defend them,” “let us sketch a solution, not just answer a quiz,” and “move us from pairs to groups so everyone has to do something.” Across comments, the refrain is clear: “don’t just tell us—let us try,” “let us build something,” and “make it practical so we can apply it tomorrow.”

These preferences reflect ESD’s shift toward authenticity and complexity, in which students engage with real-world, uncertain situations rather than memorising facts (Sigahi *et al.*, 2023). They support i5 and the creativity-pedagogy literature by showing that multimodal, design-led tasks like storyboarding, studio-style critique, and speculative scenarios improve perspective-taking and ethical sensitivity (Ibrahim and Storey, 2025; Cho *et al.*, 2025). According to Cebrián *et al.* (2020) and Glavič (2020), technology can aid but not replace meaningful making. Without assessment frameworks that capture teamwork, judgment, and transfer, “active” risks become performative. Students say brief, clear set-ups, authentic artefacts (cases), low-stakes competition to spark effort, staged collaboration, and visible exemplars make the activity not just busy but consequential for learning.

Design for iteration. Students foreground feedback timeliness, multi-stage tasks, and opportunities to “mess about . . . without penalty.” Positive practices include “weekly recap videos” that help students revisit difficult concepts, “quick check-ins after each milestone,”

and “draft reviews before the final,” which together “make it easier to correct mistakes early.” By contrast, many report the opposite: “90% of the classes, we don’t get any feedback at all,” or it arrives “too late to do anything about it.” They distinguish “quality feedback” from vague remarks—“not just ‘good job’ or ‘improve more,’ but what to change, where, and why”—and praise lecturers who provide “clear rubrics we can consult,” “examples of A-range work,” and “follow-up time in tutorials to apply the comments.” Several call for transparent criteria and progression: “tell us what ‘excellent’ looks like,” “show the steps from pass to distinction,” and “let us resubmit to prove we learned.” Students also highlight the value of low-stakes prototyping: “give small tries before the big grade,” “let us experiment without being punished,” and “mark improvement, not just the endpoint.” Culturally, one student reflects that in “Asian . . . culture . . . once wrong . . . whole life will be wrongs,” but notes a welcome shift toward “trial and error” in some classes—precisely the spirit of low-risk iteration. Others add practical enablers: “early diagnostics in week 2,” “mini-deadlines so we don’t crash at the end,” “peer critique with a checklist,” and “a feedback channel where we can ask follow-up questions.”

Multiple attempts, formative loops, and program-level spirals make i5’s ESD assessment deficit improvement visible and comparable (Cebrián *et al.*, 2020). According to students, they learn topics and then build on them, but they want to connect assessments across semesters to build skills intentionally. Research suggests that single-shot submissions and late, non-actionable comments in business schools perpetuate the rhetoric-practice gap (Franco *et al.*, 2018; Glavič, 2020) without redesign. Assessment should reflect i5’s creative risk-taking and Southeast Asian students’ demands for clarity and fairness by including iterative tasks, early diagnostics, exemplars, and rubrics that reward improvement (Hallinger and Chatpinyakoo, 2019). Iteration as a design principle, not an optional add-on, links ESD’s competency agenda to measurable development over time, closing the loop between learning processes and accountable outcomes (Kioupi and Voulvoulis, 2019; Cebrián *et al.*, 2020).

Cultural variation. Students repeatedly surface cultural dynamics that condition how i5 lands in Southeast Asian classrooms. Reticence and face-saving shape participation: “Malaysians don’t like to speak up; go group by group and use a little movement—like musical chairs—to break the ice,” and “being grouped with random people is an introvert’s nightmare; let us build up gradually.” Risk tolerance is culturally inflected—“In Asian culture if you’re wrong once it feels like you’re wrong forever, but trial-and-error classes help us learn”—so iteration must be explicitly low-stakes and visibly reward improvement, not just endpoints. Topic selection matters: “we don’t see controversial topics very often . . . Malaysia is quite conservative,” implying that social interaction needs norms, opt-in roles, and graduated exposure before adversarial debate.

Program structure can negatively impact student engagement, as mid-term tests and assignment due dates can be stressful, and breakout rooms can be quiet in online classes. Therefore, humane pacing and purposeful hybrid designs are essential, not luxuries. Finally, “use local cases, not only Western brands”, and “link the topic to who we want to become – explain how this matters for the kind of leader I want to be” are essential to meaning. These details align with developed-context ESD scholarship critiques of transferability (Hallinger and Chatpinyakoo, 2019) and warnings against instrumentalism that ignores justice and ecology (Kopnina, 2020; Kopnina and Meijers, 2014). They also support the idea that credible assessment and governance support creative, multimodal approaches (Calabor *et al.*, 2025; Cripps and Bobeva, 2025). Culturally attuned i5 means starting small (pair learners), scaffolding roles and feedback, pacing with compassion, grounding cases locally, and combining playful rigour with transparent rubrics to make joy and accountability compatible and allow students to practise responsible management in their contexts.

Interdependence of the i5 components. The five i5 elements work as a mutually reinforcing system rather than standalone tactics. When meaning is present, “Lectures should connect with real-world scenarios and current events” and “use local cases . . . relate topics to what’s happening in Malaysia or SEA this week,” students report greater willingness to participate,

which lifts joy and lowers performance anxiety. Joy, in turn, is sparked by humane pacing and playful challenge, as seen in “Give us a 5–10 minute break so we can reset our minds and focus more,” “a small prize makes people try,” and “she handed us chocolate . . . it was fun and helped us understand,” creating the psychological safety that enables social interaction to deepen beyond polite exchanges. Carefully scaffolded mixing—“start with pairs, then move to bigger groups—roles and expectations should be clear” and “a simple scoreboard or showing the top three examples motivates people to try”—opens the door to active engagement, where learners say “Don’t just tell us—let us try,” “use Padlet to collect ideas, then make us defend them,” and “show us the tools and steps people actually use so we can apply them tomorrow.” These experiences only crystallise as durable capability through iteration: “weekly recap videos help us revisit tough concepts,” “quality feedback tells me what to change, where, and why. With clear rubrics and examples,” and “give small tries before the big grade; let us experiment without being punished.”

When meaning is thin, and assessment is one-shot —“Ninety percent of the classes, we do not get any feedback at all—or it comes too late to do anything” —joy declines, interaction stalls, and activity becomes performative. This interdependence resonates with ESD’s competency agenda and assessment gap (Cebrián *et al.*, 2020; Kioupi and Voulvoulis, 2019), and with PRME’s creative turn, which views affect and collaboration as mechanisms rather than atmospherics. In summary, i5 works when meaning attracts attention, joy sustains it, social interaction diversifies it, active engagement channels it into making, and iteration consolidates it to close the rhetoric–practice gap.

Study-3

The measurement scale was inductively developed from focus group transcripts across the i5 domains. Representative statements were developed into clear, positively framed items and removed jargon while retaining the original intent. We specified eight items per component to ensure broad content coverage and adequate reliability for psychometric testing, while avoiding over-measurement that can inflate respondent burden and degrade data quality. Thus, facilitating deployment alongside other course evaluations without compromising completion rates or attention. To check face validity, a group of five students reviewed the items and confirmed that the statements accurately reflected their views and experiences. The full set of statements generated can be found in Table 3.

Study-3 methodology

SmartPLS was used to implement a PLS-SEM approach, being suited to exploratory and prediction-oriented modelling when constructs are operationalised as latent variables. Following Schuberth *et al.* (2018), we employed Confirmatory Composite Analysis (CCA) to evaluate the measurement model. This choice aligns with recommendations to CCA when working with indirect or composite-based conceptual measurement models and when refining emergent constructs in early-stage theory development (Hair *et al.*, 2020). The study received ethics approval with code: 2025/REC0291.

Table 3. HTMT discriminant validity

	Active engagement	Iteration	Joy and well-being	Meaning	Social interaction
Active engagement					
Iteration	0.848				
Joy and well-being	0.752	0.845			
Meaning	0.850	0.824	0.727		
Social interaction	0.863	0.831	0.713	0.846	

Participants. A convenience sample was recruited on campus by trained research assistants. As shown in [Table 4](#), the sample was predominantly female, in their early twenties and from Chinese background. Most were enrolled in Business/Management programmes or related business disciplines. The “Another” category includes programmes such as accountancy and business analytics.

Study-3 results

The PLS results indicate that all i5 constructs demonstrate acceptable internal consistency. Item loadings were generally moderate-to-strong, although several fell below the conventional 0.707 threshold. As all loadings exceeded 0.500, they were retained as acceptable for exploratory scale development ([Hulland, 1999](#)). Consequently, convergent validity was modest, with several AVE values falling marginally below the recommended 0.50 benchmark. Given the exploratory nature of the study, these items were retained to preserve transparency and provide future researchers with access to the complete instrument. The i5 dimensions were modelled as composite constructs, consistent with the study’s focus on measurement development and confirmatory composite analysis. Refer to [Table 5](#).

HTMT ratios support discriminant validity among the five i5 constructs, with all values below the 0.900 cutoff ([Gold et al., 2001](#)), although one value (0.863) marginally exceeds the more stringent 0.85 criterion ([Kline, 2011](#)). See [Table 3](#).

Study-3 discussion

The findings of Study-3 provide empirical support for conceptualising PRME’s i5 as a coherent and interdependent pedagogical system. Building on the descriptive findings of Study-1 and the explanatory insights from Study-2, the CCA demonstrates that the five dimensions of i5 can be operationalised as distinct yet closely related constructs within a Southeast Asian business education context. Consistent with ESD literature, the findings reinforce the importance of learning design and students’ emotional engagement in sustainability education ([Glavič, 2020](#)). Strong reliability scores across all five constructs indicate that students interpreted the i5 dimensions consistently. Supporting PRME’s proposition that creativity-centred pedagogies can be translated into measurable educational experiences ([Saunders et al., 2022](#)). Importantly, extending prior conceptual discussions by showing that meaning, joy, and iteration are not merely aspirational educational ideals. But observable and assessable dimensions of student learning.

The findings particularly reinforce the importance of “meaning” within RME. Study-2 repeatedly showed that students valued locally relevant and professionally applicable learning experiences. In Study-3, strong item loadings relating to real-world relevance and practical applicability suggest that students consistently associate meaningful learning with contextual authenticity and future applicability. This aligns with critiques that ESD can become rhetorical when disconnected from lived realities or operational practice ([Kopnina, 2020](#)). The findings

Table 4. Study-3 participant demographics

Gender	Age		Ethnicity		Degree type		Degree stage		
Male	93	Min	18	Indian	45	Business/ Management	133	Start	62
Female	121	Max	27	Chinese	136	Another	86	Middle	107
Prefer not to say	7	Ave	20.7	Malay	32	Other	2	End	52
		Std	1.36	Other	6				
				Prefer not to say	2				

Table 5. Outer loadings, construct reliability and validity

	Outer loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
<i>Active engagement</i>		<i>0.852</i>	<i>0.858</i>	<i>0.886</i>	<i>0.495</i>
Classes include hands-on tasks where I build or test ideas	0.740				
Short challenges make me think and try things, not just listen	0.746				
We use technology (e.g. Padlet, smartboards) to create and discuss ideas, not only to quiz	0.649				
Role-plays or simulations feel realistic and engaging	0.740				
News and current events are used to connect concepts to practice	0.736				
I receive quick prompts or mini-tasks that keep me actively involved	0.758				
Exemplars and criteria show me what high-quality work looks like	0.636				
I can apply what we do in class to real problems soon after	0.602				
<i>Iteration</i>		<i>0.843</i>	<i>0.844</i>	<i>0.879</i>	<i>0.477</i>
I receive feedback early enough to improve my work	0.638				
Rubrics and examples make expectations clear before I submit	0.686				
I have chances to submit drafts or prototypes and revise	0.691				
Short diagnostics help me identify strengths and gaps early	0.708				
Weekly summaries or recaps help me consolidate key ideas	0.728				
Mini-deadlines keep me progressing without last-minute stress	0.704				
Feedback explains what to change, where, and why	0.693				
My improvement over time is recognised and rewarded	0.675				
<i>Joy and well-being</i>		<i>0.841</i>	<i>0.841</i>	<i>0.879</i>	<i>0.477</i>
Class pacing (including short breaks) helps me stay focused and fresh	0.531				
Workloads and deadlines are scheduled in ways that feel manageable	0.682				
The instructor creates a warm, encouraging atmosphere	0.749				
Playful elements (e.g. friendly competition, small rewards) make learning enjoyable	0.744				

(continued)

Table 5. Continued

	Outer loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
I feel comfortable participating without fear of embarrassment	0.735				
When called on, I experience it as supportive rather than stressful	0.674				
The instructor explains patiently and checks that everyone is with them	0.698				
I leave class feeling energised and motivated to learn more	0.687				
<i>Meaning</i>		0.845	0.853	0.880	0.482
The course connects ideas to real-world situations I recognise	0.739				
Examples are current and relate to what is happening now	0.776				
Local or regional cases help me see why the content matters	0.716				
I learn practical steps (the "how") I can apply outside class	0.771				
Activities help me clarify the kind of professional I want to become	0.661				
I can see how this content applies to my daily life and future career	0.685				
We examine tools and processes used in real organisations	0.597				
I understand how different stakeholders are involved and affected	0.577				
<i>Social interaction</i>		0.861	0.864	0.892	0.507
We start in pairs and build to larger groups in a comfortable way	0.656				
Group roles and expectations are clear and fair	0.685				
Seeing examples of strong work helps my group aim higher	0.768				
The instructor circulates and supports each group's participation	0.759				
Simple prompts (e.g. movement, rotations) help break the ice	0.700				
I have low-risk ways to contribute (e.g. small-group talk, anonymous QandA)	0.666				
Group discussions expose me to perspectives different from my own	0.720				
Collaboration improves the quality of my ideas and work	0.737				

therefore support the idea that sustainability education in Southeast Asia requires contextual grounding. Rather than the direct transfer of Western pedagogical assumptions (Fujimoto *et al.*, 2025). Meaning appears to function as the entry point into the wider i5 system. Increasing students' willingness to participate socially and engage actively through iterative learning processes.

The Joy and Well-being construct further highlights the importance of affective dimensions in RME. Study-2 participants associated engagement with humane pacing within supportive classroom climates that are playful but low-anxiety learning structures. The reliability observed in Study-3 suggests that emotional and relational dimensions form a coherent component of the learning experience, rather than a peripheral concern. Whilst, weaker loadings associated with workload pacing suggest that structural pressures, such as compressed schedules, may constrain well-being-focused pedagogies. This reflects broader tensions identified in Southeast Asian higher education. These tensions include employability pressures and performance-oriented cultures that can undermine transformative learning aims (Fujimoto *et al.*, 2025). These findings suggest that implementing i5 effectively requires institutional support beyond isolated classroom interventions.

The Social Interaction construct underscores the importance of culturally attuned pedagogical scaffolding. Study-2 revealed that students valued collaboration but expressed discomfort with abrupt participation expectations in a context shaped by face-saving norms and participation anxiety. Study-3 provided support for the construct's coherence. Particularly through stronger indicators of instructor facilitation that create exposure to diverse perspectives and facilitate collaborative idea development. These findings align with the creativity-pedagogy literature, which emphasises peer learning and dialogic engagement as mechanisms for responsible management learning (Cho *et al.*, 2025; Wilson and Tewdwr-Jones, 2022). However, the results also reinforce Homer and Lim's (2024) argument that micro-contextual dynamics matter, in which, within Southeast Asian classrooms, effective social interaction depends less on increasing the volume of group work and more on carefully scaffolded participation, including gradual relationship building and psychologically safe learning environments.

Similarly, the Active Engagement findings support arguments that authentic participation is central to ESD-oriented pedagogy. Study-2 participants consistently rejected passive and presentation-driven learning in favour of practical and application-oriented activities that allowed them to "try," "build," and "apply" ideas. The Study-3 loadings indicate that hands-on tasks that include realistic simulations and authentic current-event integration were among the strongest indicators of active engagement. Thus supporting literature suggesting that experiential and multimodal pedagogies foster deeper ethical sensitivity and systems thinking (Ibrahim and Storey, 2025; Sigahi *et al.*, 2023). Importantly, the weaker loading associated with technology-mediated engagement reinforces students' earlier critiques that digital tools alone do not guarantee meaningful participation. Technology is effective only when embedded in purposeful, collaborative pedagogical designs.

The Iteration construct provides one of the study's strongest contributions to RME literature. As the literature has repeatedly identified limitations in traditional assessment systems. Particularly the dominance of single-shot evaluations that fail to capture developmental learning processes (Cebrián *et al.*, 2020; Kioupi and Voulvoulis, 2019). Study-2 highlighted strong student frustration regarding delayed or vague feedback. This frustration came alongside a desire for low-stakes experimentation and opportunities to improve over time. The Study-3 findings indicate that iteration forms a coherent construct encompassing feedback timeliness, diagnostics, staged assessment, and recognition of improvement. This supports PRME's argument that creativity and responsible management learning depend upon iterative experimentation rather than perfection-oriented assessment cultures (Saunders *et al.*, 2022). The findings are especially relevant within Southeast Asian contexts, where cultural norms surrounding failure avoidance may discourage risk-taking behaviours.

Overall, the HTMT findings support Studies 1 and 2, where the notion is that the i5 dimensions are highly interdependent pedagogical variables. Meaning, Social Interaction, and Active Engagement have strong relationships, supporting Study-2's qualitative findings. We found that meaning increased participation, joy increased psychological safety, social interaction enabled engagement, and iteration consolidated learning. The findings suggest that i5 is a dynamic pedagogical ecology where cognitive, emotional, relational, and behavioural dimensions reinforce each other. Finally, several AVE values were slightly below conventional thresholds, but this is due to the instrument's emergent, context-sensitive nature. Keeping lower-loading items preserved student-identified dimensions from Study-2. This includes locality, humane pacing, role clarity, and practical transferability. Thus, rather than a universal measure, the scale is a framework for improvement.

Theoretical contribution

By providing a micro-level, context-sensitive theorisation of how the i5 pedagogical dimensions operate within a Southeast Asian business school, this study contributes to the emerging RME literature. While existing discussions typically present meaning, joy and well-being, social interaction, active engagement, and iteration as distinct pedagogical dimensions (Saunders *et al.*, 2022), the findings suggest that students experience them as an interconnected learning system. Rather than functioning independently, the dimensions operate relationally and recursively. Meaning was strengthened through locally relevant content and collaborative learning. Social interaction contributed to psychological safety and confidence, whilst, joy and well-being encouraged participation and risk-taking. Active engagement created opportunities for application and reflection and iteration reinforced confidence and deeper learning. Consequently, the effectiveness of i5 appears to derive less from the presence of individual pedagogical practices and more from the quality of interactions between them.

This extends the i5 literature beyond contextual application. Instead, proposing a pedagogical ecology perspective in which learning outcomes emerge from dynamic relationships between dimensions rather than from discrete pedagogical interventions. The findings suggest that i5 should be understood not as a toolkit of individual teaching techniques. But as a mutually reinforcing system that shapes how students experience. In doing so, the study responds directly to calls for more contextually grounded micro-theories that complement broader macro-level narratives within RME (Homer and Lim's, 2024).

A further contribution concerns the relationship between universal pedagogical frameworks and locally embedded educational realities. Western assumptions regarding participation, creativity, engagement, and collaboration have frequently influenced RME and ESD scholarship. However, the findings demonstrate that cultural and institutional conditions, including face-saving norms, participation anxiety and other factors, mediate these pedagogical processes. Consistent with Hallinger and Chatpinyakoop (2019) and Kopnina (2020), the study suggests that pedagogical frameworks should be viewed as adaptive rather than universally transferable. In this sense, the contribution is not merely that i5 works in a Southeast Asian context, but that its enactment and outcomes are shaped through the interaction between pedagogical design and local educational realities. This provides an empirically grounded contribution to the development of context-sensitive RME theory. Offering a foundation for future comparative studies across diverse cultural settings.

Practical implications

The findings have several implications for business schools, educators, and PRME-aligned institutions seeking to operationalise RME beyond symbolic sustainability integration. Most importantly, the results suggest that coherent pedagogical systems are more important than isolated classroom activities for i5 implementation. Rather than functioning independently, meaning, joy and well-being, social interaction, active engagement, and iteration operate as an

interconnected learning ecology in which strengths or weaknesses in one dimension influence the effectiveness of others. Consequently, RME should prioritise the design of learning environments that cultivate sustained engagement, critical reflection, collaboration, and developmental learning rather than relying solely on content-heavy sustainability curricula.

Additionally there is an emphasis on contextual relevance and practical applicability. Students consistently valued learning connected to local industries and sustainability challenges, and future professional roles. Business schools should therefore incorporate more Southeast Asian cases and place-based learning opportunities that help students connect sustainability concepts to lived realities and responsible management practice. In contexts characterised by face-saving norms and participation anxiety, students responded more positively to scaffolded participation. Suggesting that small-group discussion including low-risk participation pathways and psychologically safe classrooms may be more effective than open debate. Such approaches not only enhance engagement but also foster responsible leadership including ethical decision-making, and civic awareness by encouraging students to participate and collaborate with confidence.

To strengthen iteration and developmental learning, the study highlights the importance of assessment design. Students valued prompt feedback with clear improvement pathways and opportunities to learn from mistakes. Educators may therefore need to move from high-stakes, single-shot assessments to staged tasks that incorporate drafts and formative feedback. These practices align with the creativity-centred principles underpinning i5. Whilst supporting the gradual development of sustainability competencies and reflective professional judgement.

Outcomes further suggest that responsible management pedagogy cannot rely solely on individual faculty initiatives. Clustered assessments and limited curricular flexibility can undermine engagement, reflection, and well-being. Even when innovative classroom practices are in place. Supporting i5 requires programme-level coordination with interdisciplinary collaboration and iterative curriculum design. More broadly, the study highlights the importance of culturally responsive RME implementation. Rather than treating pedagogical innovation as universally transferable. Institutions should adapt i5 principles to local educational realities and cultural norms. In doing so, business schools can create learning environments that better prepare graduates to navigate complex sustainability challenges and contribute to more socially and environmentally sustainable futures.

Limitations and future research

Several limitations should be acknowledged. First, the study was conducted within a single Southeast Asian private business school, limiting the broader generalisability of the findings. While intentionally context-sensitive, institutional culture, student demographics, and pedagogical conditions may differ from those of other universities and countries. Consequently, the findings should be viewed as a situated contribution to the RME literature rather than a universally representative model. Second, the study relies on students' self-reported perceptions, which align with its focus on lived learning experiences. Future research could strengthen the evidence base through triangulation using classroom observations, behavioural measures, or longitudinal assessments. In addition, the cross-sectional design limits understanding of how i5 experiences develop over time or influence longer-term professional outcomes.

Future research should examine the model across multiple institutions and national contexts to explore variations in the i5 dimensions across cultural, disciplinary, and institutional settings. Consistent with [Homer and Lim \(2024\)](#) progressive-layering approach to theory development, future studies could test the robustness of these relationships at broader meso-levels. Comparative and longitudinal research would further refine the measurement framework and assess the longer-term contribution of creativity-centred responsible management pedagogy to sustainability competencies and professional identity development.

Conclusion

This study contributes to the growing RME and ESD literature by empirically examining PRME's i5 framework as a coherent and interdependent pedagogical system within a Southeast Asian business school context. Across three sequential studies, the findings demonstrate that meaning, joy and well-being, social interaction, active engagement, and iteration are not isolated classroom techniques but mutually reinforcing dimensions that shape how students experience and sustain learning. The results suggest that students value learning environments that are locally relevant, psychologically safe, collaborative, practical, and developmentally iterative. Importantly, the study highlights how cultural and institutional realities shape the implementation and effectiveness of creativity-centred pedagogy in Southeast Asia. In doing so, the research responds to calls for more context-sensitive and micro-level theorisation within RME scholarship. Methodologically, the study advances an emerging measurement framework for i5 by integrating descriptive exposure mapping, qualitative explanation, and confirmatory composite validation. While exploratory and contextually situated, the findings suggest that PRME's creative turn offers considerable potential to bridge the long-standing rhetoric–practice gap in sustainability education. Ultimately, the study positions i5 not only as a pedagogical toolkit but as an interconnected learning system capable of supporting more meaningful, engaging, and developmentally sustained RME in higher education.

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