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AI Writing Tool Adoption, Faculty Perceptions and Institutional Policy Gaps in Bangladeshi Higher Education

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Abstract

Artificial intelligence (AI) has rapidly transformed the practices of academic writing in higher education. Nevertheless, there is a lack of empirical research on perceived effects of AI tools on writing instruction in higher education in Bangladesh. This study investigates the impact of AI-assisted writing tools on academic writing at the universities of Bangladesh. A mixed-method research approach, including qualitative and quantitative methods, was applied in this study. To collect the data, the study used a Google Forms–based questionnaire. Quantitative data were analyzed using descriptive statistics, Spearman rank-order correlations, Mann-Whitney U tests, and ordinal logistic regression. Qualitative responses were analyzed through thematic analysis. 55 EFL students and 08 faculty members from different public and private universities in Bangladesh participated in the survey. According to the findings, a substantial number of students actively use the AI writing tool, and a vast majority of them reported improvements in grammar, structure, and clarity. A few expressed concerns about their dependency on AI tools, which they believe reduces their creativity and critical thinking skills. Equity issues, ranging from infrastructural limitations to varying students' levels of AI literacy, further exacerbated this problem. The researcher emphasized the pressing need for more formal faculty development programs and AI literacy training to ensure the just and ethical integration of these tools and technologies into the curricula of Bangladeshi universities. Guided by UTAUT2, Vygotsky's Sociocultural Theory, and Digital Divide Theory, the study

addresses the critical gap in understanding AI's role in developing nations' higher education by providing context-specific insights.

Keywords: academic integrity, AI-assisted writing, digital equity, EFL learners, institutional policy.

Introduction

Artificial intelligence (AI) has revolutionized many aspects of modern life, specifically with its profound impact and widespread use in academic writing. The 21st century is marked by technological advancements that have fundamentally transformed educational landscapes worldwide, offering new opportunities and challenges within academic writing pedagogy. In the Bangladeshi education system, from the primary level, the medium of instruction is Bangla. Although English is included as a subject, some students fail to pass it every year. In higher education, English serves as the medium of instruction and examination, posing a significant hurdle for English language learners. Strong academic writing skills are, therefore, crucial for their success in Bangladeshi universities, where many often find difficulty in expressing their thoughts and ideas precisely [11].

The rapid growth of AI technologies, particularly generative AI models such as ChatGPT, has changed the landscape of academic writing and transformed teaching practices globally [11]. AI-assisted writing refers to the process of using AI-powered tools to facilitate human writing. The students at tertiary level in Bangladesh are frequently using these AI writing tools for both academic and personal use; however, there is limited research regarding these tools and technologies [2, 6].

Recent studies suggested that Bangladeshi students have begun to utilize AI-assisted writing tools to overcome the linguistic barriers they have, while also improving their academic performance [19]. Some studies noted serious concerns about the ethical use of AI, academic integrity, and over-reliance on AI tools. Besides that, the absence of standardized institutional guidelines and uncertainty among faculty members with AI writing tools also contribute to the complex landscape of AI integration in Bangladeshi higher education [6]. Access to reliable internet, digital literacy, and

technological barriers between public and private universities remain a significant challenge for the effective AI integration in Bangladeshi universities [8].

Though a substantial number of students are adopting AI-assisted writing tools, the empirical evidence on pedagogical impact, ethical implications, and institutional readiness remains limited. This research aims to bridge this gap by exploring the opportunities, challenges, and pedagogical implications of AI-assisted writing in Bangladeshi universities, particularly focusing on student and faculty perception, and how to protect originality in the absence of formal policies to guide ethical AI use.

Therefore, the objective of the study is to analyze how EFL students and faculty in Bangladeshi universities engage with AI-assisted writing tools, and their perceptions regarding writing improvement, originality, and ethical concerns. This research also examines how their perceptions influence writing practices and how universities can integrate such tools ethically and effectively with Bangladeshi academic writing pedagogy. Specifically, it seeks to answer the following questions: What are the opinions of Bangladeshi university students and teachers about using AI tools in academic writing. What are the main opportunities and challenges of using AI-assisted writing tools in university education in Bangladesh? How can teachers in Bangladesh effectively use AI writing tools in their teaching to promote meaningful learning and critical thinking?

This study contributes to the growing body of research on artificial intelligence in education in three key ways. First, it provides empirical evidence from a Global South context, specifically Bangladesh, where large-scale data on AI-assisted writing adoption remains limited. Second, it identifies a critical mismatch between widespread student use of AI writing tools and the absence of clear institutional policies, highlighting an emerging governance gap in higher education. Third, by integrating perspectives from technology adoption, sociocultural learning theory, and digital inequality, the study offers a multidimensional understanding of how AI tools are not only reshaping writing practices but also influencing learning behaviors and access disparities. Together, these contributions extend existing literature by situating AI use within a context of rapid adoption but limited regulatory and pedagogical preparedness.

Literature Review

AI writing tools offer a great number of opportunities for Bangladeshi university students, specifically enhancing their writing proficiency. Recent studies have found that students perceive AI applications positively, as they function as a helpful supplement throughout their academic journey [6]. [11] and [19] reported that tools like ChatGPT, Grammarly, and QuillBot provide instant feedback on grammar, syntax, and style, allowing students to enhance their academic writing quality. Moreover, these AI tools cater to individual student needs, which facilitates personalized learning [9]. [14] Furthermore added that AI tools not only aid in developing writing skills but also improve students' engagement, enhance academic performances, and conceptual understanding. Similarly, [11] noted that these tools increase confidence and motivation among the EFL learners. Additionally, AI writing tools reduce the pressure of writing tasks in various disciplines by providing quick feedback and content suggestions, along with generating ideas, structuring arguments, and refining language [11].

Despite these benefits, there is a growing concern among scholars regarding the potential over-reliance of AI tools and the erosion of critical thinking skills. For example, [12] argue that excessive use of AI tools in the academic environment may reduce students' ability to think independently and creatively, which could weaken their critical thinking and may become a hindrance in the way of developing internal writing skills. Some researchers also argue that writing with AI tools may increase laziness among students, as they might rely on these technologies heavily, and according to [11] this might make them passive learners instead of autonomous learners. Moreover, concerns regarding plagiarism, academic integrity, data privacy, and the risk of AI-generated content are some of the concerns raised within the educational sphere [11] [2]. Faculty perceptions regarding the use of AI tools are mixed; some educators consider AI tools as valuable, while others see them as a threat [6]. Bangladeshi universities, like many other universities globally, lack a clear and formal policy on how to use AI tools ethically. Institutional awareness is limited for effectively integrating AI tools into pedagogical practices [2]. This inconsistency and ambiguity leave the educators and students both in a confusing state where some educators encourage using of AI ethically, whereas some discourage.

The adaptation of AI by the faculty member in the educational setting varies significantly. [7] suggested that successful integration and the effectiveness of AI into the pedagogy depends on faculty adoption, ease of use, and the teacher's experience of AI. In Bangladesh, a recent study titled "LLM Chatbots in Academic Writing: Usability and Ethical Concerns among Bangladeshi University Students" [1] remarked that support from the institutions and usability are also very crucial factors for the effectiveness of AI applications in teaching and learning. Universities must provide clear guidelines, and foster a supportive environment that encourages responsible AI integration.

However, there are a significant number of universities that have yet to establish comprehensive guidelines. According to [9], "institutions should conduct regular training sessions for faculty to enhance their understanding of AI capabilities and limitations, equip them with strategies to detect misuse, and leverage AI effectively to promote critical thinking and originality." [10] highlights in his paper, entitled "Policy Vacuum in an AI Era: Exploring the Urgent Need for Institutional Policy in Bangladesh," that educators and the students both see a lack of governance, ethical standards, and protection for academic integrity.

In Bangladesh, the digital disparity presents a significant challenge. AI tools offer many potential benefits. However, infrastructural limitation, and unjust access may pose significant barriers equitable integration [14]. Students from private universities are privileged with better infrastructural resources than those who are studying from under-resourced public universities, which according to [13] creates a technological divide that reinforces existing inequalities in educational arena. Network connectivity issues and limited access to reliable internet, cost of premium AI tools, and digital literacy can further extend this divide, and may limit many students' ability to utilize AI effectively. [8] in a cross-country study entitled "Generative AI Access, Usage, and Perceptions," noted that Bangladeshi students experience infrastructural barriers. They mentioned, "We observed that Bangladeshi students had less frequent access to GenAI assistants and faced challenges to access due to cost and lack of knowledge about GenAI assistants". This disparity calls for an urgent need of making comprehensive strategy to ensure equal access across all educational institutions.

Although the existing literature provides extensive insight into various aspects of AI tools, most of them are based on Western contexts with less focus on Bangladeshi higher education. Consequently, there remains a significant gap in understanding the students' use, teachers' perception, and institutional policies. Studies from Bangladesh have primarily focused on either student perceptions or faculty adoption in isolation. Moreover, there is a lack of empirical data regarding how these AI tools influence students' learning outcomes and originality among EFL learners in Bangladesh. Therefore, the present study addresses these research gaps by understanding the students' learning practices, originality, and pedagogical experiences within Bangladeshi universities.

Theoretical Framework

The following three interconnected theoretical frameworks form the basis of this study as they are used to analyze the adoption of AI writing tools, pedagogical issues, and equity concerns in Bangladeshi higher education.

Unified Theory of Acceptance and Use of Technology (UTAUT2)

The main paradigm for interpreting students' adoption of AI writing tools is UTAUT2 [17]. The framework establishes a set of expected performance (perceived usefulness of technology in improving the task), social influence (the role of significant others in the formation of technology use), and enabling conditions (availability of infrastructure and institutional support) as the fundamental factors in technology acceptance. They are especially applicable to this research because they align with the perceived improvement in writing among the students, the influence of the faculty on the use of AI, and the institutional preparedness of the universities in Bangladesh, which, in turn, generalizes the UTAUT-based framework created by [13] to the EFL-academic writing sphere.

Sociocultural Theory and the Zone of Proximal Development (ZPD).

The concept of the Zone of Proximal Development, according to [18], positions AI writing tools as digital scaffolds that can assist EFL learners in narrowing the divide between autonomous capabilities and guided performance. This is particularly relevant to the Bangladeshi context, where students transition to English-medium higher education and require substantial language support. Simultaneously, the ZPD

warns that excessive reliance on scaffolding without internalization may diminish the autonomous learning process, thereby providing a direct basis for this study to examine concerns about over-reliance and critical thinking.

Digital Divide Theory

The Digital Divide Theory by [16] is based on a conceptualization of technology inequality across four dimensions: motivational, material, skills, and usage access. This framework examines equity disparities between public and private university students in Bangladesh, where differences in infrastructure, internet access, the affordability of premium AI tools, and digital literacy could lead to unequal educational outcomes.

Collectively, these three frameworks provide a single analytic framework against which the quantitative patterns and qualitative experiences in this study are interpreted.

Methodology

Research Design

This study employed a convergent parallel mixed-methods design [4], combining quantitative and qualitative approaches to examine how AI-assisted writing tools are perceived and used among EFL learners and faculty in Bangladeshi universities. The quantitative component focused on identifying usage patterns and statistical relationships, while the qualitative component provided deeper insight into participants' experiences and concerns.

Data for both components were gathered at the same time using a single online questionnaire, then analyzed separately and integrated at the interpretation stage to produce a more comprehensive understanding of the findings [15]. This design was appropriate because it allowed the study to capture both measurable trends and nuanced, experience-based perspectives within a single framework.

Participants

The study included 63 participants: 55 undergraduate EFL students (87.3%) and 8 faculty members (12.7%) from public and private universities across Bangladesh. Participants were recruited using purposive convenience sampling [5]. The primary

inclusion criterion was active use of AI-assisted writing tools in academic contexts within the past 12 months.

Purposive sampling determined eligibility, while convenience sampling reflected the practical recruitment channels available to the research team—an approach commonly used in exploratory studies with limited resources [5]. Among the students, 60% were from private universities and 40% from public institutions, representing a range of academic disciplines. Faculty participants (62.5% private, 37.5% public) held positions from Lecturer to Associate Professor, with 3 to 18 years of teaching experience.

Given the small faculty sub-sample (n = 8), their responses were analyzed primarily through thematic analysis rather than inferential statistics, in line with standard exploratory qualitative research practice [5].

Research Instrument

Data were collected using an online questionnaire administered through Google Forms. The instrument consisted of six sections: (1) demographic information, (2) AI tool familiarity and usage patterns, (3) perceptions measured on a five-point Likert scale (three items), (4) institutional context and support, (5) expectations for institutional support, and (6) four open-ended questions addressing benefits, challenges, originality concerns, ethical issues, and policy recommendations.

The questionnaire (Appendix A) was developed based on existing literature [11, 19, 9] and reviewed by two ELT experts to ensure clarity and relevance. A pilot test with 10 students confirmed item comprehension and technical functionality, resulting in minor revisions.

Data Collection Procedure

The questionnaire link was distributed via email, WhatsApp, Messenger, and university forums over a six-week period (November–December 2024). Participants provided informed consent electronically prior to participation. Responses were collected anonymously, and no personally identifiable information was recorded. The Google Forms platform ensured accurate and automatic data capture.

Data Analysis

Quantitative data were analyzed using SPSS (Version 26.0). Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize usage patterns and perceptions. Chi-square tests examined associations between categorical variables (e.g., university type and access to ethical training), while cross-tabulations explored relationships between usage frequency and perceived benefits. Statistical significance was set at $p < .05$.

Additionally, Spearman rank-order correlations, Mann–Whitney U tests, and ordinal logistic regression were conducted to examine relationships among variables and differences between public and private university students. Given the exploratory nature of the study and the relatively small sample size, these inferential results should be interpreted cautiously and viewed as indicative rather than generalizable.

It should also be noted that limited variance in the usage frequency variable prevented computation of the Test of Parallel Lines in the ordinal regression model. As a result, regression findings are treated as exploratory and directional.

Qualitative data were analyzed using Braun and Clarke's (2006) thematic analysis framework [3]. The lead researcher coded all responses and identified recurring patterns, which were grouped into four main themes: (1) perceived benefits and skill development, (2) equity and access disparities, (3) concerns about originality and over-reliance, and (4) institutional policy gaps and pedagogical needs.

Thematic saturation was monitored throughout the process; no new themes emerged after approximately the 40th response, indicating sufficient depth of qualitative data. To enhance reliability, a second researcher independently coded 29 responses (around 50% of the dataset), meeting recommended thresholds for thematic analysis [3]. This resulted in strong inter-coder agreement ($\kappa = 0.82$). Any discrepancies were resolved through discussion until consensus was reached.

Finally, quantitative and qualitative findings were integrated during the interpretation stage to generate a cohesive analysis.

Validity and Reliability

Content validity was ensured through literature-informed instrument design and expert review. The Likert-scale items demonstrated good internal consistency (Cronbach's $\alpha = .811$).

Qualitative trustworthiness was strengthened through methodological triangulation, member checking with eight participants, peer debriefing, inter-coder reliability assessment, and the maintenance of detailed audit trails.

Ethical Considerations

Informed consent was obtained from all participants prior to data collection. Participants were provided with clear information regarding the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Anonymity was maintained through the use of pseudonyms, and all data were securely stored and accessed only for research purposes.

Data Availability

The datasets generated and/or analyzed during the current study are not publicly available due to ethical and confidentiality considerations related to participant privacy. However, the data are available from the corresponding author upon reasonable request.

Results

The data were analyzed using SPSS to investigate the use of AI tools, participants' perceptions, and the support provided by institutions. This section is organized into three sub-sections: demographic characteristics, patterns of usage and perceptions of AI-assisted writing, and considerations related to institutional and ethical issues.

Demographic Profile of Respondents

Table 1. Sample Size and Institutional Distribution of Participants

Category	Group	Public University	Private University	Total	Percentage
Students	Undergraduate students	21	33	55	100%
Faculty		40%	60.0%		
	University faculty members	3	5	8	100%
		25.0%	62.5%		

This section presents a comprehensive overview of results from a quantitative survey conducted with 55 participants from both public and private universities. The survey

results indicate that 60% of the participants are from a private university, while the rest of them 40% are from a public university.

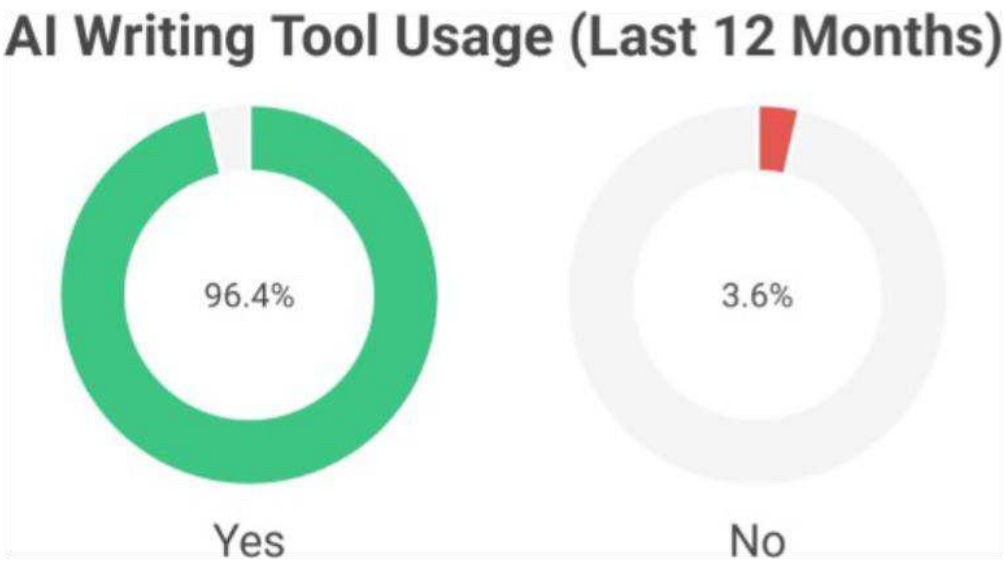


Figure 1. AI Writing Tools Usage in the Last 12 Months

Figure 1 shows that a substantial number of students have been utilizing AI writing tools over the year. Specifically, an impressive 96.4% of tertiary-level students reported using tools like ChatGPT, Grammarly, and Quillbot for academic purposes within the last 12 months, whereas only 3.6% of the respondents indicated no usage of such tools. The usage of AI writing tools indicates a high adoption rate among Bangladeshi universities.

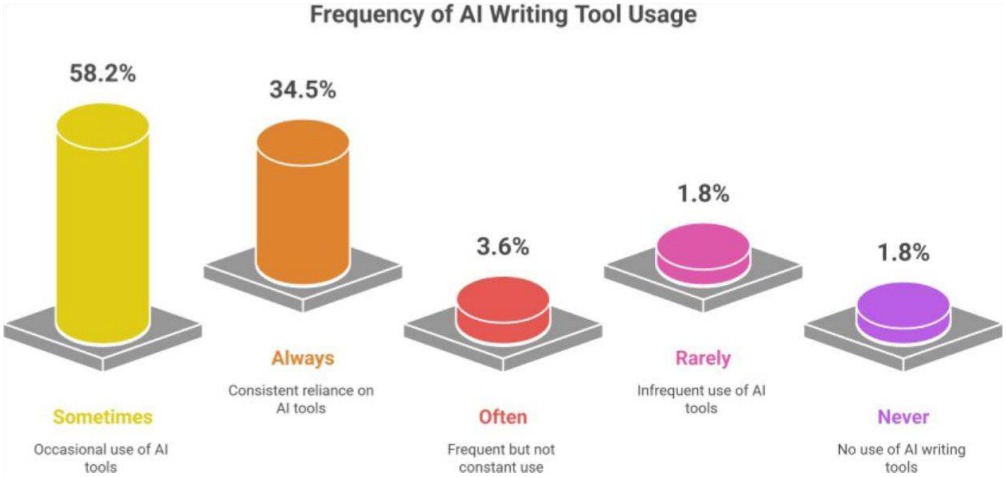


Figure 2. Frequency of AI Writing Tool Usage

Figure 2 reveals how often students utilize AI writing tools. A vast majority of the students reported using it “sometimes”, with 58.2% indicating occasional use, and 34.5% reported using it “Always”, indicating daily and consistent engagement with these technologies. Conversely, a minimal 3.6% of students often employ these tools

in their academic work, 1.8%“Rarely” use them, and another 1.8% reported “Never” utilizing these tools.

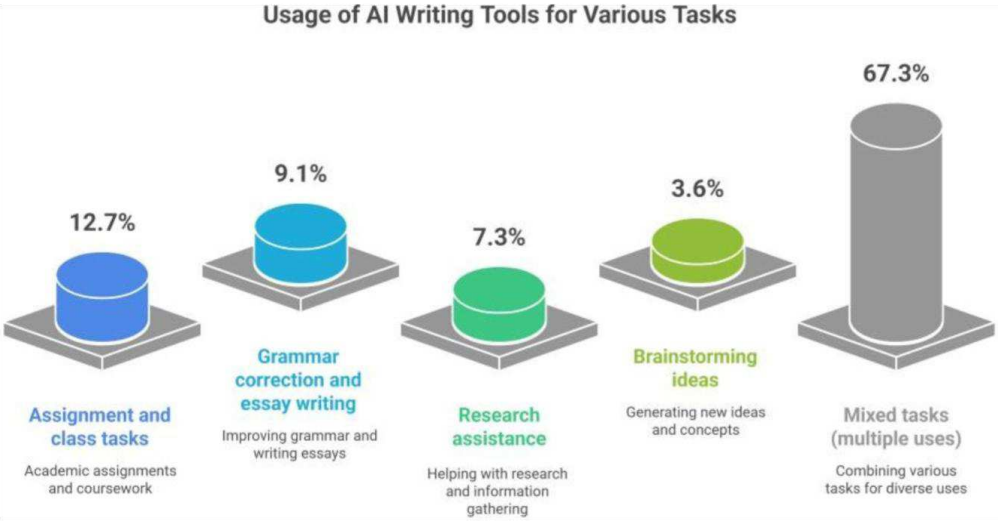


Figure 3. AI Writing Tools Usage for Various Tasks

Figure 3 illustrates the widespread usage of AI writing tools for various academic tasks among the participants. A significant 67.3% of the students reported that they use AI writing tools for multiple tasks. Specifically, 12.7% of respondents use these tools for doing their assignments and class tasks, while 9.1% of the students use them for grammar correction and class tasks. Additionally, 7.3% and 3.6% use them for research assistance and brainstorming, respectively.

Patterns of AI Tool Usage

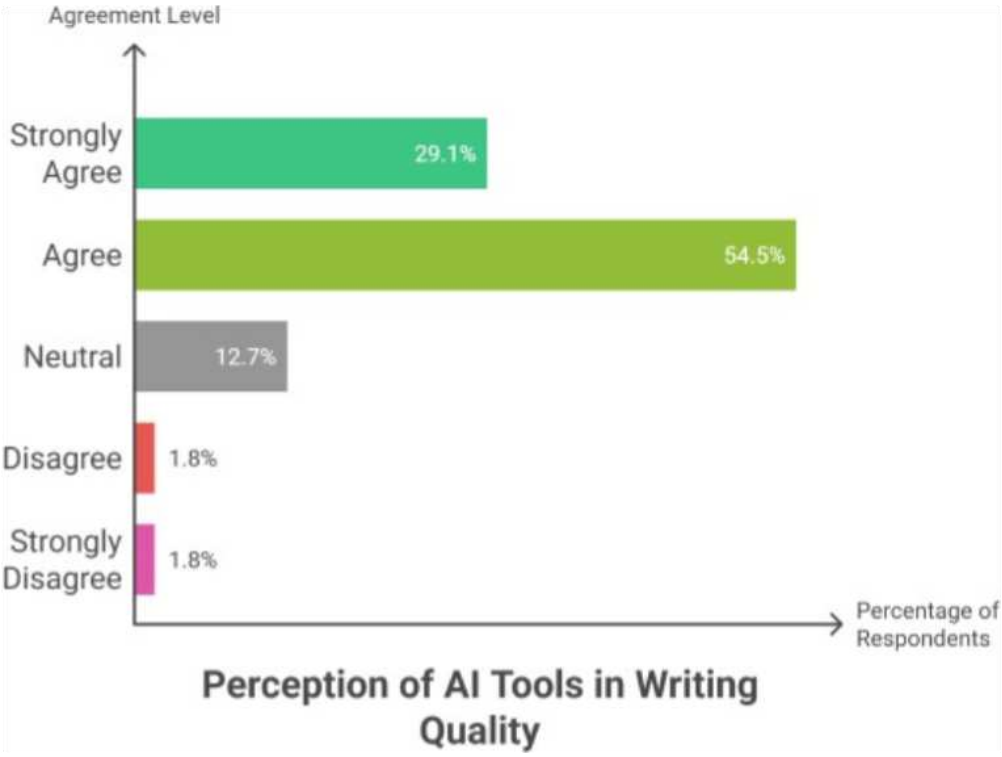


Figure 4. AI Improves Writing Quality

Figure 4 illustrates the respondents' perceptions regarding the perceived effects of AI on writing tools on their writing quality. When asked if AI writing tools improve their writing quality, a vast majority of the students 54.4% "agreed" while 29.1% "strongly agreed," with the statement that AI improves writing quality by correcting the grammar, providing a writing structure, and enhancing clarity of writing, making a substantial total of 83.5% of the total respondents who believe AI enhances their writing quality. Conversely, only a small minority, 1.8%, "strongly disagreed", with 12.7% expressing a neutral stance and 1.8% simply "disagreeing."

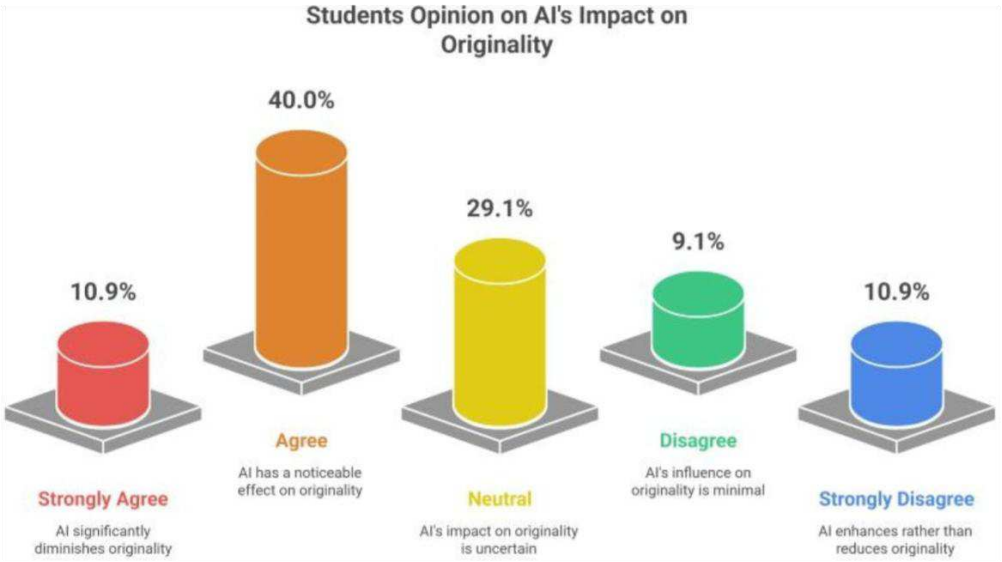


Figure 5. Over-Reliance on AI Reduces Originality

Figure 5 reveals students' perceptions regarding the over-reliance on AI tools and whether it diminishes originality in their academic work. The majority of the participants, 40% "agreed" and 10.9% "strongly agreed" that excessive dependency on AI could compromise originality, making it 50.9% of the participants. While 29.1%, remain "neutral" on this, indicating uncertainty among the respondents. However, 10.9% "strongly disagreed" while 9.1% "disagreed"

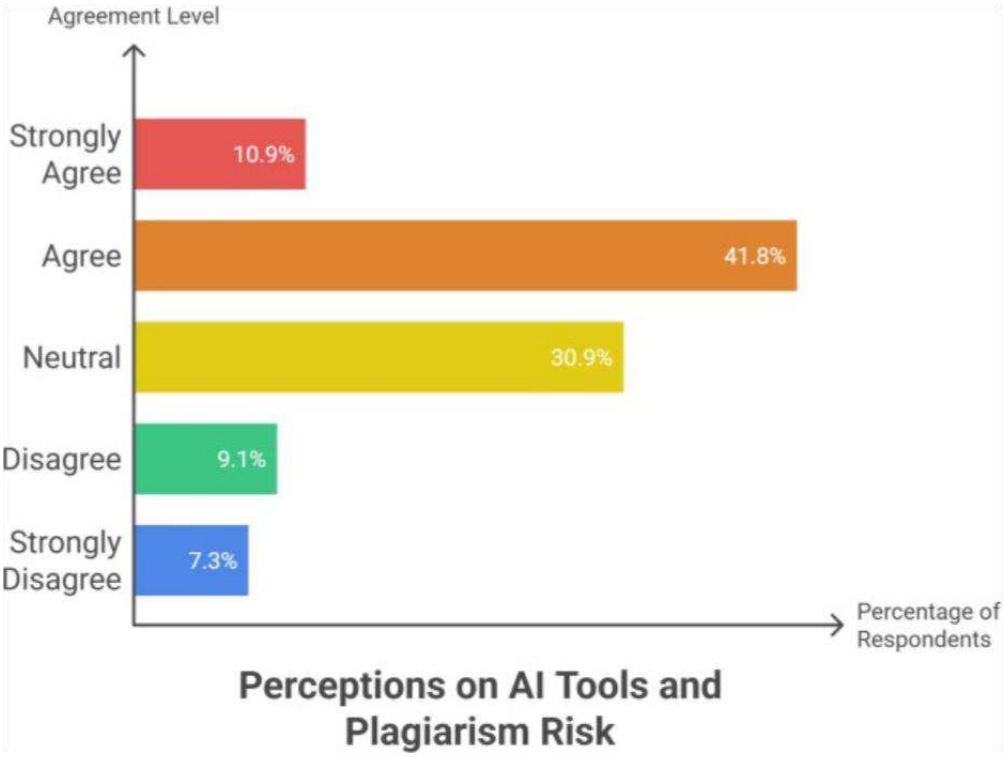


Figure 6. AI Tools Increase Plagiarism Risk

Figure 6 displays the respondent's perception regarding the AI tools and the increased risk of plagiarism, with a substantial 41.8% of the students "agreed" and 10.9% "strongly agreed" with the statement that AI tools increase the potential risk of plagiarism in broader context. In comparison to that, 30.9% remained neutral while only 9.1% of the respondents "disagreed" and 7.3% "strongly disagreed"

Institutional Influence and Support

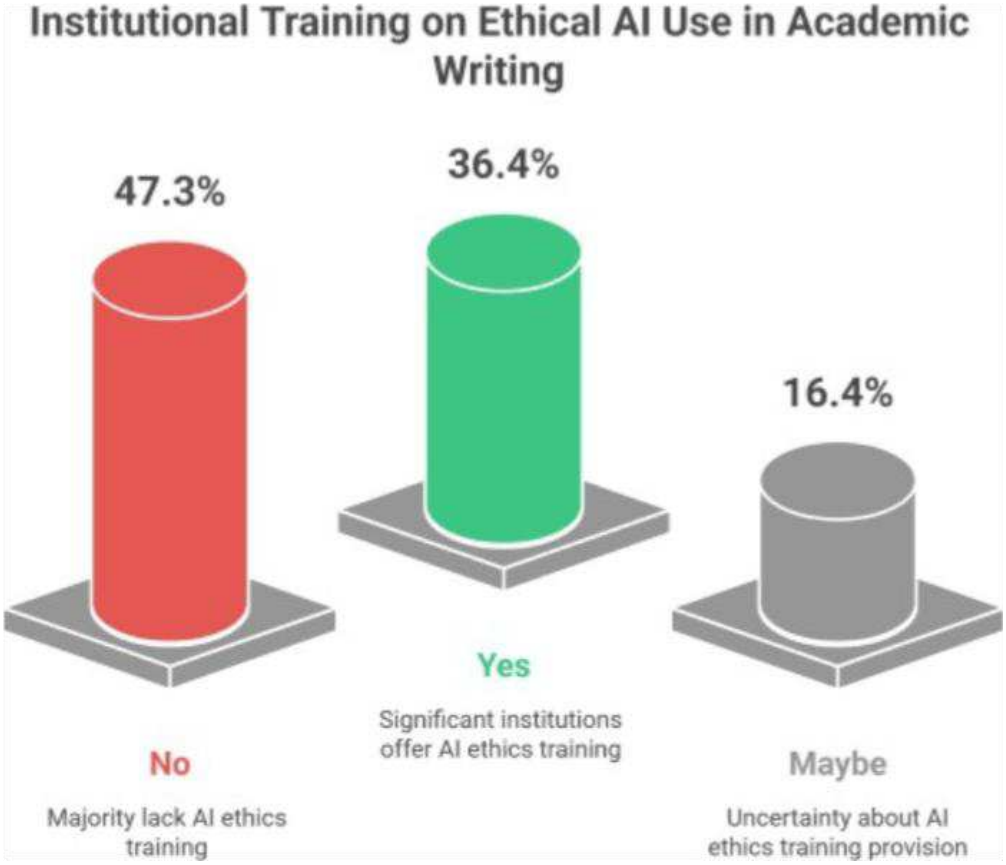


Figure 7. Formal training on ethical AI use

When asked about training on ethical AI use, almost half, 47.3% of the students, reported that they lack adequate training. Another 16.4% of the respondents indicated they were unsure if such training was available, while 36.4% confirmed they had received some form of ethical AI training.

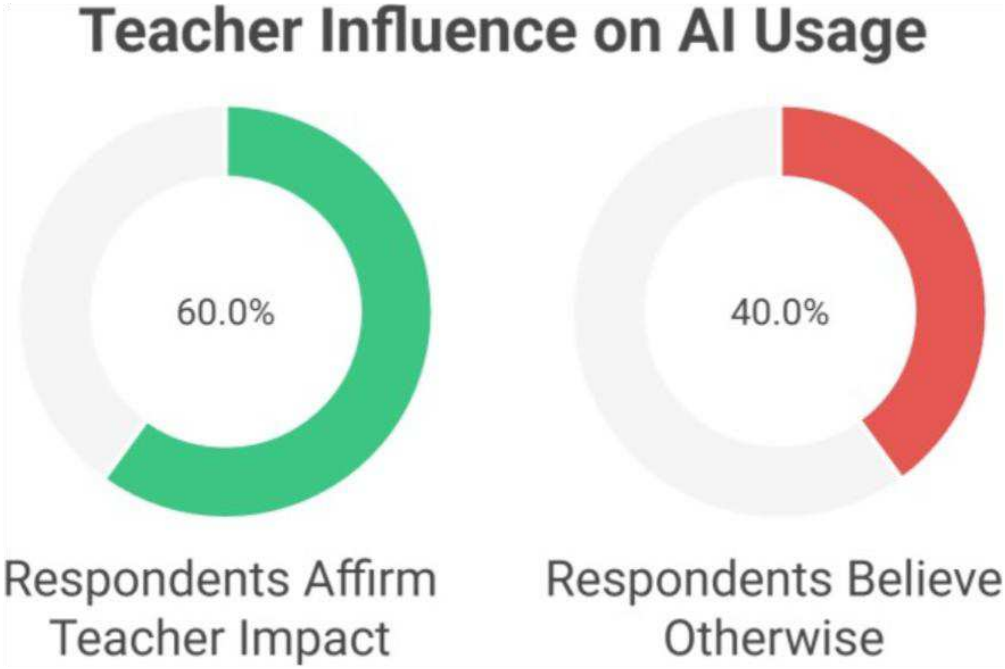


Figure 8. Teacher Influence on AI Use

Figure 8 illustrates the influence of the teacher on students' use of AI tools. A substantial number of students, 60% reported that the teacher's attitude or active use of AI influences their own use and adoption of AI tools, which contrasts with the other 40% who reported no influence from the teacher. This suggests that while some students are influenced by the teacher's action, a noticeable portion remains self-motivated or influenced by other factors in their AI tool engagement.

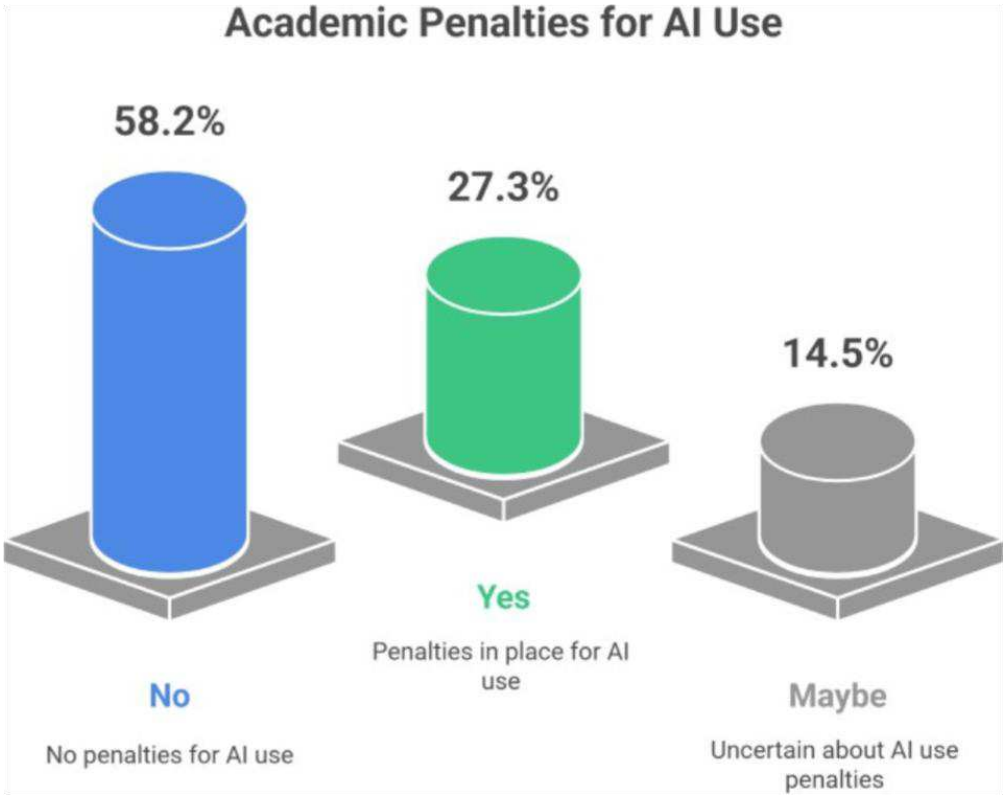


Figure 9. Penalties for AI Use

Figure 9 suggests that a majority of students, 58.2% have never faced any official penalties for using AI tools, while 27.3% of them have faced penalties, and a noticeable portion of 27.3% were not sure if their universities had any clear policies or guidelines regarding AI tools usage. No penalties for academic dishonesty and ambiguity among students clearly indicate a lack of institutional policies.

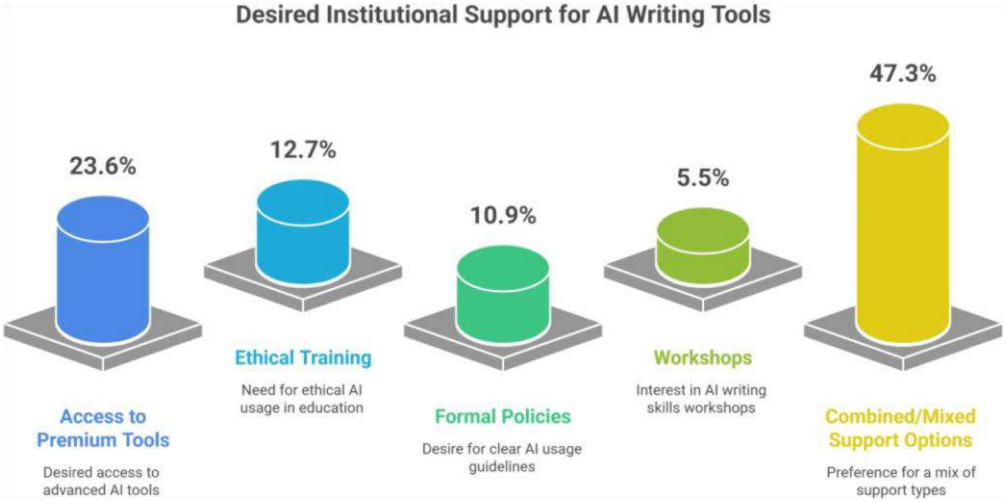


Figure 10. Institutional Support Regarding AI Tools Use

Figure 10 presents the expectations of respondents concerning the support and instructional resources they anticipate from their institutions regarding the use of AI tools. A majority of the students, 47.3% expect to get a variety of support, including establishing clear guidelines and formal policies, providing ethical training, access to premium applications, and arranging workshops and seminars. Whereas 23.6% of the students specifically requested advanced AI tools, 12.7% advocated for Ethical AI training and 10.9% called for clear policies, and 5.5% suggested arranging seminars and workshops.

Comparative and Inferential Analysis

Crosstab and Chi-square Analysis

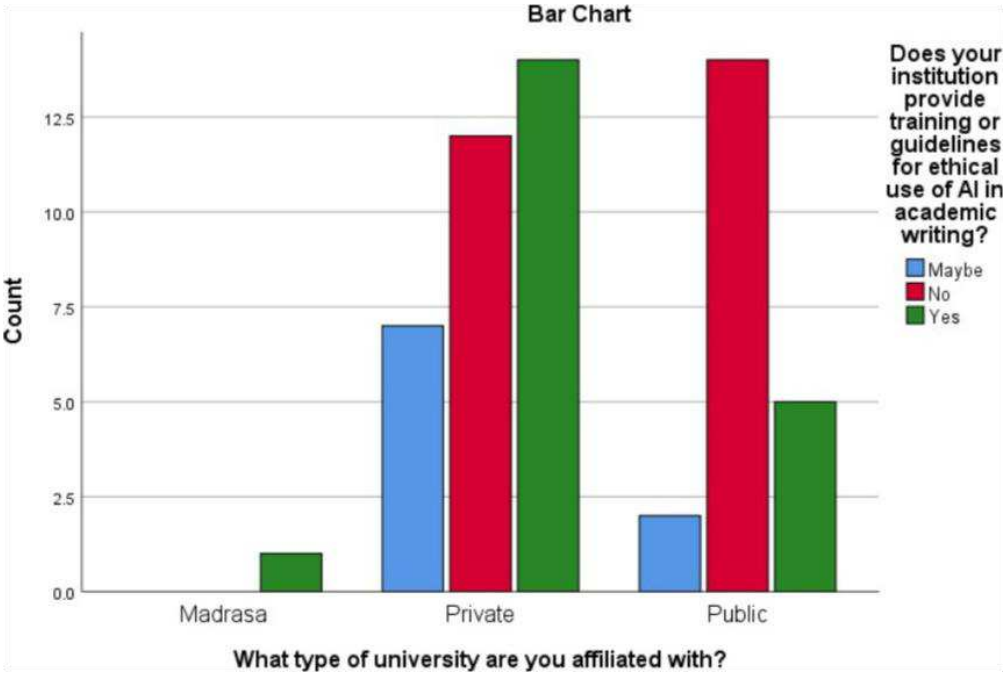


Figure 11. Ethical Training Public/Private

A chi-square test was conducted to investigate the relationship between the types of universities and the students' access to ethical training. The researchers found that 42.42% of the students from private universities described having received AI training, whereas only 23.81% of them were from public universities. On the other hand, the chi-square test between university type and ethical AI training revealed that there was no significant difference $\chi^2(4, N = 55) = 6.57$, $p = 0.160$, suggesting that although private universities remain a little bit more proactive, the institutional readiness for AI integration remains inconsistent across both public and private universities.

Relationship between Frequency of AI Use and Perceived Writing Improvement

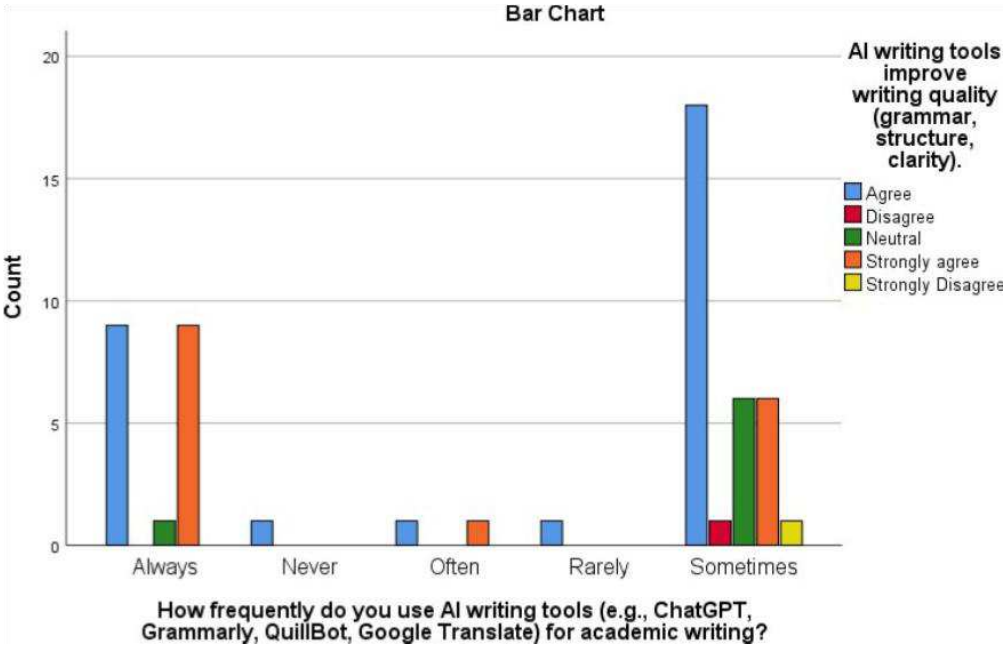


Figure 12. AI Improves Writing Quality

For further analysis, a cross-tabulation was performed to examine the frequency of AI usage and respondents' perceptions that AI improves writing quality (grammar, structure, and clarity). The findings indicated a very positive and clear trend that students who utilize AI tools frequently reported "always" or "sometimes", most of them "agreed or "strongly agreed" that AI tools enhance their writing quality. On the contrary, students who used AI less frequently were less likely to perceive the benefits. This suggests that consistent engagement with AI writing tools correlates with a higher perceived improvement in writing skills among university students in Bangladesh.

Inferential Analyses

Spearman Rank-Order Correlations

Table 2: Spearman Rank-Order Correlations (N = 55)

Variable	1	2	3	4	5	6
1. AI Usage Frequency	—					
2. Perceived Writing	.344*	—				
3. Over-reliance Concern	−.159	−.126	—			
4. Plagiarism Risk	.088	.019	.417**	—		
5. Teacher Influence	.266*	.140	−.015	−.174	—	
6. Training Access	−.184	.205	.035	−.012	−.390**	—

*Note. * p < .05. ** p < .01 (2-tailed). Training Access: 1 = Yes, 3 = No.*

Spearman rank-order correlations were computed to examine relationships among the six study variables (Table 2). Four significant correlations emerged. AI usage frequency was positively correlated with perceived writing quality (rs = .344, p = .010) and teacher influence (rs = .266, p = .049), indicating that students who perceive greater writing benefit and those influenced by their teachers tend to use AI tools more frequently. Over-reliance concern and plagiarism risk were moderately correlated (rs = .417, p = .002), suggesting these two ethical concerns co-occur in students' perceptions. Teacher influence was negatively correlated with training access (rs = −.390, p = .003), indicating that where institutional training is absent, individual teacher behavior serves as the primary governance mechanism. All remaining correlations were non-significant (all p > .134).

Logistic Regression Results

Table 3. Ordinal Logistic Regression Predicting AI Usage Frequency (N = 55)

Predictor	B	SE	Wald	df	P	95% CI for B
Perceived Writing Quality	0.813	0.391	4.311	1	.038*	[0.046, 1.580]

Teacher Influence	1.016	0.596	2.902	1	.089	[−0.153, 2.185]

*Note. Model $\chi^2(2) = 8.999$, $p = .011$. Nagelkerke $R^2 = .178$. * $p < .05$. Results are exploratory due to convergence failure in the Test of Parallel Lines.*

An ordinal logistic regression (PLUM, logit link) was conducted to examine whether perceived writing quality and teacher influence predicted AI usage frequency. The model was statistically significant, $\chi^2(2) = 8.999$, $p = .011$, with Nagelkerke $R^2 = .178$, indicating modest explanatory power. Perceived writing quality emerged as a significant predictor ($B = 0.813$, Wald = 4.311, df = 1, $p = .038$), suggesting that higher perceived benefits are associated with increased AI usage. Teacher influence was not a significant predictor ($B = 1.016$, Wald = 2.902, df = 1, $p = .089$). However, due to limited variance in the dependent variable (93.6% of responses concentrated in two categories), the Test of Parallel Lines could not be computed. As a result, the proportional odds assumption could not be verified, and the findings should be interpreted with caution as exploratory.

Mann–Whitney U Test Results

Table 4: Mann-Whitney U Test Results (N = 54)

Variable	Public MR	Private MR	U	z	p (exact)	r
Perceived Writing Quality	28.07	27.14	334.50	−0.24	.818	.032
Over-reliance Concern	30.74	25.44	278.50	−1.26	.211	.170
Plagiarism Risk	28.10	27.12	334.00	−0.23	.824	.032

Note. MR = Mean Rank. $r = |z| \div \sqrt{N}$. Public n = 21, Private n = 33. One Madrasa-affiliated participant excluded. p values are exact (2-tailed).

Mann-Whitney U tests compared public (n = 21) and private (n = 33) university students on three Likert perception items. No statistically significant differences were found across any variable (Table X), with negligible to small effect sizes (r = .032–.170). These findings suggest that perceptions of AI writing tools are broadly similar across institutional types, indicating that concerns about over-reliance and plagiarism are systemic rather than institution-specific.

Thematic Analysis of Open-ended Question

To strengthen the quantitative findings and gain a deeper understanding, the researchers conducted a thematic analysis of four open-ended questions. The responses were analyzed to identify recurring themes and patterns, and to capture insights into both the students' and faculty's perceptions, subjective experiences, and challenges regarding AI integration in their academic endeavors. The recurring ideas and themes were, therefore, grouped into broader themes.

Perceived Benefits and Skill Development

Responses from the open-ended survey questionnaire suggest that both faculty and students acknowledge the perceived benefits of AI tools. According to the students, AI writing tools have a positive impact on their writing quality. They also reported that these tools positively influence various aspects of their writing, including learning new vocabulary, improving grammar, structuring sentences more effectively, generating ideas quickly, understanding intricate topics, and facilitating the drafting process. According to one respondent, "AI-assisted writing tools help me write faster, correct my grammar and spelling, and give me new ideas when I face difficulties. These tools also make my writing more professional and clearer."

Similarly, one faculty noted, "Using AI tools for writing helps students generate ideas, improve grammar, and save time." Another faculty member remarked that these AI tools provide students with crucial language support, helping them "express complex ideas more fluently and confidently."

Equity and Access

It is essential to acknowledge that the perceived benefits may not be equally accessible to everyone due to individuals' understanding of how AI works or its limitations, which may reinforce inequality among the students. For example, giving the prompt to AI and being able to get the best output from them, as well as evaluate them critically, requires a certain level of English language proficiency and AI and tech literacy, which some students lack. One student stated, "Because of a communication gap, AI gives me the wrong answer." Another said, "I lack knowledge about its use," indicating a language and technical complexity in navigating AI tools. Some responses revealed the infrastructural limitation, which makes the situation even more intensified.

Concerns about Originality and Overreliance

Despite these benefits, both students and faculty have expressed serious concerns about creativity, authenticity, and academic integrity due to the potential over-reliance on AI tools. Many students are worried that their reliance on AI-assisted writing tools and frequent use may diminish their originality and critical thinking abilities. One respondent stated, “Using AI-generated tools hasn’t been very beneficial for me because I feel like I’m losing my thinking and creative skills.”

The faculty observations were even more critical, and they are concerned that students might lose their originality, creativity, and critical thinking abilities if they rely on these AI tools too much or use them too frequently. According to one faculty member, these tools may make students passive or dependent learners rather than autonomous learners. Another faculty member from Southeast University stated:

> *Students are getting help from various sources, but they seem confused and have very little knowledge of AI tools. In most cases, they are copying the writings blindly, which is reducing their thinking capability, demotivating them to learn deeply.”*

This theme suggests that while AI tools enhance productivity, it is simultaneously creating passive learners who are “unwilling to do anything themselves.” This tendency among students leads to problems such as plagiarism, a lack of creativity, and underdeveloped critical thinking skills, thereby reducing originality and academic integrity. One faculty member from Stamford University noted, “We have noticed that students copy from AI tools and that’s why sometimes we use AI detectors to check the originality of the writing.”

Some respondents suggest that the outcomes depend on the usage patterns. According to them, AI tools are neither inherently detrimental nor inherently beneficial; a strong ethical framework is necessary to guide them.

Institutional Policy Gaps and Pedagogical Needs

One of the most prominent findings was the absence of institutional policies. Most students called for explicit guidelines on the appropriate use of AI in academic settings, highlighting a significant gap in current university regulations. One student suggested: Universities should create clear policies about how students can use AI writing tools. They should allow these tools for learning support, like grammar correction or idea generation, but not for copying whole assignments.”

This is consistent with the faculty. They echoed the students' call for comprehensive formal policies and an ethical framework. Most faculty members reported that no official statements or guidelines are available on AI, though informal practices are present among both the students and faculty. This policy vacuum leaves both groups in a state of ambiguity, unsure how to use AI tools, leading to inconsistent practices across universities.

Indeed, one faculty member from Gono Bishwabidyalay stated, "I would set clear guidelines, teach ethical use, and require students to cite AI assistance." Another faculty member noted that though making policies is easier, maintaining them will be difficult.

Beyond the faculty perspective, students expressed a strong desire for systematic institutional support and training programs. According to them, rather than banning AI tools altogether, universities should develop structured educational initiatives. They recommended, "Universities should update policies, teach ethical use, and integrate AI literacy into the curriculum." Another stated, "Universities should adapt, not resist," and suggested that universities should organize ethical training, workshops, and seminars for both faculty and students. This will allow them to understand how AI works, its limitations, and its ethical implications.

The responses from the faculty members furthermore revealed the adoptive pedagogical strategies. One faculty member stated, "I focus more on in-class writing and oral explanations. This helps me understand each student's real ability and thought process."

Most faculty members tend to stick to traditional methods of evaluating students, suggesting reluctance to fully embrace AI tools in their teaching and assessment practices, which highlights a need for further training and clear institutional guidance. However, some faculty members mentioned using AI-assisted tools to detect plagiarism and identify AI-generated writing, suggesting a growing trend among the faculty.

The qualitative findings reveal a dual perspective. While AI tools offer numerous benefits, from enhanced writing efficiency to support for toiled language, they also raise legitimate concerns about reduced originality, creativity, and critical thinking skills. The absence of institutional guidelines also elevates this. The faculty

perspective also reveals a reluctance to fully integrate AI into pedagogy, which is crucial for effective integration of AI tools. To some extent, AI is transforming and reshaping the landscape of academic writing and influencing both teaching and learning practices.

Discussion

The findings of the study revealed that AI-assisted writing tools in Bangladeshi higher education pose significant challenges and offer countless opportunities for pedagogical innovation and enhanced learning outcomes. Both faculty and students shared a positive perception regarding AI usage in academic writing. According to the findings, most of the students (96.4%) have adopted these tools and technologies, which indicates that students have embraced them for their potential benefits, like improved grammar, efficiency, and enhanced confidence, which aligns with previous research by [11]. 83.5% of the students agreed that AI improves writing quality, with a mean perceived writing improvement score of 2.33, highlighting AI's potential as a revolutionary tool. This is also consistent with the performance expectancy construct of UTAUT2 [17], which posits that the more the students feel that a specific academic writing performance will actually improve, the more likely they are to accept the use of the AI-based tool. The ordinal regression further confirmed that perceived writing quality significantly predicted usage frequency ($B = 0.813$, $p = .038$), consistent with the performance expectancy dimension of UTAUT2 [17]

While AI-assisted writing tools serve as powerful facilitators, they also pose several challenges for users. Students sometimes grapple with academic dishonesty, willingly or unwillingly. For example, they often use AI write-ups as it is, being over-reliant on these AI tools too frequently, leading to plagiarism, which makes them lose their originality, creativity, and critical thinking skills. Almost half of the students have expressed concern about the potential harm they may be causing themselves by using these AI tools excessively, which they fear may weaken their creativity or independent thinking. A similar result was found by [12], who argued that over-reliance on generative AI can diminish critical thinking, potentially disrupting their inherent ability to think critically. Socioculturally, such an apprehension is an indication of a failure in productive scaffolding. When students are dependent on AI tools and do not critically

respond to the output generated, the ZPD will disintegrate instead of grow, and the process of internalization of independent writing skills will not be achieved [18].

The most feared concern is the absence of institutional policies, which is furthermore intensified by the readiness of both faculty and students to some extent. Students are frequently engaging with AI technologies, whereas some faculty lack knowledge of AI tools and technologies or adequate training, which sometimes results in an inability to guide students effectively. Sometimes, both groups remain uncertain about the usage limitations and ethical boundaries. For instance, 58.2% of the students mentioned that even after using gen AI, they never faced penalties for it, suggesting a lack of official governance that leads to inconsistent practices across the universities. This policy vacuum resonates with [10], who emphasized the urgent need for policy in Bangladeshi higher education. To fill this vacuum, all three theoretical dimensions that were identified in this study must be addressed. The institutions should enhance facilitating conditions (UTAUT2), design pedagogical approaches that encourage internalization instead of dependence (ZPD), and equitable access at all levels of the digital divide [16].

The successful integration of AI technology into pedagogy requires a systemic strategy, one of which is the faculty development programs. The findings suggest that over 60% students reported that they are influenced by their respective teachers' AI usage, highlighting how faculty behavior and guidance significantly shape students' perceptions and adoption of these tools. This aligns with [7], he stated that successful AI integration depends on faculty perceptions, ease of use, and understanding. This was further supported by the Spearman correlation, which showed a significant positive relationship between teacher influence and AI usage frequency ($r_s = .266$, $p = .049$), and a significant negative correlation between teacher influence and institutional training access ($r_s = -.390$, $p = .003$), confirming that teacher behavior fills the governance vacuum left by absent institutional policy. This aligns with the social influence dimension of UTAUT2 which makes instructors the primary external factor influencing the intention of students to learn and use new technologies [17].

The issue of equity poses a significant challenge, as the students describe it. Equity functions in two layers: one is infrastructural, and the other is individual. Bangladeshi students have limited access to advanced AI tools and resources, as well as a lack of

AI literacy, which echoes [8]'s and [14]'s findings. [16]'s Digital Divide Theory helps explain this disparity beyond a simple access gap. The disparity also exists on the level of skills and access to usage and it means that even students, who have access to AI, might not effectively use these tools because of a lack of digital literacy and English language proficiency. Similarly, a student's ability to prompt AI, critically analyze the given output by AI tools, and have a deep understanding of the ethical implications can also lead to inequalities in the educational setting. However, Mann-Whitney U tests revealed no significant differences between public and private university students in their AI perceptions (all $p > .05$, $r = .032–.170$), suggesting that attitudinal concerns about AI are systemic across institutional types rather than confined to resource-disadvantaged institutions

Overall, these findings suggest that though AI-assisted writing tools are playing the role of a pioneer in Bangladeshi higher education, they also pose significant challenges for its users, which is why a governing authority is needed to establish a robust framework for effectively integrating AI tools while also considering their ethical use.

Recommendations

Based on the study's findings showing high AI adoption (96.4%) alongside concerns about over-reliance (50.9%), plagiarism (52.7%), and lack of training (47.3%), the following evidence-based recommendations are proposed for stakeholders in Bangladeshi higher education.

For Universities and Institutional Leadership

1. **Develop Clear AI Usage Policies**

With 58.2% of students reporting never facing penalties for AI use, universities must establish explicit policies delineating permitted uses (grammar correction, idea generation) and prohibited uses (copying assignments). Policies should be publicly accessible and reviewed annually.

2. **Implement Mandatory AI Literacy Programs**

Given that 47.3% of participants lack adequate training, universities should provide mandatory AI literacy programs covering how AI tools function, effective prompting

strategies, critical evaluation of outputs, and ethical implications. Training should be integrated into freshman orientation and faculty professional development.

3. **Ensure Equitable Access to AI Resources**

To address equity disparities, universities should provide equitable access to premium AI tools, reliable internet infrastructure, and technical support. Establishing computer labs with AI access and offering subsidized subscriptions can mitigate institutional disparities.

For Faculty Members

4. **Integrate AI Literacy into Curriculum and Model Ethical Use**

Since 60% of students are influenced by instructors' attitudes toward AI, faculty should explicitly discuss ethical AI use, demonstrate appropriate applications, and model transparent practices. Assessment strategies should emphasize process over product through multiple drafts, in-class writing, and reflective essays explaining AI usage.

5. **Engage in Continuous Professional Development**

Faculty should participate in ongoing training on AI tools and pedagogical integration to overcome reluctance and insufficient knowledge identified in the study.

For Students

6. **Practice Responsible AI Use and Maintain Critical Thinking**

Students should use AI as a learning supplement, not a shortcut. Responsible use includes critically evaluating AI outputs, substantially revising suggestions, transparently disclosing AI assistance, and completing assignments independently to maintain fundamental skills. As qualitative data revealed, outcomes depend on usage patterns—AI is "neither inherently detrimental nor inherently beneficial."

For Policymakers

7. **Develop National Guidelines and Invest in Infrastructure**

Bangladesh's Ministry of Education should establish national-level guidelines for AI integration while investing in digital infrastructure, particularly for public universities and rural institutions, to ensure equitable access across the educational sector.

Limitations and Future Research

This study has several limitations. First, formal Institutional Review Board (IRB) approval was not obtained, as such processes were not mandatory at participating institutions during data collection, though ethical principles of informed consent, anonymity, and confidentiality were followed.

Methodologically, purposive convenience sampling limits generalizability, and self-selection bias may overestimate AI adoption rates. The small sample size (N = 63, faculty n = 8) restricts statistical power and advanced analyses. Self-report data may be subject to social desirability bias, particularly with respect to academic integrity. The online methodology excluded participants with limited internet access. The cross-sectional design prevents causal inferences and examination of temporal changes. The instrument contained only three Likert items (Cronbach's $\alpha = .811$), limiting measurement comprehensiveness. While inter-coder reliability was established ($\kappa = 0.82$) for 50% of qualitative data, single-coding of the remaining responses may introduce bias.

Contextually, the Bangladesh-only focus limits transferability. Data from primarily urban universities may not represent all institutional types. Rapidly evolving AI technology may render specific findings outdated. The study measured perceptions rather than actual learning outcomes. Additionally, the Test of Parallel Lines in the ordinal regression could not be computed due to convergence limitations arising from restricted variance in the usage frequency variable, and regression findings should therefore be treated as exploratory.

Despite these limitations, the study provides valuable empirical evidence on AI integration in Bangladeshi higher education, establishing a foundation for future research with larger samples, longitudinal designs, and objective measures. Future research should focus beyond perception-based studies, including larger and more diverse samples to examine the longitudinal perceived effects of AI-assisted writing tools among students on their academic integrity and learning outcomes.

Conclusion

This paper investigated how AI-assisted writing tools can be incorporated in Bangladeshi universities. It primarily focused on opportunities, challenges, and pedagogical implications. Findings suggest that 96.4% of the students have adopted

AI-assisted writing tools. Among them, 83.5% of the students remarked that AI improves writing quality, grammar, and overall structure. Almost half of the students are concerned about being dependent on these AI-assisted writing tools, and they think this may reduce their originality and critical thinking skills. The faculty also shared similar views on this. The study also identifies equity as a significant issue, as it reinforces inequalities among students. The faculty influences student's adoption of AI tools, however, the most significant finding is the absence of institutional guidelines that govern AI use, both of which are crucial for the effective amalgamation of AI tools in the educational landscape. The study contributes by providing empirical evidence from a developing nation like Bangladesh highlighting the urgent need of institutional guidelines.

Declarations

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Competing Interests

The authors declare that they have no competing interests.

Ethics Approval

This study was reviewed by the Departmental Research Ethics Committee of Pundra University of Science and Technology, Bogura, Bangladesh, which waived the requirement for formal ethics committee approval as the research posed minimal risk and involved voluntary, anonymous participation by adult university students. No personally identifiable information was collected at any stage. The study was carried out in accordance with the guidelines of the Departmental Research Ethics Committee of Pundra University of Science and Technology and in accordance with the Declaration of Helsinki and the national guidelines and regulations of Bangladesh.

Consent to participate

Informed consent was obtained from all participants prior to completing the questionnaire. Participants were fully informed of the study's purpose, potential risks and benefits, the voluntary nature of participation, and their right to withdraw at any

time without consequence. All responses were kept strictly anonymous and confidential, and no personally identifiable information was collected at any point.

Consent for Publication

Not applicable.

Author Contributions

MD. Tareq Jamil conceptualized the study, designed the methodology, conducted data collection and analysis, and drafted the manuscript. MD Nazmul Haque contributed to the study design, supervised the research process, and critically reviewed and revised the manuscript. Both authors read and approved the final version of the manuscript.

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Appendix A: Survey Questionnaire

Title: AI-Assisted Writing in Bangladeshi Universities: Opportunities, Challenges, and Pedagogical Implications

This questionnaire is part of a research study exploring how AI writing tools (e.g., ChatGPT, Grammarly, QuillBot) are used in Bangladeshi universities. Your responses will remain confidential and will be used for academic purposes only. Thank you for your participation.

Section 1: Demographic Information

1. What type of institution are you affiliated with?
    - Public University
    - Private University
    - Other (please specify)
2. What is your role?
    - Undergraduate Student
    - Graduate Student
    - Teacher/Instructor
    - Other (please specify)

Section 2: AI Usage Patterns

3. Have you used AI writing tools (e.g., ChatGPT, Grammarly, QuillBot) in the last 12 months?
    - Yes
    - No
4. How frequently do you use AI writing tools for academic writing?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
5. What types of tasks do you use AI writing tools for? (Select all that apply)
    - Grammar correction
    - Paraphrasing
    - Idea generation
    - Essay writing
    - Translation
    - Summarization
    - Other (please specify)

Section 3: Perceptions of AI Writing Tools (Likert Scale: Strongly Disagree – Strongly Agree)

6. AI writing tools improve writing quality (grammar, structure, clarity).

7. Over-reliance on AI writing tools reduces originality and critical thinking in students' writing.

8. AI writing tools increase the risk of plagiarism or academic dishonesty.

Section 4: Institutional Context

9. Does your institution provide training or guidelines for ethical use of AI in academic writing?

- Yes
- No
- Not sure

10. Has a teacher's attitude or use of AI influenced your own use or confidence in using AI tools?

- Yes
- No
- Not sure

11. Have you (or your peers/students) ever faced academic penalties for using AI?

- Yes
- No
- Not sure

12. Do you feel pressure to use AI because others are using it?

- Yes
- No
- Not sure

13. Are there any rules or common practices about using AI in your university?

Section 5: Experiences and Perspectives

14. What kind of support would you like to see from your institution regarding AI-assisted writing tools?

15. What benefits or challenges have you personally experienced using AI-assisted writing tools?

16. How do you think AI tools affect students' originality and learning?

17. What changes should universities make in how they deal with AI writing tools?