

# Research on Digital Ethical Dilemmas of Applied University Students in Beijing from the Perspective of AIGC-Empowered Education

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## Abstract

The rapid development of Generative Artificial Intelligence (AIGC) has led to its widespread application in the field of education. While students in applied universities enjoy the technological convenience, it has also triggered a series of digital ethical challenges, including blurred boundaries of academic integrity, difficulty in distinguishing information quality, increased technological dependence, and leakage of private data. Currently, due to the imperfect construction of relevant laws, regulations, and institutional systems in both China and higher education institutions, students' understanding of digital ethics remains unclear, forming a dilemma of "technology application first, ethical norms lagging behind." This study focuses on students from applied universities in Beijing as the research subjects. Employing research methods such as web crawling, questionnaire surveys, and in-depth interviews, it collects primary data from applied universities in Beijing to deeply analyze the ethical issues students encounter while using AIGC tools and their underlying causes. The research identifies four major dilemmas faced by students in AIGC applications: unclear cognition, degradation of core competencies, lack of institutional norms, and insufficient educational guidance. In response to these issues, this paper proposes optimizing pathways including constructing a multi-level digital ethics education system, building a thinking cultivation system to prevent technological dependence, improving layered and categorized management systems, and strengthening the systematic development of teaching staff. It aims to provide theoretical reference and practical insights for applied universities to cultivate talents possessing both high professional competence and high digital literacy.

**Keywords:** Digital Ethics; Generative Artificial Intelligence; Applied Universities; AIGC

## 1. Introduction

The rapid development of the digital economy has made generative artificial intelligence, which creates new content such as text, images, videos, and code based on user input, a key variable in driving efficiency transformation and innovation. The "Generative Artificial Intelligence Application Development Report (2025)" shows that as of June 2025, the number of users of generative AI products in China reached 515 million, with a penetration rate of 36.5%, with young and middle-aged, highly educated users forming the core group. The "New Generation Artificial Intelligence Development Plan" explicitly states the need to seize the major strategic opportunities in AI development and build a first-mover advantage for China's AI development. However, problems behind the technological dividends are gradually emerging. Some students, lacking clear ethical boundaries, directly appropriate AI-generated content, cite data without verification, and even risk leaking private information. Although China has introduced regulations such as the "Interim Measures for the Management of Generative Artificial Intelligence Services," the laws and regulations concerning university students' use of artificial intelligence are relatively lagging. Particularly, digital ethics education for students in applied universities is virtually non-existent, creating a dilemma of "technology application first, ethical norms lagging behind." Students' understanding of digital ethics remains unclear, and relevant institutional guidance is also weak. Therefore, exploring the cognitive, behavioral, and institutional causes of digital ethics among students in Beijing applied universities from the perspective of AIGC-empowered education, and proposing targeted optimization paths, holds significant theoretical value and practical urgency.

## 2. Overview of Digital Ethics

### 2.1. Definition of the Concept of Digital Ethics

Digital ethics refer to the value concepts and behavioral norms that individuals and institutions should follow in the development, dissemination, and application of digital technologies and products (Wang & Li, 2023). Drawing on existing literature, the concept is commonly understood to encompass several dimensions: data privacy and security, concerning the protection of personal information; algorithmic fairness and bias, addressing whether technological decisions are just and neutral; responsibility and transparency, emphasizing traceability and accountability; and human autonomy and dignity, ensuring that technology serves human development rather than replacing human thought. Collectively, these dimensions underscore the need to consider ethical issues throughout the entire lifecycle of digital technology.

In terms of its connotation system, digital ethics is a composite concept that integrates key domain issues such as algorithm ethics, data ethics, and artificial intelligence ethics (Zhao & Li, 2026). The internal aspect of ethics guides people to pursue benevolent ideas and spiritual forces, shaping people's values and moral outlook, and driving them to make choices that align with standards of goodness (Yang & Xu, 2026). However, when facing certain challenges currently, the integrity values of contemporary college students present a contradiction between high recognition and low practice levels (Jia, 2025), leading to a dilemma where knowledge and action

are inconsistent. In many situations, AIGC is often regarded by learners as a mere auxiliary tool attached to traditional education and teaching, thus falling into the trap of machine logic, subtly causing learners to develop habitual dependence (Zhang, 2026). To address these challenges, for instance in the art field, when facing AIGC technology, students should avoid over-reliance on inherent professional knowledge and learning content like traditional design tools, discard inertial and habitual thinking, actively understand and learn new technologies, and consciously enhance their autonomous learning ability and continuous learning ability (Jing, 2025). Meanwhile, AI literacy education needs to transcend the technical level, delving into the shaping of values and ethical concepts, and guiding social participation (Cai et al., 2024). This can promote university students' understanding of ethical and moral responsibilities and norms, guide them to make correct data practice decisions based on data ethics, and help prevent and correct data misconduct (Zhang, 2024). This also illustrates that talent cultivation and quality enhancement, as two inseparable dimensions, complement and promote each other, jointly driving the continuous development and progress of education (Wen, 2025). Such contextualized ethical conflict exercises aim to guide students to actively confront the social responsibilities behind technology, thereby elevating their ethical cognition from passive norm adherence to proactive responsibility consciousness.

This indicates that digital ethics are not only external normative constraints in the technological era but also a manifestation of values internalized in people's hearts. It requires us, against the backdrop of rapid digital technology development, to guide individuals, especially the younger generation, to overcome the disconnect between knowledge and action and habitual dependence through the deep integration of education and practice, transforming ethical concepts into conscious action guidelines. Only then can we ensure that digital technology truly serves the comprehensive development of humanity and promotes society's steady progress on the track towards goodness.

## **2.2. Distinction of Concepts Related to Digital Ethics**

Many concepts are related to digital ethics, including technology ethics, algorithm ethics, data ethics, digital technology ethics, and digital society ethics, which have been extensively discussed in academia. However, in the development process of digital technology, a series of social and technical ethical issues have arisen, all falling under the concept of "digital ethics." Therefore, distinctions are made among related concepts (Figure 1).

(1) Digital Ethics and Technology Ethics. Technology ethics are the value concepts and behavioral norms to be followed in scientific and technological activities, covering numerous technological fields such as life sciences, medicine, and artificial intelligence. Digital ethics are a specific extension of technology ethics in the digital age, primarily applied in daily details such as product design, interactive interfaces, user agreements, and algorithmic recommendations.

(2) Digital Ethics and Data Ethics. Data ethics also fall within the scope of technology ethics, mainly studying the social issues and behavioral norms triggered by big data technology, involving topics like personal privacy, data rights, and algorithmic discrimination. Simultaneously, the ethical value of big data technology originates from the purpose and motivation of its users.

(3) Digital Ethics and Digital Technology Ethics, Digital Society Ethics. Digital technology ethics focuses on examining ethical issues from the perspective of technology research, development, and engineering implementation, emphasizing the embedding of ethical principles into the technological architecture. Digital society ethics focuses on examining the ethical consequences of digitalization from the perspective of social structure and institutional change.

(4) Digital Ethics and Digital Literacy. Digital literacy is a core term in the field of information management, referring to an individual's comprehensive ability to efficiently discover, access, evaluate, integrate, and communicate information using technology in a digital environment, encompassing dimensions such as digital tool operation, data thinking construction, and digital ethical cognition. As a key competency for adapting to a digital society, its connotation emphasizes the integration of technological application, critical thinking, and social collaboration.

In summary, digital ethics is not merely the sum of the above branches of technology ethics; rather, it treats ethical issues across the entire process—from technology development to application—as an integrated whole. In the context of AIGC-empowered education, students at applied universities in Beijing frequently use AIGC to complete course papers, coding assignments, design projects, and even graduation work, encountering various ethical challenges. A pressing question thus emerges: how can they use digital technology appropriately, clearly defining the boundaries of AI?

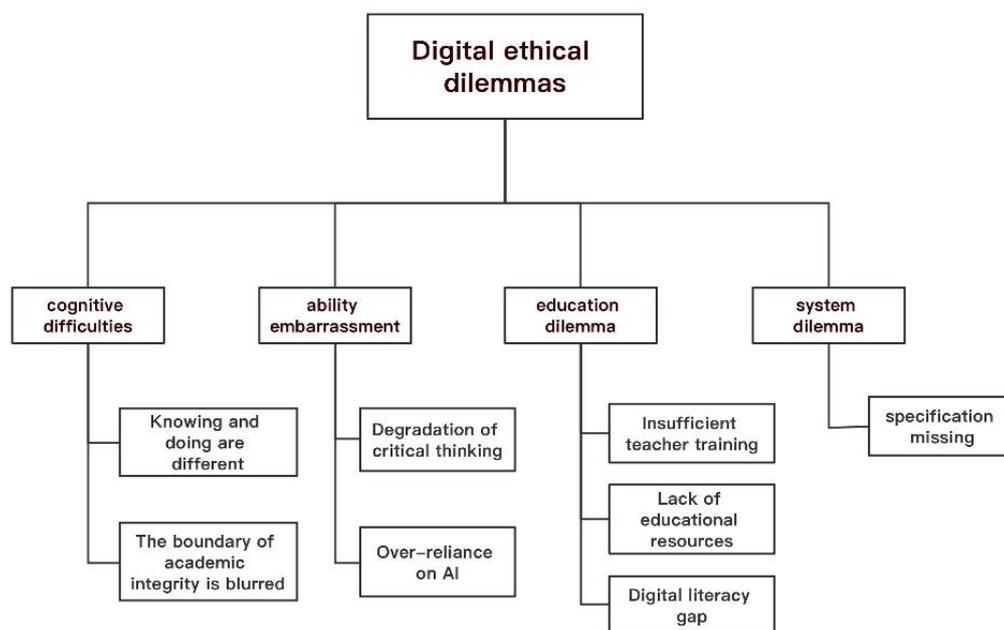


Figure 1. Frame diagram of digital ethical dilemma

### 3. Current Status of AIGC Application among Students in Beijing Applied Universities

As a unique type of higher education institution, applied universities originated in Europe, with the English name “Universities of Applied Sciences.” According to the definition in the Langenscheidt German-Chinese Dictionary, the core characteristic distinguishing this type of university from traditional comprehensive universities is its emphasis on students' practical

training, committed to cultivating high-level, high-quality applied talents oriented towards the workplace. Specifically, these are talents with strong practical and innovative abilities, capable of engaging in production, management, service, and construction, possessing a certain theoretical foundation, research capabilities, and technical skills (He & Qian, 2020). Therefore, in terms of educational characteristics, programs are closely linked with industry needs, curriculum design combines theory and practice, integrating industry standards, job skills, and professional ethics into the entire teaching process, aiming to equip students with comprehensive qualities for specific positions upon graduation.

It is precisely because of this workplace-oriented training model that applied university students, when encountering the new technological wave represented by AIGC, exhibit some distinct characteristics in their application scenarios. They are not only learners of AIGC tools but may also become its frontline developers and industry practitioners. In daily learning scenarios, they use AIGC to assist in completing tasks such as project design, code writing, and copywriting, significantly improving learning efficiency and output. In internships and practical work, they may also directly participate in specific tasks such as the development of AIGC-based educational products, user data analysis, and operations. While widespread application can enhance professional competence, it also brings digital ethics dilemmas from relatively abstract academic integrity issues to very specific and urgent workplace scenario choices. For example, how to ensure information accuracy and clear copyright while using AIGC to improve content production efficiency? How to balance technical efficiency and personal privacy protection when operating user data? How to avoid bias and discrimination in the application of algorithmic models? These dilemmas not only concern personal professional integrity but also directly touch the compliance bottom line of technology socialization. Therefore, the ethical cognition and practical level of applied university students will profoundly affect the health and safety of future technology application in education and related industries. In-depth research on their application status and ethical dilemmas in the context of AIGC-empowered education has irreplaceable practical value for building an operable technology ethics education system.

#### **4. Empirical Analysis of Digital Ethics among Beijing Applied University Students from the Perspective of AIGC-Empowered Education**

In order to further understand the current situation of digital ethics of applied college students in Beijing from the perspective of AIGC empowerment education, three research methods of big data crawler analysis, questionnaire survey and in-depth interview are adopted to carry out systematic data collection and current situation analysis.

In terms of web crawlers, the study selected the official websites of eleven application-oriented universities in Beijing (including North China University of Technology, Beijing Institute of Petrochemical Technology, Beijing City University, etc.) as data sources, and the scope of crawling covers the news, notices, academic trends, teaching resources and other public content published on the official websites of each school. Content capture and frequency statistics are carried out around eight core keywords such as digital ethics, artificial intelligence ethics, AIGC,

big data and information technology social responsibility. After data collection, deduplication, denoising and manual review are performed to ensure the accuracy of keyword matching and the reliability of analysis results.

In the questionnaire survey part, the research object is the students in the application-oriented universities in Beijing. Sampling was conducted by random sampling method according to the type of school, and finally 500 valid questionnaires were collected. The questionnaire design is based on the literature and previous interview results, covering multiple dimensions such as basic information, AIGC usage habits, ethical cognition, dilemma experience and educational needs. It shows the behavior pattern and cognitive level of the application-oriented college students in Beijing through quantitative methods.

In terms of in-depth interviews, the study selected a total of 6 front-line teachers and school leaders from different universities as interviewees, covering the background of science and engineering, humanities, art and other disciplines, to ensure that the interviewees have relevant experience in AIGC teaching application and digital ethics management. The interview was conducted in a semi-structured form, focusing on the application status of AIGC in teaching, student behavior recognition, institutional dilemma and educational support. Each interview lasted about 15 minutes, and was recorded and transcribed verbatim with the consent of the interviewee. The interview data were coded and summarized by thematic analysis to improve the reliability of the analysis.

#### **4.1. Web Crawling Analysis**

This study derives around the core keywords, selects eight keywords, and conducts keyword capture and frequency statistics on the official websites of eleven Beijing application-oriented universities, covering the news, notices, academic trends, teaching resources and other public content published on the official websites of each university, so as to ensure the pertinence of data sources and the reliability of the analysis process. The above figure is a 3D surface map drawn by programming software through the crawler results (Figure 2). The research heat of each university on the topics related to technical ethics shows a clear pattern of differentiation. Among them, 'information technology social responsibility' is the most concerned topic at present, especially in Beijing Institute of Materials Science and Technology, showing a very high peak and a far-reaching heat, showing the school's key layout in this direction. At the same time, 'artificial intelligence ethics' and 'big data' also showed strong attention, forming a small peak in many universities such as North China University of Technology and Beijing Institute of Petrochemical Technology, reflecting the frontier exploration of these traditional engineering colleges in the interdisciplinary field of technology and ethics. In contrast, the heat of emerging issues such as 'AIGC' and 'digital ethics' is obviously low, and it is still in its infancy in most colleges and universities, only appearing in individual colleges and universities such as China Institute of Labor Relations. It shows that the current exploration of various universities in this field still needs to be strengthened.

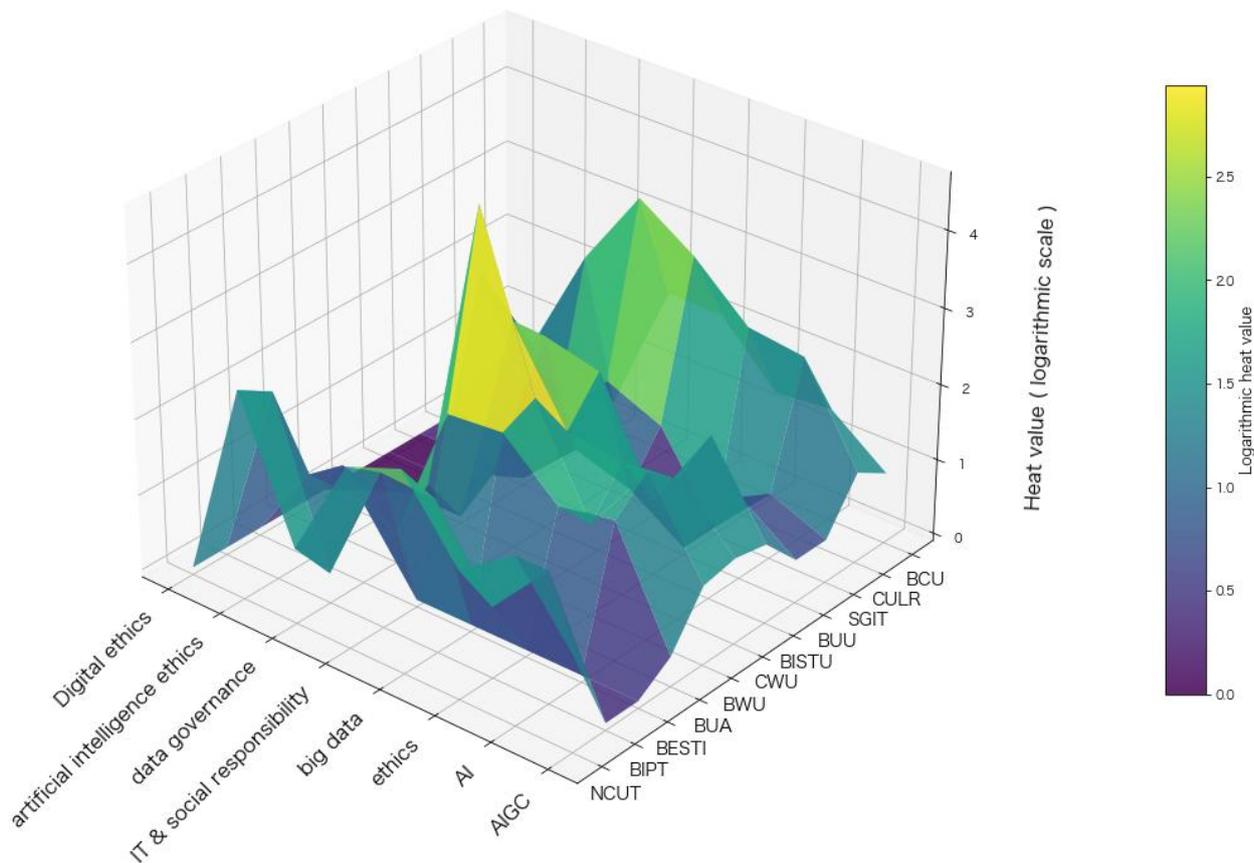


Figure 2. Web crawler analyzes 3D surface graph

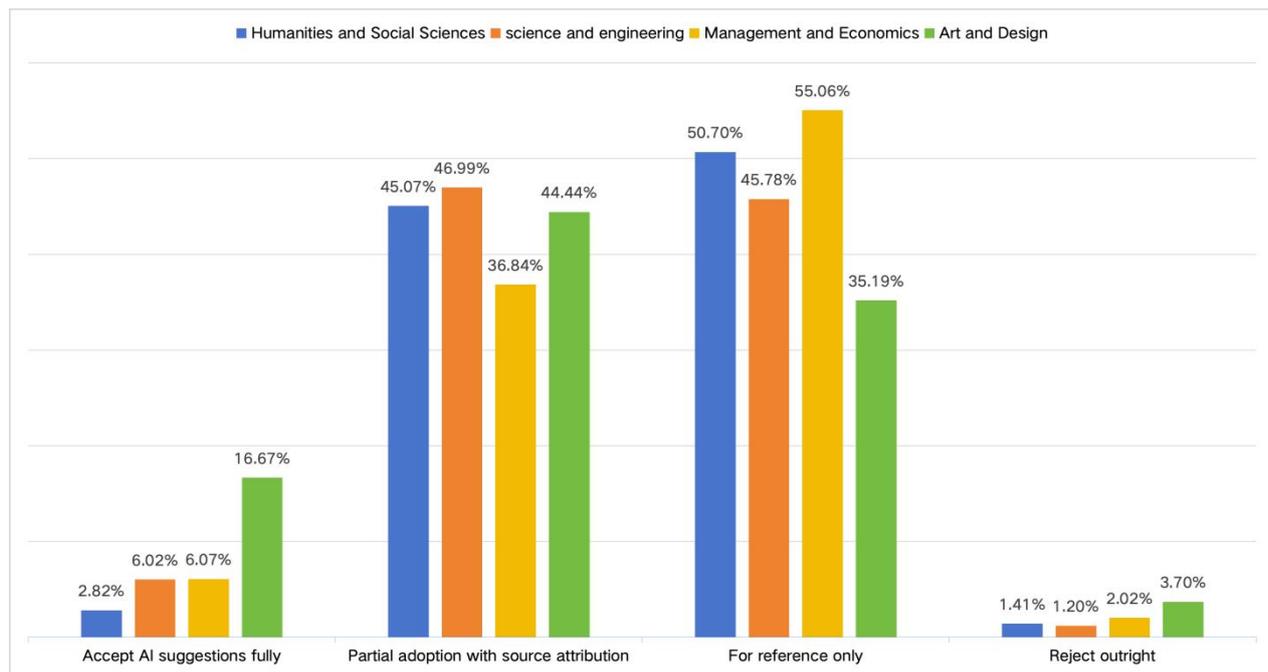
#### 4.2. Questionnaire survey and interview survey analysis

Based on 500 valid student questionnaires and in-depth interviews with a number of front-line teachers and managers, this study aims to comprehensively analyze the digital ethical dilemmas faced by Beijing application-oriented college students in the use of AIGC. The report will be carried out from the following five dimensions :

##### (1) Blurred boundary of academic integrity

The results of the questionnaire survey show that AIGC tools have been deeply embedded in students academic scenes. Up to 74.6 % of students use AIGC mainly for homework assistance and 56.8 % for thesis writing. This high-frequency academic application is in stark contrast to students vague cognition of behavioral boundaries, which constitutes the primary ethical dilemma. Although 77 % of the students tend to ' modify and use it after optimization, 34 % of the students still admit that they will ' directly copy the generated content, and 21.8 % of the students think that directly submit the complete work generated by AI is acceptable. These findings suggest that a considerable number of students struggle to distinguish AI-generated content from their own original work, indicating a weak awareness of academic integrity boundaries. Furthermore, this ambiguity creates confusion. The data show that 47.8% of students report experiencing “integrity confusion” in academic settings, while 26.4% are most concerned about being accused of

academic misconduct. Together, these figures reveal a contradiction between students' behavior and their concerns, pointing to a lack of clarity about the nature of the misconduct itself.



**Figure 3. Cross-analysis of Cognitive Conflict Between Students from Different Majors on Generated Content**

As shown in Figure 3, there are significant differences in how students from different majors handle “conflict between AI-generated content and their own cognition.” Students in art and design have the highest proportion of “completely adopting AI suggestions” and also the highest proportion of “completely rejecting AI suggestions,” showing a polarized attitude. This suggests inherent differences within art-related disciplines: some are more creative and require a personal style, so they may not adopt AI suggestions, while others may use AI to assist in copying artworks, potentially leading to adoption. In contrast, students in science, engineering, humanities, and social sciences tend to “partially adopt and cite the source” or “use only as a reference,” showing more cautious and standardized usage habits. This disciplinary difference indicates that the blurring of academic integrity boundaries is not uniformly distributed and may be related to the thinking training and research paradigms of each discipline. Meanwhile, teachers' interviews, from an educator's perspective, clearly outline this fuzzy boundary. Teacher Wang clearly delineated the limits: acceptable uses are “using AI to assist in finding information, organizing thoughts, and polishing language,” while “completely generated by AI and submitted as personal work” is unacceptable. Teacher Chen emphasized, “Core academic tasks must be completed by the students themselves.” Teachers can quickly identify AI-generated assignments precisely because the content is often “too logically structured,” “beyond the student's cognitive level,” or “content is relatively hollow.” These characteristics contradict the originality, personal thought, and deep understanding required for academic integrity. Students frequently use AIGC for academic purposes, yet their understanding of behavioral boundaries is deviated, creating a gap with teachers' clear academic standards. This ultimately leads to widespread student confusion and challenges for teachers in assessment and guidance.

## (2) Information Quality and Cognitive Risk Issues

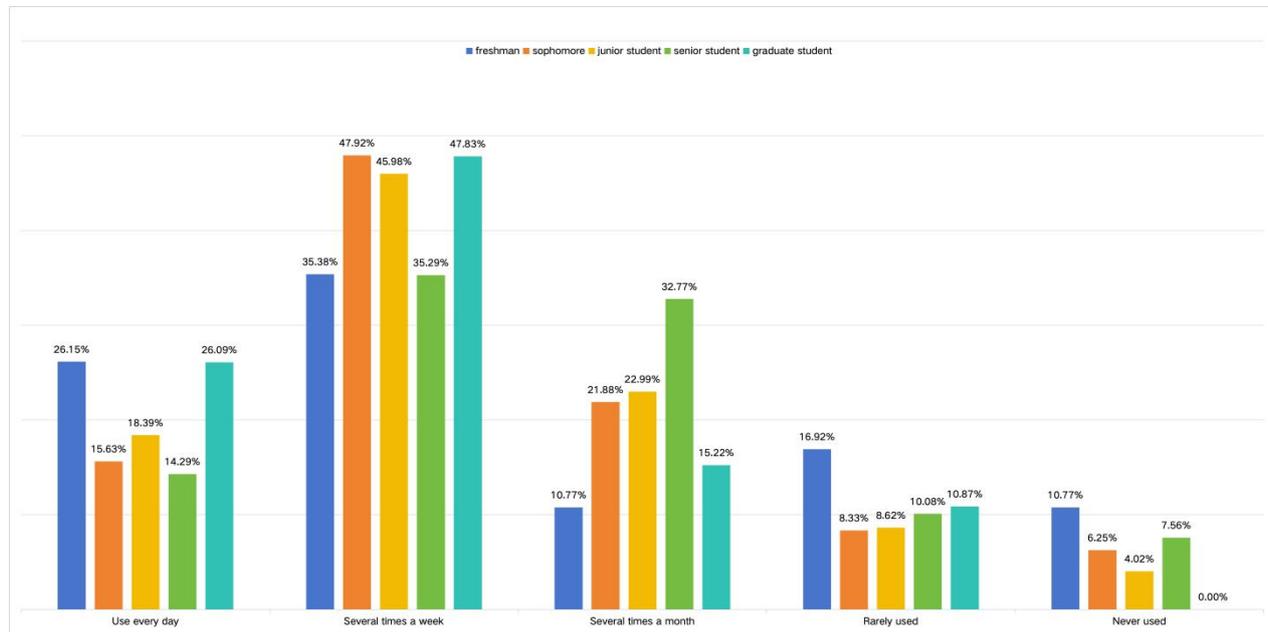
This issue concerns the reliability of AIGC output and its potential negative impact on users' cognitive processes. A primary risk lies in content authenticity and accuracy: 68.6% of students reported difficulty judging whether generated content was true, making this the most frequently encountered ethical dilemma. Similarly, 40% expressed concerns about content accuracy when completing academic tasks. Teacher Zhao highlighted a related technical limitation, noting that AIGC can produce "hallucinations," or entirely fabricated information. A second risk involves algorithmic bias. More than half of the students surveyed had encountered biased or discriminatory content. Teacher Liu explained that "AI models themselves may carry biases from the training data. We need to educate students to possess critical thinking, to verify and judge." This underscores that technology is not value-neutral; its outputs can reflect and even amplify existing biases. These risks together challenge students' critical thinking abilities. When AI-generated content conflicted with their own understanding, 49.4% of students chose to "use it only as a reference," demonstrating some caution; however, 7.2% opted to "completely adopt AI suggestions." Teacher Wang noted that a key issue is students "using AI without critical evaluation." Teacher Liu echoed this concern, warning that uncritical acceptance could lead students to internalize biased perspectives.

## (3) Technology Dependence and Developmental Competency Issues

Regarding independent thinking, over half of the students surveyed (57%) expressed concern—ranging from "somewhat" to "very worried"—that excessive reliance on AIGC could negatively affect their personal development. When asked to rank potential risks, "academic ability degradation" received the highest composite score (3.61), making it the most widely feared consequence among students. At the same time, 46.6% of students believed that AI and thinking ability could develop in balance. Teachers, however, held a different perspective. Teacher Wang argued that improper AIGC use leads to "a lack of learning initiative and responsibility," while Teacher Li noted that it could render task training meaningless, reducing teacher-student interaction to "meaningless false interaction." These concerns prompt a critical reflection: whether AI can truly support balanced cognitive development remains an urgent question.

As shown in Figure 4, there are significant differences in the frequency of AIGC usage among students of different grades. Sophomores have the highest proportion of "daily use" of AIGC, reaching 47.92%, while postgraduate students have the highest proportion of "multiple times per week" usage, at 47.83%, with no one reporting "never used." This high-frequency, in-depth usage habit, while potentially improving efficiency, also hides a stronger risk of dependence. In contrast, freshmen have relatively higher proportions of "rarely use" (16.92%) and "never used" (15.63%), likely because they are new to the university and are still in the exploratory stage of understanding and applying technological tools. Some teachers have also proposed corresponding guidance strategies, attempting to steer students towards a "balanced development" path. Teacher Chen encourages students to use AI as a tool to "inspire ideas, construct ideas, and refine ideas," rather than a simple answer generator. Teacher Li also believes that the reasonable value of AI lies in helping students "expand knowledge boundaries, optimize cognitive levels, and enhance logical abilities." However, he simultaneously emphasizes a crucial prerequisite: "without

weakening their independent thinking ability." Thus, concerns that technological dependence may lead to the degradation of independent thinking ability, learning initiative, and responsibility have become a shared anxiety. How to guide students from "substituting thinking" to "augmenting thinking" is a timely challenge for educators.



**Figure 4. Cross-analysis of AIGC usage frequency among students of different grades**

#### (4) Lack of Accountability and Norms Issues

While 83.6% of students agreed that AIGC-generated content “must” or “should” include source attribution, there is no unified guidance on the extent or format of such citation. Awareness of institutional regulations is also low: 45.8% of students indicated they had “heard of but were unclear about” or were “completely unaware of” relevant school policies. This cognitive gap leads to inconsistent behavior and makes it difficult for teachers to evaluate academic work.

In interviews, Teacher Wang noted that while schools are aware of digital ethics issues, their response is limited to reminders during exams and paper submissions, with no systematic training for faculty. Teacher Zhou pointed to the lack of a “precedent to follow” as a major institutional challenge, testing administrators’ capacity for innovation. Teacher Liu highlighted the “widespread anxiety among teachers” and the difficulty of balancing cross-disciplinary differences in AIGC usage norms.

As shown in Figure 5, as many as 47% of students indicated that their schools only "occasionally mention" related education, while the combined proportion of "not at all" and "unclear" reaches 13.8%. Only 14.2% of students believe their schools provide "systematic courses." This starkly contrasts with the strong demand from students, highlighting a severe lag in educational supply. Facing this dilemma, the leadership proposed pragmatic policy paths. Teacher Liu revealed that the school plans to first issue a university-wide guiding framework, then "fully authorize each college/department to formulate AIGC usage implementation rules that align with their professional characteristics" under this framework, balancing principled unity with

professional particularity. Teacher Zhou also suggested first establishing a set of universal normative rules, then, based on the differences of each major, "introducing more targeted related normative rules." Currently, from student behavior to teachers' judgment basis, to school rules and regulations, there is a widespread problem of normative gaps, unclear guidance, and insufficient support. Constructing a systematic, hierarchical, and dynamic governance system is urgent.

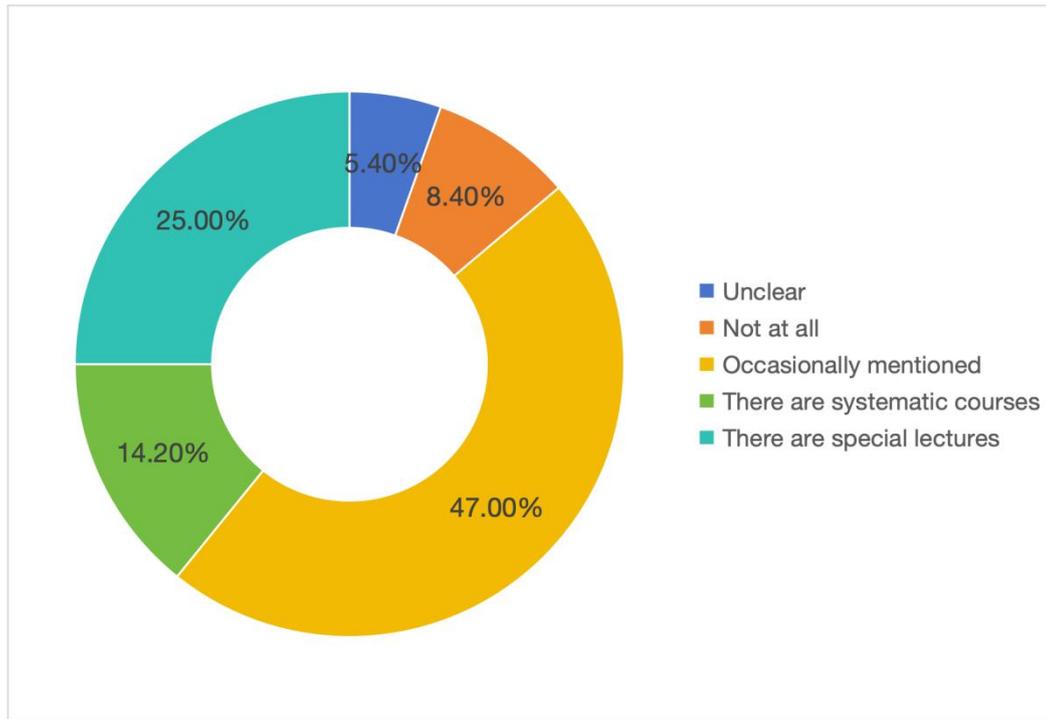


Figure 5. The provision of education related to AIGC or digital ethics by the school

#### (5) Privacy and Data Security Issues

In the students' ranking of AIGC usage risks, "privacy data leakage" ranked second (3.11 points), becoming one of the core risks of high concern to students. Moreover, 72.4% of students believe that "respecting user privacy" is the most important ethical principle in AIGC educational applications, fully reflecting students' strong awareness and value demand for personal information protection. However, a huge gap exists between students' concerns and actual risks. Despite strong awareness, students generally lack clear understanding and effective coping strategies for how to protect their data, what responsibilities platforms should bear, and what guarantees schools should provide. In interviews, Teacher Wang clearly listed "data privacy leakage" as one of the most prominent digital ethics issues when students use AIGC. This view highly aligns with the student questionnaire data, confirming the universality and urgency of the issue. In current educational discussions and school norm formulation, compared to hot topics like academic integrity and assessment method reform, privacy and data security issues still receive relatively less attention and discussion. When using various free AIGC tools, students often pay with their personal data, and they may not fully estimate the long-term consequences of this behavior. How to integrate data privacy protection education into the digital ethics curriculum, how to establish strict "technology access" review mechanisms when introducing technological

platforms, and how to clarify students' self-protection responsibilities when using public tools will become key issues that applied universities must directly face and strive to solve in the future.

## **5. Digital Ethics Dilemmas of Students in Beijing's Applied Universities from the Perspective of AIGC-Empowered Education**

### **5.1. Causes of Digital Ethics Dilemmas**

Through empirical findings from the above five dimensions, the “Blurring of Academic Integrity Boundaries” and “Lack of Accountability and Norms” reflect the lag at the institutional level, together creating the “Institutional Dilemma.” The “Information Quality and Cognitive Risk Issues” and “Technology Dependence and Developmental Competency Issues” focus on the deficiencies at the student literacy level, together constituting the “Competency Dilemma.” The “Privacy and Data Security Issues” run through both the cognitive and educational levels, highlighting the existence of the “Educational Dilemma.” It is the interplay of these five specific issues that ultimately forms a systematic dilemma at the cognitive, competency, institutional, and educational levels.

### **5.2. Specific Dilemmas**

(1) Cognitive Dilemma. Survey data show that the basic cognitive state of the student population regarding the concept of “digital ethics” is reflected to a certain extent as being widespread. The level of understanding stays at a shallow level limited to “having heard of it.” Only 8.4% of students expressed that they “know it very well.” This cognitive characteristic, possessing breadth but lacking depth, is revealed in this specific context. The practical consequences of this superficial understanding amplify ethical issues. For example, in the question setting of “whether accepting directly submitting assignments generated by generative AI is acceptable,” 21.8% of students still chose to accept, a choice result that to some extent shows the vague state of some students' concept of academic integrity boundaries. Simultaneously, in the questioning framework of “whether worried about personal information being collected when using generative AI”; although 72.4% of students expressed it as the most important ethical principle, in actual usage, reliance on unofficial, unverified platforms is still common, and deficiencies in action related to data privacy protection are also evident. This “knowledge-action gap” highlights the serious deficiency in the transformation of digital ethics education from conceptual understanding to behavioral internalization.

(2) Competency Dilemma. The popularity of AIGC tools, while improving learning efficiency, also brings the risk of degrading students' critical thinking and independent problem-solving abilities. The questionnaire survey shows that “academic ability degradation” is viewed by students as the most worrying risk of AIGC use. Cross-analysis further reveals that 24.23% of students still believe that “AI will seriously weaken independent thinking ability.” In interviews, Teacher Li pointed out that some assignments submitted by students are “fluent in language but logically hollow,” lacking depth in problem analysis and independent construction. Teacher Wang also worried that excessive use of AI leads to a “lack of learning initiative and responsibility.” Additionally, crawling data shows that in the process of promoting AIGC technology

implementation, universities generally have a tendency of “emphasizing tool application, neglecting thinking cultivation.” In the long run, students may degenerate from “technology users” to “technology dependents,” facing the risk of losing core competitiveness in the future workplace, which runs counter to the goal of applied universities to cultivate practical and innovative talents.

(3) Institutional Dilemma. Currently, applied universities in the Beijing area show obvious lag in the institutional construction for AIGC application. According to big data crawling results, among the selected sample of 11 universities, only a few institutions occasionally mention “digital ethics,” and systematic institutional texts have not yet been formed. Questionnaire survey data show that 45.8% of students either “have heard of but are unclear about” or are “completely unaware of” the relevant school regulations, indicating a significant information asymmetry in the institutional communication process. In interviews, Teacher Wang pointed out that “clear academic normative guidance” is still lacking within the school, and teachers have no unified basis to follow when facing AIGC-related issues; Teacher Chen also admitted that “academic norms have not yet been formed,” and management practices face practical difficulties. Due to the variety of disciplines and majors within the university, institutional design fails to fully consider the characteristics of each discipline. For example, art and design majors and economics and management majors have differences in AIGC usage scenarios and originality judgment standards, but current norms do not provide classified guidance, resulting in uneven implementation effects. Thus, the dilemma of “technology application precedes, ethical norms lag” emerges.

(4) Educational Dilemma. Interviews revealed an issue that questionnaires cannot directly present: the key factor behind the lag in digital ethics education at the practical level is the lack of teacher support. Interviews found that teachers generally stated they had not received systematic training. Teacher Li mentioned, “The school has no training; mainly rely on peer communication.” Teacher Wang called for the school to provide “systematic teacher training, clear academic normative guidance, teaching resource libraries, technical support, and assessment tools.” Teacher Liu also pointed out the “widespread anxiety among teachers” from a leadership perspective. Crawling data also corroborate this: although various universities frequently hold AI technology lectures, there are few thematic activities involving ethics education or teaching integration. This unbalanced distribution of educational resources further exacerbates the structural gap in digital literacy between teachers and students, making the digital ethics dilemma for both increasingly prominent.

## **6. Optimization Paths for Digital Ethics from the Perspective of AIGC-Empowered Education**

(1) Construct a multi-level digital ethics education system to resolve the cognitive dilemma of the “knowledge-action gap.”

To address the problems of “sufficient breadth but insufficient depth” and the “knowledge-action gap” at the cognitive level among students, universities need to consider constructing a digital ethics education system that runs through the entire talent cultivation process. First, incorporate digital ethics courses into general education or talent cultivation programs, offering

core courses such as “AIGC Technology Principles and Ethical Norms.” Systematically explain core issues like algorithmic bias, data privacy, and academic integrity to fill the structural gaps in students' cognition. Second, promote the integration of curriculum ideology and politics with professional education, infusing elements of digital ethics into the courses of various majors. For example, emphasize AI-assisted citation norms in related classes, and discuss copyright issues of AI-generated content in design classes, developing characteristic teaching modules based on the features of each discipline. Third, regularly organize thematic lectures, workshops, or debates, inviting technical experts, legal scholars, and corporate representatives to share cases, transforming abstract ethical principles into vivid practical understanding, thereby narrowing the gap between conceptual identification and behavioral norms.

(2) Construct a thinking cultivation system to prevent technological dependency, addressing the competency dilemma of “core literacy degradation.”

To effectively address the degradation of students' critical thinking and independent problem-solving abilities caused by the misuse of AIGC, they need to start from teaching design and evaluation reform, establishing a firewall to protect thinking abilities. On one hand, clearly delineate the red lines and guidance zones for the use of AIGC in teaching activities, issue guiding opinions requiring teachers to specify in the course syllabus academic tasks prohibited from being completed directly using AIGC, while also establishing parts where AIGC use is allowed under guidance, requiring students to submit detailed records of their thinking process, revision history, or usage logs. On the other hand, promote innovation in teaching methods, encouraging teachers to design more open-ended, non-standard-answer practical projects, reducing students' reliance on AIGC at the source. Third, reform the single-outcome evaluation model, establishing a multi-dimensional assessment system that includes classroom discussions, project practice, innovation proposals, and process records. By documenting the problem awareness, analytical depth, and originality of solutions students demonstrate throughout the learning cycle, the foundation for students' independent thinking and autonomous innovation abilities is strengthened.

(3) Improve hierarchical and classified management system construction to resolve the institutional dilemma of “unclear accountability.”

To address the chaos caused by the absence of systems and insufficient system implementation, universities should start from top-level design, scientifically constructing a hierarchical, classified, and clear-accountability AIGC management system covering the “university level - college/department level - classroom level.” At the university level, regulations like “AIGC Educational Application Management Measures” should be issued as soon as possible, specifying technology usage requirements, data security and privacy requirements, and procedures for identifying and handling technology usage violations, providing a bottom line and principles for people to follow. At the college/department level, actively encourage system construction based on the characteristics of each major, requiring detailed rules to be formulated under the guidance of university-level principles, balancing university-level baselines with departmental characteristics. At the classroom level, encourage teachers to include AIGC usage policy provisions in the course syllabus, such as whether usage is allowed, scope of use, citation

requirements, and quantitative evaluation standards. Relevant units of the university can also launch AIGC usage reporting or spot-check platforms, conducting checks on AI content in graduation theses and important academic achievements, preventing academic misconduct from the source.

(4) Strengthen the systematic construction of the teaching faculty to overcome the educational dilemma of “insufficient guidance.”

Teachers are the intermediaries of AIGC education; their own digital literacy and digital ethics guidance ability directly determine the effectiveness of AIGC education. Universities should include the cultivation of teachers' digital literacy in the faculty development plan, establishing special training programs. Training content includes: the use and evaluation of AIGC tools, identification and handling of digital ethics issues, how to integrate AI into teaching activities, and how to detect and identify AI-generated content. Some teachers in interviews expressed a strong demand for “training” and “teaching resource library” support. Universities can collaborate with enterprises or other universities, jointly building shared resources such as AI teaching cases, suggestions for handling digital ethics issues, and collections of excellent AIGC teaching design cases. Simultaneously, encourage the establishment of digital ethics teaching and research groups or work groups within certain disciplines, organizing AI teaching observation activities and experience-sharing exchanges between schools, jointly building a “AI + Ethics” teaching and research force.

## 7. Conclusion

AIGC technology is profoundly reshaping the educational ecology of applied universities, bringing infinite opportunities for talent cultivation while also triggering a series of profound digital ethics challenges concerning academic integrity, cognitive development, data security, etc. Through empirical investigation of applied universities in the Beijing area, this study reveals the four major dilemmas students face in AIGC application: cognition with breadth but no depth, risks in competency development, lag in institutional norms, and insufficient educational guidance. These phenomena are interconnected, proving that in the context of rapid technological advancement, how to establish student guidance mechanisms and standardize usage in schools is a significant challenge currently facing the education system.

Facing such challenges, universities need to undertake construction in various aspects such as teaching, education, management, and faculty. Only by guiding students to consciously recognize and abide by behavioral norms in the digital age, treating AIGC as a learning partner for thinking and inspiring creativity, can technology truly serve education and cultivate contemporary talents with both professional competence and digital literacy. This is both a current task for applied universities and an inherent requirement for the long-term development of higher education.

### **Author Contributions:**

Conceptualization, Ruimin Wang; methodology, Ziyang Sun and Ruimin Wang; investigation, Ziyang Sun; resources, Ruimin Wang; data curation, Ziyang Sun and Ruimin Wang; writing—original draft preparation, Ziyang Sun and Ruimin Wang; writing—review and editing, Ziyang Sun and Ruimin Wang; visualization, Ziyang Sun and Ruimin Wang; supervision, Ruimin Wang; funding acquisition, Ruimin Wang. All authors have read and agreed to the published version of the manuscript.

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