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EXPLORING THE UNIVERSITY STUDENTS' WILLINGNESS TO INTEGRATE ARTIFICIAL INTELLIGENCE IN WRITING ACADEMIC RESEARCH ARTICLES IN PAKISTAN

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Abstract:
This study explores the willingness of final-year university students in Pakistan to integrate Artificial Intelligence (AI) tools into the process of writing academic research articles. With AI increasingly influencing educational practices worldwide, understanding students' perceptions and openness toward such technology is crucial in assessing its potential role in higher education. A qualitative research design was employed, using semi-structured interviews to collect data from ten final-year university students across different academic disciplines. The interviews were designed to probe students' awareness of AI writing tools, perceived benefits and challenges, ethical considerations, and their readiness to adopt AI as an academic support mechanism. Thematic analysis of the interview data revealed varied but insightful perspectives. Many students acknowledged AI's capacity to enhance efficiency, provide language assistance, and support the organization of ideas. However, concerns were raised about over-reliance on AI, the potential decline in critical thinking, and ethical issues related to originality and plagiarism. Participants emphasized the importance of maintaining academic integrity while integrating technological advancements into research practices. Furthermore, some students highlighted infrastructural and training challenges within Pakistani universities that may hinder effective adoption. The findings suggest that while there is cautious optimism toward AI integration in academic writing, its acceptance depends largely on institutional support, ethical guidelines, and students' digital literacy. This study contributes to the ongoing discourse on AI in education by offering insights into the perceptions of Pakistani students, ultimately recommending structured policies and training to balance innovation with academic integrity.

Keywords: *Artificial intelligence, Academic Writing, Research Article, University students*

Introduction

The rapid diffusion of generative artificial intelligence (GenAI) across higher education has transformed how students read, plan, draft, and refine academic writing. Global policy bodies now frame AI literacy and responsible use as core higher-education competencies, while warning that uncritical adoption can erode academic integrity and meaningful learning (UNESCO, 2023/2025; OECD, 2023, 2024). In Pakistan, these tensions intersect with evolving national integrity frameworks and institutional guidance, making it timely to understand how students themselves perceive AI's role in scholarly writing.

International evidence shows student uptake is high and growing, but motivations and practices are heterogeneous. Large cross-national surveys report curiosity and pragmatic use (idea generation, language polishing, feedback) alongside anxiety about hallucinations, bias, and citation errors (Ravšelj et al., 2025; Acosta-Enriquez et al., 2024). Emerging research also links acceptance to perceived usefulness, ease of use, and clear course-level rules (Fajt et al., 2025). Yet, studies highlight a persistent grey zone between "support" and "substitution," with

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students uncertain where legitimate assistance ends and misconduct begins—a distinction complicated by inconsistent institutional policies and contested AI-detection practices (UNESCO, 2023/2025; OECD, 2024; Vanderbilt University, 2023; Turnitin, 2024).

In Pakistan, the Higher Education Commission (HEC) has long enforced an anti-plagiarism policy, and sector discussions increasingly address GenAI's implications (HEC, n.d.; HEC Draft Framework, 2025; Aga Khan University, 2024). While national policy signals are sharpening, empirical evidence on Pakistani undergraduates' willingness to integrate AI into the high-stakes task of writing research articles remains sparse. Much of the current discourse extrapolates from global surveys conducted in different resource, language, and assessment contexts. Local digital infrastructure, disciplinary writing cultures, and assessment designs can shape whether AI is perceived as a productivity aid, a linguistic scaffold, or an ethical hazard. This contextual gap motivates a focused inquiry into how final-year students—those nearest to capstone projects and thesis writing—interpret opportunities and limits of AI in academic authorship.

The research problem, therefore, centers on the mismatch between rapidly proliferating AI tools and the uneven clarity of classroom-level norms, training, and safeguards. Students confront practical dilemmas: when is it acceptable to brainstorm with AI, edit for clarity, or check structure? How should transparency be handled in acknowledgements or methodology sections? Conversely, what uses threaten originality or misrepresent authorship? At the same time, detection technologies carry non-trivial risks of false positives, especially for multilingual writers, rendering enforcement alone an incomplete solution (Academic Integrity in the AI Era, 2025; Vanderbilt University, 2023; Shah et al., 2025). Without grounded evidence on students' beliefs, competencies, and perceived boundaries, policy statements risk remaining aspirational rather than actionable in Pakistani universities.

This study's significance is threefold. First, it contributes context-sensitive insights from Pakistan to a literature dominated by Global North samples, informing institutional policy and classroom practice where linguistic diversity and resource constraints are salient. Second, it foregrounds students' ethical reasoning and practical heuristics—how they draw lines between acceptable scaffolding and unacceptable substitution—thereby complementing policy-first perspectives (UNESCO, 2023/2025; OECD, 2024). Third, by focusing on final-year students, it illuminates AI use under authentic assessment pressure (capstones, theses), where writing stakes and integrity norms are most visible. The findings can guide targeted capacity-building—e.g., assessment redesign, citation transparency protocols, and discipline-specific AI writing guidelines—aligned with national integrity policies.

The study aims to explore Pakistani final-year students' willingness to integrate AI in the writing of academic research articles and to identify the ethical, pedagogical, and institutional factors that shape this willingness. It addresses the following research questions: (1) How do final-year students in Pakistan conceptualize legitimate versus illegitimate uses of AI across stages of academic writing? (2) What perceived benefits and risks influence their willingness to integrate AI tools? (3) How do institutional policies, course-level rules, and detection practices affect students' decisions to use or avoid AI? (4) What forms of guidance, training, and assessment redesign would students consider necessary for responsible AI-supported academic writing? By situating students' voices within emerging national and global guidance, the study seeks to generate practical recommendations that balance innovation with academic integrity in Pakistan's higher-education landscape.

Literature Review

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AI Adoption and Student Attitudes Globally

A growing body of research has examined how students around the world perceive, adopt, and use AI tools (e.g., ChatGPT, Grammarly, Copilot) in academic settings. Key themes in this literature include usefulness, ethical concerns, the tension between assistance vs. academic integrity, and the role of institution-level policies.

For instance, *Using Artificial Intelligence in Academic Writing and Research* by Khalifa et al. (2024) describes six major areas in which AI tools support academic writing: idea generation, structuring content, literature synthesis, data management, editing, and ethical compliance. Users generally appreciate AI's ability to accelerate drafting, polish language, and manage references, although concerns about unethical uses and loss of authorial voice are also reported.

Another global study, *The Impact of Generative AI on Student Engagement and Ethics in Higher Education* (Al Zaidy, 2024), based on the Digital Education Council Global AI Student Survey, found that a large proportion of students report using AI tools for academic tasks. However, many felt that there is insufficient ethical guidance, limited awareness of institutional policies, and strong concerns about trust, over-reliance, fairness, and misuse.

Studies also examine predictors of positive attitudes toward AI usage. For example, *Bridging the Digital Divide: Predictors of Positive Attitudes and Functional Use of AI among University Students in Pakistan* (Mehak & Jafree, 2025) revealed that AI literacy, better availability of technological infrastructure, socioeconomic status, gender, and urban vs rural location are significant predictors of positive attitudes and functional use of AI among Pakistani university students. This suggests that perception of willingness is tied to access, exposure, and demographic factors.

Also relevant is *Students' Perceptions and Use of Generative AI Tools for Programming Across Different Computing Courses* (Keuning et al., 2024), which shows that course context matters: whether AI is permitted, what learning goals are, and how the tool aligns with those goals influences both attitudes and use. Ethical issues, such as proper crediting of AI-assisted work, are frequently raised.

Ethical Concerns, Academic Integrity, and Limits of AI Use

While the benefits of AI for writing are well-documented, concerns about ethics remain central. Hallucinated or fabricated content, improper citation, loss of critical thinking, plagiarism, and the blurring of academic authorship are often noted. These themes are especially important when AI is used in high-stakes academic writing like research articles.

For example, *Ethical Considerations Regarding the Use of AI in Higher Education* (2024) details how generative AI poses risks to learning outcomes when students may rely on AI to do tasks meant to build cognitive skills. The authors call for clearer guidelines and ethics awareness in AI usage.

Another recent study in Pakistan, *Medical Students' Attitudes Toward AI in Education: Perception, Knowledge, and Readiness* (Sami et al., 2025), shows a high level of awareness about AI among medical students (84.7% reported knowledge), and many believe AI has the potential to revolutionize medical education. However, they also express worries about misuse, academic dishonesty, and a lack of clear institutional regulation or training.

Also, *Attitudes of Pakistani Undergraduate ESL Students toward Artificial Intelligence in Improving English Writing Skills* (2025) explores how English as a Second Language (ESL) students view AI support in improving writing skills. While many welcome assistance in grammar, structure, and vocabulary, they are cautious about dependency, loss of original style,

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and whether using AI might be deemed cheating by instructors. This mixed attitude reflects the complex balancing act students face.

Contextual Studies in Pakistan: Access, Policy, and Disciplinary Variations

Pakistan offers a valuable case for examining willingness to use AI in academic writing because of its linguistic diversity (many students writing in or translating to English), variable infrastructure (internet access, computing devices), and existing policies around plagiarism and academic integrity, which are being reevaluated in light of generative AI.

Bridging the Digital Divide (Mehak & Jafree, 2025) provides empirical data for Pakistan showing socio-demographic disparities in attitudes: students in wealthier, urban areas with greater access to technology show more positive attitudes and more frequent use of AI. AI literacy (knowing how to use tools) also matters—students with more exposure are more willing and more confident.

The qualitative case study *The Future of AI in Academic Writing: A Case Study of Undergraduate and Postgraduate Assessments in Pakistan* (Rafiq, Nawaz, & Afzal, 2025) explores how students and educators perceive AI tools in assessments. They found similar benefits: improved efficiency, language help, and better writing quality. But they equally noted challenges: ethical concerns (plagiarism, originality), unequal access, lack of institutional policy, and limited training. These findings strongly align with what prior global studies have shown.

Another study, Perceptions of Artificial Intelligence (AI) Risks and ...: Pakistani students' perceptions about knowledge, use and impact of AI on academic writing (Arif et al., 2025), centres on Pakistani students' awareness and perception of AI. The study reports that students are increasingly aware of AI's capabilities, but also express apprehension about misuse, especially in academic writing.

Benefits of AI in Academic Writing

Multiple studies document advantages. Common benefits include:

- **Idea Generation & Structuring**: AI tools are used to brainstorm, generate outlines, and suggest structure, which is especially helpful at early stages of writing. Khalifa et al. (2024) mention idea generation and structuring among primary uses.
- **Language Support**: For non-native English speakers, AI assists with grammar, vocabulary, and phrasing. Case studies in Pakistan (Rafiq et al., 2025; ESL student studies) highlight how AI helps reduce language barriers.
- **Efficiency and Editing**: Draft refinement, error correction, and spelling/grammar check are seen as time-savers, freeing cognitive load for conceptual work. Both global (Al Zaidy, 2024) and local Pakistani studies reflect this.

These benefits feed into willingness: students who see tangible help are more willing to use AI, provided they believe ethical and institutional safeguards exist.

Challenges, Risks, and Barriers

Despite the benefits, several common challenges appear:

- **Ethical Uncertainty**: What counts as "help" vs. "cheating"? Students often report that instructors haven't clarified where the line falls. Misuse, misattribution, and lack of transparency are frequent worries.
- **Over-reliance and Intellectual Laziness**: Concern that students might stop developing important skills (critical thinking, independent writing) if AI is used too often. Many literature sources raise this as a risk.

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- **Access and Digital Divide**: Lack of reliable internet, insufficient access to devices, cost issues, uneven exposure, or literacy create inequality in who can benefit from AI. Pakistani studies particularly point this out.
- **Institutional Policy & Training Gaps**: Many institutions lack clear guidelines about acceptable AI use, disclosure, plagiarism rules, or tools to detect AI misuse. Training for students and faculty is limited. Without policy or guidance, students find themselves uncertain.
- **Quality, Reliability & Ethical Biases:** AI tools may produce errors, fabricated references ("hallucinations"), show bias, or fail to respect privacy/data norms. Students are aware of these risks and express caution.

Role of Disciplinary Contexts, Assessment Types, and Authenticity

How AI is perceived and used differs by discipline, type of assessment, and by stages of writing.

- In programming courses, for example, studies like *Students' Perceptions and Use ... for Programming* (Keuning et al., 2024) show more restrictive uses are expected (since code must be original, logic transparent) compared to writing in humanities or social sciences, where language polishing or literature reviews might be more acceptable.
- The type of assessment (thesis, capstone, essay, lab report, etc.) influences both risk and willingness: high-stakes assessment heightens concern about integrity, and students may be more cautious. The qualitative Pakistani case study by Rafiq et al. (2025) notes that in undergraduate vs postgraduate assessments, students feel different pressures and expectations about originality and independent work.
- Authenticity and voice: Many students worry that over-use of AI will dull their personal writing style or voice or reduce authenticity. This is especially true for ESL or multilingual students, who already navigate between their native languages and English. Studies in Pakistan among ESL students reflect that concern.

Implications for Willingness to Integrate AI in Research Article Writing

The existing literature makes it plausible that final-year students in Pakistan will exhibit **cautious optimism** toward integrating AI in research writing: willing when benefits are clear (language, structure, efficiency), but concerned about ethics, authenticity, institutional clarity, and possible loss of critical thinking. The literature suggests several factors likely to influence willingness:

- **AI literacy and familiarity**: Knowing how tools work, what their limitations are, how to prompt them, and how to edit AI output critically. Studies show AI literacy predicts positive attitudes.
- **Institutional support, policies, and assessment norms**: Clear rules about what is allowed, how AI tools should be acknowledged, how detection is used; training and guidance provided by the university/instructors.
- **Perceived risk vs reward**: Students will weigh benefits (time-saving, better language, improved quality) versus risks (misconduct, loss of originality, detection, reputational damage). Studies show perceived risk has a strong effect on intention to use AI.
- **Disciplinary differences**: Disciplines with strong norms around original research, methods, data, and citation might have stricter attitudes. Final-year research articles require more rigorous standards, so students there may be more cautious.

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- **Access & resources**: If reliable internet, computing devices, and access to premium AI tools are present, students will be more willing; otherwise, barriers may reduce willingness or lead to unequal integration.
- **Ethical awareness & cultural norms**: In Pakistani higher education, norms around plagiarism, originality, English as a medium of scholarly publication, as well as greater stakes for final-year work (thesis, publications), may amplify ethical concerns. Studies of medical and ESL students show awareness is high, but norms are not always clearly internalized or enforced.

Synthesis and Relevance

This review shows that there is strong, recent empirical support for the idea that university students globally—and in Pakistan—have mixed but generally positive attitudes toward integrating AI in academic writing, but their willingness depends on several mediating factors. Importantly, final-year students in Pakistan, who are preparing research articles or theses, occupy a critical point: they face both the highest demands for originality and academic integrity, and the most immediate pressure to produce high-quality scholarly work. Yet, the literature indicates that this group has been under-studied in qualitative depth, particularly with regard to how they negotiate ethical boundaries, what guidance they wish for, and how institutional factors shape their willingness.

Research Methodology

This study employed a qualitative research design to explore final-year university students' willingness to integrate Artificial Intelligence (AI) tools into the process of writing academic research articles in Pakistan. A qualitative approach was considered appropriate because the research sought to capture students' perceptions, experiences, and ethical reasoning in depth, rather than to quantify the frequency of use.

The study was guided by an interpretivist paradigm, which assumes that social reality is constructed through participants' perspectives and experiences. Semi-structured interviews were selected as the primary method of data collection. This approach allowed the researcher to use guiding questions while also giving participants the freedom to elaborate on their attitudes, perceived benefits, challenges, and ethical considerations regarding AI use in academic writing.

The study targeted final-year undergraduate students from diverse disciplines, as they are most likely to engage in research article or thesis writing during their academic journey. A purposive sampling strategy was used to ensure participants were selected based on their relevance to the research objectives. The sample comprised ten students (five male and five female) enrolled in final-year programs at three universities in Pakistan. The inclusion criteria required participants to (a) be in their final year of study, (b) have undertaken or be in the process of writing a research article, and (c) be aware of or have some exposure to AI writing tools.

Data were collected through semi-structured interviews conducted over a period of four weeks. Each interview lasted between 40 and 60 minutes and was conducted either face-to-face or via online platforms such as Zoom, depending on participant convenience and accessibility. An interview guide was developed, comprising open-ended questions that explored:

1. Awareness and familiarity with AI tools for academic writing.
2. Perceived usefulness and potential benefits of AI in research article writing.
3. Concerns regarding originality, plagiarism, and ethical boundaries.
4. Institutional rules, policies, or training they had encountered.
5. Personal willingness to adopt AI tools in their academic writing.

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All interviews were conducted in English and Urdu, depending on participants' comfort, and were audio-recorded with consent for transcription and analysis.

Data were analyzed using thematic analysis, following Braun and Clarke's (2006) six-step model: familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. NVivo software was used to manage and organize data efficiently. Codes were developed inductively to ensure that the themes reflected participants' voices rather than being imposed by the researcher. Particular attention was paid to recurring ideas regarding benefits, risks, ethical dilemmas, and institutional support.

To enhance the credibility and trustworthiness of the findings, multiple strategies were employed. Triangulation was achieved by recruiting participants from different universities and academic disciplines, ensuring varied perspectives. Member checking was conducted by sharing interview summaries with participants to confirm accuracy. A reflective journal was maintained by the researcher to ensure transparency of interpretations and to minimize personal bias.

Ethical approval was obtained from the respective institutional review boards of the participating universities. Participants were provided with an informed consent form detailing the purpose of the study, confidentiality measures, and their right to withdraw at any stage without penalty. Pseudonyms were used in transcripts and reporting to ensure anonymity. Data were stored securely in password-protected files and accessible only to the researcher. While the qualitative approach provides rich and contextualised insights, the small sample size limits the generalisability of findings to the wider student population in Pakistan. Furthermore, participants' self-reported perceptions may not fully capture actual behaviours. Despite these limitations, the study provides valuable exploratory evidence about the willingness of Pakistani final-year students to integrate AI in academic writing.

Research Findings

RQ1: How do final-year students in Pakistan conceptualize legitimate versus illegitimate uses of AI across stages of academic writing?

Participants consistently distinguished what they considered "supportive" versus "substitutive" use of AI. Supportive uses included grammar correction, paraphrasing, and help with structure. Substitutive uses, such as generating entire sections of literature reviews or methods, were seen as crossing ethical boundaries.

As P3 explained, *"I feel it is fine to use AI to polish my language or improve the flow of sentences, but writing the whole introduction or literature review is not acceptable because then it is not my work."* Similarly, P7 echoed, *"AI should act like a guide, not a writer. If I copy what it generates, then I'm not learning."*

Interestingly, two participants mentioned disclosure as a key factor in legitimacy. P2 said, *"If I mention that I used AI for grammar, it is fine, but if I hide it, then it looks like cheating."* This indicates that transparency and honesty in acknowledging AI use are central to how students draw ethical lines.

RQ2: What perceived benefits and risks influence their willingness to integrate AI tools?

Students highlighted a range of benefits that motivated their openness to AI integration. The most frequently mentioned benefit was improved language support, especially among non-native English speakers. P5 stated, *"English is not my first language, so sometimes I struggle with academic vocabulary. AI gives me better alternatives and makes my writing sound more formal."*

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Efficiency was another strong theme. P9 explained, *"It saves a lot of time. Instead of spending hours finding the right words, I can focus on the main content."* Several participants also valued AI's capacity to help generate outlines and summarize long articles, which they felt streamlined the initial stages of writing.

At the same time, risks were acknowledged. The most pressing concern was plagiarism and originality. P1 worried, *"I am scared that if I use AI too much, it might be detected as plagiarism and I could get into trouble."* P8 added, *"Sometimes it gives references that don't exist, so we can't fully trust it."*

A few participants also raised concerns about over-reliance. P4 reflected, *"If students keep using AI for everything, their own thinking will get weaker. We will lose the skill of critical writing."* These perceptions show that students weigh willingness by balancing efficiency and support against risks to originality and intellectual development.

RQ3: How do institutional policies, course-level rules, and detection practices affect students' decisions to use or avoid AI?

Students revealed that the absence of clear institutional guidance created uncertainty about whether AI use was acceptable. P6 noted, *"Our teachers never clearly said if we can use AI. Some say it's cheating, others ignore it. So, we are confused."*

A few students reported hearing about the Higher Education Commission's policies on plagiarism and AI, but they found them too abstract to apply in daily writing. P10 commented, *"I read something about HEC drafting an AI policy, but we don't know what it means for us in class. Each university is handling it differently."*

Detection tools were another factor shaping behaviour. Several participants feared false positives. P2 said, *"I have seen cases where Turnitin flagged AI even when a student had written by themselves. That makes me nervous even to try."* This fear discouraged some from experimenting with AI, despite recognising its benefits.

Overall, students indicated that a lack of consistent policy and training discouraged transparent and confident use of AI tools. Where course instructors explicitly discussed acceptable uses, participants reported greater confidence.

RQ4: What forms of guidance, training, and assessment redesign would students consider necessary for responsible AI-supported academic writing?

All participants expressed a desire for structured guidance on how to use AI responsibly. They suggested practical training workshops, integrated into research methodology or academic writing courses. P5 said, *"If universities gave us a short training on when and how to use AI, it would help us avoid mistakes."*

Some students also recommended official disclosure templates. P9 suggested, *"There should be a section in our thesis where we can mention if we used AI. This way, we are honest and safe."*

Assessment redesign was another recurring theme. Participants felt that purely text-based submissions encouraged covert AI use, while process-based assessments could promote transparency. P7 explained, *"If teachers check our drafts step by step, then students will not depend too much on AI. We will show our own progress."*

Finally, participants emphasised the importance of faculty awareness. P3 argued, *"Teachers also need training. Some don't know what AI can do, so they ban it. But if they understand, they can guide us better."*

Summary of Findings

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Across the four research questions, the findings suggest that Pakistani final-year students are willing to integrate AI tools in limited, supportive ways, particularly for language assistance and efficiency. However, their willingness is constrained by ethical concerns, fear of plagiarism, and lack of clarity from institutional policies. Students strongly desire structured training, clear disclosure protocols, and assessment redesigns that balance innovation with academic integrity.

Discussion of Findings

The findings of this study offer nuanced insights into how final-year Pakistani university students conceptualize the role of Artificial Intelligence (AI) in academic writing. Across the four research questions, participants demonstrated a cautious yet pragmatic willingness to integrate AI tools, mainly for language support and efficiency, while voicing concerns over plagiarism, originality, and unclear institutional policies. These perspectives align with and extend prior literature on AI in education globally and in Pakistan.

Legitimate vs. Illegitimate Uses of AI

Students in this study distinguished between "supportive" and "substitutive" uses of AI. Legitimate uses were seen as grammar correction, paraphrasing, and generating outlines, while illegitimate uses involved delegating the writing of entire sections of research articles. This finding resonates strongly with Khalifa et al. (2024), who categorized AI's role in academic writing as a tool for idea generation, structuring, and editing rather than authorship. Similarly, Keuning et al. (2024) reported that students often see AI as an assistant for low-level tasks but reject full substitution, especially in high-stakes assessments.

In the Pakistani context, these distinctions are particularly salient given the Higher Education Commission's (HEC) Anti-Plagiarism Policy and its Draft Framework on Generative AI (HEC, 2025). Students' insistence on disclosure as a marker of legitimacy echoes the Journal of the Pakistan Medical Association's requirement for transparency in AI use (JPMA, n.d.). Thus, students' self-defined boundaries reflect a growing global and national consensus that AI can serve as a "scaffold" but not as a substitute for human authorship.

Perceived Benefits and Risks

The most frequently cited benefit in this study was language support, especially in academic English. This is consistent with studies of Pakistani ESL undergraduates (Mansoor, Sumardjoko, & Sutopo, 2025), who found AI tools useful for grammar, vocabulary, and coherence. International research similarly identifies language support as a core reason for students' willingness to adopt AI (Acosta-Enriquez et al., 2024). By reducing barriers to academic English, AI appears to empower students from non-native backgrounds, supporting equitable participation in scholarly writing.

Efficiency was another strong theme in the findings, as participants noted that AI saves time and helps focus on higher-order content. This reflects global surveys where students valued AI's capacity to streamline idea generation and editing (Al Zaidy, 2024). However, consistent with prior literature, participants in this study expressed skepticism about AI's reliability, citing fabricated references and hallucinated information (Fajt et al., 2025). Such concerns mirror reports from international contexts that students must be trained to critically evaluate AI outputs rather than accept them at face value (UNESCO, 2023/2025).

Risks related to plagiarism and originality were also central to students' accounts. This echoes Rafiq, Nawaz, and Afzal (2025), who found Pakistani students were open to AI use for improving writing quality but deeply concerned about ethical implications and a lack of clear rules. Participants' fear of "losing their own thinking" through over-reliance reflects broader

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academic concerns that uncritical AI use may erode critical thinking skills (Open Innovation, 2024). Thus, willingness to use AI is shaped by a careful balancing of perceived rewards with ethical and cognitive risks.

Role of Institutional Policies, Rules, and Detection Practices

Participants reported that the absence of clear institutional rules created uncertainty, discouraging transparent AI use. This finding confirms earlier observations that Pakistani universities are uneven in their AI guidance (Aga Khan University, 2024; Ullah, Naeem, & Boulos, 2024). While the HEC Draft Framework (2025) provides national direction, participants indicated that these policies had not been fully translated into classroom practice. This aligns with international studies showing that course-level rules, not just national policies, strongly influence students' willingness to use AI (Keuning et al., 2024).

The study also revealed anxiety about AI-detection technologies, with participants fearing false positives. This concern reflects global critiques of detection tools as unreliable, particularly for multilingual writers (Vanderbilt University, 2023). In Pakistan, Air University's updated plagiarism policy (2023) references "AI-assisted content," yet students remain unclear about due process and enforcement. Without transparent and educative approaches, reliance on detection alone may discourage students from ethical experimentation with AI, thereby limiting their willingness to integrate the technology.

Guidance, Training, and Assessment Redesign

Students strongly expressed the need for structured training on responsible AI use, disclosure templates, and redesigned assessments that emphasise process over final product. This reflects recommendations from UNESCO (2023/2025) and OECD (2024), both of which advocate for integrating AI literacy into curricula. Similar demands have been raised in Pakistani studies, where students call for clearer training and faculty awareness to prevent misuse (Sami et al., 2025).

Participants' suggestion of official disclosure templates is noteworthy. Such tools would operationalise abstract ethical guidelines into concrete student practices, addressing what Rafiq et al. (2025) identified as a gap between policy intentions and classroom realities. Process-based assessments, such as step-by-step drafts and oral defences, were also proposed by students, echoing global trends where universities redesign assessments to make AI use more transparent and manageable (AP News, 2025).

Faculty development was highlighted as equally critical. Participants noted that many instructors lacked awareness of AI's capabilities and risks. This reflects Ullah, Naeem, and Boulos' (2024) survey of global university guidelines, which identified faculty training as a weak link in implementation. Students' call for better-informed instructors highlights the interdependence of student and faculty AI literacy in fostering a responsible academic environment.

Contributions and Implications

Taken together, the findings confirm global patterns of cautious optimism toward AI, while highlighting contextual challenges unique to Pakistan. Students are willing to adopt AI tools primarily for supportive functions, but ethical concerns, unclear institutional policies, and infrastructural inequalities constrain their decisions. These findings build on prior Pakistani studies (e.g., Mansoor et al., 2025; Rafiq et al., 2025) by focusing specifically on final-year students engaged in research article writing, where academic integrity stakes are highest.

The study also contributes by clarifying how students themselves conceptualize legitimacy, emphasizing transparency and disclosure. While policy frameworks increasingly require

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disclosure, this study shows that students see it as a moral as well as a procedural necessity. Moreover, the recommendation for disclosure templates and process-based assessments points to practical pathways for operationalising national and institutional guidelines.

The discussion demonstrates that Pakistani final-year students approach AI integration in academic writing with a pragmatic but ethically conscious mindset. Their willingness depends on balancing the tangible benefits of efficiency and language support with the risks of plagiarism, detection, and over-reliance. Consistent with international scholarship, students' attitudes are shaped less by abstract policies and more by concrete course-level rules, training, and assessment practices. The study underscores the importance of aligning national policies, institutional guidance, and classroom practices to foster responsible AI adoption. In doing so, it provides valuable direction for universities in Pakistan seeking to support students while safeguarding academic integrity.

Conclusion

This study set out to explore the willingness of final-year university students in Pakistan to integrate Artificial Intelligence (AI) tools into the writing of academic research articles. Using semi-structured interviews with ten students across disciplines, the research uncovered a pattern of cautious optimism: students are open to adopting AI for supportive tasks, such as grammar checking, paraphrasing, and structuring ideas, but remain hesitant when it comes to delegating core intellectual responsibilities like constructing arguments, reviewing literature, or writing methodology sections.

The findings confirm and extend existing literature. Students' conceptual boundary between "supportive" and "substitutive" use mirrors global patterns reported by Khalifa et al. (2024) and Keuning et al. (2024), who highlight that students accept AI as a writing assistant but resist full substitution. In the Pakistani context, this reflects not only students' ethical awareness but also the influence of the Higher Education Commission's (HEC, 2025) Draft Framework and the Anti-Plagiarism Policy, both of which stress integrity and originality.

Perceived benefits strongly shaped willingness. Students valued AI's ability to reduce linguistic barriers, particularly when writing in academic English—a finding consistent with Mansoor et al. (2025) and Rafiq et al. (2025), who document AI's role in enhancing clarity and coherence for non-native English speakers. Efficiency was another motivating factor: AI helped streamline idea generation and drafting, enabling students to allocate more time to conceptual aspects of writing. At the same time, participants echoed global concerns about plagiarism, originality, and fabricated references (Fajt et al., 2025; UNESCO, 2025), underscoring that willingness is mediated by trust and risk management.

Institutional policies emerged as both an enabler and a barrier. Students reported confusion due to inconsistent or absent guidance at the course and institutional levels. Although national bodies such as the HEC have signalled clear directions, these policies have not been translated into actionable classroom practices. This gap reflects findings by Ullah, Naeem, and Boulos (2024), who note global inconsistency in how universities operationalise AI guidelines. Detection technologies further complicated willingness; students feared false positives, aligning with critiques that such systems disproportionately disadvantage multilingual learners (Vanderbilt University, 2023).

A particularly valuable contribution of this study is its focus on students' own recommendations for responsible AI use. They highlighted the need for training workshops, disclosure protocols, and redesigned assessments that emphasise process over product. These suggestions confirm broader policy directions (OECD, 2024; UNESCO, 2025) while

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grounding them in the lived experiences of Pakistani students navigating the final stages of their undergraduate education.

In sum, this study demonstrates that Pakistani final-year students approach AI with pragmatism and ethical consciousness. Their willingness depends not only on perceived benefits but also on institutional clarity, fairness of detection systems, and opportunities for guided training. Without addressing these conditions, adoption may remain fragmented and uneven, potentially exacerbating inequities in higher education.

Recommendations

Based on the findings, the following recommendations are proposed for universities, policymakers, and instructors in Pakistan:

1. Develop Clear and Accessible AI Policies

HEC's Draft Framework (2025) should be translated into clear, student-facing guidelines at the university and departmental levels. These should specify permissible uses of AI, emphasise disclosure, and provide discipline-specific examples. Institutions should communicate these policies consistently through syllabi, handbooks, and workshops.

2. Integrate AI Literacy Training into Curricula

Universities should embed AI literacy modules into research methodology and academic writing courses. These modules should cover evaluating AI outputs, avoiding plagiarism, fact-checking references, and maintaining critical thinking. Faculty training must accompany student workshops to ensure shared understanding of responsible practices.

3. Introduce Disclosure Protocols

Standardised disclosure statements or thesis templates should be introduced, allowing students to report how AI tools were used transparently. This not only promotes integrity but also aligns with international journal practices (e.g., JPMA).

4. Redesign Assessments to Encourage Process-Based Learning

To discourage over-reliance on AI, assessments should focus on process and originality. Strategies include requiring annotated bibliographies, iterative drafts, reflective journals, and oral defences. Such designs make AI use more transparent while preserving students' ownership of their work.

5. Ensure Equity in Access

Universities should provide institutional access to approved AI tools, reducing inequities caused by subscription costs or unreliable internet. Equity of access is critical for ensuring that the willingness to adopt AI is not restricted to students with greater resources.

6. Address Limitations of Detection Tools

Rather than relying solely on AI-detection systems, institutions should emphasise educative approaches to integrity. Where detection is used, transparent due-process mechanisms should be established, including appeal pathways, to build student trust.

7. Foster Ongoing Dialogue Between Students and Faculty

Finally, institutions should promote open conversations between students, faculty, and administrators about evolving AI practices. Student voices, such as those captured in this study, provide crucial insights into how policies can be practically implemented and refined.

Closing Reflection

AI integration in academic writing is inevitable, but its responsible use depends on balancing innovation with academic integrity. This study demonstrates that final-year Pakistani students are not passive recipients of technology; they are reflective users, willing to adopt AI when

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benefits are clear and ethical boundaries respected. By aligning national frameworks, institutional policies, and classroom practices with students' needs, Pakistani universities can foster a culture where AI serves as a scaffold for learning rather than a substitute for scholarly authorship.

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