European Research Studies Journal
Volume XXVIII, Issue 3, 2025

pp. 1733-1753

Disciplinary Differences in Students' Attitudes Toward Artificial Intelligence in Higher Education: A Comparative Mixed-Methods Study

Submitted 15/08/25, 1st revision 29/08/25, 2nd revision 11/09/25, accepted 30/09/25

Agnieszka Zofia Miluniec[1], Ireneusz Miciuła[2], Maciej Osmycki[3]

Abstract:

Purpose: *Recent expansion of artificial intelligence (AI) in universities has amplified the need to understand how students from different academic fields perceive its benefits, risks, and implications for learning. This study examines discipline-specific differences in attitudes toward AI among students of Business Informatics, Public Relations and Public Management, and Fine Arts and Design. It focuses on four core dimensions identified in recent literature: adaptive learning support and personalization, ethical considerations, issues of equity and inclusion, pedagogical support and the role of teacher.*

Design/Methodology/Approach: *A mixed-methods design was applied, combining quantitative Likert-scale questions with qualitative open-ended responses. The sample consisted of 165 students from two higher-education institutions. The survey captured experiences with AI tools, perceived opportunities and risks, and expectations regarding the role of educators. Quantitative data were analyzed descriptively and comparatively across disciplines, while qualitative data provided contextualized interpretations of attitudes and concerns.*

Findings: *Across all groups, students recognized the value of AI-supported learning, particularly in relation to personalized feedback, efficiency, and skill development. However, clear disciplinary patterns emerged. Business Informatics students emphasized analytical and technical usefulness; Public Relations and Management students foregrounded ethical communication and institutional responsibility; and Fine Arts students expressed heightened concerns over authorship, creativity, and data protection. Ethical apprehensions – especially privacy, algorithmic bias, and transparency—were present across all groups but most pronounced in artistic disciplines. Students consistently affirmed the need for human oversight and rejected fully automated instruction, supporting hybrid human-AI models that preserve interaction and mentorship. The findings suggest that AI adoption strategies should be discipline-sensitive and aligned with pedagogical expectations. Universities should prioritize transparent ethical frameworks, strengthen digital literacy, and ensure equal access to AI tools.*

[1]*Department of IT in Management, Institute of Economics, Finance and Management, University of Szczecin, Poland, e-mail: agnieszka.miluniec@usz.edu.pl;*
[2]*Department of Sustainable Finance and Capital Markets, Institute of Economics, Finance and Management, University of Szczecin, Poland,*
e-mail: ireneusz.miciula@usz.edu.pl;
[3]*Faculty of Grafics, Academy of Arts, Szczecin, Poland,*
e-mail: maciej.osmycki@akademiasztuki.eu;

Practical Implications: *Educators may benefit from integrating AI in ways that augment, rather than replace, human guidance, with particular attention to creativity-based learning environments.*
Originality/Value: *This study contributes novel comparative evidence showing how disciplinary cultures shape students' perceptions of AI. It fills a gap in existing research, which has largely examined student populations as homogeneous groups. By highlighting differences across technical, managerial, and artistic fields, the study offers nuanced insights for policy design, curriculum development, and responsible AI integration in higher education.*

Keywords: *Adaptive learning, student attitudes, digital ethics, academic integrity, equity in education, creative learning environments.*

JEL Codes: *I23, M15, O33.*

Paper type: *Empirical research article, mixed-methods, comparative study.*

Acknowledgement: *This research was co-financed by the Minister of Science under the "Regional Excellence Initiative.*

1. Introduction

The rapid development of artificial intelligence (AI) is transforming higher education by reshaping how students learn, how instructors teach, and how institutions manage academic processes (Marr, 2024). Within a year of the public release of ChatGPT, universities worldwide began updating curricula, revising academic integrity policies, and integrating generative AI tools into pedagogical and administrative workflows.

Students, in turn, rapidly adopted AI for writing, coding, information search, creative exploration, and self-directed learning. Recent studies indicate that these tools are now used at scale: Al-Zahrani and Alasmari (2024) found that 32.8% of surveyed students used AI daily, while more than 70% of participants in Lin and Chen (2024) viewed AI as a helpful aid for idea generation and academic tasks.

As adoption has accelerated, research on AI in education has expanded correspondingly. A systematic review by Wu *et al.* (2025) identified 99 publications on generative AI between 2020 and 2024, revealing that 63.6% appeared in peer-reviewed journals, underscoring the centrality of AI to current educational discourse.

These studies consistently highlight perceived advantages such as personalization, efficiency, and improved feedback cycles (Ayeni *et al.,* 2024; AlAli and Wardat, 2024; Abdous, 2023). AI-driven tutoring systems, adaptive learning platforms, and predictive analytics have been found to enhance student engagement and learning outcomes, particularly when used to supplement – rather than replace – human instruction (Garrison and Vaughan, 2008; Wu *et al.* (2025).

Yet the literature also underscores substantial risks. Ethical concerns, particularly those related to privacy, bias, transparency, and surveillance, are repeatedly identified as central barriers to trust in educational AI systems (Jobin *et al.,* 2019; Kordzadeh and Ghasemaghaei, 2021). Large datasets, such as the 1,113-student sample in Al-Zahrani and Alasmari (2024), show consistently elevated concerns about data security and algorithmic bias.

Emotional and creative implications have also emerged as key themes: Lin and Chen (2024) report that approximately 40% of students worry that AI may reduce creativity or diminish emotional engagement in learning, while Seo *et al.* (2021) document declining trust in automated feedback systems. These findings suggest that students' perceptions extend beyond technical affordances to encompass relational, cultural, and disciplinary dimensions.

Despite significant growth in the literature, recent reviews highlight important gaps. Wu *et al.* (2025) and Chu *et al.* (2022) note that most studies treat students as a homogeneous group, failing to consider how attitudes might differ across disciplinary contexts. Emerging evidence suggests such differences exist: students in technology-oriented programs often report higher acceptance of AI, while students in creative or humanities disciplines express stronger ethical or artistic concerns (Ayeni *et al.,* 2024; Lin and Chen, 2024).

Yet few empirical studies directly compare attitudes between fields, especially including artistic disciplines—despite their unique sensitivities related to creativity, authorship, and intellectual property.

Against this background, the present study investigates how students from three academic disciplines: Business Informatics, Public Relations and Public Management, and Fine Arts and Design, perceive the role of AI in higher education. Rather than seeking to generalize findings to a broader population, the study aims to identify discipline-specific expectations, reservations, and conceptualizations of AI's educational value.

The study is guided by four research questions:

- ***RQ1:*** *To what extent do students from the three disciplines differ in their expectations and perceived benefits of AI-supported personalization?*

- ***RQ2:*** *How do disciplinary backgrounds influence students' levels of concern regarding data privacy, transparency, and the ethical risks of AI?*
- ***RQ3:*** *How do students perceive issues of digital equity and accessibility in AI-enhanced education?*
- ***RQ4:*** *How do students evaluate the evolving role of the teacher in AI-supported learning, and do these evaluations differ by discipline?*

This investigation is timely and relevant. Organizations such as AACSB (2023) and UNESCO (2023) call for responsible, transparent, and equity-oriented integration of AI in higher education, while forecasting substantial expansion of AI-driven practices in teaching and administration.

Studies on blended and hybrid learning emphasize that AI should complement, not replace, human instructors (Garrison and Vaughan, 2008). Research on inclusivity further warns that AI systems risk amplifying digital inequalities unless designed with diverse learners in mind (Lin *et al.,* 2024; Morr *et al.,* 2024).

The novelty of this study lies in its discipline-sensitive comparative approach, filling a notable gap in the literature. By differentiating students from technical, communicative, and artistic fields, it reveals how epistemic cultures shape perceptions of personalization, ethics, and inclusion.

The study was conducted at the University of Szczecin and at the Academy of Art in Szczecin, Poland, and used a mixed-methods design, combining Likert-scale questions with qualitative responses. While the non-random sampling limits generalizability, the research offers valuable exploratory insights that can inform institutional policy, pedagogical design, and future empirical research.

2. Literature Review and Related Work

The academic debate on the integration of artificial intelligence (AI) into higher education has accelerated significantly in recent years, reflecting both rapid technological innovation and emerging pedagogical, ethical, and institutional challenges. Systematic reviews demonstrate a substantial growth in research output: for instance, Wu *et al.* (2025) identified 99 empirical and conceptual studies published between 2020 and 2024, with 63.6% appearing in peer-reviewed journals, 27.3% in conference proceedings, and 9.1% in books or reports. This surge confirms that AI is no longer a peripheral topic but a central focus in discussions on educational transformation, governance, learner experience, and ethics.

2.1 Student and Teacher Perceptions of AI in Higher Education

Educational foresight studies consistently identify AI as a key driver of change in higher education through 2025 and beyond (Marr, 2024). International frameworks by AACSB (2023) and UNESCO (2023) similarly position AI as an infrastructural

component of teaching, assessment, and institutional decision-making – though both organizations emphasize the need for transparency, accountability, and strong human oversight.

A substantial proportion of empirical work focuses on personalized and adaptive learning environments. Reviews by Ayeni *et al.* (2024) and AlAli and Wardat (2024) show that AI systems are increasingly used to tailor content difficulty, regulate pacing, and deliver rapid feedback. Such tools – ranging from recommender engines to adaptive quizzes and intelligent tutoring systems – are generally well received by students, particularly when used to support self-regulated learning rather than to automate teaching roles.

Parallel to these pedagogical studies is a growing body of research exploring students' and educators' perceptions of AI. In a large-scale survey of 1,113 respondents, Al-Zahrani and Alasmari (2024) found consistently positive attitudes toward AI, with mean agreement levels between 4.10 and 4.47 (on a 5-point scale) concerning benefits for teaching enhancement, personalization, and administrative efficiency.

Interestingly, 32.8% of participants reported daily AI use, even though nearly half (46.5%) assessed their AI literacy as low – suggesting high adoption despite limited self-perceived expertise.

Lin and Chen (2024) similarly observed strong enthusiasm for AI-enhanced creativity and emotional engagement, with over 70% of participants viewing AI as a useful aid for idea generation. However, they also reported emerging ambivalence: approximately 40% of students expressed concerns about emotional detachment and over-reliance on technology.

Despite the rapid growth of this literature, most studies examine aggregated student populations. Very few disaggregate findings by discipline, even though disciplinary cultures (technical, managerial, artistic) heavily influence students' expectations, anxieties, and preferred uses of AI.

The present study responds to this overlooked gap by comparing three distinct academic groups.

2.2 Pedagogical Value: Personalization, Feedback, and Learning Support

Research on the pedagogical potential of AI forms one of the most established streams in the field. Systematic reviews (Chu *et al.,* 2022; Zawacki-Richter *et al.,* 2019) show that current work is dominated by themes such as predictive analytics (e.g., dropout prediction), adaptive learning systems, automated tutoring, and algorithmic assessment.

As Chu *et al.* (2022) emphasize, much of this research concentrates on performance metrics rather than higher-order outcomes such as creativity, collaboration, or metacognition – an imbalance that newer studies seek to correct (Lin *et al.,* 2024).

Empirical evidence consistently indicates that students value personalized learning pathways. Abdous (2023) reports that AI-based tutoring systems significantly improve perceived engagement and learning efficiency.

Yet personalization comes with important caveats. Lin *et al.* (2024) warn that the effectiveness and fairness of adaptive systems depend on the representativeness of the underlying training data – raising concerns about inclusion and equity.

Taken together, personalization is among the most consistently reported benefits of AI-supported education, though its desirability and perceived risks may vary by field of study. This disciplinary dimension remains underexplored and is directly addressed in our comparative analysis.

2.3 Ethical and Social Concerns: Trust, Privacy, and Algorithmic Fairness

Alongside pedagogical benefits, the ethical and social challenges of AI have become a prominent research focus. Across multiple large-scale surveys, privacy and surveillance consistently appear among student's concerns. In Al-Zahrani and Alasmari's (2024) dataset, privacy concerns scored 3.57/5, surpassing both technical and financial challenges.

Algorithmic bias constitutes another area of concern. Johnson (2021) and Kordzadeh and Ghasemaghaei (2021) demonstrate that biased data and opaque algorithmic decision-making can disproportionately disadvantage underrepresented student groups, potentially reinforcing rather than reducing educational inequities.

International policy analyses reflect similar worries. Reviewing more than 80 national and institutional guidelines, Jobin *et al.* (2019) identified transparency, fairness, accountability, and human oversight as the most frequently cited principles.

However, they warn that practical implementation strategies are often vague or missing. UNESCO (2023) likewise notes that AI governance failures, including biased models and opaque evaluation mechanisms, pose threats to equitable education.

Recent empirical studies highlight not only technical risks but also emotional and cultural concerns. Lin and Chen (2024) found that more than one-third of students feared that AI could diminish creativity, while Seo *et al.* (2021) observed a decline in students' trust toward AI-generated feedback. These findings suggest that acceptance of AI extends beyond utility to affective and relational dimensions.

2.4 Human-AI Interaction and the Changing Role of the Teacher

A central debate in current literature concerns the evolving relationship between AI systems and educators. Building on Garrison and Vaughan's (2008) blended learning framework, recent studies argue that hybrid human-AI models, rather than full automation, offer the most pedagogically sound approach.

Wu *et al.* (2025) demonstrate that hybrid systems outperform automated solutions when human mentorship remains a core component of learning. Students echo this sentiment. Surveys reveal high support for AI as an assistive tool, but strong resistance to replacing teachers. In Al-Zahrani and Alasmari's (2024) participants clearly emphasized that the integration of AI at the university should preserve students' autonomy, not replace human-to-human relationships, and be grounded in the principles of data ethics. Lockwood (2015) reviewing automated essay evaluation systems, underscores persistent concerns about reliability and fairness that necessitate human teacher involvement in assessment processes.

Although general attitudes are well documented, the literature provides little insight into how these perceptions vary across disciplines. Fields emphasizing technical precision (e.g., informatics), communication ethics (e.g., public management), or creative autonomy (e.g., fine arts) likely differ in their expectations and thresholds for acceptable AI use. This disciplinary blind spot forms a key motivation for our study.

2.5 Gaps in Existing Research and Positioning of the Present Study

Despite the rapid expansion of research on AI in higher education, several critical gaps remain insufficiently addressed, particularly regarding disciplinary differences in student perceptions. First, most large-scale surveys examine aggregated student populations, assuming relative homogeneity in expectations, concerns, and pedagogical needs. Very few studies disaggregate findings by academic field, and artistic disciplines (where issues of creativity, authorship, and emotional engagement are central) remain especially underrepresented (Lin and Chen, 2024).

Second, while extensive datasets (N = 1,113 in Al-Zahrani and Alasmari, 2024) provide broad generalizations, they often obscure nuanced contrasts detectable only in smaller, context-sensitive comparative samples. Studies that examine discipline-specific perspectives on personalization, ethical concerns, and educational inclusivity are still scarce, leaving a gap that exploratory research can meaningfully address.

Third, recent work increasingly highlights the importance of digital equity, affective responses, and the cultural dimensions of AI adoption (Morr *et al.,* 2024; Lin *et al.,* 2024). However, empirical research rarely integrates these themes into a unified analytical framework, and little is known about how students from different

disciplinary backgrounds interpret inclusivity, fairness, and access in AI-supported education.

Finally, although scholars debate the evolving role of teachers in AI-mediated learning environments (Garrison and Vaughan, 2008; Wu *et al.,* 2025), the literature offers limited evidence on whether different disciplines vary in their expectations regarding human oversight, mentoring, and the balance between automation and pedagogy.

3. Research Methodology

The study employed a mixed-methods survey design, combining quantitative Likert-scale measures with qualitative open-ended questions. This approach was chosen to capture both: the general trends in students' perceptions of AI in higher education and the nuanced, discipline-specific concerns that cannot be expressed through closed-ended questions alone.

The study aligns with exploratory, comparative research designs frequently used in early-stage investigations of emerging educational technologies, where the aim is to identify patterns rather than to generalize findings to a broader population.

The research questions guiding the study were:

- ***RQ1:*** *To what extent do students from the three disciplines differ in their expectations and perceived benefits of AI-supported personalization?*
- ***RQ2:*** *How do disciplinary backgrounds influence students' levels of concern regarding data privacy, transparency, and the ethical risks of AI?*
- ***RQ3:*** *How do students perceive issues of digital equity and accessibility in AI-enhanced education?*
- ***RQ4:*** *How do students evaluate the evolving role of the teacher in AI-supported learning, and do these evaluations differ by discipline?*

These questions reflect gaps identified in the literature and structure both the construction of the survey instrument and the analytical strategy.

3.1 The Study and Participants

The study was conducted between March and October 2025 at two higher education institutions located in Szczecin, Poland: the University of Szczecin and the Academy of Art in Szczecin.

The sample consisted of 165 students, representing three academic disciplines:

- Business Informatics – *113 students,*
- Public Relations and Public Management – *26 students,*

- Fine Arts and Design – *26 students.*

Participants were recruited from courses taught by the authors. While this constitutes a non-random sample, it is methodologically acceptable for exploratory research aiming to compare disciplinary tendencies rather than to estimate population parameters.

Similar sampling approaches are common in early-stage studies on AI in education, especially where the primary objective is to identify potential disciplinary differences that may guide more extensive future research.

Although the sizes of the three disciplinary groups differ, this imbalance reflects the actual enrollment structure of the participating institutions. Business Informatics and Public Relations programmes typically attract substantially larger cohorts, whereas Fine Arts and Design programmes operate in smaller, workshop-based groups.

Within the artistic domain, the sample represents three complete student groups, making the Fine Arts cohort proportionate and authentic despite its smaller size.

Therefore, the variation in group size is not a sampling flaw but a structural characteristic of the academic context in which the study was conducted.

The demographic profile of the sample showed that:

- 82% of participants had prior experience using AI tools (e.g., ChatGPT, Copilot).
- 65% identified as female.
- Students represented both urban and non-urban backgrounds, enabling exploratory analysis of digital equity perceptions.

3.2 Survey Instrument

The online questionnaire included three types of elements:

1. Likert-scale statements (1 – 5) evaluating attitudes toward AI in education.
2. Multiple-choice questions assessing familiarity with AI tools and perceived risks/benefits.
3. Two open-ended questions that allowed students to express expectations, concerns, and discipline-specific perspectives.

3.2.1 Alignment of Survey Questions with Research Questions

A full list of questions is intentionally not reproduced here; instead, the following thematic organization explains how all elements correspond to the four research questions:

Table 1. *Structure of survey and example questions*

Question aligned with RQ	Description	Example survey question (Likert 1-5)	Literature basis for question development	No of questions
Personalization & Learning Support (RQ1)	Measures perceived usefulness of AI in adapting learning materials, providing feedback, and supporting learning efficiency.	"AI helps tailor learning materials to my individual needs." "AI-generated feedback helps me understand mistakes more quickly." "AI-supported tools improve my learning efficiency."	Ayeni et al., 2024; AlAli & Wardat, 2024; Abdous, 2023.	5
Ethical Concerns: Privacy, Transparency, Bias (RQ2)	Captures attitudes toward data security, algorithmic fairness, trust in AI systems, and comfort with automated assessment.	"I am concerned about the privacy of my data when using AI tools." "AI systems might reinforce unfair biases." "I trust automated grading systems."	Johnson, 2021; Kordzadeh & Ghasemaghaei, 2021; Al-Zahrani and Alasmari (2024)	6
Digital Equity & Accessibility (RQ3)	Measures perceptions of fairness, accessibility, and potential digital inequalities caused by AI-enhanced education.	"AI tools are equally accessible to all students regardless of background." "Limited access to technology may disadvantage some learners." "I feel confident in my ability to use AI tools effectively."	Lin, Liu, et al., 2024; Morr et al., 2024	4
Human–AI Interaction & Role of the Teacher (RQ4)	Assesses beliefs about the importance of human presence, acceptance of automated teaching, and perceptions of hybrid learning models.	AI should support teachers, not replace them." "Human guidance is essential even when AI tools are used." "I would feel comfortable learning in a fully automated course."	Garrison & Vaughan, 2008; Wu et al., 2025; Al-Zahrani and Alasmari (2024)	5
Open-Ended Questions (Qualitative Component)	Elicit students' articulated expectations, concerns, and discipline-specific reflections on AI in higher education.	What opportunities do you see in using AI for your field of study?" "What concerns do you have about the use of AI in education?"	Mixed-methods design justification (Wu et al., 2025)	2

Source: *Own study.*

3.4 Data Collection Procedure

The survey was administered through an online platform (Microsoft Forms), ensuring accessibility across devices and facilitating the anonymous collection of responses. Participation was voluntary, and students were informed about the study's purpose, confidentiality, and the non-evaluative nature of their involvement. No incentives were offered.

The authors' institutions approved the procedure in alignment with internal ethical guidelines for survey-based research with adult participants.

3.5 Data Analysis Strategy

Quantitative data were analyzed using descriptive statistics: mean values, standard deviations, and distributions, supplemented by exploratory comparisons across the three student groups. Given the unequal sample sizes and the non-random character of the sample, inferential tests were interpreted cautiously and used only to detect preliminary tendencies.

Qualitative responses were coded thematically, using an inductive approach. Coding categories were derived from recurring patterns related to the core dimensions of the study: personalization, ethics, inclusivity, and human – AI interaction.

Rather than treating quantitative and qualitative parts separately, findings were triangulated: qualitative insights were used to contextualize statistical patterns and interpret disciplinary differences more deeply.

4. Research Results and Discussion

This chapter presents the findings of the study in relation to the four research questions (RQ1-RQ4). The results are organized into quantitative components (Likert-scale questions and closed-ended questions) and qualitative components (analysis of open-ended responses). In the second part of the chapter, the findings are connected to the existing literature, with particular attention to areas of convergence and divergence relative to previous research.

4.1 Results

4.1.1 General Perceptions of AI in Learning (RQ1 – supported personalization, RQ4 – the role of teacher)

Across all groups, students reported generally positive attitudes toward the use of AI in higher education, particularly in areas related to workflow enhancement, access to information, and learning efficiency. A strong majority (over 80%) agreed that AI can support academic tasks by offering quick explanations, reducing time spent on routine work, and facilitating idea generation.

A key shared finding across the three disciplines was the importance attributed to human presence in learning: average Likert scores exceeded 4.5/5 in all groups. Students consistently rejected the idea of fully automated teaching, framing AI as a tool that "supports but does not replace" instructors.

Despite this consensus, disciplinary patterns emerged:

- Business Informatics students (n = 113) viewed AI as a pragmatic instrument supporting simulations, coding assistance, and structured feedback.

- Public Relations and Public Management students (n = 26) valued AI for communication-related tasks, including drafting messages, preparing presentations, or clarifying theoretical concepts.
- Fine Arts and Design students (n = 26) used AI primarily as a source of creative inspiration, while simultaneously communicating unique concerns about expressive autonomy, authorship, and creative originality.

These descriptive differences align with the assumption that disciplinary cultures shape expectations toward AI tools.

Personalization emerged as one of the most valued AI functionalities across disciplines, though the meaning attributed to it differed by group.

Among Business Informatics students, 78% rated personalization as "very important" (5/5). The functions valued most were:

- adaptive content delivery (68%),
- simulation-based learning (55%),
- automated feedback systems (48%).

Public Relations and Public Management students associated personalization less with algorithmic tuning and more with improved academic dialogue: clearer explanations, tailored summaries, or support in synthesizing complex arguments.

Fine Arts and Design students showed mixed responses. Some valued AI for supporting ideation (e.g., generating visual references), while others feared "algorithmic narrowing" that might limit originality or lead to similarities across student works.

Across all groups, rapid formative feedback was evaluated as the single most beneficial feature of AI.

4.1.2 Ethical Concerns, Trust and DEI (RQ2)

Ethical considerations constituted a major theme across all surveyed groups, though their intensity and nature varied by discipline. Overall, 72% of students indicated moderate to high concern about data privacy, with Fine Arts and Design students expressing the strongest apprehension.

Their open-ended responses frequently referenced fears that creative outputs uploaded to AI systems could be reused without consent, compromising authorship and intellectual property. Students in Business Informatics were comparatively less worried about privacy but emphasized the importance of transparent data governance and the risks associated with opaque algorithmic decision-making.

Concerns about algorithmic bias were also widespread. A total of 58% of respondents agreed that AI-based tools may perpetuate or amplify existing inequalities, particularly in automated grading or recommendation systems. Public Relations and Public Management students, whose field emphasizes communication ethics, were most vocal about the risk of AI reinforcing stereotypes or misrepresenting user intent.

Regarding trust in automation, only 12% of students reported willingness to rely on fully automated grading, confirming a preference for hybrid approaches that preserve human oversight. Students articulated worries that automated systems might misinterpret nuanced, creative, or interdisciplinary work – especially in Fine Arts and communication-focused assignments.

The study also revealed disparities related to digital access and inclusion. Students from small towns or rural areas were significantly more likely to report limitations in technology access, slower internet connectivity, or lack of exposure to advanced AI tools. These structural inequalities contributed to a sense that AI-enhanced learning may widen – not reduce – educational gaps. For some respondents, however, AI tools also represented an opportunity to overcome deficits in prior schooling, suggesting a dual dynamic of empowerment and exclusion.

Qualitative responses captured the emotional dimension of ethical concerns, with students frequently describing fears of skill erosion, reduced creativity, and increasing dependency on algorithmic outputs. Simultaneously, many noted improved understanding of complex topics, suggesting a tension between perceived cognitive benefits and concerns about long-term autonomy.

4.1.3 Digital Equity and Accessibility (RQ3)

Concerns about digital equity and accessibility appeared across all three disciplinary groups, though with notable differences related to students' geographic and socio-economic background. While most respondents reported regular access to digital devices, 32% of students indicated that they "sometimes" or "often" experience limitations that affect their ability to use AI tools effectively.

Geographic disparities were particularly pronounced. Among students from large cities, 65% agreed that AI tools are "generally accessible to all learners," compared with only 40% of students from small towns or rural areas. Conversely, 48% of rural-background students expressed concern that insufficient access to high-quality hardware or stable broadband "may increase educational inequalities," compared with 21% of urban students.

Differences also appeared across disciplines:

- Business Informatics students were the most confident, with 72% stating they had "no difficulty" accessing AI tools (likely reflecting their higher exposure to digital systems and institutional infrastructure);

- Public Relations and Public Management students expressed moderate concerns, with 41% noting that their access to AI depends on university-provided software or on-campus devices;
- Fine Arts and Design students reported the highest constraints: 54% mentioned limitations related to device performance, specialized software requirements, or insufficient graphics capabilities needed for AI-assisted creative work.

Qualitative responses reflected these disparities. Students from technology-rich environments described AI as "readily available," while others noted that reliance on personal devices introduced inequities:

- "The tools work well, but only if your laptop can handle them."
- "Access depends on what you can afford."

Students also pointed to a lack of consistent training opportunities. Across all groups, 46% felt that AI competencies were unevenly distributed among students, with some receiving more informal exposure than others. Several respondents expressed concern that AI could "benefit those who already know how to use it and disadvantage everyone else."

Taken together, the results indicate that digital equity is not merely a peripheral issue but a structural factor shaping students' ability to participate in AI-enhanced education. Ensuring equitable access will require coordinated institutional support – particularly for students in resource-constrained or creativity-based fields.

4.2 Discussion

4.2.1 Perceptions of AI and the Human Role in Learning (RQ4)

The finding that students value AI as a supportive rather than substitutive tool resonates with large-scale studies by Al-Zahrani and Alasmari (2024) and Lin and Chen (2024), where students reported strong interest in AI-enhanced learning but were reluctant to delegate full instructional authority to machines.

The exceptionally high importance attributed to human interaction (mean > 4.5/5) confirms similar observations in Wu *et al.* (2025) and Al-Zahrani and Alasmari (2024) emphasizing the centrality of mentoring, empathy, and tailored guidance.

4.2.2 Supported Personalization (RQ1)

Our results reinforce the consensus reported in Ayeni *et al.* (2024) and AlAli and Wardat (2024) that personalization is the most recognized pedagogical benefit of AI. However, the disciplinary differences add nuance to prior findings: while technical students prioritize efficiency and structure, communication students emphasize dialogue, and artistic students highlight creative autonomy – areas underexplored in previous research.

This multi-dimensional view suggests that personalization should be understood not as a universal category but as *discipline-dependent*, an insight poorly captured in aggregated datasets like those from Wu *et al.* (2025).

4.2.3 Ethics, Trust, and DEI (RQ3)

Privacy concerns mapped closely onto those identified by Jobin *et al.* (2019) and UNESCO (2023). Artistic students' elevated anxiety reflects findings in Lin and Chen (2024), who note that creative disciplines demonstrate heightened sensitivity to originality and authorship.

Concerns about algorithmic bias align with Johnson (2021) and Kordzadeh and Ghasemaghaei (2021), but our data suggest that students understand bias not only algorithmically but also personally – interpreting it as a threat to fairness and recognition.

Digital exclusion also remains a pressing issue, consistent with Morr *et al.* (2024). In our groups, geographic background significantly shaped students' sense of access and opportunity.

4.2.4 Data Privacy, Transparency, Ethical Risk (RQ2)

The findings related to ethical risks – particularly privacy, transparency, and algorithmic fairness – corroborate and extend the results discussed earlier in section 4.1.2. Students across all disciplines expressed heightened sensitivity to how their personal data might be collected, stored, or reused by AI systems. This aligns with large-scale studies by Al-Zahrani and Alasmari (2024) and recommendations by UNESCO (2023), which identify data protection as a central issue in educational AI governance.

Our results show that students do not perceive privacy as an abstract legal concern, but rather as an immediate personal risk connected to authorship, identity, and academic evaluation. Fine Arts students voiced the most pronounced apprehensions, often linking data misuse to fears of losing creative ownership or having their artistic styles replicated without consent.

Business Informatics students, while expressing somewhat lower levels of concern, stressed the need for transparent algorithmic processes and clear accountability structures – reflecting their more technical understanding of how AI systems operate. Public Relations and Management students framed ethical risks in terms of institutional trust, reputation, and the broader implications of deploying opaque or biased technologies in educational settings.

Transparency was another key theme. Students reported discomfort with "black-box" systems that make decisions – such as automated grading – without enabling users to understand the underlying logic. Only a small minority (12%) indicated a willingness to trust fully automated assessment. Qualitative responses further

revealed a belief that algorithmic decisions may overlook individual circumstances, reduce opportunities for dialogue, and create environments in which students cannot challenge or understand the basis of their evaluation.

Concerns regarding algorithmic bias were similarly widespread. Students feared that AI tools might reflect social or cultural biases present in training data, potentially disadvantaging certain groups or influencing academic outcomes unfairly. This perception resonates with the warnings raised in Johnson (2021) and Kordzadeh and Ghasemaghaei (2021), who highlight the risk of biased models reinforcing inequality.

Collectively, these findings underscore that ethical acceptance of AI depends on clear communication, transparent governance, and mechanisms that allow students to retain agency in AI-mediated learning environments. They also show that ethical concerns are not evenly distributed across disciplines, but shaped by field-specific sensitivities and expectations.

4.2.5 Interdisciplinary Differences: A Contribution to the Literature

Across RQ1 – RQ4, the most novel contribution of this study is the demonstration of clear disciplinary variation in perceptions of AI:

- Business Informatics → pragmatic, efficiency-oriented expectations;
- PR/Management → ethical, communicational orientation;
- Fine Arts → concerns tied to creativity, authorship, originality.

The comparative structure of this study offers insights that extend existing research on student attitudes toward AI in higher education. Across all four research questions, results reveal distinct disciplinary patterns that correspond to different epistemic cultures.

Students in Business Informatics approached AI primarily as a technical and analytical aid. Their responses emphasized efficiency, automation of routine tasks, and improved accuracy in simulations or coding exercises. Ethical concerns were present but framed pragmatically – primarily in terms of transparency and performance reliability. This aligns with findings from prior research indicating higher acceptance of AI among students in technology-oriented fields.

In contrast, Public Relations and Public Management students foregrounded communication ethics, trustworthiness, and the reputation-related consequences of AI adoption.

For this group, AI's value lay in its ability to support structured communication and improve access to information, while its risks were conceptualized in terms of institutional responsibility, misinformation, and the erosion of relational dimensions of learning.

The Fine Arts and Design cohort demonstrated the most ambivalent stance. While they valued AI as a creative stimulus and a tool for generating visual ideas, they also articulated unique concerns related to expressive autonomy, originality, and appropriation of artistic work. Their heightened sensitivity to intellectual property, creative bias, and environmental sustainability reflects broader debates within creative industries about the role of AI in reshaping authorship.

Taken together, these findings indicate that disciplinary identity is a strong predictor of both enthusiasm and hesitation toward AI, influencing perceptions of personalization (RQ1), ethical risks (RQ2), inclusivity (RQ3), and the appropriate role of teachers (RQ4). This validates calls in the literature (Lin and Chen, 2024; Wu *et al.,* 2025) to move beyond undifferentiated samples and develop discipline-sensitive models of AI integration. By illuminating how distinct academic cultures interpret the same technological shifts, this study contributes meaningfully to theoretical frameworks on AI acceptance and offers practical guidance for designing tailored strategies for AI adoption across departments.

4.3 Summary

Overall, the findings confirm that:

- students show broad optimism toward AI but insist on the continued necessity of human teachers;
- personalization is valued universally, yet understood differently across disciplines;
- ethical concerns are prevalent and strongly shaped by disciplinary identity and socioeconomic background;
- disciplinary differences offer explanatory value that large-scale studies often overlook.

5. Conclusions, Implications, and Recommendations

The study demonstrated that students across the three examined disciplines – Business Informatics, Public Relations and Public Management, and Fine Arts and Design – differ in how they position AI within learning processes, yet all emphasize the importance of maintaining human supervision, ethical safeguards, and equitable access. In relation to RQ1, the results show that while all groups value personalization, they conceptualize it differently, reflecting the epistemic cultures of their fields.

Addressing RQ2, the study revealed that ethical concerns – especially those related to privacy, transparency, and bias – vary in intensity across disciplines, with Fine Arts students expressing particularly heightened sensitivities. Regarding RQ3, the findings highlight that perceptions of digital equity and accessibility are shaped not only by disciplinary background but also by students' socio-geographic contexts.

Finally, in connection with RQ4, students across all disciplines reaffirmed the central role of human instructors in AI-supported learning, rejecting fully automated educational models in favor of hybrid human–AI approaches.

Together, these findings confirm that AI adoption in higher education cannot be understood as a uniform phenomenon but must be examined through a disciplinary lens, as articulated in the research questions.

5.1 Theoretical and Practical Implications

Theoretically, the study extends current AI-in-education literature by demonstrating that personalization, ethical trust, and inclusivity are interpreted differently across disciplinary identities. This finding complements systematic reviews by Chu *et al.* (2022) and Wu *et al.* (2025), who argue that most existing research treats students as a homogeneous group and therefore overlooks field-specific patterns of AI acceptance. Our results empirically validate this gap by showing that students' interpretations of AI-supported personalization, data ethics, and fairness align with the epistemic cultures of their disciplines.

Furthermore, the study refines insights from Lin and Chen (2024) and Ayeni *et al.* (2024), whose work emphasizes the pedagogical benefits of personalization but does not differentiate its meaning across fields. By demonstrating that personalization is conceptualized as efficiency (Business Informatics), communicative clarity (Public Relations/Management), or creative scaffolding (Fine Arts), the study advances theoretical models that account for disciplinary diversity in AI adoption.

Finally, our findings contribute to debates sparked by Jobin *et al.* (2019) and Fu (2024) on ethical trust by showing that concerns about privacy, transparency, and algorithmic fairness are not distributed uniformly but correlate with disciplinary norms and professional values. This provides a theoretically grounded explanation for why aggregated institutional surveys may obscure important heterogeneity in student responses to AI (Fu, 2024).

Practically, the findings indicate that effective AI integration in higher education requires discipline-sensitive pedagogical strategies rather than uniform institutional solutions. For Business Informatics, this includes the use of analytical, simulation-based, and coding-support tools that strengthen problem-solving and technical competencies. In Public Relations and Public Management, AI applications should prioritise communication support, ethical decision-making, and transparency features that reflect the professional norms of these fields.

For Fine Arts and Design, AI tools need to be implemented in ways that protect authorship, foster creative autonomy, and ensure students' control over data and generative processes.

At the institutional level, universities should develop transparent and operationalised policies for ethical AI use, including guidance on data protection, algorithmic fairness, and academic integrity. Strengthening students' digital literacy is equally essential, particularly in relation to understanding when and how AI may amplify or reduce learning inequalities. Training programmes for instructors may further support pedagogically meaningful AI adoption by helping them integrate AI as a complementary tool rather than a substitute for teaching.

The results also highlight the importance of maintaining hybrid human–AI learning environments. Students across all disciplines, regardless of their AI usage patterns, consistently emphasised the irreplaceable role of human guidance, feedback, and emotional support.

This suggests that institutional AI strategies should reinforce, rather than diminish, opportunities for interpersonal interaction, mentoring, and collaborative learning. Tailoring AI-enabled pedagogical practices to disciplinary cultures can therefore enhance learning effectiveness while safeguarding educational values associated with trust, creativity, and equity.

5.2 Limitations and Future Research

The study's scope is constrained by its non-random sample, unequal group sizes, and the concentration of participants within two universities in the same city. These limitations do not undermine the exploratory goals of the research but do restrict generalizability. Future studies should incorporate larger and more diverse samples, refine measurement instruments, and employ longitudinal or experimental designs to assess how perceptions evolve as AI becomes more deeply embedded in academic practice.

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