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Gendered Self-Perceptions, Inclusive Classroom Climate, and Responsible Generative-AI Use in English for Specific Purposes

Annisa Romadloni[1)*], Linda Perdana Wanti[2)*], Laura Sari[3)]

[1)] Program Studi Teknologi Rekayasa Multimedia, Politeknik Negeri Cilacap
[2)] Program Studi Rekayasa Keamanan Siber, Politeknik Negeri Cilacap
[3)] Program Studi Teknik Informatika, Politeknik Negeri Cilacap

*Annisa Romadloni
Email: annisa.romadloni@pnc.ac.id
linda_perdana@pnc.ac.id

Abstract

Gendered perceptions shape participation and belonging in higher education, and the rapid uptake of generative AI adds new equity and academic-integrity risks in English for Specific Purposes (ESP). This study examined how communal/agentic self-perceptions and perceived gender-inclusive classroom climate relate to responsible generative-AI orientations among Indonesian vocational students. A cross-sectional quantitative secondary analysis was conducted using an end-of-course survey (N=90) with reliability, descriptive, correlational, and regression analyses. Results indicated high communal and moderate agentic self-perceptions, generally positive inclusion perceptions with lingering stereotype signals in group tasks, and high perceived AI utility alongside strong concerns about inaccurate and biased outputs. Inclusion climate and perceived AI utility jointly predicted stronger governance-oriented norms (e.g., disclosure, citation, fairness). Scenario judgments rated AI most acceptable for summarizing, translating, and language correction when students revised/verified outputs, and least acceptable for generating whole reports or slide decks without meaningful authorship.

Keywords: *Gender Perception, Inclusive Classroom Climate, Vocational Higher Education, Generative AI, AI Literacy*

INTRODUCTION

Gender has remained a durable organizing principle in postsecondary education because expectations about competence, leadership, and appropriate participation continue to be filtered through gendered social norms (Jean, 2025; Stewart et al., 2021; Vaikre et al., 2026). In classroom life, such norms are reproduced through interactional routines such as turn-taking, task allocation in group work, and differential feedback about whose voice is treated as authoritative. When these routines are repeated, they can influence how students evaluate their suitability for visible roles, such as presenter, group leader, or spokesperson. In vocational higher education, the stakes of participation can be heightened because classroom performances are connected to imagined workplace practices and to anticipated professional identities. In language classrooms, participation is also inseparable from risk because communicative errors are public and can be interpreted as a lack of competence rather than as part of learning (Durrani & Kataeva, 2025; Kuteesa et al., 2024; McBrien & Brussini, 2022; Yates et al., 2025).

Gendered processes have increasingly been conceptualized as operating through both the social environment and students' self-perceptions. Communal and agentic self-perceptions have been treated as core dimensions of gendered self-construal, with communal orientations reflecting perceived care, empathy, cooperation, and relational attentiveness, and agentic orientations reflecting perceived assertiveness, independence, competitiveness, and comfort with leadership. These dimensions have been treated as socially patterned without being biologically fixed, and they have been used to explain why some students are socialized to value harmony and helpfulness while others are socialized to value dominance and control. In language learning, these orientations can shape willingness to communicate, peer feedback practices, and comfort with challenging biased comments, especially in mixed-gender groups. Recent evidence has also suggested that gender stereotypes can indirectly shape language learning engagement via

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motivational beliefs and emotions, even when overt endorsement of stereotypes is limited (Li et al., 2025).

Inclusive classroom climate has been positioned as an actionable mechanism through which equity commitments can be translated into everyday teaching and learning. Inclusive classroom climate has been theorized as a mediator between inclusive teaching practices and inclusion outcomes, implying that students' perceptions of fairness, belonging, respect, and representation are proximal indicators that can register small changes in practice and can predict engagement (Margas, 2023). In higher education, inclusion has also been linked to accessibility and universal design, because participation can be restricted when learning materials, interactional formats, and assessment pathways are designed for an assumed "default" student. Recent work has indicated that accessibility and universal design are often inconsistently addressed in higher education curricula, which can reinforce subtle exclusion and normalize "accommodation" as exceptional rather than standard (Mavrou et al., 2025). Systematic reviews of inclusive pedagogy have similarly emphasized that inclusive communication, inclusive instructional practices, and inclusive curriculum design should be treated as integrated competencies rather than as optional add-ons (Jackson-Summers et al., 2024).

A further layer of change has been introduced through the rapid diffusion of generative artificial intelligence. Large language models and conversational generative-AI tools have been widely adopted by university students for drafting, translating, summarizing, brainstorming, and revising text. The diffusion has been accelerated by perceptions of immediate utility, low access barriers, and the compatibility of generative-AI outputs with common academic genres. Student adoption has frequently been explained through technology acceptance perspectives, and an extended UTAUT approach has suggested that perceived usefulness, facilitating conditions, and social influence can shape intention to use tools such as ChatGPT in higher education (Strzelecki, 2023). Within the Indonesian context, adoption has also been shown to be predicted by similar acceptance factors in studies focused on university students' use of ChatGPT for learning (Alshammari & Alshammari, 2024; Habibi et al., 2023; Wahdah et al., 2025). At the same time, institutional responses have remained uneven internationally, with comparative analyses documenting considerable variation in whether guidelines exist, how academic integrity is framed, and which practices are explicitly permitted or prohibited (An et al., 2025; Deep et al., 2025; Jin et al., 2025; Tsao, 2025)

Language education has been placed at the center of these debates because the affordances of generative AI align closely with common language-learning tasks. In English for Specific Purposes, learning is often organized around iterative drafting and revision, vocabulary growth, and pragmatic decisions about tone, audience, and professional genre conventions. Generative AI can provide alternative phrasings, grammar explanations, vocabulary suggestions, and translation drafts, which can increase perceived efficiency and reduce anxiety about linguistic accuracy. At the same time, the alignment between AI outputs and language-learning outcomes has created pedagogical ambiguity because improvement can be produced with minimal learner processing. Concerns have therefore been raised that uncritical use can undermine learning, distort assessment validity, and invite plagiarism-like submission practices, especially when full assignments are generated and submitted without disclosure (Eke, 2023; Kasneci et al., 2023). The need for clearer guidelines has been reinforced by qualitative evidence showing that students often develop personal strategies to navigate ethical uncertainty and to validate AI outputs in the absence of institutional clarity (Hadinejad et al., 2025).

Equity concerns have been intensified because generative-AI systems can reproduce biases present in training data and can amplify stereotypical representations when prompts and outputs are accepted uncritically. Gender bias has been treated as a plausible risk in educational AI because stereotypes can be echoed in professional role depictions, evaluative language, and examples of "appropriate" communication. This risk is salient in vocational ESP, where professional identities are rehearsed through language and where occupational cultures can be

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gendered. Responsible use, therefore, requires not only technical skills but also ethical reflection and context-sensitive judgment about when AI assistance supports learning and when it substitutes for it. AI literacy has been framed as a necessary complement to access, because responsible use requires that limitations of AI systems are recognized, that outputs are validated, and that governance norms about disclosure and citation are followed (Laupichler et al., 2022). In the context of generative AI, responsible-use capacity has also been tied to the presence of clear policies and to the fairness of assessment designs that reduce incentives for misuse (Jin et al., 2025; Kasneci et al., 2023).

Despite converging debates about gender, inclusion, and generative AI, several research gaps have remained evident during 2020–2025. Gender has often been treated as a demographic moderator rather than as a structured set of self-perceptions that can shape participation, belonging, and tool use. Inclusive classroom climate has frequently been examined separately from technology-use research, even though climate perceptions can influence whether new tools are experienced as empowering support or as disciplinary pressure. Studies of generative-AI adoption in higher education have often prioritized perceived usefulness and intention to use, while responsible-use governance has been treated as an afterthought or confined to policy analysis. In addition, scenario-based measurement of ethical boundaries has rarely been integrated with students' broader classroom experiences, even though practical judgments are where policy principles are enacted and contested.

A contextual gap has also been visible in Indonesian vocational higher education and in English for Specific Purposes. Vocational programs are oriented toward labor-market readiness in technology-intensive sectors, and English is framed as a professional resource for mobility in specialized fields. In such contexts, gendered self-perceptions can shape role uptake in group tasks and comfort with public speaking, while inclusive climate perceptions can shape whether participation is experienced as safe and valued. Because generative-AI tools can provide linguistic "confidence" through rapid correction and drafting, adoption may be patterned by both self-perceptions and classroom climate. The intersection of these factors has remained underexamined in empirical work focused on vocational settings and on ESP learning, despite the practical relevance for classroom management and assessment design (Hz, 2022; Rahmanu & Molnár, 2025).

From a theoretical standpoint, the intersection was approached by linking gendered self-perceptions to social role processes, by treating classroom climate as the proximal context in which status cues are interpreted, and by framing generative-AI use through acceptance and governance considerations. This combination is rarely operationalized in one dataset, particularly in vocational ESP, where language learning is embedded in occupational preparation. It also permits a shift from asking only whether AI is used to asking under what classroom conditions and self-perception profiles, responsible boundaries are recognized and enacted. Such evidence can inform assessment redesign and student-facing guidance (Enamorado, 2025; Wang & Yu, 2023; Wolter & Hannover, 2016).

To address these gaps, an original empirical study was conducted using a course-evaluation dataset from an ESP class in Indonesian vocational higher education. The dataset captured communal and agentic self-perceptions, perceptions of gender-inclusive and accessible classroom climate, patterns of generative-AI use for learning, perceived AI utility, concerns about inaccuracy, bias, and privacy, perceived need for guidance, and scenario-based judgments about acceptable AI use. Novelty was introduced by treating responsible generative-AI use as an outcome shaped by both individual gendered self-perceptions and perceived classroom climate, rather than as a stand-alone technology issue. The study was guided by research questions framed around descriptive patterns and relational structure. It was asked how gendered self-perceptions, inclusive classroom climate, and orientations toward responsible AI were distributed among vocational ESP students. It was also asked whether differences in these constructs were associated with gender group and self-reported AI use frequency. Finally, it was

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examined whether inclusive classroom climate and perceived utility of AI were associated with stronger governance and fairness norms, controlling for other factors. Empirical, conceptual, and practical contributions were thereby targeted for the design of inclusive, integrity-sensitive ESP instruction in the generative-AI era.

RESEARCH METHODS

A cross-sectional quantitative design was implemented, and a secondary analysis of course-evaluation data was conducted (Johnston, 2014; Setia, 2016). The design was selected because the research questions required simultaneous estimation of patterns of gendered self-perceptions, perceived inclusive classroom climate, and responsible generative-AI orientations within the same learning group (Setia, 2016). The course-evaluation format was used to reduce intrusion into teaching time and to capture perceptions while the classroom experience was still salient (Marsh, 1987). Although the dataset was collected for pedagogical evaluation, the variables aligned with the constructs of interest and permitted theory-informed modelling of relationships among self-perceptions, contextual perceptions, and technology-related orientations. A theory-informed analytical strategy was employed, comprising three complementary approaches. Psychometric analysis was used to examine internal consistency and to create composite measures (Cronbach, 1951; DeVellis, 2017). Correlational and regression modelling were used to examine associations and to estimate the relative contribution of predictors to governance norms. Scenario-based judgement analysis was used to examine how ethical boundaries were applied in concrete generative-AI use situations, rather than only in abstract statements (Atzmüller & Steiner, 2010).

The study was conducted at an Indonesian vocational higher education institution, where English for Specific Purposes was offered as a compulsory module across several programs. The instructional focus was on occupationally relevant communication, including writing and revising short reports, drafting professional correspondence, and developing field-specific vocabulary. A blended learning approach was used, combining classroom discussion and group activities with digital assignments submitted via institutional platforms (Garrison & Kanuka, 2004). This setting was treated as substantively important because vocational students are often positioned at the intersection of technological change and employability expectations, while English use is simultaneously framed as a gatekeeping competence and as a practical tool for workplace participation.

The dataset consisted of 90 student responses. Gender was reported as male by 45 students and female by 45 students. Age was reported in years and was extracted from the age field; an age range of 17–29 years was observed, with a mean age of 18.92 years (SD = 1.54). Students were enrolled in several vocational programs, including Cyber Security Engineering, Multimedia Technology Engineering, Accounting and Informatics Engineering (n = 55, 61.2%), Mechanical Engineering, Agro-Industrial Product Development, and Environmental Pollution Control Engineering (n = 35, 38.8%). Access to learning devices was predominantly smartphone-based (n = 54, 60.0%), with the remainder using laptops (n = 36, 40.0%). Frequency of AI use for learning was reported as daily by 28 students (31.1%), weekly by 37 students (41.1%), rarely by 15 students (16.7%), monthly by 8 students (8.9%), and never by 2 students (2.2%). Because the sample was derived from a single course evaluation, it was treated as a convenience sample of an intact group rather than as a random sample of all vocational students (Etikan, I., Musa, S.A., Alkassim, 2016).

Data were collected using a structured questionnaire with Likert-type items. Response options were anchored from strongly disagree to strongly agree on a five-point scale for perception items, and from not acceptable to highly acceptable on a five-point scale for scenario-based acceptability items (Likert, 1932). The questionnaire was administered in Indonesian to ensure accessibility for students across programs. Constructs were operationalized using multi-

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item scales to reduce measurement error and facilitate internal consistency assessment (DeVellis, 2017). Items were adapted from established constructs in gender and education research, inclusive pedagogy and universal design literature, and technology acceptance and AI governance scholarship (Davis, 1989; Floridi et al., 2018; Jobin et al., 2019; Meyer & Norman, 2020). Adaptation was conducted to align with the ESP context and with the responsibilities of vocational students in academic work.

Gendered self-perceptions were operationalized through communal and agentic item sets. Ten communal items captured perceived empathy, nurturing orientation, cooperation, and relational sensitivity (Abele & Wojciszke, 2014). Ten agentic items captured perceived assertiveness, independence, competitiveness, confidence in leadership, and comfort with taking initiative. These items were formulated to represent self-perceptions rather than prescriptive norms, and the wording was adjusted to be culturally appropriate and understandable to vocational students. Because self-perceptions were expected to be shaped by social role processes and gender schema activation, these measures were treated as theoretically meaningful beyond categorical gender (Bem, 1981; Eagly, 1987; Eagly & Wood, 2012).

Inclusive classroom climate and accessibility were operationalized through 23 items capturing perceptions of encouragement to participate, fairness of leadership opportunities, representation of diverse genders in examples and materials, responses to biased comments, clarity of rubrics, multiple ways to demonstrate learning, respectful peer interaction, belonging, and accessibility of learning resources such as captions, transcripts, and device usability (Florian & Black-Hawkins, 2011; Goodenow, 1993). Three items were negatively valenced, capturing perceived influence of stereotypes on group task allocation, observed microaggressions, and concern that gender could influence grading. These items were included to reduce acquiescence bias and to capture exclusion signals that can coexist with positive climate perceptions. For composite scoring, the negatively valenced items were reverse-coded so that higher values consistently indicated a more inclusive and accessible climate.

Generative-AI use was captured in two formats. The frequency of AI use for learning was measured using a single categorical item, ranging from never to daily. Current uses of AI were captured through a multiple-response item, including grammar checking, vocabulary building, summarizing readings, translating text, and brainstorming ideas. Contexts of use were captured through a multiple-response item indicating whether AI was used during in-class learning, during independent study, after drafting to check language, in the finishing stage of assignments, or not used for assignments (Krecar et al., 2024; Li et al., 2024).

Responsible generative-AI orientations were operationalized through several scales. Perceived AI utility was measured using six items capturing perceived usefulness for language learning tasks, efficiency gains, support for drafting and revising, perceived improvement of understanding, and perceived ability to learn independently. AI governance and fairness norms were measured using six items capturing endorsement of disclosure and citation, verification of outputs, avoidance of data sharing, recognition that undisclosed generation can violate academic integrity, and recognition of unfair advantage when AI is used without transparency (Gruenhagen et al., 2024; Kasneci et al., 2023). AI concerns were measured using three items capturing concern about inaccurate information, concern about biased outputs, and concern about privacy and data security (Floridi et al., 2018; Jobin et al., 2019). Perceived need for guidance was measured using two items assessing the desire for institutional or instructor guidance and for concrete examples of what is permitted. Scenario-based acceptability was measured using six short scenarios that describe different generative-AI use practices, ranging from limited support (e.g., using AI for grammar improvement while tracking changes) to high-substitution practices (e.g., submitting a full report generated by AI without disclosure). Acceptability ratings were used to assess boundary-setting in concrete situations and to reduce ambiguity in abstract agreement items.

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Data were collected at the end of the ESP class as part of the routine course evaluation (Marsh, 1987). The questionnaire was administered online via a web-based form accessible on smartphones and laptops. Participation was voluntary, and completion time was approximately ten to fifteen minutes. Responses were submitted anonymously, and no identifying information was requested beyond demographic and program variables needed for evaluation. The form's introduction stated that participation or non-participation would not affect grades and that aggregated results would be used to improve teaching quality. Because the focus of the present study was perceptions of gender inclusion and responsible AI use, the presence of potentially sensitive items was addressed by ensuring that the form could be completed privately and by allowing participants to skip items if they experienced discomfort.

Data were exported to spreadsheet format and were analyzed using statistical computing procedures. Age values were extracted as numeric values from the age field. Descriptive checks were conducted to identify missing values and implausible responses. Because the dataset was derived from real classroom evaluation, minor inconsistencies between reported AI frequency and selected AI use options were observed; these inconsistencies were treated as evidence of fluid interpretations of "AI use for learning" rather than as grounds for exclusion, and no cases were removed for this reason. For multi-item scales, item responses were treated as approximately interval for the purpose of computing composite means (Carifio & Perla, 2009). Negatively worded climate items were reverse-coded using a 6 minus x transformation so that higher scores indicated stronger inclusion perceptions.

Internal consistency reliability was evaluated using Cronbach's alpha for each multi-item construct (Cronbach, 1951). Composite scores were then computed as the arithmetic mean of items within each scale to preserve the original 1–5 metric and to ease interpretation (DeVellis, 2017). Descriptive statistics were computed for all composite constructs and for key items, including scenario acceptability items. Group comparisons by gender were conducted using Welch's independent-samples t-tests because equal variances could not be assumed a priori, and effect sizes were estimated using Cohen's d (Cohen, 1988; Ergin & Koskan, 2023). Associations among composite constructs were examined using Pearson product–moment correlations, and the pattern of correlations was visualized with a correlation heat map to support interpretation of the relational structure.

To examine predictors of responsible-use governance norms, an ordinary least squares regression model was estimated with governance and fairness norms as the dependent variables. Predictors were entered simultaneously to estimate unique associations while holding other variables constant. Inclusive classroom climate, communal self-perception, agentic self-perception, perceived AI utility, AI concerns, self-reported AI-use frequency, age, and gender group were included as predictors. Gender was dummy-coded for modelling. Standard diagnostic checks were conducted to ensure that extreme outliers did not dominate results and that residual patterns did not indicate severe violations of linearity and homoscedasticity. Standardized coefficients were computed in an auxiliary model to support the comparison of predictor strengths. Scenario-based acceptability was analyzed descriptively at the item level and as a composite to identify the relative acceptability of low-substitution versus high-substitution practices (Atzmüller & Steiner, 2010). A line chart was produced to visualize scenario patterns, and a scatter plot was produced to visualize the association between inclusive classroom climate and governance norms. These practical procedures were implemented to ensure that results could be interpreted transparently and replicated with similar datasets.

RESULTS AND DISCUSSION

A. FINDING

Participant and usage profile. The dataset represented 90 vocational higher education students enrolled in an ESP class. Gender was evenly distributed, with 45 male and 45

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female respondents. Students were drawn primarily from Cyber Security Engineering, Multimedia Technology Engineering, Accounting and Informatics Engineering (n = 55, 61.2%); Mechanical Engineering, Agro-Industrial Product Development, and Environmental Pollution Control Engineering (n = 35, 38.8%). The mean age was 18.92 years (SD = 1.54), and the observed range was 17–29 years. Access to learning devices was divided between smartphones (60.0%) and laptops (40.0%).

High exposure to generative AI tools was indicated. Self-reported frequency of AI use for learning was concentrated in weekly and daily use. Weekly use was reported by 41.1% of respondents and daily use by 31.1%. Rare use was reported by 16.7%, monthly use by 8.9%, and non-use by 2.2%. In multiple-response questions, generative AI was most often used for brainstorming ideas (74.4%) and checking grammar (71.1%). Summarizing readings (48.9%) and vocabulary building (43.3%) were also common, while translating text (30.0%) was less frequent. Use contexts suggested that AI was largely positioned as a personal learning support rather than as a fully automated completion strategy. Independent study and homework were the most common contexts (68.9%), followed by drafting a text independently and then checking with AI (56.7%), and using AI primarily to finish or polish a task (55.6%). AI use during in-class learning was also reported by 48.9%, suggesting that classroom norms allowed at least some integration of tools during learning activities.

Table 1. Participant profile and generative-AI exposure (N = 90).

Variable	Category	n	%
Gender	Laki-laki	45	50.0
	Perempuan	45	50.0
Program	D4 Rekayasa Keamanan Siber	33	36.7
	D4 Teknik Pengendalian Pencemaran Lingkungan	22	24.4
	D4 Teknologi Rekayasa Multimedia	15	16.7
	D4 Pengembangan Produk Agroindustri	12	13.3
	D3 Teknik Informatika	6	6.7
	D4 Akuntansi Lembaga Keuangan Syariah	1	1.1
	D3 Teknik Mesin	1	1.1
Device access	Smartphone	54	60.0
	Laptop	36	40.0
AI-use frequency	Mingguan (1-3 kali dalam satu minggu)	37	41.1
	Harian (setiap hari)	28	31.1
	1-2 kali (jarang sekali	15	16.7
	Bulanan (1-3 kali dalam satu bulan)	8	8.9
	Tidak pernah	2	2.2
Age (years)	Range 17–29; M (SD)		18.92 (1.64)

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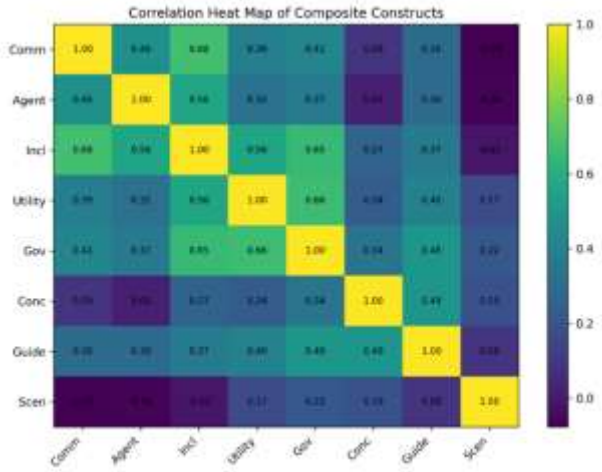

Figure 1. Correlation heat map of composite constructs.

Scale quality and overall patterns. Internal consistency reliability was satisfactory across constructs, supporting composite score formation. Cronbach's alpha ranged from .75 to .95 across the multi-item scales. Communal self-perception demonstrated very high internal consistency (α = .95), agentic self-perception showed good internal consistency (α = .84), and the inclusion-accessibility climate scale showed good internal consistency (α = .86). Perceived AI utility (α = .78) and governance and fairness norms (α = .83) were also reliable, as were AI concerns (α = .86) and guidance need (α = .85). The scenario acceptability scale showed acceptable reliability (α = .75), which was expected given that scenarios were designed to sample heterogeneous boundary conditions rather than a single homogeneous trait.

Table 2. Scale reliability and descriptive statistics.

Construct	Items	Cronbach α	Mean	SD
Communal self-perception	10	0.799	4.039	0.433
Agentic self-perception	10	0.843	3.497	0.504
Inclusion-accessibility climate	23	0.864	3.626	0.407
AI perceived utility	6	0.856	3.776	0.565
AI governance and fairness norms	6	0.760	3.694	0.552
AI concerns (accuracy, bias, privacy)	3	0.859	3.822	0.740
Need for guidance	2	0.823	3.911	0.681
Scenario acceptability	6	0.719	3.200	0.628

Table 3. Self-reported purposes and contexts of generative-AI use (multiple responses).

Type	Category	n	%
Purpose	Brainstorming Ideas (Mencari Ide)	67	74.4
	Menerjemahkan Teks	52	57.8
	Check Grammar	37	41.1
	Summarising readings (membuat kesimpulan)	36	40.0

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	Vocabulary building	29	32.2
Context	PR/Belajar Mandiri	56	62.2
	Membuat draft sendiri lalu check AI	45	50.0
	Hanya menggunakan AI untuk menyelesaikan tugas (finishing part)	40	44.4
	Saat proses pembelajaran di kelas	34	37.8
	Setelah peer-review (check) dari teman	17	18.9
	Saya memilih tidak menggunakan AI untuk mengerjakan tugas	8	8.9

As reported in the reliability and descriptives table, communal self-perception was high in the group (M = 4.04, SD = 0.74), indicating strong endorsement of self-descriptions characterized by care and cooperation. Agentic self-perception was moderate (M = 3.50, SD = 0.56), indicating more variable endorsement of leadership and competitive self-descriptions. Inclusion-accessibility climate was moderately positive (M = 3.63, SD = 0.40), suggesting that the class was generally perceived as respectful, supportive, and reasonably accessible while still leaving room for improvement. Perceived AI utility was high (M = 3.78, SD = 0.61), and governance and fairness norms were also relatively high (M = 3.69, SD = 0.54). Concerns about AI limitations were simultaneously elevated (M = 3.82, SD = 0.72), and the need for guidance was high (M = 3.91, SD = 0.71), indicating that perceived benefit coexisted with perceived risk and demand for explicit instruction. Scenario acceptability averaged near the midpoint (M = 3.20, SD = 0.70), suggesting a conditional rather than permissive orientation toward AI use.

Within the inclusion-accessibility construct, item patterns highlighted both strengths and vulnerabilities. Strong perceptions were reported regarding supportive error tolerance and respectful learning norms, and high agreement was also indicated regarding instructors' use of inclusive language and the availability of transcripts or text alternatives for multimedia content. However, weaker perceptions were observed for items related to gendered task allocation and the influence of stereotypes in group tasks. The statement that stereotypes influenced task distribution in group work had the lowest inclusion-related mean after reverse coding, suggesting that gendered role allocation remained a salient risk in collaborative activities. Concerns about whether gender could influence grades were also present at a moderate level, suggesting that grading transparency and perceived fairness remained important sites of anxiety.

Table 4. Scenario-based acceptability of generative-AI use.

Scenario	Mean	SD
AI-generated list of 10 technical terms; original sentences written by the student	3.18	0.98
Assignment prompt pasted; full report drafted by AI; minimal editing; no disclosure	2.60	1.08
Student-written paragraph translated to English by AI; revised by student before submission	3.64	0.88
Research article summarised by AI; citations checked and correctly	3.70	0.87

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cited by student		
Draft grammar improved by AI; wording suggestions adopted; changes documented for transparency	3.73	0.92
Complete slide deck with references created by AI and submitted as-is	2.34	1.09

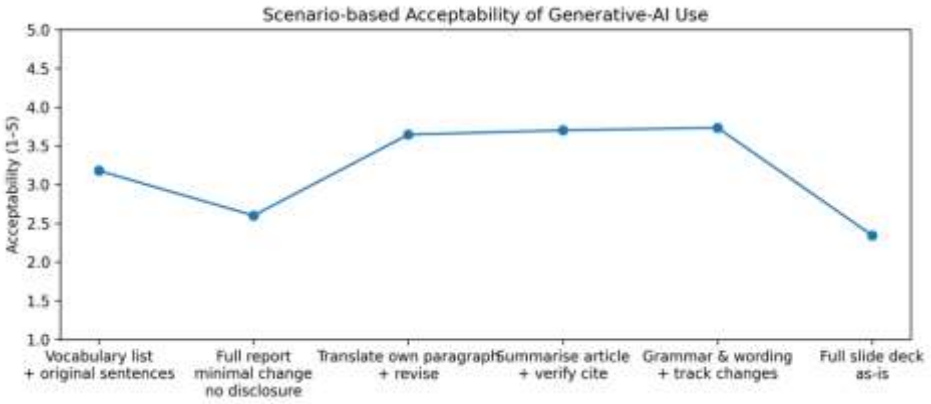

Figure 2. Scenario-based acceptability profile across six practices.

Scenario-based acceptability patterns. The scenario table and line chart illustrate a consistent distinction between low-substitution and high-substitution uses of generative AI. The most acceptable scenario involved using AI to check grammar and wording while tracking changes (M = 3.73, SD = 0.99). High acceptability was also observed for using AI to summarize an article while verifying and citing sources (M = 3.70, SD = 0.99) and for using AI to translate a self-written paragraph followed by student revision (M = 3.64, SD = 1.07). Moderate acceptability was observed for using AI to generate a vocabulary list while the student wrote original example sentences (M = 3.18, SD = 1.13). Low acceptability was observed for generating a full report with minimal editing and no disclosure (M = 2.60, SD = 1.07) and for producing a complete slide deck and submitting it as-is (M = 2.34, SD = 1.14). These patterns suggested that students recognized disclosure and contribution boundaries, and that the ethical status of AI use was judged partly by the degree of learner authorship and verification.

Gender-group comparisons suggested that differences were not pervasive across constructs but were present in perceived AI utility. Male respondents reported higher perceived AI utility than female respondents, and the difference was statistically significant under Welch's t-test (t = 2.13, p = .036), with a moderate effect size (d = 0.45). Differences in communal self-perception, agentic self-perception, inclusion-accessibility climate, governance norms, concerns, guidance need, and scenario acceptability were not statistically significant, indicating that gender group did not operate as a simple determinant of inclusive climate perceptions or governance orientations in this group.

Associations among constructs. The correlation heat map shows strong positive associations among the social and governance dimensions. Inclusion-accessibility climate was strongly associated with communal self-perception (r = .68) and moderately associated with agentic self-perception (r = .56), indicating that students who perceived the classroom as more inclusive and accessible also reported stronger communal and agentic self-perceptions. Inclusion climate was also positively associated with perceived AI utility (r = .56) and with governance and fairness norms (r = .65). Governance norms were strongly associated with perceived AI utility (r = .66) and moderately associated with AI concerns (r

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= .44) and guidance need (r = .43). Scenario acceptability showed weaker associations with other constructs, suggesting that scenario judgments captured an additional dimension of boundary reasoning that did not collapse fully into perceived utility or into governance endorsement.

Table 5. Regression predicting AI governance and fairness norms.

Predictor	B	SE	t	p
const	-0.077	0.638	-0.120	0.905
InclusionClimate	0.534	0.165	3.226	0.002
Communal	-0.056	0.128	-0.442	0.659
Agentic	0.042	0.100	0.414	0.680
AIUtility	0.400	0.093	4.315	0.000
AIConcerns	0.100	0.063	1.604	0.113
AIFreq	0.017	0.044	0.374	0.710
Age	-0.001	0.028	-0.026	0.980
Male	-0.022	0.082	-0.268	0.790

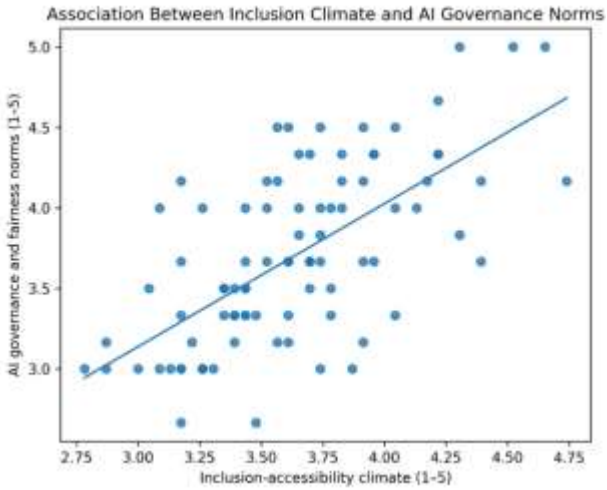

Figure 3. Scatter plot showing the association between inclusion climate and governance norms.

Predicting governance and fairness norms. A multiple regression model was estimated to examine whether inclusive classroom climate and other variables predicted governance and fairness norms while other factors were held constant. The model accounted for a substantial proportion of variance (R^2 = .58, adjusted R^2 = .54), indicating that the predictors collectively accounted for governance orientations. Two predictors remained statistically significant. Inclusive classroom climate predicted higher governance and fairness norms (B = 0.534, p = .002), and perceived AI utility also predicted higher governance and fairness norms (B = 0.400, p < .001). Standardized coefficients suggested that the two predictors were of similar magnitude (β = .39 for inclusion climate and β = .41 for AI utility). Communal self-perception, agentic self-perception, AI concerns, AI-use frequency, age, and gender group did not show statistically significant unique effects in the full model. The scatter plot shows a positive association between inclusive classroom climate and governance norms, indicating that higher perceived inclusion is associated with stronger endorsement of disclosure, verification, and fairness principles.

B. DISCUSSION

The findings suggested that gendered self-perceptions, inclusive classroom climate, and responsible generative-AI orientations were not independent strands but were interwoven within a single learning ecology. Several implications for theory can be derived when the

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results are interpreted through the integrated lenses of social role theory, gender schema theory, and technology acceptance, coupled with governance considerations.

The high level of communal self-perception, together with moderate agentic self-perception, was consistent with the idea that vocational students can internalize strong relational orientations even when enrolled in technology-oriented programs. Under social role theory, communal self-perception can be sustained when cooperation and helpfulness are rewarded in classroom and peer contexts, while agentic self-perception can remain more variable when leadership and assertive participation are unevenly encouraged. The group pattern also suggested that "gendered" self-perceptions should not be assumed to mirror categorical gender. Because both male and female respondents reported relatively strong communal orientation, communal traits may be functioning as broadly valued competencies in this vocational setting, including teamwork and service orientation. This interpretation aligns with the treatment of communal and agentic orientations as socially patterned but not fixed, and it supports the methodological choice to measure gendered self-perceptions directly rather than relying solely on gender categories.

The inclusion-accessibility findings revealed that an overall positive climate can coexist with specific gendered vulnerabilities. Supportive error tolerance and respectful interaction were rated highly, which suggests that a basic level of psychological safety was perceived. However, weaker perceptions were detected in areas where gendered status processes are most likely to be activated, particularly group-task allocation. Under gender schema theory, collaborative tasks can become sites where gender schemas are enacted because "appropriate" roles are inferred quickly, and technical or leadership roles can be allocated according to stereotypes. The relatively weak score for stereotype influence in task distribution, therefore, indicated that inclusion challenges were not primarily located in overt disrespect but in subtle role assignment practices. This pattern is consistent with the argument that an inclusive climate is not exhausted by politeness and respect; it is also shaped by how opportunities for visibility, leadership, and technical contribution are (Margas, 2023). Because vocational ESP relies heavily on collaborative genres such as reports and presentations, the gendered division of labor in group work has practical consequences for both language practice and professional identity rehearsal.

Generative-AI use was shown to be both common and strategically positioned. Brainstorming and grammar checking were the most frequent uses, and AI use was reported most often during independent study and after drafting to check outputs. This pattern suggested that generative AI was largely used as a scaffold for idea generation and language form, rather than as a full replacement for authorship. The interpretation was reinforced by the scenario-based findings in which low-substitution practices were rated as substantially more acceptable than high-substitution practices. Such patterns have been described in qualitative work where students have been reported to use AI as a "second pair of eyes" for revision, while also expressing discomfort with the full outsourcing of assessed work (Hadinejad et al., 2025). The present results extend that account by showing that boundary reasoning can be observed quantitatively through scenario judgements and that these judgements can be examined alongside broader climate and self-perception measures.

A particularly notable result was the positive association between perceived AI utility and governance and fairness norms, as well as the persistence of this association in the regression model. This pattern challenges a simplistic assumption that higher perceived usefulness necessarily predicts unethical use. Instead, perceived utility may coexist with, and even motivate, stronger engagement with governance principles, because students who rely on the tool may be more aware of the need to verify outputs and to disclose use in order to protect credibility. This interpretation is consistent with governance arguments that responsible integration requires realistic acknowledgement of use rather than denial and prohibition (An et al., 2025; Jin et al., 2025). It is also compatible with broader integrity

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research in which students have indicated that education and clear policy can reduce misconduct risks by clarifying boundaries and by reducing ambiguity about acceptable assistance (Tsao, 2025). When perceived utility is high, a stronger demand for guidance can also be elicited, as evidenced by the higher mean need-for-guidance in the present group.

Inclusive classroom climate emerged as a robust predictor of governance and fairness norms even after perceived AI utility and other variables were controlled. This result can be interpreted as evidence that responsible-use orientations are partly social and contextual rather than only individual and cognitive. In classrooms where fairness, belonging, and accessibility are emphasized, transparency norms may be easier to endorse because disclosure is less likely to be socially punished and because learning is framed as developmental rather than punitive. Conversely, in classrooms where evaluation is feared and belonging is uncertain, concealment and strategic misuse can be incentivized. This climate-to-governance pathway has practical relevance because institutional policy analyses have shown that governance signals are inconsistent and that students often rely on local cues, such as instructor discourse and assessment design, to infer what is (An et al., 2025; Jin et al., 2025). The present findings therefore support an integrated view in which inclusion work and integrity work are mutually reinforcing rather than competing agendas.

Gender group differences were limited, but male respondents reported higher perceived AI utility. Several interpretations can be considered. Differential perceived utility may reflect differences in prior exposure to digital tools, differences in confidence in experimenting with new technologies, or differences in the perceived relevance of AI to program-specific tasks. It should also be acknowledged that the program distribution was skewed toward engineering, and gendered program cultures could shape how AI is talked about and adopted. However, the absence of significant gender differences in governance norms and in scenario acceptability suggested that ethical boundary reasoning was not monopolized by one gender group. Instead, responsible-use orientations appeared to be shared, which may reflect the visibility of generative-AI debates in higher education and the emergence of common student norms about what counts as “too much” substitution.

Finally, the high level of AI concerns and the high need for guidance were theoretically significant because they indicated the coexistence of adoption and critical awareness. In AI literacy research, responsible use has been framed as requiring an understanding of limitations such as hallucinated facts, hidden bias, and privacy risks (Laupichler et al., 2022). The present group’s concerns about inaccuracy and privacy were high, suggesting that risk awareness was present even among frequent users. However, the guidance items were also high, which suggests that awareness was not sufficient for confident action. This combination aligns with UNESCO’s emphasis that guidance and institutional capacity are needed so that learners are supported in validating tools and protecting human agency (UNESCO, 2023). It also aligns with recent student-governance research in Indonesia, indicating support for sanctions and rules when governance is perceived as fair and educationally justified (Barus et al., 2025).

Overall, the findings and their theoretical interpretation suggest that responsible generative-AI use in vocational ESP is shaped by a convergence of self-perception, classroom climate, and perceived tool utility. A narrow focus on detection and prohibition is therefore unlikely to address the underlying drivers of use or the social conditions that support transparent and learning-oriented practices. Instead, the integrated framework implies that inclusive pedagogy, universal design, and explicit AI literacy instruction can be treated as part of the same educational response, because each domain shapes how students interpret risk, fairness, and legitimacy in language learning and assessment.

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CONCLUSION

Responsible generative-AI use in vocational ESP was shown to be shaped by a convergence of gendered self-perceptions, perceived inclusive classroom climate, and perceived tool utility. Frequent AI use was reported, and high perceived utility coexisted with high concern and high demand for guidance. Scenario judgements distinguished assistance from substitution, although partial permissiveness toward complete drafting without disclosure remained. Inclusive classroom climate and perceived AI utility jointly predicted stronger governance and fairness norms, which suggested that responsible use is supported when learning environments are perceived as fair, safe, and accessible. An integrated approach is therefore indicated in which inclusive pedagogy, universal design, and explicit AI governance guidance are combined to support transparent, learning-oriented generative-AI practices in vocational higher education.

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