

An Exploration of the Limitations of using Artificial Intelligence in the Thesis Writing Process

Yang Haochen, Jiang Ruimeng, Li Mingyang, He Kexin, Ni Jun

School of Business, Beijing Wuzi University, Beijing, China

ABSTRACT

Currently, universities across China have integrated generative artificial intelligence into the entire thesis writing process. When undergraduates or graduate students utilize AI for tasks such as conducting research, formatting documents, or performing basic computational work, this approach can reasonably reduce the time spent on mechanical, repetitive tasks within the thesis. However, allowing students to delegate the core argumentation and expression of viewpoints in their theses to AI may lead them into territory where academic integrity is violated, thereby creating opportunities for misconduct. At present, the AI tool management policies issued by most universities still lack detailed guidance and have not been designed with feasible, measurable operational procedures tailored to the various stages of the actual thesis writing process; as a result, the definition of "compliance" remains unclear, and faculty or academic administrators lack a unified, objective standard for identifying non-compliant practices. Drawing on recent empirical case studies-both positive and negative-regarding the use of AI in thesis writing, this paper categorizes thesis writing into six fundamental stages and examines, within this framework, whether it is necessary to impose restrictions on the use of AI at each stage. The paper proposes a three-tiered management approach-"fully permitted assistance," "limited, case-by-case use," and "strictly prohibited"-provides quantitative reference standards designed according to specific disciplines and academic timelines, and offers feasible policy recommendations addressing the individual students, faculty responsibilities, and institutional frameworks. These reflections on AI governance serve as a guiding resource for academic personnel on how to appropriately utilize AI, and can also provide localized empirical support for universities seeking to enhance their academic culture and uphold academic integrity.

How to cite this paper: Yang Haochen | Jiang Ruimeng | Li Mingyang | He Kexin | Ni Jun "An Exploration of the Limitations of using Artificial Intelligence in the Thesis Writing Process" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-4, August 2026, pp.1291-1302, URL: www.ijtsrd.com/papers/ijtsrd142174.pdf



Copyright © 2026 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



KEYWORDS: Generative Artificial Intelligence; Academic Dissertation; Academic Integrity; Usage Boundaries; University Academic Conduct Management.

INTRODUCTION

As large language model technologies continue to evolve, generative AI tools are increasingly being adopted by university students for writing their degree theses; virtually every stage of the writing process-ranging from topic selection and source verification to sentence refinement, computational analysis, and literature formatting-can now be supported by AI. For students, leveraging AI is a convenient approach that saves time spent repeatedly checking formatting or screening references, thereby accelerating the thesis writing process. However, universities currently lack corresponding institutional frameworks to support this trend, and the resulting conflicts are becoming increasingly apparent.

First, most Chinese universities have implemented AI-based text detection systems to conduct rigorous checks on academic integrity; however, the relevant institutional policies generally only vaguely prohibit the use of AI to complete entire academic papers, without establishing specific phased control measures. As a result, students find it difficult to clearly distinguish between the tools they use and AI-generated content; likewise, when instructors encounter mid-term reports or final deliverables and suspect the involvement of AI, they lack definitive criteria for making such judgments, which can easily lead to cognitive conflicts between faculty and students. According to surveys conducted, more than

60% of faculty and students at Chinese universities have utilized generative AI for learning or research purposes; however, only a small number of universities have established feasible institutional arrangements to address this issue, and the development of such policies lags far behind the current state of AI technology.

Second, students' attitudes toward the use of AI are polarized. Some students overuse AI-letting the tool handle everything from topic selection to final draft completion-which can lead to accusations of academic misconduct, resulting in the postponement of their thesis defense or the entry of such cases into their academic integrity records; on the other hand, some students avoid using AI altogether out of fear of complications; the time they spend is largely devoted to trivial tasks-such as formatting documents or correcting punctuation-while their actual scholarly thinking hardly advances, and as a result, their efficiency in writing their theses is significantly reduced.

There has been prior discussion regarding the creative logic underlying degree theses in the humanities and in the sciences and engineering. The basic focus of humanities theses lies in theory, argumentation, and textual form, whereas scientific and engineering theses involve the handling of experimental data, relevant materials, and diagrams; the criteria for assessing originality differ between these two contexts. A one-size-fits-all prohibition cannot directly meet the diverse pedagogical requirements across different disciplines; currently, there are no feasible guidelines in China designed specifically for current students, tailored according to their academic level or field of study.

A systematic review of existing domestic and international research reveals that foreign literature primarily focuses on the ethical considerations surrounding AI-powered writing and related text recognition methods for AI applications; however, it rarely incorporates all stages of university writing processes into governance frameworks. Given the significant differences between Chinese and international education systems and academic evaluation traditions, governance experiences from other countries may not be directly applicable to China's context ^[1]. Currently, most Chinese studies concentrate on optimizing AI technologies or advocate a macro-level approach to resisting AI-generated writing; nonetheless, empirical investigations into the hierarchical analysis of the entire writing process remain insufficient ^{[2][3]}. Addressing the challenges and research gaps identified, this paper employs raw questionnaire and interview data, supplemented by

teaching case studies, to analyze the writing process of academic dissertations. It categorizes the dissertation writing process into six distinct phases, proposes a three-tiered hierarchical management approach, establishes quantitative criteria tailored to specific disciplines, and offers feasible recommendations regarding the relationship among students, instructors, and institutions. This study serves as a practical reference for academic integrity governance through a localized survey methodology.

SURVEY AND DATA ANALYSIS OF THE CURRENT STATE OF AI ADOPTION ACROSS DIFFERENT PHASES OF A DEGREE THESIS

A. Survey Respondent Population Segmentation

This study examines the entire lifecycle of a degree thesis-from drafting to review and management-by analyzing it across three distinct groups: the first group consists of recent undergraduate graduates or full-time master's students (categorized by discipline into humanities or sciences for statistical purposes); the second group comprises thesis supervisors and faculty members teaching courses related to academic integrity; the third group includes staff members from the academic plagiarism detection department and administrative personnel responsible for literature management in the library. The inclusion of information from multiple sources enables a more comprehensive understanding of the real-world context and helps mitigate the biases associated with surveys relying on a single data source. The questionnaire was designed using a strictly anonymous format to avoid imposing any psychological burden on respondents; as a result, the data obtained is considered more reliable. A total of 51 questionnaires were collected.

B. Questionnaire and Interview Core Question Design

The language used in the questionnaires and semi-structured interviews avoids complex academic terminology, making it more aligned with everyday conversational practices on campus. For students, the aim is to investigate how AI is actually used in practice, how frequently it appears, and their own understanding of the appropriate boundaries for using AI; for teachers and administrative staff, the focus is on analyzing the challenges teachers face when evaluating AI-generated text, identifying instances of AI misuse that both teachers and students recognize, and identifying any relevant gaps in the current institutional framework that have not yet been addressed. The complete questionnaires and interview guides will serve as supplementary materials to this research project and will be provided together upon the conclusion of the project.

C. Survey Data Compilation and Current Usage Status Summary

1. Overall Usage Frequency Statistics for AI Tools

Statistical analysis of the 47 valid questionnaires collected reveals that approximately 87% of the surveyed students had at least once used generative AI tools throughout the entire thesis writing process. The primary scenarios in which students employed AI included literature review, sentence refinement, or determining article structure; science and engineering students, in particular, were more frequently using AI for computational tasks or creating diagrams (including experimental charts). The remaining approximately 13% of respondents had never used AI for any purpose; the reason given by all respondents was concern over potential academic issues arising from the misuse of AI. The current survey findings are broadly consistent with conclusions drawn from third-party studies conducted in China: the prevalence of AI usage among students at Chinese universities is generally high, although there are significant individual variations in their awareness of the associated risks.

2. Consensus and Disagreements Among Teachers and Students

Upon summarizing the interview data, it becomes clear that both teachers and students have a clear understanding of the relevant issues: having the entire paper written by another person using AI, using AI to compile references in a fictitious manner, or employing AI to revise experiments that were actually conducted – all three of these practices constitute forms of academic misconduct and should be prohibited.

The disagreement raised in this article primarily concerns the appropriate proportion of AI-generated text in the main body of an academic paper. From a humanities perspective, the share of AI-generated text in each chapter should not exceed 5%; in contrast, faculty members in STEM fields generally agree that an auxiliary use of approximately 10% AI-generated text (i.e., mild citation) does not pose a threat to originality-particularly when students rewrite the content themselves. Applying a single standard to all disciplines may not be appropriate; therefore, it is currently advisable to establish distinct guidelines for different fields or to implement a more flexible approach to regulating the use of such text.

3. Summary of Academic Risk Cases Related to Excessive AI Use

Case Study 1: AI-generated large numbers of fictional references (ghost citations)

The paper in question: Forty Years of Fertility Transition in Hong Kong

Journal: China Population and Development Studies

Retraction; DOI: 10.1007/s42379-025-00201-x.

Event Overview: Based on the doctoral student status as defined by the University of Hong Kong, the author utilized AI tools to generate a large number of references during the thesis writing process without individually verifying each reference from the original sources; among the 61 references cited in the paper, 24 were fabricated references generated by AI that actually lacked any substantive basis. Although the primary data were not falsified, the sheer volume of such invalid citations itself holds no academic value.

Processing outcome: December 15, 2025 – The relevant journal has published a statement announcing the retraction in accordance with established procedures; the corresponding author has voluntarily resigned from their administrative position; the involved doctoral student has been subject to disciplinary action by the university^[15].

Case Study 2: AI-generated scientific error charts submitted directly without verification

The involved paper: Cellular functions of spermatogonial stem cells with regard to JAK/STAT signaling pathway

Event Overview: The graphic tools used in this paper were AI-based; all illustrations for this review article were generated using these tools. However, the anatomical diagrams and signaling pathway diagrams contain relatively clear biological errors; these images were submitted for publication without manual verification.

Processing outcome: Just three days after the paper was published online, the relevant journal issued a retraction notice, stating that the study lacked scientific rigor and should therefore be withdrawn^[16].

Case 3: AI-modified scientific research images were not disclosed, resulting in distorted image logic.

Reports on scientific research practices have repeatedly highlighted instances where researchers have employed AI to alter captured experimental images or their scales and details; however, these cases did not comply with journal guidelines by explicitly disclosing that the AI was merely an image-processing tool – a phenomenon indicative of academic misconduct. Following verification by reviewers that the AI-modified portions of the images were indeed altered, the corresponding articles were retracted. Based on this approach, when original images used in STEM-related writing have been

processed with AI, a full disclosure of such processing should be provided; arbitrary modifications to the original data are not permitted.

Positive institutional reference (public university documents)

On November 28, 2024, Fudan University issued the "Regulations on the Use of Artificial Intelligence Tools in Undergraduate Graduation Theses (Designs) (Trial Implementation)" (an official document issued by the Academic Affairs Office). The regulations stipulate that AI tools may only be used for preliminary literature verification or mechanical processing of document formatting; however, for tasks such as topic conception, main body development, statistical analysis, or drawing of primary conclusions, students shall not rely on AI to complete these tasks. Instead, students must clearly explain their various uses of AI and retain relevant records of the human-machine collaboration for verification purposes.

THE NECESSITY OF DEFINING THE BOUNDARIES OF AI APPLICATION THROUGH THE SIX MAJOR WRITING PHASES OF A DEGREE THESIS

This article examines each stage of the complete dissertation writing process in detail: literature collection and organization; topic selection and outline development; main text composition; language polishing or proofreading; processing of relevant data and charts; and the formatting of abstracts and references. It then compares each of these stages with a specific research case as well as the requirements for undergraduate and graduate education, thereby analyzing the practical logic underlying the AI-related constraints.

A. The Necessity of Managing the Literature Collection and Curation Phase

Generative AI can quickly generate literature review paragraphs and synthesize perspectives from various sources; however, AI systems often suffer from the "hallucination" problem-frequently fabricating non-existent authors, journals, or paper entries. Furthermore, the reviews generated by AI often consist merely of a collection of viewpoints, lacking a coherent, progressive analytical or critical reasoning framework.

If students rely solely on AI to complete a literature review, they skip the training phases involving independent search, reading original sources, and organizing the research framework; as a result, the review lacks students' independent thinking, which contradicts the educational objectives of these training phases. Therefore, it is essential to define clear boundaries for the use of AI.

B. The Necessity of Managing the Thesis Topic Selection and Overall Research Framework Development Phase

AI can generate multiple potential research topics and comprehensive thesis outlines in a single output; however, the output content exhibits pronounced template-based characteristics, making it easy for the selected topics to deviate from students' actual internship or field research experiences, and leading to a high degree of homogeneity in the research frameworks. When students simply copy the topics or outlines generated by AI, their theses lack innovation from the very beginning of the proposal stage, suffer from inadequate practical applicability, and fail to meet the requirements for cultivating professional talent. Therefore, during the topic selection and framework development phases, direct copying of AI-generated content should be strictly prohibited.

C. The Necessity of Controlling the Full-Text Drafting Phase

The main text serves as the core medium for demonstrating the originality of a doctoral thesis, encompassing all the student's research findings-whether derived from theoretical derivations, case studies, or empirical experiments. The direct generation of entire text paragraphs by AI constitutes a form of academic misconduct; however, completely prohibiting AI from providing conceptual guidance would only exacerbate the writing pressure on students with weaker linguistic skills.

If AI-generated full-text content is permitted, students will lose the professional training essential for independent argumentation and logical reasoning; consequently, the objective of assessing a student's research capabilities through their dissertation will be difficult to achieve. Therefore, the thesis writing process should be subject to the most stringent quantitative control standards across the entire workflow.

D. The necessity of implementing adjustments to sentence fluency and managing the grammar proofreading phase

The tools used in AI possess a rapid capability to correct grammatical errors; they can address issues such as awkward phrasing or punctuation mistakes, as well as perform one-click rewriting of entire texts. However, when extensive replacement operations are applied to an entire document, there is a risk that the original thinking patterns and linguistic characteristics of the paper may be lost.

If AI is not restricted to rewriting individual paragraphs, the paper will tend to become overly template-like, undermining the originality of the degree work. Arrangements for proofreading and

editing should specify the scope of content that may be revised each time, prohibiting significant alterations to the original text.

E. The necessity of controlling data processing and chart creation processes

The tools used in AI can perform batch processing to generate experimental data or plot standard sample graphs in a single operation; however, these tools do not verify the accuracy of the original data; instead, they may remove or attenuate anomalous values, thereby making erroneous results appear more visually appealing.

If students rely solely on AI as their primary tool for data processing over an extended period, their ability to conduct analytical and computational verification will be undermined; when individual students use AI to manipulate original data, it demonstrates a lack of respect for scientific facts; therefore, stricter data control measures should be implemented for data used in scientific and engineering papers.

F. Necessity of managing the abstract drafting, keyword selection, and reference formatting phases

AI can quickly standardize reference formatting, generate initial abstract drafts, and provide candidate keywords. However, AI-generated abstracts often deviate from the actual research findings of the paper, and reference entries may contain errors regarding author names, publication year, volume/issue numbers, or page numbers. If students simply copy the content generated by AI without manually verifying each entry, this can undermine the rigor of their paper; when formatting or reference errors are severe, they may directly affect a student's eligibility for thesis defense. Therefore, the formatting support process also requires clearly defined baseline usage boundaries.

HIERARCHICAL DEFINITION OF STANDARD BOUNDARIES FOR AI USE

Current academic discourse on governance largely rejects the simplistic binary classification of generative artificial intelligence into either "complete prohibition" or "unrestricted use," preferring instead to analyze the innovations involved in academic writing and to develop risk management frameworks based on this approach, thereby balancing the relationship between tool efficiency and originality. Li Zhikai and Zhang Xiao have already pointed out that imposing a blanket ban on certain types of writing does little to distinguish between different stages of the writing process, whereas adopting a laissez-faire approach may undermine the role of dissertations in fostering research literacy; therefore, treating such cases according to their level represents a relatively

reasonable response strategy for universities at the current stage ^[7]. Meanwhile, the document titled "Guidelines for Regulating the Use of AI Tools in Graduate Dissertations and Practical Research Outputs," issued by the China Association for Academic Degrees and Graduate Education, also emphasizes the need to distinguish between auxiliary labor and creative work, establish tiered regulations based on the extent of AI involvement, and provide practically verifiable reference points to facilitate both learners and instructors in making informed judgments ^[10]. This paper defines the use of AI into three tiers-(1) permitted assistance, (2) limited use, and (3) strict prohibition-and establishes corresponding standards tailored to the characteristics of various humanities and sciences disciplines, thereby avoiding ambiguity in institutional descriptions.

A. Literature Collection and Organization Procedure

The core objective of literature collection and organization is to develop students' ability to retrieve, evaluate, and synthesize academic literature as well as to map out academic discourse; however, AI can only perform mechanical support tasks such as literature retrieval and screening-it cannot replace the process of reading original sources and conducting independent critical analysis. In his research, Huang Yu argues that literature reviews represent creative work that reflects a researcher's critical thinking skills; therefore, AI should be used solely for preliminary literature screening. Directly reproducing a literature review generated by AI constitutes an academically risky practice. Even when excerpting viewpoints derived from AI-generated summaries, researchers must still verify the original sources and supplement their analysis with independent critical commentary ^[5].

1. Fully permitted for auxiliary use: Utilize AI to search for Chinese and English literature, screen titles and abstracts, and generate a list of potential literature – this function is intended solely as a search tool.
2. Limited and discretionary use: Use AI to extract the core viewpoints from the literature; the extracted text shall not exceed 20% of the total word count of the literature review; students must verify each excerpt against the original source material, and upon completion of the extraction, they must include an independent commentary of at least the same length.
3. Strictly prohibited: relying on AI to generate complete literature review paragraphs, fabricating false foreign-language literature entries, or directly copying AI-generated viewpoints without adding any personal interpretation or analysis.

B. Guidelines for the Topic Selection and Outline Development Phase

The reflection on research topics and the research framework serves as the foundation for determining the overall direction and logical structure of a thesis; it is a key indicator of whether a student possesses a problem-oriented mindset and is capable of conducting rigorous research. Liang Zheng argues that research topics and the overall framework constitute critically important intellectual components of a doctoral dissertation; however, the examples provided by AI regarding topic selection and framework design are often template-based or unrealistic in nature. Students should treat AI's fragmented approaches as mere prompts rather than blindly replicating the complete methodologies outlined by AI. The Fudan University regulations concerning undergraduate dissertations related to AI explicitly state that research topics or frameworks should not be developed solely by AI; although the underlying inspiration may originate from AI, these elements must still be substantially modified and restructured in accordance with empirical research findings and the guidance of the supervisor^[11].

1. Fully supported auxiliary use: Please specify the research topic you are interested in, and the AI will generate up to 10 potential topics or brief writing prompts.
2. Limited and discretionary use: Building upon the output framework provided by the AI as the foundational approach, students shall independently handle at least 60% of the items pertaining to structure and research; the final selected topic shall be jointly refined by the student and their supervisor.
3. Strictly prohibited: All topics listed in the AI guidelines must be used as-is; no modifications should be made to the AI writing approach.

C. Core Writing Control Standards (Originality Threshold for Academic Papers)

The reflections (questions, examples, evidence, and conclusions) contained within the main body of a dissertation represent a fundamental demonstration of research competence and constitute a key component of the degree requirements. Li Zhikai and Zhang Xiao once stated that the intellectual work in the main body should be completed by the student themselves; AI may only serve to provide fragmented prompts on thought processes and should not be used to replace the complete reasoning or argumentation process for the research topic^[7].

Currently, universities such as Tianjin University of Science and Technology and Fuzhou University have incorporated AIGC detection into their undergraduate

thesis review procedures. These institutions have established early-warning indicators for the proportion of AI-generated text within academic works; however, they explicitly clarify that such detection rates merely serve as potential risk signals and do not equate to academic misconduct itself-these findings should be considered alongside the supervisors' follow-up reviews for a comprehensive assessment. Both international academic systems and the internal regulations of several Chinese "Double First-Class" universities emphasize that papers in the humanities and social sciences should adhere to original argumentation as their fundamental principle; in contrast, papers in the sciences and engineering may allow for certain simplifications in methodology or procedure, but the core insights, empirical analyses, and research findings must stem from the author's own independent thinking. This principle is a widely recognized norm within the academic community, rather than merely a quantitative requirement.

Threshold source note: The 10% threshold mentioned in this chapter, the 8% threshold for the entire study, or the 5% threshold for the humanities disciplines are not official measurements conducted by the Ministry of Education, nor do they represent a nationally unified standard. Rather, these thresholds are reference values provided by this study-derived from a comprehensive analysis of internal control data from multiple domestic universities, AI-based threshold values for academic theses across various disciplines at French higher education institutions, and literature on AI-based graduate research in China (suitable for self-assessment or internal use)-and should not be automatically applied in cases involving penalties for academic misconduct. Turnitin itself clarifies that the AI-detected percentage mentioned here is merely a indicative indicator and does not constitute definitive evidence of academic dishonesty^[13].

The principle governing the application of artificial intelligence is as follows: the relevant academic paper should primarily consist of the student's own topic, arguments, factual analysis, and conclusions; AI-generated prompts should serve as fragmented ideas and must not be used to replace complete reasoning or thought processes.

1. Fully permitted for auxiliary use

When writing is not smooth or when students have difficulty grasping the relevant concepts-yet they already know how to construct an argument but lack ready-made analytical perspectives or terminology explanations-it is advisable to use AI as a support.

Treat AI solely as a fragmented source of information (e.g., terms or research approaches), without expecting students to directly extract complete sentences or

paragraphs from the text. When students encounter difficulties in constructing their arguments, AI can be used to identify common analytical methods within the subject area as a thought-provoking guide; however, all written content must be completed by the students themselves.

2. Use with discretion and as appropriate
applicable scene : The student already has a complete argumentative framework in place, but lacks effective language organization; in such cases, a few sample fragments can serve as rewriting prompts.

The approach should be based solely on the fragmented materials provided by AI. By considering current institutional policies across various universities and existing academic research, this paper offers the following recommendations: when rewriting individual chapters, the proportion of AI-derived reference material should not exceed 10%; for the entire paper, the overall share of AI-generated rewritten content should ideally be kept below 8%; for humanities papers, this proportion may be set at no more than 5%; all idiomatic expressions or phrases sourced from AI should be fully paraphrased or rewritten by the student, rather than simply copied verbatim from the AI-generated text.

Policy Source: Hefei University of Technology and Pingdingshan University have established regulations regarding the AI tools used in doctoral and master's theses: prompt texts and the original output text must be preserved-either as attachments to the thesis or by submitting an AI usage manual for verification; all relevant steps must be traceable, facilitating verification by supervisors and reviewers^[12].

3. Strictly prohibited

It is not permitted to use AI to construct complete paragraphs, entire chapters, or the entirety of a paper; nor is it permitted to use the theories, examples, or experimental materials provided by AI as the central content of the paper's main body.

Publicly available risk case studies: Public notices issued by Chinese universities regarding random inspections of doctoral dissertations have highlighted that some graduate students have simply copied entire argumentative passages provided by AI into their main text without making any modifications or disclosing the use of AI; such cases are classified as high-risk under AIGC detection criteria and should be regarded as AI-generated work, necessitating the postponement of their thesis defense; in certain instances, where a dissertation that had already been awarded a degree was later verified to contain its core content generated by AI, the degree was revoked, and

the individuals involved were added to the Research Integrity Discrepancy Database^[17].

D. Text Refinement and Proofreading Process Usage Guidelines

Text refinement and proofreading aim to correct linguistic imperfections without altering the original argumentative logic or core viewpoints of a paper. Scholars such as Zhang Weiping have argued that AI-driven text rewriting should be limited to localized corrections of grammatical errors, punctuation, or sentence fluency; large-scale semantic restructuring, however, can undermine the author's personal research expression and blur the boundaries of academic originality^[9].

1. Fully permitted for auxiliary use

Ideal for identifying and correcting localized linguistic errors after completing the initial draft. Utilizes AI to correct grammatical and punctuation errors, as well as to refine poorly constructed sentences, while preserving the original argumentative logic and core viewpoints throughout the entire process – without altering the research meaning.

2. Use with discretion and as appropriate

This tool is suitable for situations where academic sentences lack rigorous precision and require slight wording adjustments. The AI's "polishing" service limits the amount of modification applied to each paragraph to 30% of the original word count; it is intended solely to refine the language, without altering the key points or the reasoning process within the paragraph. After using this polishing service, students should read the entire paragraph again to avoid any loss of meaning, misinterpretation of concepts, or confusion of facts resulting from AI-generated rewriting.

The so-called "real-world risk scenario" (as explained in the Turnitin official reporting document) refers to situations where students submit their entire original draft to an AI system for "academic rewriting" – during which the AI replaces all sentences or sometimes alters the research conclusions – resulting in viewpoints in the paper that do not align with the authors' actual intent; if a student performs extensive rewriting without presenting new insights (without citing sources), this also constitutes a high-risk case under AIGC and will be subject to an academic integrity review by the university^[13]. Source: Turnitin official AI detection documentation.

3. Strictly prohibited

It is prohibited to delegate to AI the task of rewriting entire paragraphs or sections as a whole; it is also prohibited for AI to replace all the original

argumentative logic or alter the original research conclusions.

E. Data Processing and Chart Creation Procedure Guidelines

Empirical papers in STEM and economics/management fields frequently utilize AI for computational and graphical tasks. Li Zhengfeng and Wang Huanyu caution that large language models do not possess the ability to verify the authenticity of raw experimental data, and there is an inherent risk that these models may automatically mitigate experimental errors or artificially enhance data results; therefore, all data computations and chart generation performed with the involvement of AI must be manually reviewed by researchers against the original data. It is not recommended to directly upload the entire unanonymized raw experimental dataset to AI tools for processing^[8].

1. Fully permitted for auxiliary use

Suitable for repetitive basic arithmetic operations and the generation of standardized chart templates. AI is utilized to perform simple basic mathematical calculations, generating blank chart templates and drawing code; the raw data and experimental records are to be managed and entered by the students themselves.

2. Use with discretion and as appropriate

This approach is suitable for scenarios where students already possess a complete original dataset and wish to simplify their computational tasks or chart formatting. After the AI has completed the basic calculations, students must manually verify all calculation results by cross-referencing them against their original experimental records; they may refer to the AI-generated chart framework template, but all chart annotations, trend interpretations, and result analysis text must be written independently by the students; the direct use of AI-generated interpretation conclusions is prohibited.

An authoritative, publicly accessible retraction case: In February 2024, researchers at Xi 'an Honghui Hospital submitted a paper to a review article published in *Frontiers in Cell and Developmental Biology*. The three primary research illustrations included in this paper were generated using AI-based drawing tools; the authors submitted the manuscript without conducting any manual verification of their scientific validity or professional accuracy^[6]. Shortly after the paper was published online, it was retracted by the journal within just three days. The retraction statement clearly stated that the AI-generated illustrations contained numerous elementary errors—such as inconsistencies with fundamental biological and anatomical facts (e.g., incomplete rat anatomical

diagrams, cluttered information in cell communication illustrations, and illegible professional terminology symbols)—and thus failed to meet the rigorous standards expected of academic figures^[4]. Such a high-profile case sufficiently demonstrates that figures created with AI tools inherently lack logical coherence based on scientific knowledge and are incapable of automatically determining the accuracy of research content. If university students use outputs generated by AI (e.g., data or models) as figures in their academic papers while foregoing manual verification, this approach itself contains fundamental flaws; such submissions are likely to be rejected during thesis defenses due to non-compliance with academic standards, and the researchers' scientific integrity may be questioned.

3. Strictly prohibited

The use of AI to modify or alter original experimental data, or to artificially smooth out experimental errors in order to enhance the results, is prohibited; it is also prohibited to delegate all data analysis and result interpretation tasks to AI for independent completion.

F. Guidelines for the Adjustment of Abstract and References Formatting Process

The abstract, keywords, and references constitute the concluding sections of a research paper. The abstract succinctly captures the paper's innovative contributions and main conclusions, while the references reflect the comprehensiveness of the literature review; neither should be entirely generated by AI. Huang Yu points out that AI-generated content can easily produce fabricated references, and AI-generated abstracts often deviate from the actual research findings of the paper, leading to misalignment of conclusions—hence the need for manual verification of each entry^[5].

Use case: After the full text of the paper has been finalized, use this tool to standardize formatting, correct punctuation, or draft an initial abstract; Not suitable for: directly generating the final abstract or batch generating reference entries.

1. Fully permitted for auxiliary use

Ideal for finalizing documents and applying standardized formatting. Utilizes AI to uniformly format references, correct punctuation, and generate multiple sets of alternative keywords.

2. Use with discretion and as appropriate

This resource is designed for students who need writing prompts for drafting an abstract after completing their full-length thesis. The abstracts provided by AI serve only as initial draft material; students are required to rewrite the relevant content themselves (at least 70% of the content) and must not

overlook any statements regarding conclusions in the original thesis. Students should verify the author, year, volume, page number, and DOI for each reference, and correct any inaccurate entries or formatting errors identified by AI.

A publicly available traceable risk case study: Taking a PhD student at the University of Hong Kong as an example, the AI system used generated a batch of reference entries; as a result, 24 AI-generated "ghost" publications were identified, and the paper was ultimately rejected by the journal. This risk should also be taken seriously by doctoral candidates when preparing their dissertations.

3. Strictly prohibited

It is prohibited to directly copy AI-generated abstracts without any modification; it is also prohibited to rely on AI for batch generation of references without verification, or to accept AI-generated literature entries.

IMPLEMENTATION PLAN FOR THE DEPLOYMENT OF THREE CATEGORIES OF ENTITIES

A. Practical Thesis Writing Guidelines for Graduates

As the primary responsible party for their dissertation, students bear ultimate academic responsibility for the entire content of their thesis. The "Guidelines for Standardizing the Use of Artificial Intelligence Tools in Graduate Dissertations and Practical Achievements," issued by the China Association for Academic Degrees and Graduate Education, explicitly states that the graduate student applicant is the primary responsible party for the use of AI tools, and that the core arguments and innovative contributions must be independently developed by the applicant^[10]. Several Chinese universities, including Fudan University and Pingdingshan University, have implemented an AI Tool Usage Commitment Letter system, requiring students to proactively disclose the scenarios in which they use AI tools and to retain interaction records for future reference; this system covers all usage scenarios throughout the entire research process-ranging from the proposal submission stage to the final defense^{[11][12]}.

First, the preparation of the research proposal and the main body of the paper should be approached in a sequential manner: begin with independent thinking, then utilize tools as a supportive aid. Only when you have a solid grasp of the research question, the writing structure is roughly in place, and the initial draft is largely complete should you employ AI for auxiliary tasks; the formulation of the research proposal or the development of core arguments should be completed through independent effort; neither the selection of the

research topic nor the primary arguments and empirical analysis should be generated by AI.

Second, every step involving the use of AI-for instance, for retrieval, text refinement, computational processing, or graphic creation-shall be documented. The traces of AI usage must be fully preserved, and the actual use of AI should be explicitly stated. Upon finalization of the paper, the AI-related interactions should be summarized, clearly outlining the tools employed, the corresponding operations performed, and the initial results; these relevant entries should be included in an appendix or presented as a separate AI declaration, enabling the supervisor and the defense committee to verify such information.

Third, it is essential to clearly distinguish between auxiliary tasks and original research. AI is solely responsible for performing mechanical tasks-such as literature review, formatting, grammar correction, and performing basic computations; however, critical thinking, argumentation, case studies, experimental descriptions, and conclusions must be developed independently. Any opinion or cited materials and literature provided by AI must be verified individually for their source; the results generated by AI should not be treated as definitive answers.

Risk Warning: Some students may mistakenly believe that the statement "AI is only used for grammar checking and does not require citation" is correct. According to the regulations issued by Fudan University, any use of AI in a thesis-regardless of its extent-must be clearly explained and disclosed^[11].

B. Review and Control Methods for Thesis Supervisors

The supervisor should provide appropriate guidance throughout the research process and conduct necessary reviews of the research outcomes; rather than postponing the verification process until the final draft is completed, the supervisor should integrate compliance management into all stages – from the proposal submission phase through the mid-term review phase and the initial draft phase – using AI as a benchmark, thereby preventing any issues from accumulating until the final submission stage.

First, the review should focus on the originality of the paper's core content. The examination should concentrate on the argumentation in the main text, experimental facts, and research findings; particular attention should be paid to paragraphs that exhibit overly mechanical writing, rigid formatting, poor logical coherence, or incorrect references; and it is essential to clearly distinguish between content written by the student themselves and material generated by AI. This process should be conducted across three

distinct phases: the interim review, the initial draft review, and the pre-submission review. If there is suspicion that certain content is the product of AI, Supervisors may raise questions regarding this section during the defence to verify students' genuine understanding of primary sources and raw data. Turnitin itself emphasizes that the AI detection tool is merely a suggestive tool; instructors should make their judgments based on the context of the defense and the origin of the draft, rather than relying solely on the percentage score to determine academic misconduct [13].

Second, provide clear guidelines on the use of AI for the sections pertaining to project proposal guidance and regular group meetings. From the outset of the project proposal phase, clearly explain how AI should be utilized within the relevant discipline; detail the acceptable procedures and the practices that should be avoided; and ensure that all materials and data related to AI are subject to proper management, thereby minimizing any significant changes required in the final draft as a result of these considerations.

Third, focus on training in scientific research skills when addressing students who overuse AI in their writing. When encountering students whose papers contain excessive AI usage and who fail to clearly articulate their own arguments, it is not sufficient to simply instruct them on how to rewrite their text; instead, encourage them to engage in more extensive literature analysis and to attempt writing independent paragraphs, thereby solidifying their foundational skills in scientific writing.

C. Recommendations for improving institutional frameworks targeting university functional management departments

The competent administrative authorities of universities shall address the existing dilemmas arising from the current institutional practice of adopting a one-size-fits-all approach and lacking detailed rules for separate procedures. The concept of hierarchical management should be incorporated into the administration of degree papers to ensure the implement ability of relevant regulations.

First, the writing of internal university dissertations should be subject to systematic control based on different stages and categories. For the three academic disciplines-humanities, sciences, and engineering-clear guidelines should be established regarding whether assistance during each writing stage is permitted or prohibited; this would standardize the criteria for identifying academic misconduct within the university, moving beyond the simplistic prohibition of "full-text AI-assisted writing" [11].

Second, the detection of AIGC should be incorporated into the supporting working mechanism for improvement. Text recognition capabilities powered by AI should be refined to clearly distinguish appropriate rewriting from fully AI-generated content; the detection reports generated by AIGC serve only as preliminary indicators and do not constitute final determinations; therefore, they should be supplemented by manual review conducted by supervisors, and appropriate handling measures should be established based on the severity of the violation. A relevant survey conducted by Guangming Online has demonstrated that misclassification incidents involving various AIGC tools are a possible phenomenon; the original content may not necessarily be free from high AI-generated elements, and detection mechanisms should not be used merely to substantiate or replace disciplinary actions [14].

Third, regular and widespread awareness campaigns on academic integrity should be conducted. Lectures should be organized before and after graduation, using real-world cases-such as the HKU reference citation retraction incident and instances of alleged AI misuse (e.g., chart errors)-as cautionary examples; the proper use of AI should be incorporated into the curriculum; and measures should be taken to prevent academic misconduct resulting from a lack of knowledge..

RESEARCH SUMMARY AND FUTURE DIRECTIONS

A. Core Research Findings

First, most universities in China have not yet integrated various writing-related processes or quantitative metrics into the scope of AI-driven management systems; as a result, the relevant parties-teachers, students, and institutions-lack a shared set of evaluation criteria. This situation can easily lead to an extreme polarization, either toward the overuse of AI or its outright rejection, thereby increasing the likelihood of academic misconduct.

Second, the six major steps of thesis writing should each be subject to specific constraints depending on the context of AI usage; relatively stringent standards should be applied to the main text and the relevant experimental data; however, for auxiliary tasks such as literature review or formatting arrangements, these constraints may be appropriately relaxed.

Third, the three-tiered management framework described as "full allowance for auxiliary materials – limited and moderate use – strict prohibition" is a relatively appropriate arrangement for domestic bachelor's and master's degree dissertations; by establishing flexible proportionality criteria tailored separately for humanities and sciences disciplines, this

approach can effectively leverage both the efficiency and originality of AI.

Fourth, to effectively implement tiered management and control systems, collaboration among students, teachers, and university administrative authorities is essential; the proposed implementation approach provides a viable suggestion for universities to establish long-term academic integrity management frameworks.

B. Future Extensible Research Directions

First, the scope of the surveyed institutions should be expanded to include comprehensive universities as well as those specializing in science and engineering or humanities and education; faculty and student data should be processed according to the specific circumstances of each institution; and variable threshold settings should be established for the text used in relevant AI processes, thereby making the standards more universally applicable.

Second, conduct ongoing investigations into the so-called AI-related products and AI text recognition technologies, and adjust regulatory indicators in line with technological evolution to ensure the regulatory framework remains up-to-date.

Third, after providing a comprehensive discussion of matters pertaining to hierarchical management and control, the research findings should be applied to the analysis of university administration in China, using actual data to support the standardized design of relevant academic theses.

REFERENCES

- [1] Smith J. [1] Smith J. Ethical Boundaries of Generative AI in Graduate Writing [J]. Journal of College Academic Integrity, 2024,18 (2): 36-51.
- [2] Wang Ming. A Study on Existing Issues in the Regulation of AI Use in the Writing of Academic Dissertations at Domestic Higher Education Institutions [J]. China Higher Education Research, 2025(7): 68–75.
- [3] Li Hua. A survey on the current usage of generative AI in the writing process of undergraduate graduation theses [J]. Higher Education Exploration, 2025, 11(3): 14–21.
- [4] Guo X, Dong L, Hao D. RETRACTED: Cellular functions of spermatogonial stem cells in relation to JAK/STAT signaling pathway [J]. Frontiers in Cell and Developmental Biology, 2024, 11:1339390. DOI:10.3389/fcell.2023.1339390.
- [5] Huang Yu. A Study on the Academic Ethical Boundaries of Generative AI-Taking Academic Writing Norms as an Example [J]. Higher Science Education, 2025(5):112–118.
- [6] Sun Tao. Article retracted just 3 days after publication: The incident involving an AI-generated erroneous scientific illustration by a domestic author [EB/OL]. (2024–02–21) [2026–08–19]. <https://news.sciencenet.cn/htmlnews/2024/2/517757.shtm>.
- [7] Li Zhikai, Zhang Xiao. Ethical Risks and Governance Approaches in Applying Generative Artificial Intelligence to Degree Thesis Writing [J]. Degree and Graduate Education, 2024(5):45–51.
- [8] Li Zhengfeng, Wang Huanyu. The Conflict and Coordination Between Generative AI and Academic Ethics-From a Perspective of Science and Technology Ethics [J]. Science Studies, 2023, 41(12): 2173–2181.
- [9] Zhang Weiping, Liu Li. A Study on Disclosure Guidelines for the Use of Generative AI in Academic Papers [J]. China Journal of Scientific and Technical Periodicals, 2024, 35(2): 189–196.
- [10] China Academic Degrees and Graduate Education Society – Digital and Intelligent Education Management Working Committee. Guidelines for the Standardized Use of Artificial Intelligence Tools in Graduate Degree Dissertations and Practical Research Outcomes [EB/OL]. (2026–05–14) [2026–08–19]. <http://www.chisa.edu.cn>.
- [11] Academic Affairs Office, Fudan University. Regulations on the Use of Artificial Intelligence Tools in Undergraduate Graduation Theses (Design Projects) (Trial Implementation) [EB/OL]. (20241128) [20260820]. <https://m.jiemian.com/article/12050471.html>.
- [12] Graduate School of Pingdingshan University. Notice of Pingdingshan University on the Standardized Use of Artificial Intelligence Tools in Graduate Theses (Practical Achievements) [EB/OL]. (2026–06–09) [2026–08–19]. <https://yjsc.pdsu.edu.cn/info/1096/1639.htm>.
- [13] Turnitin. AI Writing Detection Capabilities [EB/OL]. [2026-08-19]. <https://www.turnitin.ca/products/features/ai-writing-detection/>.

- [14] Hao Mengjia, Xiong Xu. Are some university students using AI to write academic papers? Multiple universities issue policy documents [EB/OL]. People's Daily Online, (2024-05-13) [2026-08-19]. <http://edu.people.com.cn/n1/2024/0513/c1006-40235048.html>.
- [15] Xia Hua Xiang. A doctoral dissertation at The University of Hong Kong cites AI-generated fabricated literature – an incident [EB/OL]. ScienceNet.cn Blog. (2026-03-05) [2026-08-19]. <https://blog.sciencenet.cn/blog-530435-1524502.html>.
- [16] Frontiers Editorial Office, Retraction: Cellular functions of spermatogonial stem cells in relation to JAK/STAT signaling pathway, 16 February 2024, <https://doi.org/10.3389/fcell.2024.1386861>, 2026-08-19 access.
- [17] Ministry of Science and Technology and 21 other departments. Rules for the Investigation and Handling of Academic Misconduct in Scientific Research [EB/OL]. (2022-09-14) [2026-08-19]. https://www.gov.cn/zhengce/zhengceku/2022-09/14/content_5709819.htm.

