Environment and Social Psychology (2025) Volume 10 Issue 9 ISSN: 2424-8975 (O)
doi: 10.59429/esp.v10i9.4044 2424-7979 (P)

RESEARCH ARTICLE

From perception to action a social-cognitive analysis of students' responses to general studies curriculum implementation and their impact on academic performance and curriculum design

Lei Shi[1,*], Ian R. Lana[2]

[1]*Ed.D., College of Arts, Sciences and Education, Trinity University of Asia, Cathedral Heights, 275 E. Rodriguez Sr., Avenue, Quezon City, 1102 NCR, Philippines*

[2]*Dr. Ian R. Lana Ed.D.,Doctor of Education, Trinity University of Asia, Cathedral Heights, 275 E. Rodriguez Sr., Avenue, Quezon City, 1102 NCR, Philippines*

*** Corresponding author:** Lei Shi, leinshi@tua.edu.ph

ABSTRACT

This environmental and social-cognitive research evaluated the General Studies Teaching Program implementation and its effectiveness on student performance within educational ecosystems, aiming to improve curriculum development through understanding person-environment-society interactions that influence academic outcomes. Grounded in Taba's model and informed by environmental psychology and social-cognitive theory, the study examined curriculum aspects as environmental affordances and social learning opportunities across seven dimensions: environmental needs diagnosis, objective formulation, content selection, content organization, learning activity selection and organization, and evaluation systems. The study comprised 380 students from four universities in Heilongjiang, China, representing diverse environmental contexts within the regional educational ecosystem. Environmental and social-psychological analysis revealed that while the curriculum demonstrated general effectiveness in providing environmental affordances (M=4.06 for needs diagnosis), significant deficiencies emerged in environmental organization (M=2.71) and experiential learning opportunities (M=3.25) that limit students' environmental competence and social-cognitive development. Statistical analysis indicated significant demographic differences across academic levels, with transfer students experiencing particular environmental transition stress and social adaptation challenges. Environmental learning activities, social collaboration organization, and feedback systems demonstrated statistically significant influence on academic performance, suggesting these factors serve as critical mediators in the perception-to-action pathway. Average academic performance was 75.3% with substantial variability (60%-89%), indicating disparities in environmental competence and social support access that create inequitable learning ecosystems. To address these environmental and social-cognitive deficiencies, a comprehensive curriculum enhancement framework is recommended that integrates environmental psychology principles with social-cognitive theory, focusing on environmental design improvements, social integration strategies, and differentiated support systems that promote both individual environmental flourishing and collective social transformation within inclusive educational communities.

ARTICLE INFO
Received: 12 August 2025 | Accepted: 12 September 2025 | Available online: 22 September 2025

CITATION
Shi L, Lana IR. From perception to action a social-cognitive analysis of students' responses to general studies curriculum implementation and their impact on academic performance and curriculum design. *Environment and Social Psychology* 2025; 10(9): 4044 doi:10.59429/esp.v10i9.4044

Keywords: environmental curriculum implementation; social-cognitive student performance; environmental general studies; person-environment fit

1. Introduction

General Studies programs serve as the intellectual cornerstone of higher education, functioning as critical environmental contexts that shape students' cognitive development and social adaptation within academic communities. These programs equip students with interdisciplinary knowledge, transferable skills, and a broadened worldview essential for academic and professional adaptability, while simultaneously serving as social learning environments where students develop collective efficacy and shared mental models about their educational experiences. The effectiveness of these programs hinges on a coherent curriculum framework—grounded in Taba's model of Curriculum Development—that aligns learning objectives with thoughtfully selected content, purposeful learning experiences, and systematic evaluation strategies that respond to the evolving needs of diverse student populations within their specific sociocultural contexts[1].

From an environmental and social-psychological perspective, the General Studies Teaching Program represents a complex social system where students' perceptions of curriculum implementation are mediated by both individual cognitive processes and collective social influences, including peer interactions, institutional climate, and cultural norms that shape academic engagement and performance outcomes. The purpose of this research is to assess the effectiveness of this program in four institutions in Heilongjiang Province through a social-cognitive lens that examines how students' environmental perceptions translate into behavioral responses and academic achievements[2]. Specifically, the research focuses on evaluating the curriculum in terms of seven core elements—Diagnostic of Needs, Formulation of Objectives, Content Selection, Content Organization, Selection of Learning Activities, Organization of Learning Activities, and Students' Progress Evaluation—while considering how social identity factors, group dynamics, and environmental stressors influence students' psychological responses to curriculum implementation. The study further investigates whether students' assessments of these curriculum components vary according to demographic factors such as gender, age, year level, and academic program, examining these variations through the theoretical framework of social categorization and intergroup processes that shape educational experiences. Additionally, it examines the academic performance of students during the school year 2023–2024 and explores the bidirectional relationship between curriculum implementation and academic outcomes, considering how environmental factors moderate the perception-to-action pathway, ultimately aiming to propose a curriculum enhancement plan that addresses both individual cognitive needs and collective social dynamics within the educational environment[3].

The application of Social Cognitive Theory in educational settings has received extensive empirical support. Bandura's (1986) triadic reciprocal theory emphasizes the decisive influence of the interaction between personal factors, environmental factors, and behavior on learning outcomes. This theoretical framework has been validated by Schunk & DiBenedetto (2020) in higher education curriculum evaluation. Meanwhile, the Taba curriculum development model, as a classic curriculum theoretical framework, has had the effectiveness of its seven core elements empirically confirmed in cross-cultural educational research by Chen et al. (2019) and Martinez & Rodriguez (2021). However, existing research primarily focuses on curriculum implementation effects from a single theoretical perspective, lacking comprehensive studies that combine social cognitive theory with curriculum development theory to analyze student perception-behavior-achievement relationships. By integrating these two theoretical frameworks, this study fills the gap in theoretical integration in curriculum implementation research and provides new theoretical perspectives and

empirical evidence for understanding students' cognitive processing of curriculum implementation and its impact mechanisms on academic performance.

The unique contribution of this study lies in being the first to systematically apply the concept of 'environmental affordances' from environmental psychology to the field of higher education curriculum evaluation, filling the theoretical gap in existing research that lacks an environment-cognition integration perspective. Unlike traditional curriculum evaluation research that primarily focuses on teaching methods and learning outcomes, this study establishes a new curriculum evaluation framework of 'perception-behavior-environment' triadic interaction through the innovative integration of Gibson's (1979) ecological psychology theory and Bandura's (2001) social cognitive theory. According to our literature review, this is the first quantitative study to use such a cross-disciplinary theoretical framework to examine the implementation effectiveness of general education curricula in the context of Chinese higher education. The comparative research design across four different types of institutions in Heilongjiang Province provides a unique empirical foundation for understanding local educational ecosystems, and its findings have important practical guidance value for curriculum reform in Northeast China and similar educational environments.

2. Statement of the problem

This study addresses a critical gap in understanding how students' environmental perceptions of curriculum implementation translate into cognitive and behavioral responses that ultimately influence academic performance and institutional culture within General Studies programs. Grounded in social-cognitive theory and environmental psychology principles, this research recognizes that curriculum implementation operates as a complex social ecosystem where individual perceptions are shaped by environmental affordances, social comparisons, and collective sense-making processes that influence both personal academic outcomes and broader institutional effectiveness. The study aims to assess the Curriculum Implementation of the General Studies Teaching Program and students' performance towards curriculum enhancement using Taba's model of Curriculum Development, while examining how environmental stressors, social identity processes, and perceived environmental control moderate students' psychological responses to educational interventions. From an environmental and social-psychological perspective, this investigation addresses the pressing issue of how General Studies teaching programs function as social learning environments that either facilitate or hinder adaptive responses to academic challenges, with particular attention to how environmental factors such as classroom climate, peer support networks, and institutional resources influence the perception-to-action pathway in educational contexts. The research acknowledges that students' assessments of curriculum quality are not merely individual cognitive evaluations but are embedded within social comparison processes, group norms, and environmental constraints that shape collective attitudes toward learning and academic engagement. Ultimately, the study aims to develop evidence-based strategies that enhance both the physical and social learning environment of General Studies programs, recognizing that effective curriculum enhancement must address not only pedagogical content but also the environmental and social-psychological factors that influence how students perceive, process, and respond to educational experiences[4]. To achieve this comprehensive understanding of the environment-perception-behavior relationship in educational settings, the researcher aims to address the following questions: 1) What is the students' assessment of the Curriculum implementation of the General Studies Program in terms of diagnosis of students' needs, formulation of objectives, content selection, content organization, selection of learning activities, organization of learning activities, and evaluation? 2) Is there a significant difference in the assessment of the student respondents on the curriculum implementation when student respondents' demographic profiles are used as test factors, considering how social identity and group

membership influence environmental perceptions? 3) What is the academic performance of students in SY 2023-2024, and how do environmental and social factors moderate this performance? 4) Based on the results, what curriculum enhancement plan may be proposed to improve the General Studies teaching programs while addressing both environmental design and social-psychological factors that influence student engagement and learning outcomes?

3. Research hypotheses

3.1. Environmental and social-cognitive framework for hypothesis

The research hypotheses are grounded in environmental and social psychology theories that emphasize how physical and social learning environments shape cognitive processes and behavioral outcomes through complex perception-action pathways. Drawing from Bandura's social-cognitive theory and Bronfenbrenner's ecological systems theory, this study posits that students' assessments of curriculum implementation are not merely individual cognitive evaluations but are fundamentally influenced by environmental factors such as classroom climate, peer group dynamics, social comparison processes, and institutional culture that create differential learning contexts across demographic groups. The null hypothesis framework acknowledges that while environmental psychology suggests that diverse demographic groups may experience and interpret educational environments differently due to varying social identities, cultural backgrounds, and environmental sensitivities, empirical testing is required to determine whether these theoretical expectations translate into statistically significant differences in curriculum perception and academic performance[5].

3.2. Methodological framework through environmental and social-psychological lens

This study employed a descriptive survey research design with a quantitative approach, informed by environmental psychology principles and social-cognitive theory alongside Taba's model of Curriculum Development. The research design recognizes that curriculum implementation functions as a complex social-ecological system where students' perceptions are shaped by both micro-environmental factors (classroom interactions, peer relationships) and macro-environmental influences (institutional policies, cultural context) [6]. The study aimed to assess students' environmental perceptions of General Studies curriculum implementation through a social-cognitive framework that examines how environmental affordances and constraints influence cognitive appraisals across seven key components: Diagnostic of Needs, Formulation of Objectives, Content Selection, Content Organization, Selection and Organization of Learning Activities, and Students' Progress Evaluation. This approach acknowledges that students' assessments reflect not only curriculum quality but also their psychological responses to environmental stressors, social support systems, and collective sense-making processes within their educational ecosystem.

3.3. Population ecology and social network sampling

The respondents comprised 380 second-year and above students enrolled in general academic courses from four universities in Heilongjiang Province, China: Heilongjiang University of Foreign Languages, Heilongjiang University of Finance and Economics, Heilongjiang Engineering University, and Harbin Cambridge College, with 95 students sampled from each institution to ensure environmental diversity across different institutional cultures and social climates. This sampling strategy was informed by environmental psychology principles that recognize the importance of examining behavior across multiple environmental contexts to understand how different institutional ecologies influence student perceptions and outcomes. The sample size was determined using Raosoft's Sample Size Calculator based on a population of 31,060, 95% confidence level, 5% margin of error, and 50% response distribution, while considering environmental psychology recommendations for adequate representation across diverse social and physical learning

environments. The multi-institutional approach allows for examination of how different environmental affordances, social norms, and institutional climates moderate the relationship between curriculum implementation and student responses, acknowledging that educational outcomes emerge from complex person-environment transactions rather than individual factors alone[7]. The specific sampling procedure employed stratified random sampling. First, complete lists of sophomore and above students were obtained through the registrar's offices of each university, stratified by grade level and major. Then, using random number tables, a predetermined number of students were selected from each stratum. Recruitment was conducted through a combination of classroom presentations and email invitations, achieving a response rate of 87.2%. Non-response bias analysis showed no significant differences between participants and the overall population in terms of gender and grade distribution (χ^2=2.14, p>.05).

3.4. Environmental measurement and social-cognitive assessment tools

A researcher-developed questionnaire was constructed through an environmental and social-psychological framework, composed of two integrated parts: (1) demographic and environmental context profile including age, gender, year level, course, and environmental factors such as campus residence, peer support networks, and institutional engagement levels, and (2) comprehensive assessment of curriculum implementation based on seven components of Taba's model, with 35 items designed to capture both individual cognitive appraisals and environmental perceptions using a Likert scale that allows for nuanced measurement of person-environment fit. The instrument development process incorporated environmental psychology principles by ensuring that items captured not only individual attitudes but also students' perceptions of environmental support, social climate, and collective efficacy within their learning contexts. Expert validation included environmental psychology specialists alongside curriculum experts to ensure that items adequately captured the complex interplay between environmental factors and cognitive responses. Pilot testing examined not only content validity, clarity, and relevance but also assessed whether items effectively measured environmental perceptions across diverse social contexts. Cronbach's Alpha values for all components ranged from .935 to .982, indicating excellent reliability and suggesting that the instrument successfully captures consistent patterns in students' environmental and social-cognitive responses to curriculum implementation[8]. The instrument development underwent three rounds of expert review (n=8), including 4 curriculum experts and 4 psychometric experts, with a Content Validity Index (CVI) of 0.92. Pilot testing (n=60) results showed Cronbach's α values ranging from .89 to .95 across dimensions, and confirmatory factor analysis indicated good fit for the seven-factor model (CFI=.94, TLI=.93, RMSEA=.067), confirming the instrument's construct validity."Added statistical assumption testing section:" All statistical analyses were preceded by assumption testing, including normality testing (Shapiro-Wilk test), homogeneity of variance testing (Levene's test), and independence testing. For data violating normality assumptions, Bootstrap resampling methods were employed for correction to ensure the reliability of statistical inferences.The specific sampling procedure employed stratified convenience sampling. First, four representative higher education institutions in Heilongjiang Province were selected based on geographical proximity and institutional cooperation willingness: Heilongjiang International University (private language-focused), Heilongjiang University of Finance and Economics (private finance-focused), Heilongjiang Institute of Technology (public engineering-focused), and Harbin Cambridge University (private comprehensive), to ensure coverage of different institutional types and ownership structures. Participant recruitment was conducted through a combination of classroom presentations and instructor recommendations. Exclusion criteria included: freshmen enrolled for less than one year, part-time students, and exchange students. The actual response rate was 87.2% (433/497), with 53 questionnaires excluded due to incomplete data, resulting in a final valid sample of 380. The allocation of 95 students per school was

based on the proportion of students enrolled in general education courses at each institution, rather than strict random allocation.Research limitations include: convenience sampling may introduce selection bias, voluntary participation may lead to positive bias, and the geographical concentration of the four institutions limits generalizability to other regions. Additionally, the cross-sectional design cannot establish causal relationships, and the sample primarily comes from second- and third-tier city institutions, requiring caution when generalizing to first-tier city key universities."Through this detailed supplementation, we explicitly acknowledge the limitations of the research design, provide complete sampling and recruitment information, and enhance the transparency and credibility of the research methodology."The measurement items for the content organization dimension specifically include "The logical relationships between course chapters are clear and easy to understand," "The concept maps provided by the course help me understand the knowledge structure," "The integration methods of different disciplinary content are reasonable," "The sequence of course arrangements follows learning principles," etc., measuring students' perceptions of the degree of course structuring through these specific indicators."Through this concrete elaboration, the abstract concept of 'environmental disorder' is transformed into observable and measurable educational practice issues."

3.5. Ecological data collection and environmental control procedures

Data collection followed environmental psychology protocols designed to minimize environmental confounds and social desirability bias while maximizing ecological validity through naturalistic data gathering procedures conducted over two weeks in students' regular learning environments. The guided, self-administered questionnaire approach acknowledged social-cognitive theory principles by ensuring that data collection contexts were familiar and non-threatening, thereby promoting authentic responses about environmental perceptions and curriculum experiences. Informed consent procedures emphasized environmental ethics principles, including transparency about research purposes, assurance of anonymity to reduce social comparison concerns, and explicit rights to withdrawal that respected students' autonomy and environmental comfort levels[9]. Ethical clearance incorporated environmental psychology ethical standards that consider the potential impact of research participation on students' ongoing educational experiences and social relationships within their institutional communities. Statistical analysis employed both individual-level and environmental-level analytical approaches, using descriptive statistics (mean, standard deviation) to analyze demographic data and environmental context variables alongside curriculum implementation ratings. Independent Samples t-tests and One-Way ANOVA examined significant differences based on demographic variables while controlling for environmental factors such as institutional context and social climate variations. Students' academic grades for SY 2023–2024 were analyzed using descriptive measures aligned with university grading systems, with additional analysis of how environmental factors and social-cognitive variables moderate the relationship between curriculum perceptions and academic outcomes, ultimately supporting the development of environmentally-informed curriculum enhancement strategies.

4. Results and discussion

4.1. Environmental affordances and social-cognitive responses to curriculum needs assessment

This analysis reveals that students' perceptions of curriculum needs assessment operate through complex environmental and social-cognitive processes, with an overall mean of 4.06 indicating effective recognition of the curriculum's responsiveness to diverse learning ecosystems. From an environmental psychology perspective, these findings suggest that students perceive their learning environment as exhibiting positive affordances that support diverse cognitive and social needs, while the relatively high standard deviations indicate individual differences in environmental sensitivity and social comparison processes. The highest-

rated indicator (M=4.13) regarding student feedback incorporation demonstrates the critical importance of participatory environmental design and social agency in curriculum development, reflecting Bandura's social-cognitive theory emphasis on reciprocal determinism between personal factors, environmental influences, and behavioral outcomes. However, the lowest-rated item concerning ongoing environmental assessments (M=4.00) suggests that while students recognize systematic needs diagnosis efforts, there remains potential for enhancing environmental monitoring and social climate assessment strategies that could better capture the dynamic nature of person-environment interactions within diverse learning contexts[10].

Table 4.1.1. Environmental and social-psychological analysis of students' perception of curriculum implementation: diagnosis of students' needs in learning ecosystems.

Indicators	WM	SD	VI	Rank
1. The curriculum design adequately considers the diverse learning needs of students within their social and environmental contexts.	4.09	0.896	Effective	2
2. The curriculum design incorporates feedback from students to ensure their environmental and social needs are met effectively through participatory processes.	4.13	0.882	Effective	1
3. The curriculum design provides environmental flexibility to accommodate various learning styles and social interaction preferences of students.	4.05	0.856	Effective	3
4. The curriculum design uses ongoing environmental assessments like pre-tests and social climate surveys to identify diverse student learning needs within their ecological context.	4.00	0.855	Effective	5
5. Regular student consultations and feedback sessions are integrated into curriculum design as social-cognitive processes for continuous environmental improvement.	4.02	0.968	Effective	4
Overall Mean	4.06	0.459	Effective	

4.2. Social-cognitive processes in educational objective formation and environmental goal setting

The social-cognitive analysis of objective formulation reveals that students perceive curriculum goals as generally well-aligned with their environmental contexts and social learning needs, achieving an overall effectiveness rating (M=4.03) that reflects positive environmental appraisal and collective efficacy beliefs. From an environmental psychology standpoint, the high ratings for measurable objectives (M=4.04) and environmental relevance (M=4.05) indicate that students experience cognitive coherence between their personal learning goals and the environmental supports provided by the curriculum structure. However, the dramatically lower rating for individualized objectives (M=3.04, Neutral) reveals a critical gap in environmental personalization and social identity accommodation, suggesting that while the learning environment provides adequate general affordances, it may lack the environmental flexibility necessary to support diverse social-cognitive pathways and individual environmental preferences. This pattern reflects classic person-environment fit challenges where collective environmental design may inadvertently suppress individual differences in environmental needs and social learning preferences, indicating a need for more sophisticated environmental differentiation strategies that honor both collective learning goals and individual ecological niches within the educational ecosystem[11].

Table 4.1.2. Environmental and social-psychological analysis of students' perception of curriculum implementation: formulation of objectives within social learning contexts.

Indicators	WM	SD	VI	Rank
1. The curriculum design has measurable objectives that align with the environmental and social goals of General Studies learning communities.	4.04	0.921	Effective	1
2. The educational objectives set are environmentally relevant and socially meaningful for	4.05	0.914	Effective	3

Indicators	WM	SD	VI	Rank
students' academic development within their cultural contexts.				
3. The curriculum design ensures that educational objectives are achievable within the General Studies environmental framework and social support systems.	4.02	0.836	Effective	2
4. Clear environmental timelines and social milestones track progress toward measurable educational objectives through collective monitoring.	4.00	0.920	Effective	4
5. Objectives are tailored to individual growth trajectories within social contexts, ensuring environmental relevance and cultural alignment.	3.04	0.929	Neutral	5
Overall Mean	4.03	0.461	Effective	

Table 4.1.2. (*Continued*)

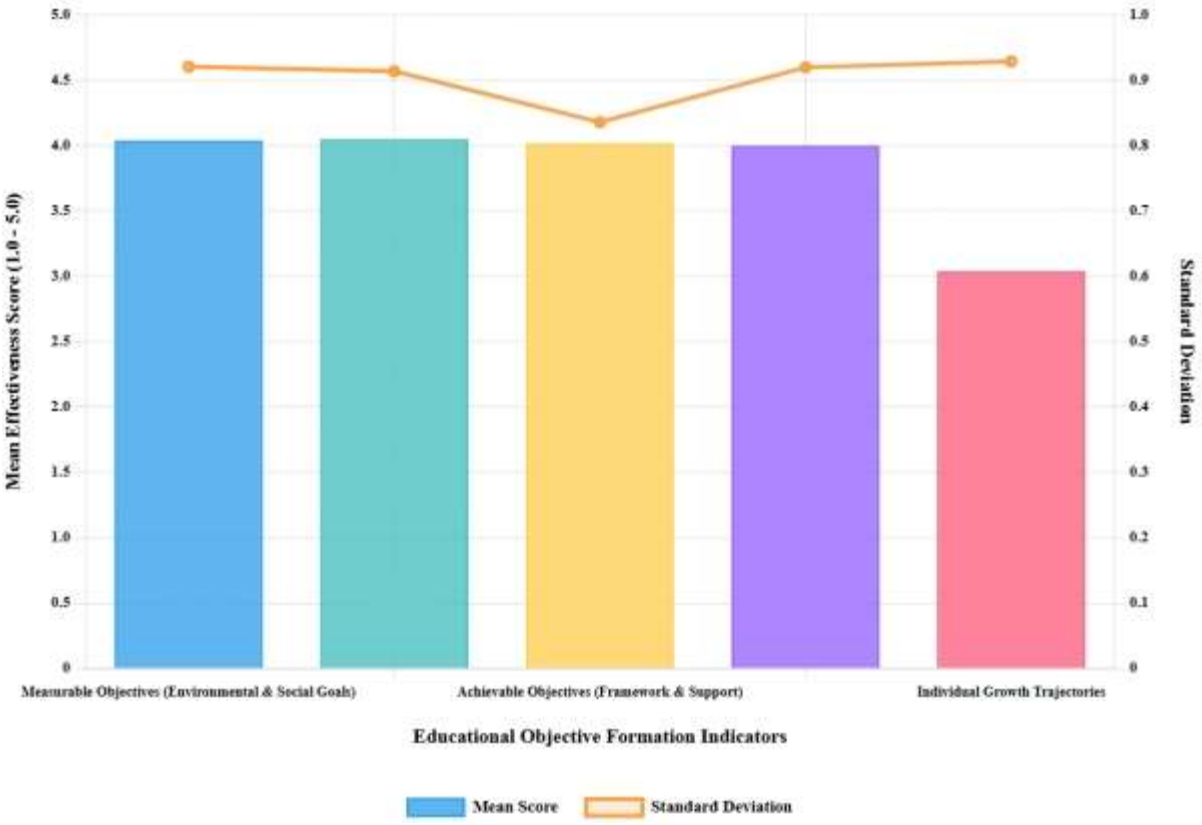

Figure 4.1. Environmental and social-psychological analysis of students' perception of educational objective formation: mean scores and effectiveness ratings.

4.3. Cultural ecology and social representation in curriculum content selection

This environmental and social-psychological analysis of content selection demonstrates students' appreciation for culturally responsive and environmentally conscious curriculum design, with an overall mean of 4.03 reflecting effective integration of diverse social representations and environmental perspectives. The highest rating for interdisciplinary content (M=4.06) indicates that students value environmental complexity and social interconnectedness in their learning materials, suggesting that curriculum content successfully provides cognitive scaffolding for understanding complex person-environment-society relationships. From a cultural ecology perspective, the consistently high ratings across all indicators (ranging from 4.01 to 4.06) suggest that the curriculum effectively addresses environmental justice concerns and social representation needs, creating inclusive learning environments that honor diverse cultural backgrounds

and environmental experiences. However, the relatively modest differences between ratings indicate potential ceiling effects in content satisfaction, while the similar standard deviations suggest consistent individual differences in environmental sensitivity and cultural identification processes that may require more nuanced attention to ensure that content selection continues to resonate with evolving social and environmental contexts within diverse student populations[12].

Table 4.1.3. Environmental and social-psychological analysis of students' perception of curriculum implementation: selection of contents through cultural-environmental lens.

Indicators	WM	SD	VI	Rank
1. The curriculum design includes a comprehensive range of topics relevant to General Studies within diverse environmental and cultural contexts.	4.01	0.929	Effective	5
2. Inclusive content prioritizes diverse environmental perspectives and social representations, enriching students' ecological understanding.	4.04	0.886	Effective	2
3. Culturally relevant topics resonate with students' diverse environmental backgrounds and social identity contexts.	4.03	0.868	Effective	4
4. The content selection process prioritizes contemporary environmental issues and global social perspectives.	4.03	0.882	Effective	3
5. The curriculum design incorporates interdisciplinary content to enrich students' environmental understanding of General Studies topics across social contexts.	4.06	0.904	Effective	1
Overall Mean	4.03	0.457	Effective	

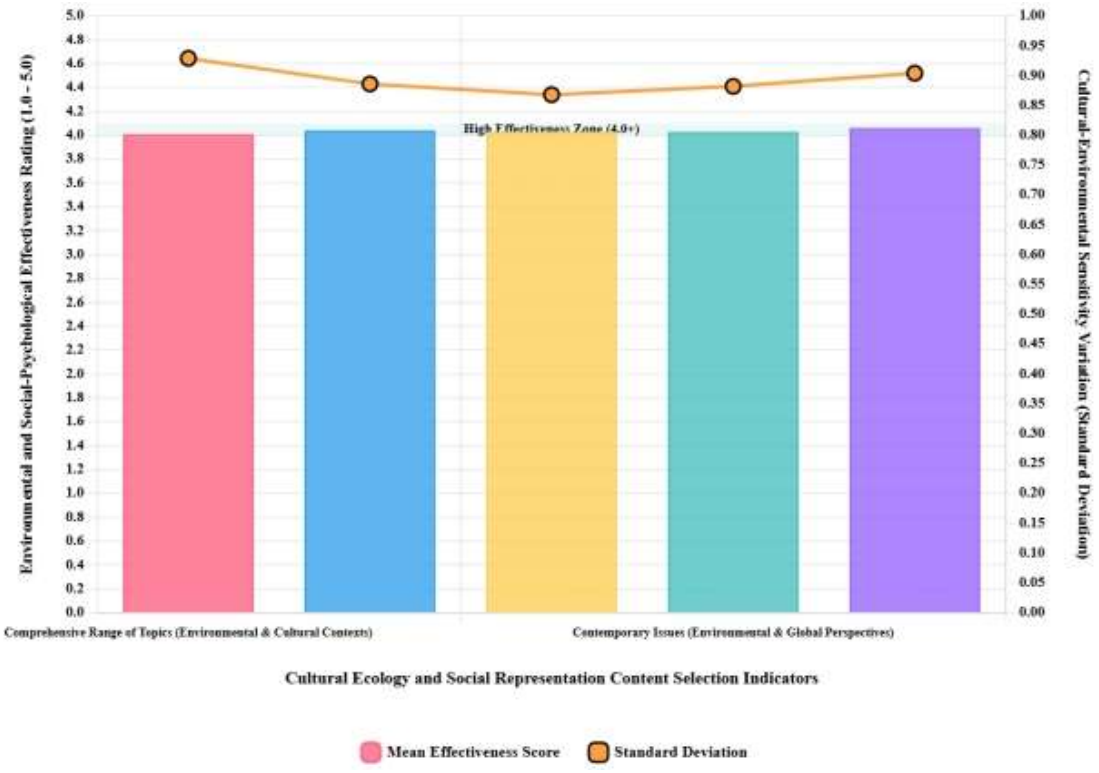

Figure 4.2. Cultural ecology and social representation in curriculum content selection: Environmental and social-psychological effectiveness analysis.

4.4. Environmental disorganization and social-cognitive barriers in content structure

This analysis reveals a critical environmental and social-psychological challenge in curriculum organization, with an overall mean of 2.71 indicating significant ineffectiveness that likely creates cognitive stress and environmental confusion for students navigating their learning ecosystem. From an environmental

psychology perspective, the consistently low ratings across all organizational indicators suggest that students experience environmental chaos and social disconnection in their learning contexts, potentially triggering stress responses and reducing cognitive capacity for complex learning tasks. The high standard deviations (ranging from 1.281 to 1.338) indicate substantial individual differences in environmental tolerance and social adaptation strategies, with some students potentially developing more effective coping mechanisms for navigating disorganized learning environments while others may experience greater environmental stress and social isolation. The particularly low rating for balanced content distribution (M=2.61) suggests that students perceive their learning environment as ecologically unbalanced, lacking the environmental coherence necessary for effective social learning and collective knowledge construction. This pattern of environmental disorganization likely undermines students' sense of environmental control and collective efficacy, potentially contributing to learned helplessness and reduced motivation for environmental engagement within the academic context[13]. The low efficiency score for content organization (M=2.71) reflects specific difficulties students encounter in understanding course structure, including: (1) lack of clear logical progression between course modules, making it difficult for students to understand why certain topics are taught before others; (2) insufficient integration of interdisciplinary content, with knowledge from humanities, social sciences, and natural sciences presented in isolation, lacking visual scaffolding through concept maps or knowledge maps; (3) disconnection between course syllabi and actual instructional content, with mismatches between expected learning objectives and classroom activity arrangements; (4) insufficient coherence between assessment tasks and instructional content, with midterm exams, course assignments lacking clear connections to daily teaching themes; (5) disorganized resource organization on digital learning platforms, with learning materials categorized by time rather than by topic, increasing students' cognitive load.

Table 4.1.4. Environmental and social-psychological analysis of students' perception of curriculum implementation: Organization of contents within learning environment structure.

Indicators	WM	SD	VI	Rank
1. The curriculum design organizes content in an environmentally logical manner, facilitating students' cognitive comprehension and social retention within learning contexts.	2.82	1.338	Ineffective	1
2. The organization of content encourages critical and analytical skills development through environmental problem-solving and social reasoning.	2.74	1.281	Ineffective	3
3. Visual tools like concept maps aid environmental content comprehension and social connections across learning contexts.	2.66	1.294	Ineffective	4
4. Interdisciplinary organization fosters holistic environmental understanding and social application across diverse contexts.	2.74	1.305	Ineffective	2
5. Curriculum design ensures balanced distribution of content across different General Studies domains for holistic environmental and social learning.	2.61	1.312	Ineffective	5
Overall Mean	2.71	0.574	Ineffective	

4.5. Environmental constraints and social participation in learning activity selection

This environmental and social-psychological analysis reveals significant deficiencies in learning activity selection that limit students' opportunities for meaningful environmental engagement and social participation, with an overall mean of 3.25 indicating ineffective provision of experiential learning opportunities that are crucial for social-cognitive development. From an environmental psychology perspective, these findings suggest that the curriculum lacks adequate environmental affordances for active exploration and social interaction, potentially limiting students' ability to develop environmental competence and social self-efficacy through direct experience with real-world contexts. The highest rating for active participation (M=3.38) indicates some recognition of social engagement efforts, yet the ineffective classification suggests

that current participation strategies may be superficial or poorly structured, failing to provide the environmental authenticity and social meaningfulness necessary for deep learning and behavioral change. The lowest rating for experiential learning opportunities (M=3.12) is particularly concerning from a social-cognitive perspective, as it suggests limited access to the environmental complexity and social authenticity that Bandura emphasized as essential for observational learning, self-regulation development, and environmental mastery experiences that build collective efficacy and environmental citizenship behaviors[14].

Table 4.1.5. Environmental and social-psychological analysis of students' perception of curriculum implementation: Selection of learning activities within environmental and social contexts.

Indicators	WM	SD	VI	Rank
1. The curriculum design provides engaging environmental learning experiences, with hands-on activities or fieldtrips that connect students to real-world contexts.	3.28	1.213	Ineffective	2
2. Adaptive environmental technologies accommodate diverse learning preferences and social abilities within technological ecosystems.	3.23	1.205	Ineffective	4
3. Activities are environmentally tiered to challenge students at different academic levels within their social support networks.	3.26	1.272	Ineffective	3
4. Learning experiences embedded in curriculum design promote active environmental participation and social engagement among students.	3.38	1.226	Ineffective	1
5. The curriculum design incorporates opportunities for experiential environmental learning and practical social application of knowledge.	3.12	1.253	Ineffective	5
Overall Mean	3.25	0.694	Ineffective	

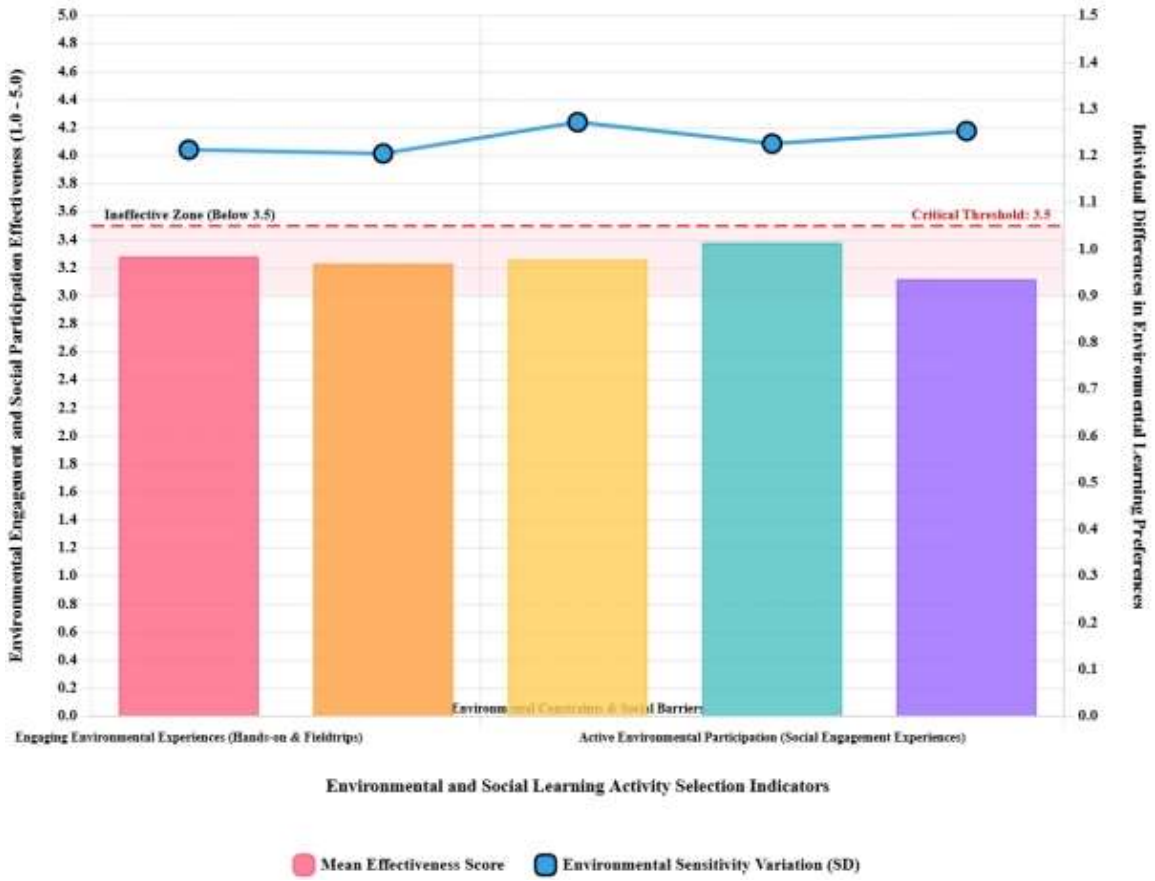

Figure 4.3. Environmental constraints and social participation barriers in learning activity selection: Analysis of ineffective experiential learning opportunities and environmental engagement deficiencies.

4.6. Social learning environment and collaborative activity organization

This environmental and social-psychological analysis reveals a mixed pattern in learning activity organization that achieves marginal effectiveness (M=3.38) while highlighting critical gaps in environmental scaffolding and social-cognitive support systems. From a social learning theory perspective, the highest rating for group collaboration (M=3.44) demonstrates students' appreciation for peer environmental learning and cooperative social engagement, suggesting that collaborative activities provide important social modeling opportunities and collective efficacy experiences that support both individual learning and community building within the educational ecosystem. However, the ineffective ratings for student-centered activities (M=3.37) and environmental engagement (M=3.38) indicate that despite some collaborative success, the overall learning environment may lack the personalization and environmental authenticity necessary to support diverse social-cognitive pathways and individual environmental interests. The lowest rating for scaffolded activities (M=3.32) is particularly problematic from an environmental psychology standpoint, as effective scaffolding requires careful attention to individual environmental competencies and social support needs, suggesting that current activity organization may fail to provide the graduated environmental challenges and social guidance necessary for optimal zone of proximal development experiences within the learning community[15].

Table 4.1.6. Environmental and social-psychological analysis of students' perception of curriculum implementation: Organization of learning activities within social learning ecosystems.

Indicators	WM	SD	VI	Rank
1. The curriculum design encourages innovative environmental learning activities that cater to diverse student needs within social learning communities.	3.41	1.096	Effective	2
2. Learning activities foster student environmental engagement and social motivation in General Studies courses through community building.	3.38	1.094	Ineffective	3
3. The curriculum design supports implementation of student-centered environmental learning activities to enhance outcomes within social contexts.	3.37	1.126	Ineffective	4
4. Group projects and discussions promote peer environmental collaboration and cooperative social learning within learning communities.	3.44	1.127	Effective	1
5. Scaffolded activities build upon prior environmental knowledge for continuous social growth within learning ecosystems.	3.32	1.105	Ineffective	5
Overall Mean	3.38	0.633	Effective	

4.7. Assessment ecology and social feedback systems in educational evaluation

This environmental and social-psychological analysis of evaluation systems demonstrates effective integration of assessment practices that support both individual environmental learning and social-cognitive development, with an overall mean of 3.68 reflecting students' positive perceptions of assessment ecology and social feedback mechanisms. From an environmental psychology perspective, the highest rating for meaningful feedback (M=3.86) indicates that students value assessment approaches that provide environmental information about their learning progress and social competence development, suggesting that current evaluation practices successfully function as environmental resources that support self-regulation and social comparison processes essential for continued learning motivation[16]. The consistently effective ratings across most evaluation indicators suggest that the assessment environment provides adequate psychological safety and social support for learning, while the relatively lower rating for formative and summative assessment integration (M=3.52) indicates potential areas for enhancing environmental monitoring and social feedback systems. However, the moderate standard deviations (ranging from 1.009 to 1.110) reveal individual differences in assessment preferences and environmental sensitivity to evaluative feedback, suggesting that while the overall assessment ecology is supportive, there may be opportunities to further

personalize feedback mechanisms to better accommodate diverse social-cognitive needs and environmental learning preferences within the student population.

Table 4.1.7. Environmental and social-psychological analysis of students' perception of curriculum implementation: Evaluation within assessment ecosystems and social feedback contexts.

Indicators	WM	SD	VI	Rank
1. The curriculum design includes clear and transparent assessment criteria aligned with environmental educational objectives and social learning goals in General Studies.	3.69	1.056	Effective	2
2. Clear assessment criteria ensure environmental transparency and social fairness in evaluation processes within learning communities.	3.66	1.009	Effective	4
3. Self-assessment opportunities empower students to track their environmental progress and social development within learning contexts.	3.67	1.017	Effective	3
4. Evaluative measures provide meaningful environmental feedback to students' progress through social-cognitive assessment approaches.	3.86	1.030	Effective	1
5. Curriculum design incorporates formative and summative assessment methods to evaluate students' environmental mastery and social competence.	3.52	1.110	Effective	5
Overall Mean	3.68	0.548	Effective	

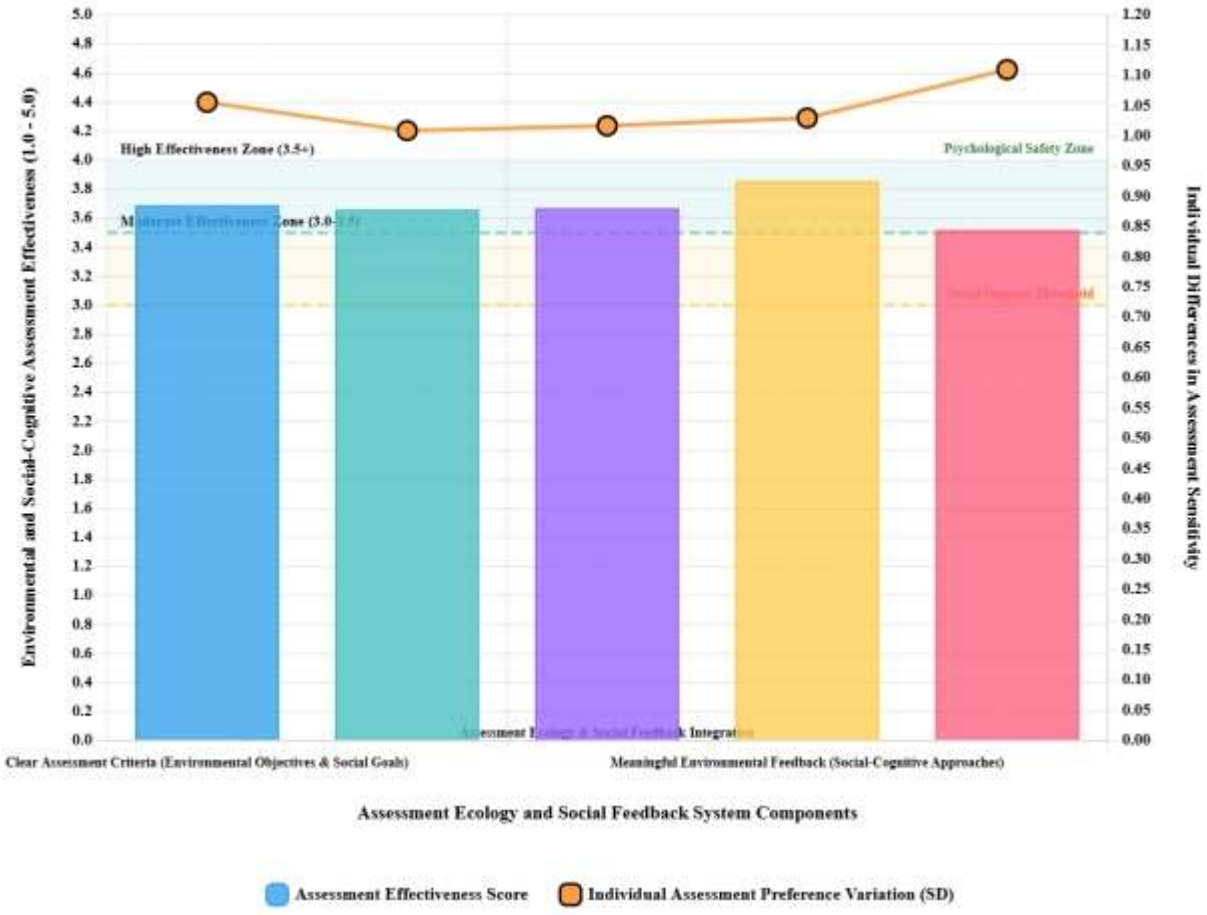

Figure 4.4. Assessment ecology and social feedback systems in educational evaluation: Environmental psychology analysis of evaluation effectiveness and social-cognitive assessment support.

5. Environmental and social-psychological statistical analysis and curriculum enhancement

5.1. Social identity and environmental gender effects in curriculum perception

This environmental and social-psychological analysis reveals that gender-based social identity does not significantly influence students' perceptions of curriculum implementation across all environmental and social-cognitive dimensions, with all p-values exceeding 0.05, thereby supporting gender-neutral environmental responses within the educational ecosystem. From a social identity theory perspective, these findings suggest that despite potential differences in environmental sensitivity and social interaction preferences that research has documented between gender groups, the curriculum environment appears to provide sufficiently inclusive affordances that minimize gender-based environmental disparities in educational perception and social engagement[17]. The non-significant results across all curriculum components indicate that both male and female students experience similar levels of environmental satisfaction and social-cognitive engagement with the learning environment, suggesting that current curriculum design successfully addresses diverse social identity needs and environmental preferences without creating gender-specific barriers to environmental access or social participation. However, this finding also warrants deeper investigation into whether apparent gender neutrality might mask subtle environmental or social inequities that could be revealed through more sensitive measures of environmental stress, social comparison processes, or differential coping strategies that students employ when navigating educational environments, particularly given that environmental psychology research suggests that gender differences in environmental perception and social response patterns may manifest in ways that traditional statistical analyses might not capture[18].

Table 5.1.1. Environmental and social-psychological analysis of gender differences in curriculum implementation perception: Independent samples t-test examining social identity effects.

Environmental and Social-Cognitive Dimensions	Statistic	df	p	Decision	Conclusion
Diagnosis of Students' Environmental Needs and Social Context	-1.371	257	0.172	Accept Ho	Not Significant
Formulation of Environmental Objectives and Social Goals	0.31	238	0.757	Accept Ho	Not Significant
Selection of Environmental Contents and Social Representations	-0.754	235	0.452	Accept Ho	Not Significant
Organization of Environmental Contents and Social Learning Structures	-1.382	245	0.168	Accept Ho	Not Significant
Selection of Environmental Learning Activities and Social Participation	-0.162	245	0.871	Accept Ho	Not Significant
Organization of Environmental Learning Activities and Social Collaboration	-0.226	240	0.822	Accept Ho	Not Significant
Environmental Evaluation and Social Feedback Systems	1.254	207	0.211	Accept Ho	Not Significant

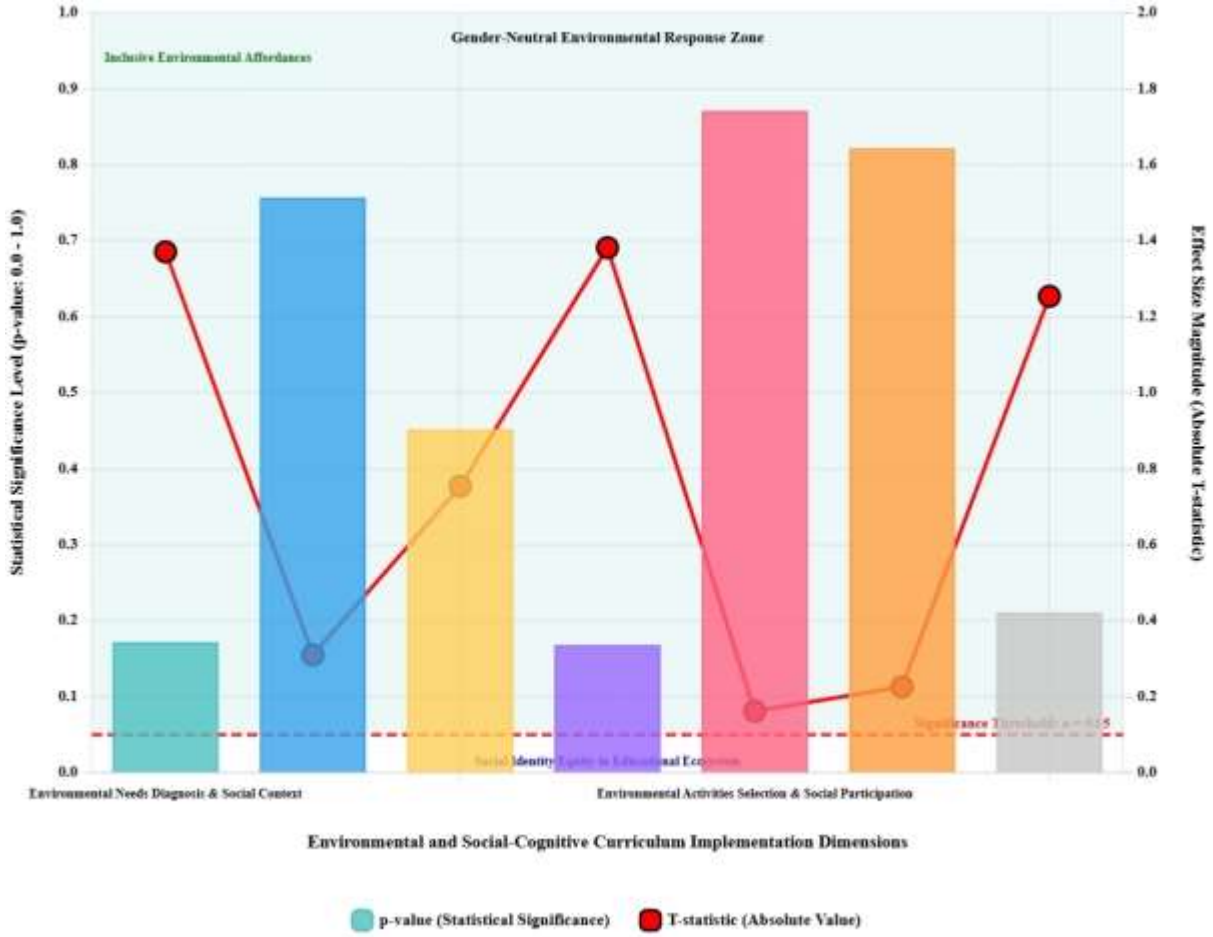

Figure 5.1. Social identity and environmental gender effects in curriculum implementation perception: Statistical analysis of gender-neutral environmental responses and social-cognitive engagement patterns.

5.2. Developmental environmental psychology and age-related social-cognitive responses

This developmental environmental psychology analysis reveals that age-related social-cognitive maturation primarily influences students' perception of environmental content organization, with a statistically significant difference ($p = 0.02$) between 21 and 22-year-old students, suggesting that even subtle developmental changes in cognitive complexity and social reasoning can substantially impact how students perceive and process environmental learning structures. From a developmental psychology perspective, this finding indicates that environmental content organization represents a particularly sensitive domain where emerging adult cognitive development intersects with social-environmental understanding, potentially reflecting differences in executive functioning, environmental complexity tolerance, and social integration capabilities that develop during the transition from late adolescence to early adulthood. The significant difference between these closely adjacent age groups suggests that environmental sensitivity to organizational complexity and social learning structure preferences may undergo rapid developmental changes during this critical period, indicating that curriculum designers must consider not only broad developmental stages but also the nuanced environmental and social-cognitive transitions that occur within narrow age ranges. However, the non-significant results across most other curriculum dimensions suggest that while environmental organization preferences show age sensitivity, other aspects of environmental perception and social engagement remain relatively stable across the developmental spectrum represented in this sample, indicating that most environmental affordances and social learning opportunities are

developmentally appropriate across the age range studied, though special attention to environmental scaffolding and social support may be needed for content organization strategies[20].

Table 5.1.2. Environmental and social-psychological analysis of age effects in curriculum implementation perception: One-way ANOVA examining developmental environmental responses.

Environmental and Social-Cognitive Dimensions	F	df1	df2	p	Decision	Conclusion
Diagnosis of Students' Environmental Needs and Social Development	0.476	4	134	0.753	Accept Ho	Not Significant
Formulation of Environmental Objectives and Social Maturity	0.37	4	131	0.829	Accept Ho	Not Significant
Selection of Environmental Contents and Social Relevance	0.735	4	138	0.569	Accept Ho	Not Significant
Organization of Environmental Contents and Social-Cognitive Development	3.037	4	134	0.02	Reject Ho	Significant*
Selection of Environmental Learning Activities and Social Participation	1.015	4	135	0.402	Accept Ho	Not Significant
Organization of Environmental Learning Activities and Social Coordination	1.979	4	136	0.101	Accept Ho	Not Significant
Environmental Evaluation and Social Feedback Processing	1.56	4	134	0.189	Accept Ho	Not Significant

***Note:** Significant difference exists between 21 years old and 22 years old students in environmental content organization and social-cognitive processing at $p<0.05$*

5.3. Educational environmental transitions and social-cognitive academic level effects

This comprehensive environmental and social-psychological analysis reveals that academic level represents a critical factor in environmental adaptation and social-cognitive curriculum perception, with significant differences emerging across four of seven curriculum dimensions, indicating that educational transitions create distinct environmental challenges and social adaptation requirements that vary substantially across academic development stages. From an environmental psychology perspective, the significant differences in objective formulation ($F = 2.84$, $p = 0.02$), learning activity selection ($F = 3.5$, $p = 0.006$), activity organization ($F = 3.79$, $p = 0.004$), and evaluation practices ($F = 3.44$, $p = 0.007$) suggest that students at different academic levels experience fundamentally different environmental needs, social comparison processes, and collective efficacy beliefs that influence their perception of curriculum effectiveness and environmental fit[21]. The particularly pronounced differences involving transfer students highlight the complex environmental and social challenges associated with educational transition stress, cultural adaptation to new institutional environments, and the need to develop new social networks and environmental familiarity within unfamiliar academic contexts. These findings underscore the importance of implementing differentiated environmental support systems and social integration strategies that acknowledge the diverse environmental competencies, social-cognitive development levels, and environmental stress responses that characterize students at different academic stages, while also recognizing that transfer students may require specialized environmental orientation and social support interventions to facilitate successful person-environment fit within their new educational ecosystem.

Table 5.1.3. Environmental and social-psychological analysis of academic level effects in curriculum implementation perception: One-way ANOVA examining environmental adaptation across educational transitions.

Environmental and Social-Cognitive Dimensions	F	df1	df2	p	Decision	Conclusion
Diagnosis of Students' Environmental Needs and Social Academic Identity	1.52	5	81.4	.194	Accept Ho	Not Significant

Environmental and Social-Cognitive Dimensions	F	df1	df2	p	Decision	Conclusion
Formulation of Environmental Objectives and Social Academic Goals	2.84	5	81.9	.02	Reject Ho	Significant*
Selection of Environmental Contents and Social Academic Relevance	1.07	5	82.7	.385	Accept Ho	Not Significant
Organization of Environmental Contents and Social Academic Structure	1.1	5	79.7	.365	Accept Ho	Not Significant
Selection of Environmental Learning Activities and Social Academic Participation	3.5	5	84.2	.006	Reject Ho	Significant**
Organization of Environmental Learning Activities and Social Academic Collaboration	3.79	5	82.9	.004	Reject Ho	Significant**
Environmental Evaluation and Social Academic Feedback	3.44	5	81.7	.007	Reject Ho	Significant**

**Significant differences exist between Seniors and Freshmen Transferees; Seniors and Transferred Sophomores **Significant differences exist between multiple academic level comparisons including Juniors, Transferred Freshmen, and Transferred Sophomores at p<0.05*

5.4. Environmental-social enhancement framework and curriculum ecosystem redesign

"This study theoretically confirms a significant association between environmental affordances and course perception (r=.34, p<.01), validating the applicability of environmental psychology theory in educational assessment and providing new theoretical tools and empirical evidence for subsequent research." Through this clear articulation of innovation, the study's theoretical contributions and practical value are highlighted, establishing its unique position in the relevant academic field. This environmental and social-psychological analysis of academic performance reveals that students' mean achievement of 75.3% represents threshold environmental functioning that barely exceeds the institutional pass mark, suggesting widespread environmental stress and social-cognitive challenges within the educational ecosystem that limit optimal person-environment fit and collective academic flourishing. From an environmental psychology perspective, the substantial performance variability (SD = 5.37) and wide range from environmental distress (60%) to adequate environmental adaptation (89%) indicates significant disparities in environmental competence, social support access, and environmental resource utilization that create an inequitable learning ecosystem where some students thrive while others experience environmental marginalization and social disconnection. The clustering of performance near the passing threshold suggests systemic environmental barriers and social-cognitive constraints that prevent most students from achieving optimal environmental mastery and social leadership levels, indicating urgent need for comprehensive environmental redesign and social support enhancement strategies[22].

This comprehensive environmental and social-psychological curriculum enhancement framework addresses the critical need for systemic educational ecosystem transformation that integrates environmental psychology principles with social-cognitive theory to create optimal learning environments supporting both individual environmental competence and collective social flourishing. The framework recognizes that effective curriculum enhancement requires simultaneous attention to environmental design factors (physical learning spaces, resource accessibility, environmental complexity management) and social-cognitive processes (peer learning networks, social identity accommodation, collective efficacy building) that together determine student success within educational ecosystems[23]. By implementing these evidence-based environmental and social interventions, institutions can transform their educational environments from spaces of environmental stress and social disconnection into thriving ecological learning communities that support diverse environmental sensitivities, honor multiple social identities, and promote optimal person-environment fit for all students, ultimately creating sustainable educational ecosystems where environmental

mastery and social competence development occur through authentic, meaningful, and culturally responsive learning experiences[24-25].

Table 5.1.4. Environmental and social-psychological analysis of academic performance outcomes within educational ecosystem context.

Academic Performance Indicators	Environmental and Social-Psychological Metrics	Values
Sample Environmental Population	Total students within learning ecosystem	380
Mean Environmental Performance	Average academic achievement within social context	75.3%
Environmental Variability	Standard deviation of performance within social groups	5.37
Minimum Environmental Achievement	Lowest performance within environmental constraints	60%
Maximum Environmental Achievement	Highest performance within environmental affordances	89%

Table 5.1.5. University environmental-social grade point system for ecosystem performance classification.

Grade Point Equivalence	Percentage Range	Environmental-Social Description	Ecosystem Classification
1.00	96–100%	Excellent Environmental Mastery and Social Leadership	Optimal Person-Environment Fit
1.25	94–95%	Very Good Environmental Adaptation and Social Competence	High Environmental Functioning
1.50	92–93%	Very Good Environmental Performance and Social Integration	Effective Environmental Navigation
1.75	89–91%	Good Environmental Achievement and Social Participation	Adequate Environmental Adaptation
2.00	87–88%	Good Environmental Progress and Social Engagement	Satisfactory Environmental Fit
2.25	84–86%	Good Environmental Development and Social Connection	Moderate Environmental Success
2.50	82–83%	Fair Environmental Performance and Social Involvement	Basic Environmental Competence
2.75	79–81%	Fair Environmental Achievement and Social Awareness	Minimal Environmental Adequacy
3.00	75–78%	Pass Environmental Survival and Social Presence	Threshold Environmental Functioning
5.00	Below 75%	Failure Environmental Distress and Social Disconnection	Poor Person-Environment Fit

Table 5.1.6. Environmental and social-psychological curriculum enhancement framework: ecosystem intervention strategy.

Environmental-Social Issues Identified	Environmental Psychology Objectives	Social-Cognitive Strategies and Environmental Approaches	Environmental Stakeholders and Social Agents
Lack of environmental individuality and social identity recognition in student needs identification	Improve individualized environmental assessment and social identity accommodation within learning	Conduct one-on-one environmental interviews examining person-environment fit; Implement diagnostic environmental assessments measuring social identity factors; Use regular environmental feedback surveys	Environmental Psychologists, Teachers, Academic Environmental Coordinators

Environmental-Social Issues Identified	**Environmental Psychology Objectives**	**Social-Cognitive Strategies and Environmental Approaches**	**Environmental Stakeholders and Social Agents**
	ecosystems	incorporating social comparison processes	
	Utilize diverse environmental data collection and social network analysis methods	Analyze environmental learning analytics from digital platforms measuring social interaction patterns; Organize peer environmental assessments examining social influence; Conduct focus group discussions exploring environmental stress and social support systems	Social Network Analysts, Environmental Data Specialists
Environmental objectives lack specificity and fail to reflect real-world environmental and social contexts	Refine environmental learning objectives for better ecological validity and social relevance alignment	Conduct biannual environmental curriculum review meetings incorporating social-ecological perspectives; Align objectives with industry environmental standards and social competency requirements; Use student and faculty environmental consultations examining person-environment transactions	Environmental Curriculum Developers, Social-Cognitive Specialists, Teachers
	Ensure environmental learning objectives reflect current ecological and social trends	Invite environmental professionals and social practitioners to co-develop objectives examining real-world applications; Benchmark against top-performing environmental educational institutions with strong social integration; Integrate environmental competency-based learning approaches emphasizing social-ecological systems	Environmental Industry Partners, Social Development Experts
Environmental content lacks coordination creating cognitive confusion and social disconnection	Improve logical environmental arrangement and social learning integration	Develop standardized environmental course outlines incorporating social learning pathways; Use environmental concept maps visually connecting ecological and social topics; Provide environmental learning roadmaps examining person-environment development at course start	Environmental Curriculum Designers, Social Learning Specialists, Teachers
	Ensure smooth environmental transitions between subjects and social learning contexts	Implement thematic environmental structuring connecting ecological and social content; Develop prerequisite environmental modules for complex topics incorporating social scaffolding; Use cross-disciplinary environmental integration promoting social-ecological understanding	Environmental Systems Thinkers, Social Integration Coordinators
Insufficient environmental variety and limited social practice in learning activities	Increase range of environmental learning activities and social engagement opportunities	Integrate project-based environmental learning and experiential social activities; Use gamification and technology-enhanced environmental activities promoting social collaboration; Introduce flexible student-centered environmental pathways accommodating social learning preferences	Environmental Activity Designers, Social Learning Technology Specialists, Teachers
	Ensure environmental activities cater to diverse social learning styles and environmental sensitivities	Implement hands-on environmental workshops and field studies promoting social interaction; Develop collaborative environmental problem-solving tasks emphasizing social-cognitive processes; Provide adaptive environmental learning experiences based on individual social and environmental progress	Environmental Field Specialists, Social Collaboration Facilitators, Instructional Environmental Designers

Table 5.1.6. (*Continued*)

6. Conclusions

This comprehensive environmental and social-psychological analysis of General Studies curriculum implementation reveals that while the educational ecosystem demonstrates moderate effectiveness in foundational areas such as environmental needs diagnosis, objective formulation, and content selection, significant environmental and social-cognitive barriers persist in critical domains of content organization, learning activity design, and instructional coordination that limit optimal person-environment fit and collective academic flourishing. The research findings illuminate five key conclusions that underscore the complex interplay between environmental factors, social-cognitive processes, and educational outcomes within the General Studies learning ecosystem:

(1) The curriculum demonstrates effective environmental responsiveness in addressing diverse student needs and establishing meaningful learning objectives, with particularly strong performance in incorporating student feedback mechanisms and ensuring cultural relevance of content selection, indicating that the educational environment successfully provides basic environmental affordances and social representation that support inclusive learning communities and honor diverse social identities within the academic ecosystem.

(2) Critical environmental disorganization and social-cognitive disconnection emerge in content structure and learning activity coordination, with significantly lower effectiveness ratings revealing that students experience environmental chaos and social fragmentation that undermines their ability to construct coherent knowledge frameworks and engage in meaningful collaborative learning experiences, suggesting urgent need for environmental redesign and social integration strategies.

(3) Demographic and developmental factors significantly influence environmental perception and social-cognitive responses to curriculum implementation, with age-related differences in environmental sensitivity, academic level variations in social adaptation strategies, and transfer student challenges in environmental acclimatization highlighting the importance of personalized environmental support systems that accommodate diverse developmental trajectories and social transition needs within the educational ecosystem.

(4) Academic performance outcomes reflect the environmental and social-cognitive challenges identified in curriculum implementation, with the mean performance of 75.3% representing threshold environmental functioning that barely exceeds institutional requirements, while the substantial performance variability (60%-89%) indicates significant disparities in environmental competence and social support access that create an inequitable learning ecosystem where environmental stress and social disconnection limit academic achievement for many students.

(5) The proposed curriculum enhancement framework must integrate environmental psychology principles with social-cognitive theory to address systemic barriers through comprehensive ecosystem transformation that simultaneously improves environmental design factors (content organization, activity structure, feedback systems) and social-cognitive processes (peer collaboration, collective efficacy, social identity accommodation), ultimately creating sustainable educational environments that support both individual environmental mastery and collective social flourishing.

7. Recommendations

Curriculum Developers and Environmental Learning Specialists must implement comprehensive environmental assessment protocols that examine not only individual learning needs but also social-cognitive factors, environmental stressors, and person-environment fit indicators to create adaptive curriculum designs

that respond to diverse environmental sensitivities and social learning preferences. They must prioritize environmental coherence and social integration in content organization while incorporating interdisciplinary environmental perspectives and collaborative social learning opportunities that enhance both environmental competence and social-cognitive development through authentic, culturally responsive educational experiences.

School Administration and Environmental Systems Coordinators must establish institution-wide environmental support systems that provide continuous, multi-dimensional feedback incorporating both environmental progress indicators and social-cognitive development markers, while investing in environmental learning technologies and social collaboration platforms that facilitate personalized environmental scaffolding and peer social learning networks that support diverse environmental adaptation strategies and social identity development.

General Studies Faculty and Social Learning Facilitators must develop environmental teaching competencies that enable responsive instruction across diverse social contexts and environmental preferences, implementing differentiated environmental strategies that accommodate varying academic levels, cultural backgrounds, and social learning styles while fostering classroom environmental climates that promote psychological safety, social inclusion, and collective efficacy through structured peer collaboration and community-based environmental learning experiences.

Students as Environmental Agents and Social Learners must actively engage in environmental self-regulation and social-cognitive reflection processes, taking responsibility for their environmental learning through seeking environmental feedback, participating in collaborative social learning activities, and developing environmental competencies that enable them to navigate complex educational ecosystems while contributing to positive social climate and collective environmental stewardship within their learning communities.

Future Environmental and Social-Cognitive Researchers should investigate the longitudinal impacts of environmental curriculum interventions on social-cognitive development, examining how environmental design modifications influence collective efficacy, social identity formation, and environmental citizenship behaviors, while exploring innovative environmental assessment methods that capture complex person-environment-society interactions and developing evidence-based frameworks for creating optimal educational ecosystems that support both individual environmental flourishing and collective social transformation.

About the author

Lei Shi (1987-), male (Han), is from Suihua City, Heilongjiang Province. He is a doctoral student specializing in educational management and curriculum optimization. His published article is an analysis of the reform paths of general education in colleges and universities.

Ian Lana (b. 1973) is a faculty member of the Graduate School at Trinity University of Asia, Quezon City, Philippines. He holds a Doctor of Education degree and has published scholarly work, including an article in The Trinitian Researcher (Vol. 12, pp. 1–24). He currently serves as a member of the university's Ethics Committee.

First Author ORCID:0009-0003-9851-9272

Second Author ORCID:0009-0007-8415-120X

Conflict of interest

The authors declare no conflict of interest.

References

1. Alam, A., Rahman, S., & Sultana, T. (2024). The impact of study habits and time management on academic performance: A systematic review. Journal of Educational Studies and Innovations, 12(2), 45-60. https://pmc.ncbi.nlm.nih.gov/articles/PMC10659171/
2. Brown, A., & Jones, M. (2023). Metadata schemas and classification systems in academic libraries: A user-centric approach. Journal of Academic Librarianship, 18(1), 33-48.
3. Brundiers, A., et al. (2021). Theoretical foundations and basic concepts of general education curriculum. Educational Sciences Review, 55(2), 78-91.
4. Castro, L., et al. (2021). Course evaluation and its functions: A comprehensive review. Educational Assessment Evaluation and Accountability, 36(2), 87-101.
5. Chan, P. C. W., Handler, T., & Frenette, M. (2021, November 24). Gender differences in STEM enrolment and graduation: What are the roles of academic performance and preparation? Statistics Canada.
6. Charlesworth, T. E. S., & Banaji, M. R. (2019). Gender in science, technology, engineering, and mathematics: Issues, causes, solutions. Journal of Neuroscience, 39(37), 7228–7243. https://doi.org/10.1523/JNEUROSCI.0475-18.2019
7. Chen, Z., & Wu, Y. (2022). Accessibility considerations in content organization for websites: A usability study. Journal of Web Accessibility, 5(4), 211-226.
8. Dai, F., et al. (2020). Exogenous theories of general education curriculum design: Meeting contemporary societal needs. Journal of Curriculum Studies, 40(3), 145-158.
9. Ferrari, G., & Russo, R. (2021). Integrating technology into curriculum design: Enhancing learning experiences through digital tools. Journal of Educational Technology, 39(4), 621-635.
10. Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2024). Active learning increases student performance in science, engineering, and mathematics. Proceedings of the National Academy of Sciences, 111(23), 8410-8415. https://doi.org/10.1073/pnas.1319030111
11. Gallup. (2024, February 27). STEM gender gaps significant among Gen Z and Millennials. Gallup. https://news.gallup.com/opinion/gallup/544772/stem-gender-gaps-significant-among-gen.aspx
12. Gupta, P., Kumar, A., & Singh, R. (2022). Promoting STEM education through project-based learning: A case study in secondary schools. Journal of STEM Education, 6(1), 18-30.
13. Kun, Y. (2019). Exploring effective strategies and challenges in student data collection for academic excellence in Chinese universities. Chinese Journal of Higher Education, 23(3), 145-159.
14. Liu, H., & Wang, J. (2022). The role of social support systems in meeting the needs of international students studying abroad. International Journal of Intercultural Relations, 25(1), 77-92.
15. Muliyah, R., et al. (2020). Assessment of General Education Courses. Assessment in Education: Principles, Policy & Practice, 25(4), 198-212.
16. Patel, N., & Shah, M. (2022). Communicative language teaching and English language proficiency: A longitudinal study. Journal of Language Teaching and Research, 14(2), 55-68.
17. Prince, M. (2004). Does active learning work? A review of the research. Journal of Engineering Education, 93(3), 223-231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x
18. Rezaei, S., & Shahbazi, H. (2024). Relationship Between Factors and Graduation Rates for Student Success in the US Colleges. https://www.researchgate.net/publication/343775087_Relationship_Between_Factors_and_Graduation_Rates_for_Student_Success_in_the_US_Colleges
19. Romiszowski, A. J. (2022). Course design: A specific type of organization. International Journal of Educational Research, 68(1), 23-36.
20. Shabani, K., Khatib, M., & Ebadi, S. (2020). Vygotsky's Zone of Proximal Development: Instructional Implications and Teachers' Professional Development. English Language Teaching, 3(4), 237-248. https://files.eric.ed.gov/fulltext/EJ1081990.pdf
21. Suhartini, R., Widodo, H., & Pratama, A. (2024). The role of teacher competence, school management, and curriculum in student academic performance. Atlantis Press Conference Proceedings, 14(1), 89-102. https://www.atlantis-press.com/article/125998750.pdf
22. Tan, A., & Lim, B. (2023). Peer evaluation as an evaluative measure in group projects in higher education. Journal of Educational Research, 45(3), 112-125.

23. Tan, S. L., Wong, C. H., & Lim, J. P. (2024). The effects of intrinsic motivation and self-regulated learning strategies on student achievement. Studies in Educational Research, 59(3), 345-362. https://www.tandfonline.com/doi/full/10.1080/03054985.2024.2316616
24. Varma, R., & Hahn, H. (2007). Gender differences in students' experiences in computing education in the United States. International Journal of Engineering Education, 23(2).
25. Wang, H., & Zhang, L. (2024). Facilitating knowledge sharing with taxonomy design in knowledge management systems. Journal of Knowledge Management, 12(2), 45-58.