



# Joy-centred pedagogy and generative learning in Vietnamese higher education: A mixed-methods study

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## Abstract

Joy-centred pedagogy has emerged as a response to declining student engagement and rising emotional fatigue across contemporary higher education systems. Generative learning theory conceptualizes durable understanding as the outcome of selecting, organizing, and integrating processes that require sustained cognitive effort. This study examined whether relational climate dimensions associated with joy-centred pedagogy and structured generative activities predicted student agency, academic engagement, and cumulative GPA within Vietnamese universities. A convergent mixed-methods design combined survey data from 652 undergraduates with interviews conducted with 12 faculty members across disciplinary clusters. Hierarchical regression modelling indicated that intellectual vitality and relational care predicted student agency, while self-explanation frequency and retrieval practice frequency demonstrated significant associations with engagement and performance. Interaction analysis demonstrated that intellectual vitality amplified the positive association between self-explanation frequency and both academic engagement and cumulative GPA within reform-oriented Vietnamese universities. Qualitative evidence illustrated how faculty members framed productive struggle as meaningful academic effort under reform-oriented governance conditions. Integrated interpretation suggests that disciplined intellectual vitality stabilizes generative effort within accountability-driven institutional contexts.

**Keywords:** Agency; Engagement; Generative learning; Higher education; Joy

## 1. Introduction

Vietnamese higher education has undergone rapid restructuring under policy agendas emphasizing autonomy, accountability, and global integration during the past decade (Ngoc Bau & Tran, 2024). Legislative reforms expanded institutional discretion while strengthening accreditation and performance reporting obligations. Competitive environments linked to research funding, international rankings, and partnership networks increasingly influenced public universities (Ngoc & Tien, 2023). Evaluation systems emphasized employability, publication output, and standardized indicators of educational quality (Lu et al., 2025). Classroom level decision making also encountered growing instructional pressures under intensified institutional oversight.

Teaching practices often reflect system-level constraints such as large enrolments, centralized curriculum structures, and assessment cultures that prioritize measurable learning outcomes and examination performance (Alemdar & Aytaç, 2022; Owan et al., 2023; Pham, 2012; Sevnarayan, 2024). Although reform discourse often promotes innovation and learner-centred transformation, classroom routines may continue to be shaped by content coverage demands, rigid timetables, and examination-oriented assessment practices, leaving limited space for sustained conceptual dialogue and active student participation (Badal, 2025; Güloğlu-Demir & Kaplan-Keleş, 2021). Accountability conditions compress instructional time and constrain elaboration during cognitively demanding exchanges, and academic vitality depends on interpretive conditions that sustain effort under pressure, as noted in research on Vietnamese reform contexts (Yao & Collins, 2019).

Interpretive conditions alone cannot fully explain sustained engagement with abstract knowledge; rather, engagement also depends on affective and motivational factors such as self-efficacy, interest, positive learning experiences, and perseverance in challenging academic tasks

(Aviory et al., 2025; Cubacub & Jimenez, 2025; Tshering et al., 2024; Wang & Tambi, 2024). Joy centred pedagogy conceptualizes joy as disciplined intellectual vitality grounded in relational care, fairness, seriousness toward inquiry, and mutual respect (Scipio et al., 2026). Joy reflects resilience under conceptual difficulty and commitment to meaning construction, and theoretical perspectives indicate that positive academic emotion supports persistence and engagement under challenge (Akkan & Horzum, 2024; Fredrickson, 2001; Pekrun, 2006). Intellectual seriousness remains essential because epistemic responsibility must align with students' interpretive experience in demanding academic environments (Gao et al., 2025).

Cognitive processes underlying learning require equal attention. Generative learning theory defines learning as active engagement in selecting, organizing, and integrating knowledge through effortful processing (Fiorella & Mayer, 2016; Mayer, 2024). Retrieval practice strengthens reconstruction and transfer (Dunlosky et al., 2013; Karpicke & Blunt, 2011), and self-explanation promotes restructuring of conceptual understanding (Fiorella, 2023). Constructive and interactive engagement modes consistently produce stronger learning outcomes than passive reception (Chi & Wylie, 2014), and empirical research confirms the robustness of generative mechanisms across contexts (Petersen et al., 2023; Roelle et al., 2022).

Integration of relational and generative perspectives provides a coherent account of learning processes. Retrieval tasks reveal gaps in understanding, explanation routines organize conceptual relations, and integration processes consolidate knowledge across learning episodes (Fiorella & Mayer, 2016; Mayer, 2024). Vietnamese classrooms intensify the importance of this integration because dense curricula and cumulative assessment emphasize coverage and accuracy, while generative activities increase perceived difficulty by exposing incomplete understanding. Sustained participation requires both interpretive support and cognitive structuring, and deep understanding emerges when learners engage in active meaning construction rather than surface adjustment (Tobias, 2010).

Existing literature has validated generative mechanisms, yet integration between motivational climate and generative activity remains underdeveloped (Dunlosky et al., 2013; Fiorella & Mayer, 2016). Reform discourse in Vietnam emphasizes innovation and learner centred approaches, although empirical evidence clarifying convergence between relational framing and generative structure remains limited. Separation between interpretive and cognitive dimensions risks obscuring how persistence and understanding co develop under policy driven conditions.

This study examines relational climate and generative mechanisms within Vietnamese higher education during the 2025 academic year using a convergent mixed methods design. Quantitative analysis estimates relationships among joy centred pedagogical climate, generative activities, student agency, engagement, and academic performance, while qualitative analysis examines how faculty members enact relational care and structured generative routines under institutional constraints. Accordingly, the study sought to answer the following research questions:

RQ 1) To what extent do relational dimensions of joy-centred pedagogical climate predict student agency after controlling for demographics and prior academic performance in Vietnamese higher education?

RQ 2) To what extent do retrieval practice, self explanation, and collaborative generative activity predict academic engagement and cumulative GPA beyond relational climate effects in Vietnamese universities?

RQ 3) How do faculty members enact joy-centred relational practices and generative strategies under institutional constraints in Vietnamese higher education?

Integration of relational framing and generative mechanisms clarifies how disciplined intellectual vitality and structured cognitive activity jointly sustain agency, engagement, and performance under accountability driven reform conditions.

## **2. Literature Review**

### **2.1. Academic Vitality in Vietnamese Higher Education Reform Contexts**

Vietnamese higher education currently operates within a reform trajectory marked by curriculum

harmonization initiatives, digital governance requirements, and international benchmarking agendas that recalibrate institutional priorities (Nguyen et al., 2025). Regulatory frameworks encourage alignment between program outcomes and nationally standardized competency descriptors, while accreditation mechanisms intensify scrutiny of measurable graduate achievement and research output. Universities increasingly reorganize internal evaluation systems to demonstrate competitiveness within regional and global knowledge economies. Classroom environments frequently reflect massification pressures, combining large enrolment cohorts with tightly sequenced syllabi that prioritize coverage efficiency and examination readiness over iterative conceptual exploration (Chi & Wylie, 2014).

Performance-oriented governance environments influence how learners interpret academic challenge and evaluative exposure during classroom participation. Joy-centred pedagogy conceptualizes joy as disciplined intellectual vitality grounded in relational care, inclusion, and seriousness toward inquiry, as articulated in prior theoretical discussions. Broaden-and-build theory advanced by Fredrickson (2001) and control-value theory articulated by Pekrun (2006) indicate that enjoyment expands cognitive engagement when challenge remains meaningful and controllable within academic contexts.

Relational dimensions of classroom climate become particularly salient under reform conditions that intensify academic demand. Intellectual rigor without relational trust may increase avoidance of epistemic risk when students fear exposure of misunderstanding. Inclusion climate and perceived instructor support influence willingness to participate in cognitively demanding dialogue that requires articulation of incomplete reasoning. Engagement frameworks grounded in activity theory indicate that observable participation patterns reflect underlying perceptions of safety and competence (Chi & Wylie, 2014). Generative learning theory further implies that effortful processing depends on sustained attentional investment and tolerance for cognitive difficulty (Fiorella & Mayer, 2016).

## **2.2. Joy-centred Pedagogy as a Relational Condition for Intellectual Effort**

Joy-centred pedagogy conceptualizes joy as disciplined intellectual vitality sustained through relational care, mutual respect, and serious engagement with challenging ideas. Joy in university classrooms does not signify entertainment or emotional indulgence but reflects commitment to inquiry that persists under conceptual difficulty (Camfield, 2025). Control-value theory explained enjoyment as an achievement emotion associated with perceived control and task value, and that appraisal structure clarified why joy can coexist with rigor when learners interpret demands as meaningful and attainable (Pekrun, 2006). Affective factors also appear to be closely associated with academic performance, suggesting that enjoyment, interest, and positive learning experiences may support students' persistence and engagement while also reflecting their perceived success across learning episodes (Armiati et al., 2026; Kaku & Arthur, 2025; Ofem et al., 2024; Pekrun et al., 2017). Activity achievement emotions, including enjoyment, further exhibited systematic associations with academic performance across samples and study designs, strengthening the empirical plausibility of joy-related mechanisms within demanding higher education settings (Camacho-Morles et al., 2021).

Relational trust influences willingness to articulate partial understanding, revise reasoning publicly, and confront conceptual gaps emerging during generative activity. Retrieval practice and self-explanation require exposure of misunderstanding, while climates lacking perceived respect may provoke avoidance. Generative learning theory identified effortful processing as a prerequisite for durable understanding, and cognitive effort frequently involves temporary uncertainty or error (Fiorella & Mayer, 2016; Mayer, 2024). Classroom climates characterized by attentiveness and fairness may reduce defensive withdrawal during cognitively demanding tasks. Active participation also demonstrated close relationships with deeper processing across learning activities (Chi & Wylie, 2014).

Clarity of learning goals and constructive cognitive challenge stabilize disciplined academic effort across instructional sequences. Transparent expectations orient learners toward meaningful

generative processing rather than rote memorization routines embedded within examination-oriented cultures. Attainable rigor communicates seriousness toward inquiry while maintaining interpretability of academic demands. Generative learning theory articulated by Fiorella and Mayer (2016) clarifies that selecting, organizing, and integrating processes require structured guidance to translate effort into durable understanding.

Joy-centred pedagogy thus functions as a relational condition that may stabilize participation in cognitively effortful generative activities within Vietnamese university classrooms. Reform environments characterized by high performance expectations intensify the need for climates that legitimize questioning and iterative reasoning. Activity-based engagement models demonstrate that deeper cognitive involvement emerges when learners actively generate, explain, and test ideas in visible ways (Chi & Wylie, 2014). Generative learning theory clarifies how such activities strengthen conceptual understanding through selecting, organizing, and integrating processes (Fiorella & Mayer, 2016).

### **2.3. Generative Learning Theory and Observable Generative Activities**

Generative learning theory provides a cognitive explanation for how students construct durable understanding through active mental effort rather than passive exposure to information (Grabowski, 2004). Meaningful learning occurs when learners select relevant information, organize coherent structures, and integrate new material with prior knowledge in working memory before consolidating it into long-term representations (Fiorella & Mayer, 2016; Mayer, 2024). Cognitive effort becomes central in this framework because integration requires deliberate attention, monitoring, and restructuring of existing schemas. Instructional environments that rely primarily on repetition or recognition-based review rarely stimulate the level of processing required for transfer across contexts. Empirical syntheses in cognitive and educational psychology demonstrate that strategies demanding generative processing consistently outperform rereading or highlighting in promoting long-term retention (Dunlosky et al., 2013; Karpicke & Blunt, 2011).

Observable generative activities operationalize abstract cognitive principles into measurable classroom behaviours suitable for empirical analysis (Anyichie et al., 2023; Nugroho et al., 2025; Owan et al., 2023; Tshering et al., 2024). Retrieval practice requires students to recall information without prompts, which strengthens memory traces and enhances transfer performance across tasks (Dunlosky et al., 2013; Karpicke & Blunt, 2011). Self-explanation requires articulation of reasoning steps and integration of conceptual relationships, which supports deeper monitoring and correction of misunderstandings (Fiorella & Mayer, 2016). Elaborative summarizing and concept mapping demand organization of dispersed information into coherent structures. Collaborative generative tasks, including peer explanation and structured problem solving, introduce social dimensions of reasoning that can further consolidate understanding when tasks require explicit elaboration rather than division of labour (Akendita et al., 2026; Asare et al., 2025; Osei et al., 2026; Petersen et al., 2023).

Generative activities also relate directly to academic engagement and agency at the process level. Engagement frameworks grounded in the ICAP model distinguish passive reception from active, constructive, and interactive behaviours, with constructive and interactive modes associated with deeper cognitive processing (Chi & Wylie, 2014). Generative behaviours such as explaining, teaching, and testing represent constructive or interactive activity patterns that signal sustained cognitive investment. Agency may develop when students experience competence during successful generative processing, reinforcing beliefs about personal control over learning outcomes. Cognitive theory suggests that repeated engagement in structured generative activity strengthens metacognitive awareness and strategic regulation over time (Fiorella & Mayer, 2016; Mayer, 2024).

Within Vietnamese university contexts characterized by dense curricular pacing and examination pressure, generative activities introduce structured opportunities for deep processing that counteract tendencies toward surface familiarity. Retrieval practice disrupts illusion of competence produced through rereading, while self-explanation exposes gaps in reasoning that

might otherwise remain hidden. Collaborative generative work requires articulation of logic that cannot be substituted with memorized phrases. Empirical evidence repeatedly demonstrates that effortful generative processing yields measurable gains in retention and transfer across subject domains and age groups (Dunlosky et al., 2013; Karpicke & Blunt, 2011).

#### **2.4. Integrating Joy-centred Climate and Generative Activity in Explaining Student Outcomes**

Relational climate and generative activity represent analytically distinct yet potentially interdependent dimensions of university teaching practice (Blumenschein et al., 2025). Joy-centred pedagogy establishes relational care, inclusion, intellectual vitality, and constructive cognitive challenge as conditions shaping students' interpretations of difficulty (Camfield, 2025). Generative learning theory explains how structured activities transform cognitive effort into durable understanding through selecting, organizing, and integrating processes. Sustained participation in retrieval practice or self-explanation requires tolerance for uncertainty and willingness to expose incomplete reasoning. Classroom climates characterized by trust and fairness may reduce defensive withdrawal during effortful processing, allowing generative strategies to operate effectively (Fiorella & Mayer, 2016; Mayer, 2024).

Student agency, academic engagement, and academic performance represent distinct but interconnected outcomes within this integrated perspective. Agency reflects perceived ownership, competence, and self-regulatory control during learning processes, consistent with student-centred learning perspectives emphasizing participatory ownership and active contribution (Lee et al., 2026). Engagement reflects sustained cognitive and behavioural investment across course activities, including persistence during complex tasks. Performance reflects accumulated mastery demonstrated through assessment outcomes. Generative learning research has demonstrated that effortful retrieval and elaboration strengthen performance over time (Dunlosky et al., 2013; Karpicke & Blunt, 2011). Engagement theory grounded in activity patterns suggests that constructive and interactive behaviours predict deeper processing relative to passive reception (Chi & Wylie, 2014).

The integrative argument advanced in this study posits that Joy-centred climate may stabilize participation in generative activities that demand attentional control and metacognitive monitoring. Broaden-and-build theory suggested that positive emotions expand cognitive repertoires and strengthen enduring resources, which implies that joy may increase willingness to sustain effortful generative processing during uncertainty rather than narrow attention toward avoidance (Fredrickson, 2001). Control-value theory also indicated that enjoyment depends on perceived control and task value, which clarifies why transparent goals and fair relational treatment can increase persistence during retrieval and explanation routines that initially feel difficult (Pekrun, 2006). Intellectual vitality communicated through instructor modelling may normalize struggle as an expected feature of scholarly work rather than as evidence of inadequacy. Inclusion climate may encourage articulation of reasoning during collaborative generative tasks, strengthening conceptual integration. Evidence of reciprocal relations between achievement emotions and performance further supports examination of joint pathways linking relational climate, generative activity, engagement, and GPA over time (Camacho-Morles et al., 2021; Pekrun et al., 2017).

Demographic and academic background characteristics, including gender, academic year, disciplinary field, and prior GPA, require consideration to isolate instructional influences from structural variation. Performance disparities may reflect cumulative academic history rather than current classroom climate or generative engagement. Controlling for background covariates increases interpretive precision regarding the contribution of relational and generative predictors. Reform conditions in Vietnam create institutional environments that emphasize measurable achievement, yet sustainable academic vitality depends upon alignment between relational support and structured cognitive effort. Integration of Joy-centred pedagogy with generative learning theory offers a theoretically grounded framework for examining how disciplined intellectual engagement emerges within contemporary Vietnamese university classrooms (Chi &

Wylie, 2014; Fiorella & Mayer, 2016).

### 3. Methods

#### 3.1. Research Design and Data Collection

This study employed a convergent mixed methods design grounded in joy centred pedagogy and generative learning theory within Vietnamese higher education during the 2025 academic year. Quantitative data were collected from February to July 2025 to capture student perceptions across instructional cycles, while qualitative interview data were collected from April to December 2025 to examine faculty members' enactment of relational care, intellectual vitality, and generative practices within Vietnamese universities. Ethical approval was obtained prior to data collection, and all participants provided informed consent before survey completion and interviews.

The sample included 652 undergraduate students enrolled in courses across multiple disciplines, with voluntary participation and informed consent obtained prior to data collection in this study. Lecturer data were drawn from 12 faculty members through semi structured interviews exploring instructional practices and institutional constraints, and all interviews were recorded, transcribed, anonymized, and summarized in Table 1 alongside the data collection timeline.

Table 1

*Sample characteristics and data collection timeline (students = 652; Faculty members =12)*

<i>Groups and Variable</i>	<i>Description</i>	<i>Value</i>
<b>Students</b>		
Gender	Male	301 (46.17%)
	Female	351 (53.83%)
Academic year	Year 1	166 (25.46%)
	Year 2	172 (26.38%)
	Year 3	159 (24.39%)
	Year 4	155 (23.77%)
Disciplinary cluster	STEM	205 (31.44%)
	Social Sciences	148 (22.70%)
	Education	120 (18.40%)
	Business & Economics	110 (16.87%)
	Humanities	69 (10.58%)
Prior GPA (10-point scale)	Mean (SD), Range	7.38 (0.90), 5.00–9.10
Cumulative GPA (10-point scale)	Mean (SD), Range	7.42 (0.88), 5.10–9.20
<b>Faculty members</b>		
Gender	Male	7 (58.33%)
	Female	5 (41.67%)
Teaching experience	Mean (SD), Range	14.17 (5.28), 6–23 years
Disciplinary cluster	STEM	3 (25.00%)
	Social Sciences	3 (25.00%)
	Education	2 (16.67%)
	Business & Economics	2 (16.67%)
	Humanities	2 (16.67%)

#### 3.2. Measurement Instruments and Analytical Structure

The student survey was developed through adaptation of existing measurement approaches associated with classroom climate, generative learning, achievement emotion, and engagement research rather than through construction of a wholly new inventory. Relational care, inclusion climate, intellectual vitality, clarity of learning goals, and perceived cognitive challenge were

operationalized using adapted classroom climate and pedagogical environment indicators emphasizing fairness, intellectual support, participation safety, and cognitively challenging instruction. Item construction was informed by classroom engagement and cognitive activation frameworks developed by Chi and Wylie (2014), generative learning measurement approaches synthesized by Fiorella and Mayer (2016), and achievement emotion perspectives proposed by Pekrun (2006).

Retrieval practice and self-explanation frequency were adapted from retrieval based learning and generative learning research examining effortful recall, explanation generation, conceptual restructuring, and integration processes during higher education learning activities (Fiorella & Mayer, 2016; Karpicke & Blunt, 2011; Roelle et al., 2022). Collaborative generative activity items were adapted from interactive and collaborative engagement approaches emphasizing peer explanation, collaborative elaboration, and shared problem solving within cognitively demanding instructional contexts (Chi & Wylie, 2014; Petersen et al., 2023).

Student agency items were adapted from self-regulated learning and participatory learning frameworks emphasizing ownership, competence, strategic regulation, and active contribution during classroom participation. Academic engagement items reflected cognitive and behavioural investment in learning activities and were adapted from school engagement literature (Fredricks et al., 2004). Academic performance was measured using cumulative GPA on the Vietnamese 0 to 10 grading scale, while prior GPA functioned as a baseline academic control.

All survey items used five point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). Each construct included four to six observed indicators. Example items included “My lecturer encourages students to explain difficult ideas publicly” for intellectual vitality, “I attempt to recall concepts without notes during classroom activities” for retrieval practice, and “I explain concepts in my own words during learning activities” for self-explanation.

Scale adaptation followed contextual refinement procedures before formal data collection. Two educational researchers and two university lecturers reviewed the instrument to evaluate conceptual alignment, wording clarity, and contextual appropriateness for Vietnamese higher education. A pilot administration involving 35 undergraduate students was subsequently conducted to examine item clarity and response interpretability. Minor wording revisions were implemented before full administration. Content validity was strengthened through literature-based item adaptation, expert review, and pilot testing, while construct validity was evaluated through confirmatory factor analysis, convergent validity, discriminant validity, and reliability diagnostics. Table 2 summarizes the adapted measurement foundations used to operationalize relational climate, generative learning activities, student agency, and academic engagement within Vietnamese higher education contexts.

Table 2

*Sources of adapted measurement instruments*

<i>Construct</i>	<i>Measurement focus</i>	<i>Adapted measurement basis</i>	<i>Key source</i>
Relational Care	Fairness, respect, psychological safety	Classroom climate and active participation indicators	Chi and Wylie (2014)
Inclusion Climate	Inclusive participation and communicative safety	Engagement and participatory classroom interaction measures	Fredricks et al. (2004)
Intellectual Vitality	Cognitive activation and productive struggle	Generative learning and cognitively activating instruction	Fiorella and Mayer (2016)
Clarity of Learning Goals	Instructional clarity and interpretability	Generative learning instructional structure	Mayer (2024)
Perceived Cognitive Challenge	Attainable rigor and intellectual demand	Cognitive engagement and generative processing	Chi and Wylie (2014)

Table 2 continued

<i>Construct</i>	<i>Measurement focus</i>	<i>Adapted measurement basis</i>	<i>Key source</i>
Retrieval Practice Frequency	Effortful recall and reconstruction	Retrieval practice measurement approaches	Karpicke and Blunt (2011)
Self-Explanation Frequency	Explanation generation and integration	Generative learning explanation strategies	Fiorella and Mayer (2016)
Collaborative Generative Activity	Peer explanation and collaborative elaboration	Interactive engagement approaches	Petersen et al. (2023)
Student Agency	Ownership and self-regulatory participation	Self-regulated learning approaches	Lee et al. (2026)
Academic Engagement	Cognitive and behavioural investment	School engagement framework	Fredricks et al. (2004)

The measurement framework integrates relational, cognitive, and participatory dimensions derived from established educational research traditions. Relational climate indicators emphasize fairness, participation safety, and intellectual support, while generative learning indicators focus on retrieval, explanation, and collaborative elaboration processes associated with deep cognitive engagement. Adaptation across multiple theoretical traditions strengthened contextual alignment with reform-oriented Vietnamese university classrooms while preserving conceptual consistency with established higher education research. Table 3 presents the analytical structure of independent, dependent, and control variables included in the hierarchical regression models.

Table 3

*Variable specification and measurement structure*

<i>Variable Role and Construct</i>	<i>Theoretical Basis</i>	<i>Measurement Format</i>	<i>Scale Range</i>
<b>Independent</b>			
Relational Care	Joy-centred pedagogy	Likert scale	1–5
Inclusion Climate	Joy-centred pedagogy		1–5
Intellectual Vitality	Joy-centred pedagogy		1–5
Clarity of Learning Goals	Joy-centred pedagogy		1–5
Perceived Cognitive Challenge	Joy-centred pedagogy		1–5
Retrieval Practice Frequency	Generative learning theory		1–5
Self-Explanation Frequency	Generative learning theory		1–5
Collaborative Generative Activity	Generative learning theory		1–5
<b>Dependent</b>			
Student Agency	Engagement and agency theory	GPA (10-point scale)	1–5
Academic Engagement	Engagement theory		1–5
Academic Performance (Cumulative GPA)	Institutional academic records		0–10
<b>Control</b>			
Gender	Demographic variable	Binary coding	0–1
Academic Year	Institutional progression	Ordinal coding	1–4
Disciplinary Cluster	Institutional classification	Categorical coding	1–5
Prior GPA (Baseline academic standing)	Academic history	GPA (10-point scale)	0–10

The analytical structure distinguishes relational climate dimensions from observable generative learning activities while retaining demographic and academic controls to strengthen interpretive precision across regression models. Student agency, academic engagement, and academic performance were treated as analytically distinct outcomes reflecting participatory, behavioural, and achievement dimensions within Vietnamese higher education environments.

### 3.3. Data Analysis

Data analysis examined relationships between relational climate variables derived from joy centred pedagogy and generative activity variables through three hierarchical regression models in this study. Model 1 estimated associations with student agency after controlling for demographic and academic characteristics, Model 2 examined academic engagement using the same structure, and Model 3 analysed cumulative GPA while controlling for prior GPA to establish baseline performance.

Reliability was assessed using Cronbach alpha and composite reliability, while convergent validity was evaluated through average variance extracted. Confirmatory factor analysis examined the proposed 10 factor structure before regression modelling. Discriminant validity was assessed using heterotrait monotrait ratios, and diagnostic checks addressed multicollinearity and residual assumptions. Qualitative data were analysed through thematic coding of relational care, inclusion climate, intellectual vitality, retrieval practice, and self-explanation, and integrated interpretation connected quantitative patterns with instructional practices. Iterative comparison across interview transcripts supported thematic consistency during qualitative interpretation. Coding procedures included iterative comparison across transcripts and analytic discussion between two researchers to strengthen interpretive consistency during thematic development.

All continuous predictors were mean centred before interaction analysis, and common method variance tests indicated no serious bias, supported by Harman's test and comparison with a single factor CFA model. The first unrotated factor accounted for less than 50% of total variance, indicating that common method bias was unlikely to dominate the observed relationships. Procedural controls included anonymous responses, balanced item sequencing, and assurance that survey responses did not affect academic evaluation in Vietnamese institutions.

## 4. Results

### 4.1. Measurement Integrity and Construct Differentiation

Measurement evaluation examined whether relational climate constructs derived from joy centred pedagogy and generative activity constructs functioned as distinct yet coherent dimensions within Vietnamese higher education during the 2025 academic cycle. Analytical procedures included internal consistency testing, confirmatory factor analysis, discriminant validity assessment, and multicollinearity diagnostics prior to regression modelling, with relational care, inclusion climate, intellectual vitality, clarity of learning goals, and perceived cognitive challenge forming one cluster and generative indicators forming another cluster.

Internal consistency analysis demonstrated strong reliability across all constructs measured using five-point Likert scales. Standardized factor loadings ranged from .63 to .88, while Cronbach alpha ranged from .81 to .90 and composite reliability ranged from .84 to .92 across constructs in this study. Student agency and academic engagement exceeded .89 in internal consistency estimates, and detailed reliability and validity diagnostics are presented in Table 4.

Table 4

*Reliability and construct validity diagnostics (N = 652)*

<i>Construct</i>	<i>Items</i>	<i>Standardized Loading Range</i>	<i>Cronbach's Alpha</i>	<i>Composite Reliability</i>	<i>AVE</i>
Relational Care	5	.68-.82	.87	.89	.62
Inclusion Climate	5	.66-.81	.85	.88	.60
Intellectual Vitality	5	.71-.85	.88	.90	.64
Clarity of Learning Goals	4	.65-.79	.83	.86	.58
Perceived Cognitive Challenge	4	.63-.77	.81	.84	.55
Retrieval Practice Frequency	4	.69-.83	.86	.88	.61
Self-explanation Frequency	4	.67-.84	.84	.87	.59
Collaborative Generative Activity	4	.64-.80	.82	.85	.57
Student Agency	6	.72-.86	.89	.91	.66
Academic Engagement	6	.74-.88	.90	.92	.68

Descriptive statistics indicated that relational climate dimensions exceeded the midpoint of the five-point scale, reflecting moderately strong perceptions of relational support and intellectual vitality across Vietnamese institutions in this study. Generative activity frequencies showed variation across courses, while student agency, academic engagement, and academic performance remained within expected distributions without extreme skewness.

All constructs demonstrated acceptable reliability and convergent validity, with standardized factor loadings remaining above .60 and AVE values exceeding the recommended .50 threshold across constructs. Cronbach alpha and composite reliability also remained above recommended benchmarks, supporting internal consistency across relational climate, generative activity, agency, and engagement dimensions. Variance inflation factor diagnostics indicated no multicollinearity concerns among predictors. Confirmatory factor analysis further supported the proposed 10 factor measurement structure with acceptable global fit indices. Table 5 presents confirmatory factor analysis fit indices evaluating alignment between the proposed 10 factor measurement structure and observed covariance patterns within Vietnamese higher education contexts.

Table 5

*Confirmatory factor analysis model fit indices (N = 652)*

<i>Fit Index</i>	<i>Value</i>	<i>Recommended Threshold</i>	<i>Interpretation</i>
$\chi^2/df$	2.41	< 3.00	Acceptable
CFI	.94	$\geq .90$	Good
TLI	.93	$\geq .90$	Good
RMSEA	.047	$\leq .08$	Good
SRMR	.041	$\leq .08$	Good

Model fit indices indicated acceptable alignment with conventional SEM thresholds, supporting adequate representation of observed covariance patterns within the measurement framework in this study. The 10-factor structure aligned with the theorized relational and generative architecture, while average variance extracted exceeded .50 across constructs, supporting convergent validity alongside acceptable discriminant validity patterns. Heterotrait monotrait ratios ranged from .42 to .79 and remained below the .85 threshold, confirming differentiation between relational climate and generative activity dimensions, and detailed HTMT results are reported in Table 6.

Table 6

*Heterotrait–monotrait (HTMT) ratio matrix*

<i>Construct</i>	<i>RC</i>	<i>IC</i>	<i>IV</i>	<i>CLG</i>	<i>PCC</i>	<i>RPF</i>	<i>SEF</i>	<i>CGA</i>	<i>SA</i>	<i>AE</i>
Relational Care (RC)	–									
Inclusion Climate (IC)	.63	–								
Intellectual Vitality (IV)	.71	.68	–							
Clarity of Learning Goals (CLG)	.58	.55	.66	–						
Perceived Cognitive Challenge (PCC)	.60	.57	.69	.62	–					
Retrieval Practice Frequency (RPF)	.49	.46	.52	.54	.51	–				
Self-Explanation Frequency (SEF)	.53	.50	.58	.59	.56	.72	–			
Collaborative Generative Activity (CGA)	.55	.52	.61	.57	.59	.68	.74	–		
Student Agency (SA)	.69	.64	.79	.66	.63	.71	.76	.68	–	
Academic Engagement (AE)	.66	.61	.74	.69	.65	.73	.78	.70	.82	–

All HTMT values remained below the conservative .85 threshold, confirming empirical distinction between relational climate and generative activity constructs despite moderate theoretical association. Descriptive statistics and multicollinearity diagnostics are presented in Table 7.

Table 7  
*Descriptive statistics and multicollinearity diagnostics*

Variable	Mean	SD	Min	Max	VIF
Relational Care	3.84	0.67	2.10	5.0	2.14
Inclusion Climate	3.79	0.70	1.95	5.0	2.06
Intellectual Vitality	3.88	0.65	2.30	5.0	2.27
Clarity of Learning Goals	3.91	0.63	2.40	5.0	1.98
Perceived Cognitive Challenge	3.74	0.72	2.00	5.0	1.91
Retrieval Practice Frequency	3.46	0.76	1.80	5.0	2.18
Self-Explanation Frequency	3.52	0.71	1.90	5.0	2.09
Collaborative Generative Activity	3.58	0.74	1.85	5.0	2.12
Student Agency	3.77	0.69	2.05	5.0	–
Academic Engagement	3.82	0.66	2.10	5.0	–
Academic Performance (GPA)	7.42	0.88	5.10	9.20	–

Patterns reported in Table 7 indicate moderate variability across relational climate and generative activity predictors, supporting regression analysis without severe range restriction in Vietnamese higher education contexts. Mean values above the midpoint reflect substantial presence of joy centred pedagogical dimensions, while variation in generative activity frequency indicates instructional heterogeneity across institutions. Variance inflation factor values remained below conservative thresholds, confirming absence of problematic multicollinearity among predictors within hierarchical models in this study. Zero order correlations among relational, generative, and outcome variables are presented in Table 8 to illustrate primary associations prior to regression analysis.

Table 8  
*Zero-order correlations among main study variables (N = 652)*

Variable	RC	IV	RPF	SEF	SA	AE	GPA
Relational Care	–						
Intellectual Vitality	.62***	–					
Retrieval Practice Frequency	.41***	.47***	–				
Self-Explanation Frequency	.45***	.53***	.68***	–			
Student Agency	.58***	.65***	.60***	.67***	–		
Academic Engagement	.55***	.63***	.66***	.71***	.78***	–	
Cumulative GPA	.31***	.39***	.42***	.48***	.51***	.54***	–

Note. \*\*\*:  $p < .001$

Correlation patterns demonstrate moderate to strong associations among relational, generative, agency, and engagement constructs. The strongest associations emerged between theoretically adjacent participatory constructs, although discriminant validity diagnostics remained within acceptable thresholds across the measurement framework. Performance correlations remain moderate, suggesting explanatory space for regression modelling.

#### 4.2. Relational Climate and the Formation of Student Agency

Relational climate dimensions derived from joy centred pedagogy and generative activity indicators were examined in relation to student agency within Vietnamese higher education during the 2025 academic year using hierarchical regression in this study. Student agency was defined as perceived ownership, competence, and self-regulatory participation, and control variables explained 13% of variance with prior GPA showing a positive effect and academic year showing a modest negative association.

Addition of relational climate increased explained variance to 36%, with intellectual vitality showing the strongest effect and remaining dimensions also demonstrating positive associations. Inclusion of generative activities increased explained variance to 43%, with self-explanation emerging as the strongest predictor followed by retrieval practice and collaborative activity, and

full results are presented in Table 9.

Relational climate variables remained statistically significant after inclusion of generative activities, although standardized coefficients decreased slightly, indicating partial overlap between relational vitality and structured cognitive effort in Vietnamese classrooms. Intellectual vitality remained the strongest relational predictor, while self-explanation frequency emerged as the strongest generative predictor, supporting the role of articulated reasoning in strengthening perceived competence and ownership. The results indicate that student agency reflects joint influence of relational climate and structured generative practice under reform conditions in this study. Prior academic achievement contributed to agency, while relational care and intellectual vitality supported agentic participation in challenging tasks, and structured retrieval and explanation practices reinforced sustained intellectual involvement in Vietnamese university classrooms.

Table 9  
Hierarchical regression results for student agency (N = 652)

Predictor	Step 1 $\beta$	Step 2 $\beta$	Step 3 $\beta$
Control Variables			
Gender	.03	.02	.02
Academic Year	-.12**	-.09*	-.08*
Disciplinary Cluster	.04	.03	.02
Prior GPA	.31***	.25***	.21***
Relational Climate Variables			
Relational Care		.24***	.19***
Inclusion Climate		.18**	.15**
Intellectual Vitality		.29***	.23***
Clarity of Learning Goals		.17**	.14**
Perceived Cognitive Challenge		.15**	.12*
Generative Activity Variables			
Retrieval Practice Frequency			.16**
Self-Explanation Frequency			.21***
Collaborative Generative Activity			.11*
Model Statistics			
R <sup>2</sup>	.13	.36	.43
$\Delta R^2$		.23	.07
F Change		41.28***	18.64***

Note. \*.  $p < .05$ ; \*\*.  $p < .01$ ; \*\*\*.  $p < .001$

### 4.3. Generative Activity and the Structuring of Academic Engagement and Performance

Academic engagement and academic performance were examined through two regression models grounded in generative learning theory and joy centred pedagogy within Vietnamese higher education during the 2025 academic year. Academic engagement was defined as sustained cognitive and behavioural investment, while academic performance was measured through cumulative GPA on the ten-point scale, and identical control variables and relational indicators were retained across models to ensure comparability in this study.

The analytical sequence began with demographic and academic characteristics, followed by relational climate dimensions and generative activity indicators across hierarchical steps. Academic engagement results are reported in Table 10, presenting standardized coefficients that reflect incremental explanatory contributions across model stages.

Control variables explained 15% of variance in academic engagement, and prior GPA showed a significant positive association indicating alignment between prior achievement and sustained

Table 10  
*Hierarchical regression results for academic engagement (N = 652)*

Predictor	Step 1 $\beta$	Step 2 $\beta$	Step 3 $\beta$
Control Variables			
Gender	0.02	0.01	0.01
Academic Year	-.09*	-0.07*	-0.06*
Disciplinary Cluster	0.03	0.02	0.02
Prior GPA	0.27***	0.21***	0.18***
Relational Climate Variables			
Relational Care		0.22***	0.17***
Inclusion Climate		0.16**	0.13**
Intellectual Vitality		0.26***	0.20***
Clarity of Learning Goals		0.15**	0.12**
Perceived Cognitive Challenge		0.14**	0.11*
Generative Activity Variables			
Retrieval Practice Frequency			0.19***
Self-Explanation Frequency			0.23***
Collaborative Generative Activity			0.15**
Model Statistics			
R <sup>2</sup>	.15	.38	.47
$\Delta R^2$		.23	.09
F Change		39.74***	24.11***

engagement during 2025 coursework in this study. Academic year showed a modest negative association across progression stages, while gender and disciplinary cluster did not reach statistical significance after accounting for other variables.

Addition of relational climate increased explained variance to 38%, with intellectual vitality showing the strongest effect and relational care and inclusion climate also contributing positively. Inclusion of generative activities increased explained variance to 47%, with self-explanation as the strongest predictor followed by retrieval practice and collaborative activity, and academic performance was analyzed using the same structure with results reported in Table 11.

Table 11  
*Hierarchical regression results for academic performance (Cumulative GPA, 0–10 scale) (N = 652)*

Predictor	Step 1 $\beta$	Step 2 $\beta$	Step 3 $\beta$
Control Variables			
Gender	0.04	0.03	0.03
Academic Year	-0.06	-0.05	-0.04
Disciplinary Cluster	0.05	0.04	0.03
Prior GPA	0.52***	0.48***	0.43***
Relational Climate Variables			
Relational Care		0.12*	0.09*
Inclusion Climate		0.09	0.07
Intellectual Vitality		0.18**	0.14**
Clarity of Learning Goals		0.10*	0.08*
Perceived Cognitive Challenge		0.08	0.06
Generative Activity Variables			
Retrieval Practice Frequency			0.17**
Self-Explanation Frequency			0.21***
Collaborative Generative Activity			0.12*
Model Statistics			
R <sup>2</sup>	.29	.35	.42
$\Delta R^2$		.06	.07
F Change		9.18***	14.63***

Robustness analysis applied heteroscedasticity-consistent standard errors using the HC3 estimator to evaluate stability of regression coefficients under variance inequality across

hierarchical models in this study. Coefficient patterns remained consistent, and exclusion of prior GPA did not alter direction or relative strength of generative predictors, while control variables explained 29% of variance in cumulative GPA with prior GPA showing a strong positive association.

Inclusion of generative activities increased explained variance to 42%, with self-explanation showing the strongest association with GPA and retrieval practice also demonstrating a significant effect, while collaborative activity contributed modestly. Moderation effects were examined using mean centred interaction terms across sequential steps, and detailed coefficients with variance changes are reported in Table 12.

Table 12

*Interaction effects between relational climate and generative activities (N = 652)*

Predictor	Academic Engagement $\beta$	GPA $\beta$
Intellectual Vitality $\times$ Self-Explanation	0.08**	0.07*
Relational Care $\times$ Retrieval Practice	0.03	0.02
Model statistics (final step including interaction terms)		
Outcome	$\Delta R^2$	F Change
Academic Engagement	.01	6.42**
GPA	.01	4.18*

Statistical results indicated a significant interaction between intellectual vitality and self-explanation frequency predicting academic engagement with  $\beta = .08$ ,  $p < .01$ , and a parallel interaction predicting cumulative GPA with  $\beta = .07$ ,  $p < .05$  in this study. Simple slope analysis showed stronger associations between self-explanation and outcomes under high intellectual vitality compared with low intellectual vitality, with slopes estimated at  $-1$  SD and  $+1$  SD following mean centring procedures.

Interaction between relational care and retrieval practice did not reach statistical significance across models. Intellectual vitality specifically strengthened the association between self-explanation and both academic engagement and GPA, consistent with arguments proposed by Fredrickson (2001) and Pekrun (2006). Relational care did not significantly moderate the association between retrieval practice and either outcome.

#### 4.4. Convergence of Relational and Cognitive Mechanisms

Qualitative findings clarified how relational climate dimensions and generative activities intersected within instructional practice across Vietnamese universities in this study. Regression results showed additive contributions from intellectual vitality, relational care, retrieval practice, and self-explanation across agency, engagement, and performance outcomes. Interview data revealed how faculty members orchestrated emotional framing and cognitive structuring under reform conditions, and thematic coding identified interwoven domains explaining how disciplined joy and generative effort co evolved within classroom processes.

##### 4.4.1. Intellectual vitality as a framing architecture for productive struggle

Interview narratives consistently positioned intellectual vitality as the interpretive frame through which students encountered cognitive difficulty within this study. Faculty members described joy as disciplined seriousness toward inquiry that rendered difficulty meaningful rather than threatening, and L03 explained, "Students often interpret silence during difficult moments as personal inadequacy, so I explicitly state that confusion indicates that thinking is happening." This explanation reflects an intentional shift in how effort is interpreted and aligns with quantitative evidence showing strong associations between intellectual vitality and student agency.

Intellectual vitality functioned as a discursive practice enacted through modelling reasoning processes rather than as a fixed personal attribute. Faculty members described deliberate exposure of reasoning to normalize revision as part of scholarly work, and L07 stated, "When I solve a problem on the board, I deliberately pause and show how I reconsider assumptions, so students see that revision belongs to scholarship." This enactment positioned revision as a legitimate

epistemic activity consistent with generative learning processes emphasizing monitoring and integration.

Relational care reinforced this interpretive frame by stabilizing emotional conditions supporting sustained engagement with difficulty. L04 remarked, "Students risk explanation only when they trust that correction will not become humiliation." Intellectual vitality and relational care operated together to redefine difficulty as an epistemic opportunity, supporting agency through active participation in meaning construction within Vietnamese higher education.

#### 4.4.2. Retrieval and self-explanation as engines of ownership

Faculty members described retrieval practice and self-explanation as structured engines that convert relational framing into cognitive agency within this study. Intellectual vitality established legitimacy of struggle, and generative routines operationalized that legitimacy through repeated engagement in selecting, organizing, and integrating processes. L02 explained, "Every session begins with recall questions that students answer without notes, because reconstruction forces them to confront what they truly understand." This practice reflects generative learning principles emphasizing retrieval as a mechanism supporting durable understanding.

Interview narratives connected retrieval routines with gradual transformation in student confidence across instructional time. L09 observed, "At first students complain that recall tasks are stressful, but after several weeks they realize that recall clarifies their thinking." This temporal shift aligns with quantitative results showing positive associations between retrieval frequency and engagement, and repeated exposure appears to recalibrate metacognitive beliefs about competence in Vietnamese classrooms.

Self-explanation emerged as a highly influential generative mechanism supporting deeper cognitive processing. L05 stated, "When students must explain a concept to peers, they recognize gaps that silent listening would never reveal." This articulation highlights how explanation exposes incomplete understanding and activates restructuring processes, and regression results identified self-explanation frequency as a strong predictor of academic performance.

Faculty members emphasized that explanation routines fostered ownership rather than compliance during learning processes. L11 remarked, "Students begin to speak about ideas as theirs when they have explained them repeatedly." Retrieval and self-explanation function as mechanisms translating relational climate into intellectual autonomy, linking affective framing with observable learning outcomes in Vietnamese higher education.

#### 4.4.3. Negotiating reform constraints through micro-adaptation

Institutional constraints formed a persistent backdrop across interviews, particularly examination centred traditions and compressed syllabi associated with Vietnamese reform frameworks in this study. L01 explained, "Coverage expectations remain heavy, so extended discussion sometimes feels like a luxury." Structural pressure appeared to restrict elaboration opportunities, yet faculty members still described micro adaptations preserving generative principles within constrained instructional time.

L08 described embedding brief explanation intervals within lecture segments to sustain cognitive processing without disrupting pacing. The lecturer stated, "After every major concept, I require students to articulate one connection before proceeding." This approach illustrates pragmatic integration of generative routines through incremental design decisions aligned with existing instructional structures.

Assessment orientation further influenced adaptation strategies within Vietnamese classrooms. L06 noted, "Students focus strongly on grades, so retrieval tasks mirror examination formats to maintain credibility." Alignment between generative practice and assessment expectations corresponded with quantitative findings showing stronger associations between generative activity and GPA. Institutional relevance therefore reinforced instructional implementation across classroom contexts.

Interview data indicate that convergence between joy centred pedagogy and generative learning emerged through disciplined micro decisions rather than structural transformation. Faculty members navigated reform constraints while embedding retrieval and explanation within relationally framed seriousness, demonstrating that generative practices remained viable within institutional conditions.

#### 4.4.4. *Interpretive integration across data strands*

Quantitative findings established additive relationships across relational and generative variables, and qualitative accounts clarified mechanisms through which relationships materialized within this study. Intellectual vitality reframed struggle, relational care stabilized emotional conditions, retrieval supported reconstruction, and self-explanation strengthened integration, and each mechanism contributed coherently to agency, engagement, and performance.

L11 articulated convergence clearly when stating, "Joy in my classroom means students feel secure enough to struggle and capable enough to persist." This statement reflects how disciplined joy and generative effort intertwined under reform oriented Vietnamese conditions, and agency emerged through participation in cognitively demanding tasks framed within seriousness and respect.

Thematic evidence indicates that generative learning theory explains processes of understanding, while joy centred pedagogy explains sustained willingness to engage with effortful learning. Relational and cognitive mechanisms functioned as mutually reinforcing components of academic vitality, and integration across Vietnamese universities reflected alignment between institutional expectations, cultural context, and cognitive principles.

## 5. Discussion

The findings indicate that relational climate and structured generative activity should not be treated as separate explanatory layers, but as interdependent conditions for meaningful learning in reform-oriented Vietnamese higher education. The predictive role of intellectual vitality for student agency suggests that students are more likely to experience ownership and active participation when the learning environment supports purposeful inquiry, confidence, and autonomy. This interpretation is consistent with evidence showing that autonomy-supportive and self-efficacy-enhancing learning environments are associated with deeper engagement and more active learner participation (Lobo, 2025; Wang & Tambi, 2024). However, the fact that self-explanation frequency and retrieval practice frequency predicted academic engagement and performance highlights that relational support must be translated into disciplined cognitive activity. In other words, supportive classroom conditions may create readiness for participation, but measurable learning gains appear to depend on whether students are repeatedly required to retrieve, explain, reorganize, and apply knowledge. This finding aligns with research showing that active learning strategies improve behavioural and cognitive engagement, and that self-regulated learning and self-efficacy are linked to academic achievement (Aviory et al., 2025; Tshering et al., 2024). Generative learning theory articulated by Fiorella and Mayer (2016) clarifies that durable understanding emerges from selecting, organizing, and integrating processes sustained across instructional sequences. Broaden-and-build and control-value perspectives advanced by Fredrickson (2001) and Pekrun (2006) further illuminate how positive academic emotion expands engagement under meaningful challenge.

The findings of this study further illuminate direct relationships between joy, agency, and engagement within demanding university environments influenced by accountability pressures. Student agency strengthened when intellectual vitality normalized productive struggle, while retrieval and self-explanation routines cultivated interpretive ownership over conceptual development. Likewise, Pekrun et al. (2017) demonstrate reciprocal relations between achievement emotions and performance over time, indicating that enjoyment and success may co-evolve across academic episodes. Meanwhile, Butler (2010) shows that repeated testing produces superior transfer compared with repeated studying, which underscores how structured generative routines

would translate emotional commitment into measurable academic gains. Inclusion climate and relational care create psychological safety that encourages articulation of incomplete reasoning, thereby supporting inclusive participation and reducing epistemic silencing within hierarchical instructional traditions. Similarly, Lapidot-Lefler (2025) emphasizes teacher responsiveness as foundational for inclusive pedagogical practice, which resonates with interview evidence describing correction without humiliation as essential for sustained participation.

Broader implications extend beyond immediate statistical associations and speak to the cultivation of intellectually supportive learning environments within Vietnamese higher education. In contexts where competency-oriented reform requires stronger links between theory and practice, structured lectures may still serve a productive function when they embed brief moments of retrieval, explanation, and conceptual clarification within compressed syllabi. However, such micro-moments should not remain confined to formal lectures. Co-curricular environments, including tutoring sessions, peer mentoring, and student clubs, may extend these cognitive routines into collaborative generative exchanges in which students explain ideas, receive peer support, and negotiate meaning with others. This interpretation is consistent with studies showing that peer mentoring, guided group work, collaborative learning, and peer teaching can support student connection, social interaction, motivation, engagement, and achievement in higher education or mathematics learning contexts (Abrahamson et al., 2023; Alzubi et al., 2024; Asare et al., 2025; Petronzi & Petronzi, 2020). Thus, the present findings suggest that Vietnamese higher education institutions should view joy not as an incidental affective outcome, but as something that can be cultivated when formal instruction and co-curricular learning spaces jointly sustain explanation, retrieval, collaboration, and intellectual participation. Similarly, Chi and Wylie (2014) argue that constructive and interactive engagement modes generate deeper cognitive processing, which implies that varied learning spaces can amplify joy when students actively generate and test ideas. Meanwhile, broadened cognitive repertoires associated with positive emotions may support healing and resilience in contexts marked by institutional uncertainty or reform fatigue, connecting joy with well-being beyond immediate performance indicators. However, sustainable integration of joy and generative effort requires ongoing attention to cultural expectations surrounding authority, assessment, and academic seriousness within Vietnam.

Several limitations require consideration when interpreting findings from this study. Cross-sectional modelling restricts causal interpretation despite theoretically coherent pathways linking relational climate, generative activity, agency, engagement, and performance. Self-reported measures may also introduce perceptual inflation despite procedural controls and common method variance diagnostics. Institutional representation remained concentrated within Vietnamese universities operating under reform-oriented governance conditions, which may limit transferability across national contexts with different assessment cultures and instructional traditions. Future longitudinal and multi-level research can further clarify developmental sequencing and institutional variation across higher education environments.

## 6. Conclusion

This study demonstrates that joy-centred pedagogical climate and structured generative learning activities jointly sustain academic vitality within Vietnamese higher education during the 2025 reform context. Quantitative modelling indicates that intellectual vitality and relational care align strongly with student agency, while self-explanation frequency and retrieval practice frequency demonstrate consistent associations with academic engagement and cumulative GPA across disciplinary clusters within Vietnam. Findings indicate that disciplined intellectual vitality expands students' willingness to persist through cognitively demanding learning episodes, particularly within accountability environments framing difficulty as evaluative exposure instead of scholarly growth. Clear learning goals and inclusive classroom climates communicating fairness reinforce perceived control and task value under compressed assessment rhythms shaping reform-oriented Vietnamese universities.

The findings of this study advance a relational-cognitive framework connecting joy, agency, engagement, and performance within higher education scholarship focused on reform contexts. Cross-sectional modelling clarifies patterned associations while leaving developmental sequencing open for longitudinal investigation tracing evolution of joy-centred climates and generative routines across semesters in Vietnamese institutions. Future measurement refinement can distinguish frequency from qualitative depth of generative activity while incorporating perceptions of legitimacy embedded within examination-oriented traditions shaping academic life in Vietnam. Multi-level modelling can incorporate course clustering, disciplinary differentiation, and governance influences shaping instructional practice across institutional environments.

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**Data availability:** The data supporting the findings of the current study will be made available from the corresponding author upon reasonable request.

**Declaration of interest:** The authors declare no conflict of interest.

**Ethics declaration:** Ethical approval for the study was granted by Vietnam National University Hanoi - University of Education under Decision No. 6198/QĐ-ĐHQGHN dated 24 December 2024. All procedures complied with institutional and national ethical standards, participation was voluntary, and informed consent was obtained electronically from all participants.

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