

Focus Areas in Precision Governance: An Investigation into Key Influencing Factors of Graduate Students' Academic Misconduct

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Abstract: This study proposes that precision governance is the direction for addressing academic misconduct among postgraduates. Accurately analyzing the key influencing factors of postgraduates' academic misconduct is the foundation for implementing precision governance. A measurement scale for these influencing factors was developed, covering 6 dimensions and 19 secondary indicators. A questionnaire survey was conducted among 994 master's students from 15 universities, and regression analysis was performed using SPSS 21.0. The results show that three dimensions-academic behavior in middle and university stages, curriculum and teaching design, and personal morality-are the key factors that significantly affect postgraduates' academic misconduct. In contrast, the other three dimensions-school academic ethics education, school academic systems and their implementation, and personal social responsibility-have no significant impact. Based on these findings, this study puts forward suggestions: incorporating middle and university stages into the scope of academic misconduct governance, carrying out supply-side reforms in postgraduate education and teaching, improving the effectiveness of postgraduate academic ethics education, and accelerating the promotion of precision governance for postgraduates' academic misconduct.

Keywords: precision governance, academic misconduct, influencing factors

1. Introduction

Strengthening the governance of postgraduate academic misconduct and fostering a clean and upright green education ecosystem are of great significance for promoting postgraduates' understanding of academic norms, establishing correct academic values [1], and cultivating high-quality talents who are patriotic, aspirational, truth-seeking, and diligent. This practice is also an inherent requirement for implementing the fundamental task of fostering virtue through education and achieving high-quality connotative development of postgraduate education. In April 2024, the 9th Session of the Standing Committee of the 14th National People's Congress adopted the Degree Law of the People's Republic of China, which explicitly lists adherence to academic ethics and norms as one of the prerequisites for degree award. Nevertheless, it is undeniable that postgraduate academic misconduct has not been effectively curbed [2][3], and it exhibits characteristics such as diversified forms, concealed means, complex causes, and long-term governance needs. In recent years, incidents of concentrated retractions of papers by Chinese scholars from international journals (statistics based on the Retraction Watch database and Web of Science (WoS) show that 2,852 papers by Chinese scholars were retracted between 2016 and 2020) [4]-[6], along with a series of exposed postgraduate academic misconduct cases, have triggered public distrust in the quality of Chinese postgraduate education. This also indicates that the current governance of postgraduate academic misconduct remains a long and arduous task that requires high attention.

Long-term studies by domestic and foreign scholars have shown that postgraduate academic misconduct is comprehensively influenced by multiple factors, including gender, academic experience in middle school and undergraduate stages, academic discipline/major, personal self-control ability, external pressure (e.g., the "Publish or Perish" policy), academic evaluation, the academic environment of the university, teachers' teaching behaviors, supervisors' academic behaviors, and supervisors' attitudes toward postgraduate academic misconduct [7]-[17]. To strengthen the governance of postgraduate academic misconduct, many scholars have conducted meaningful research: they introduced the governance systems and measures for postgraduate academic misconduct in countries/regions such as the United Kingdom and the United States [18][19], analyzed the current status and shortcomings of

relevant domestic policy tools, and put forward constructive suggestions such as establishing and improving institutional systems, setting up academic integrity management agencies at all levels, and strengthening academic ethics education [20][21].

However, most existing studies on the influencing factors of postgraduate academic misconduct focus on a single factor, aiming to explain “why” postgraduates engage in academic misconduct from one perspective, and lack a comprehensive study of various factors in the current Chinese academic environment. Although relevant studies have proposed several measures to strengthen the governance of postgraduate academic misconduct, they fail to explain the factual basis for adopting these measures, resulting in a lack of targeting. Targeting the characteristics of academic experience and academic environment of Chinese postgraduates, this study summarizes and designs a comprehensive measurement scale for the influencing factors of postgraduate academic misconduct. A survey was conducted among 994 master’s students from 15 universities (unless otherwise specified, ‘postgraduates’ hereinafter refer to master’s students). This study attempts to identify the key influencing factors of academic misconduct among Chinese postgraduates, and further propose targeted governance measures, in the hope of contributing to the enhancement and improvement of the governance of postgraduate academic misconduct.

2. Precision governance: the developmental direction for governing postgraduate academic misconduct

What constitutes “academic misconduct”? Currently, there is no relatively unified consensus on this question. In comparison, the definition of “academic misconduct” itself is relatively clear (Due to differences in acting subjects, the scope of academic misconduct can be divided into narrow and broad senses. In the narrow sense, it mainly refers to various improper behaviors committed by members of the academic community in the process of scientific research, with various academic achievements as the primary carriers. In the broad sense, however, beyond the field of scientific research, academic misconduct extends to various improper behaviors of students at all educational stages during their learning, assessment, practice, and research processes, with knowledge as the core carrier. Given that this study focuses on master’s students as the main research subject, academic misconduct is defined in the broad sense herein as “behaviors that violate recognized academic norms and gain unreasonable advantages over others through unauthorized actions in the processes of knowledge production, learning, exchange, dissemination, creation, and evaluation”, and further research is conducted based on this definition.). Academic misconduct emerges alongside the development of social modernity, as an alienation product in the process where academic research gradually shifts from “the unremitting pursuit of truth” to instrumentalization and utilitarianism. Early academic misconduct mainly referred to three behaviors: forging data, trimming data, and cooking data. Later, it gradually expanded to include piracy (infringement and misappropriation of others’ achievements), plagiarism, fabrication, and other behaviors associated with these acts. With the emergence and development of technologies such as the Internet, mobile terminal devices, and instant messaging software, as well as the in-depth integration of these technologies with education and teaching processes, and postgraduates’ learning, research, and daily life -especially with the increasingly extensive and in-depth interdisciplinary integration -the types of academic misconduct have gradually increased. Behaviors such as online plagiarism or copying, online sale or purchase of academic achievements, improper authorship of achievements, and compiling various question banks have also become common.

To prevent academic misconduct, academic misconduct detection systems have been widely used. However, this has been accompanied by some highly concealed “hidden” and “in-depth” academic misconduct behaviors, such as: overcomplicating simple issues (deliberately obscuring meaning by replacing academically recognized concepts with more abstract and indirect ones); hidden repetition (replacing the original text with similar language or using colloquial expressions instead of professional descriptions); content padding (e.g., lengthy descriptions of the theoretical models, operating principles, and mathematical formulas of a certain statistical analysis method); converting text (or public notices) into images; cross-lingual plagiarism; cross-lingual duplicate publication [22]; and even splitting sentences into fragments using incorrect punctuation in violation of grammatical rules.

The characteristics of academic misconduct-diversity, concealment, complexity, and evolvability -lead to differences in understanding of its specific forms and harmfulness among different cultural backgrounds, countries, and institutions. This undoubtedly increases the difficulty of governing academic misconduct. In recent years, the emergence and increasingly widespread application of generative artificial intelligence (AI) technologies represented by ChatGPT, and the Artificial Intelligence

Generated Content (AIGC) they produce, have brought profound transformations and challenges to scientific research, education, and learning. Although their information integration and language processing capabilities-based on powerful algorithms-can assist people in auxiliary tasks such as literature organization and text processing, their functions (e.g., writing papers, reducing paper repetition rates, and even drafting experimental reports and project application proposals) also provide opportunities for postgraduates to engage in academic ethics violations. While the originality of AIGC content is difficult to identify, the legal, ethical, and moral controversies it brings regarding copyright ownership and identification of responsible subjects have also become challenges that postgraduate academic ethics education must address [23][24].

Postgraduate education undertakes the dual tasks of talent cultivation and scientific research. Under the training model that integrates teaching into research and combines industry with education, postgraduates, on the one hand, need to complete training components such as course study, assessments, and internships as enrolled students; on the other hand, they directly participate in various horizontal and vertical research projects as team members to conduct scientific research. Statistics show that as early as the “12th Five-Year Plan period (2011-2015)”, among researchers participating in various funded projects of the National Natural Science Foundation of China (NSFC), the proportion of on-campus master’s students had reached 27.27%, and that of on-campus doctoral students had also reached 20.24% [25]. In recent years, the proportion of high-level papers co-authored or published by postgraduates has been increasing in various universities. According to statistics from Sun Yat-sen University, in 2015, the number of ESI Highly Cited Papers co-authored or published by doctoral students accounted for 36.8% of the university’s total. Among these, the papers where doctoral students served as the first author (corresponding author/independent author) accounted for 12.1% of the university’s total [26], which has enhanced the academic influence of universities and supported the construction of “Double First-Class Initiative” (world-class universities and first-class disciplines). This indicates that as an important part of the university’s research team, postgraduates’ academic misconduct will also affect the academic reputation of their universities. At the same time, postgraduates’ academic behaviors during their postgraduate studies exert a significant impact on the cultivation of their values and their behaviors in various professional activities after graduation. Graduates who have engaged in academic misconduct during their postgraduate studies are also prone to improper behaviors such as data forgery and data modification at work. Therefore, conducting governance on postgraduate academic misconduct is determined by the characteristics and mission of postgraduate education.

The governance of postgraduate academic misconduct refers to the efforts by degree administrative authorities at all levels and universities to standardize and guide postgraduates’ academic behaviors, as well as prevent and discipline their academic misconduct, through a series of policy tools, institutions, personnel, and related activities. Aimed at promoting the green and sustainable development of postgraduate education, it is a systematic project involving multiple subjects, interdisciplinary collaboration, connection of multiple links, and coordination of multiple strategies. Although China has initially established a relatively sound governance system for postgraduate academic misconduct through long-term efforts, there are still shortcomings in aspects such as ideological concepts, institutional construction, mechanisms and systems, platform pathways, and content methods, and the governance effect needs further improvement. On March 5, 2019, Premier Li Keqiang of the State Council explicitly proposed in the Government Work Report delivered at the Second Session of the 13th National People’s Congress that “we will strengthen research ethics and academic atmosphere, discipline academic misconduct, and guard against impetuous practices”. This marked the first time that “disciplining academic misconduct” was included in the Government Work Report, expressing zero tolerance for academic misconduct at the national level -and this has become the sole criterion for governing postgraduate academic misconduct.

Precision governance for postgraduate academic misconduct means that universities at different levels adopt targeted governance measures for postgraduates of different disciplines/majors, backgrounds, and roles, based on the accurate analysis of the characteristics and causes of their academic behaviors. As mentioned earlier, there are numerous factors influencing postgraduates’ academic misconduct. These factors act as nodes, connecting, intersecting, coupling, aggregating, and evolving with each other to form a complex network structure. According to complex network theory, different nodes connect to different numbers of other nodes, and their roles in the entire network also vary. A small number of nodes, which connect to more nodes and exert a significant impact on the entire network, are called “key nodes”. Similarly, in the complex network structure formed by the various influencing factors of postgraduate academic misconduct, a small number of influencing factors have a significant impact on postgraduates’ actual academic behaviors in specific contexts and are regarded as “key influencing factors”. Accurately analyzing and identifying these key influencing factors, exploring the causes of postgraduate academic

misconduct, clarifying the “targets” of governance, and selecting targeted measures are the foundation for implementing precision governance for postgraduate academic misconduct [27].

3. Research design for investigating key influencing factors of postgraduate academic misconduct

3.1. Design of the Questionnaire for Measuring Postgraduates’ Attitudes Toward Academic Misconduct

Scientific measurement of postgraduate academic misconduct is the foundation of this study. In practice, two methods based on past outcomes are generally adopted: asking respondents to report whether they have engaged in academic misconduct themselves, or asking them to report whether other students around them have committed academic misconduct. Considering respondents’ self-protection tendency, there are significant differences in the data obtained by these two methods in the same study. According to psychological research, postgraduates’ academic behaviors are not linear and direct actions after acquiring knowledge of academic norms; instead, they are attitudes and choices made by postgraduates after weighing their personal academic ethics against practical dilemmas and interest trade-offs in specific contexts. By designing different situational models to measure respondents’ attitudes toward academic misconduct, we can more accurately reflect the academic behaviors that respondents may adopt.

Based on this, this study designed 3 scenarios that postgraduates may encounter in academic practice, and indirectly measured postgraduates’ academic misconduct through their possible attitudes when facing choices. The measurement items classified postgraduates’ possible attitudes into five levels, from “Strongly Agree” to “Disagree”, with scores assigned from 1 to 5 respectively. As shown in Table 1, the measurement items can reflect 75.45% of postgraduates’ attitudes, indicating a certain degree of scientific validity.

Table 1 Measurement of Graduate Students’ Attitudes Toward Academic Misconduct

	Index	Measurement Example	Explanation of Total Variance (%)
<i>Graduate Students’ Academic Attitude</i>	3	Agree to the punishment result of graduate students being expelled for cheating in exams	75.450

3.2. Design of the Questionnaire for Measuring Key Influencing Factors of Postgraduate Academic Misconduct

Based on a review of relevant domestic and foreign literature [28], this study summarized, sorted, and classified the potential academic misconduct behaviors of postgraduates and their influencing factors during the process of learning, scientific research, and development. The Delphi method was used to consult postgraduates within a certain scope, and finally, a questionnaire on the key influencing factors of postgraduate academic misconduct suitable for the Chinese context was formed. The questionnaire divides the influencing factors of postgraduate academic misconduct into 6 dimensions, including academic behavior in middle and university stages, curriculum and teaching design, school academic ethics education, personal morality, personal social responsibility, and school academic systems and their implementation (as shown in Table 2). Each dimension contains several secondary indicators. The measurement items were designed in a Likert scale format, with respondents’ answers divided into 5 levels from “Strongly Agree” to “Disagree”, scored 1 to 5 respectively. The reliability test showed that the Cronbach’s Alpha coefficient of the questionnaire was 0.881, indicating strong reliability of the questionnaire.

Table 2 Measurement of Key Factors Influencing Academic Misconduct among Graduate Students

Dimension	Index	Example of measurement indicators
<i>Academic behavior in middle school and university</i>	3	No academic misconduct occurred during my secondary school years
<i>Course Teaching Design</i>	3	The assessment methods for graduate courses can facilitate the enhancement of my abilities
<i>Academic Ethics Education in Schools</i>	3	The school has conducted extensive and in-depth academic ethics education
<i>Personal moral values</i>	3	Academic misconduct violates self-imposed standards
<i>Personal sense of social responsibility</i>	3	Academic misconduct is a sign of disrespect towards teachers and peers
<i>Academic system and enforcement in schools</i>	4	The school imposes severe penalties for academic misconduct

This study selected 994 master's students from 15 universities (including Xi'an Jiaotong University) as survey participants. A total of 1,200 questionnaires were distributed, and 994 valid questionnaires were retrieved, resulting in an effective recovery rate of 82.8%. Among the participants: 368 were male postgraduates, accounting for 37%; 626 were female postgraduates, accounting for 63%.

For data analysis, this study used SPSS 21.0 software. First, factor analysis and reliability analysis were conducted to test the validity and reliability of the two questionnaires (i.e., the questionnaire for measuring postgraduates' attitudes toward academic misconduct and the questionnaire for measuring key influencing factors). Then, linear regression was applied to further analyze the degree of impact of influencing factors across different dimensions on postgraduates' academic misconduct.

4. Survey Analysis of Key Influencing Factors of Postgraduate Academic Misconduct

This study used linear regression to analyze the impact of six dimensions of influencing factors—including academic behavior in middle and university stages, curriculum and teaching design, school academic ethics education, personal morality, personal social responsibility, and school academic systems and their implementation—on postgraduate academic misconduct (as shown in Table 3). The analysis of Table 3 reveals the following:

4.1 Influence of Academic Misconduct Experience in Middle and University Stages on Postgraduates' Academic Misconduct

Academic misconduct in middle and university stages mainly includes behaviors such as cheating in exams, being named as an author without making substantial contributions in group experiments, plagiarizing experimental reports, modifying experimental data, collecting exam questions from senior students to form question banks, purchasing exam answers via exam groups, and buying graduation design papers online. Although universities have attempted to curb students' academic misconduct by strengthening academic atmosphere construction and imposing severe penalties (such as revoking eligibility for degree applications or even expelling students), these behaviors are so concealed and prevalent that a considerable number of students have benefited without being punished. This has implicitly encouraged students' misconduct (punished students are regarded as “unlucky”) and led them to carry such “experience” into their postgraduate studies. Studies by foreign scholars have shown that students who engaged in academic misconduct during middle and university stages are more likely to continue such behavior in postgraduate studies. This study verifies that this phenomenon also exists in the Chinese context.

4.2 Influence of Postgraduate Curriculum Design

Curriculum design mainly refers to the relevance between postgraduate course offerings and their research directions, whether teachers' teaching methods promote postgraduates' course learning, whether course assessment methods can truly reflect students' learning outcomes, and whether the arrangement of course assessments provides postgraduates with sufficient preparation time. Course learning is not only the main channel for postgraduates to acquire professional knowledge but also a key field where postgraduate academic misconduct occurs. If postgraduate courses are outdated, have low relevance to their research directions, or are taught using outdated methods, it will be difficult to stimulate postgraduates' learning enthusiasm, resulting in poor learning outcomes—and thus increasing the likelihood of academic misconduct. Course assessment methods also affect postgraduate academic misconduct. If the assessment method is single and the assessment content overemphasizes knowledge memorization rather than knowledge application, postgraduates are more likely to engage in misconduct. The survey of this study shows that 46.34% of respondents indicated that the teachers they had contact with rarely “adopted innovative measures to improve students' learning effects and prevent/reduce academic misconduct (such as new teaching methods and examination methods like case teaching, on-site teaching, skill operation assessment, and practical project assessment)”. This reflects that a considerable number of teachers lack enthusiasm and initiative in taking effective measures to reduce postgraduate academic misconduct. This finding of the study also supports the necessity of accelerating the reform of postgraduate education and teaching, and improving the capacity and level of postgraduate education and teaching.

4.3 Influence of Postgraduates' Personal Morality on Academic Misconduct

Personal morality has a significant impact on postgraduate academic misconduct. Personal morality includes attitudes toward academic misconduct (i.e., whether academic misconduct is regarded as unacceptable), adherence to academic norms when facing potential difficult situations, tolerance for academic misconduct of peers, and sympathy for students punished for academic misconduct. Although scholars have disputes over the nature of academic misconduct [29], the mainstream view still regards it as a moral issue. After all, limited academic norms cannot cover all possible academic misconduct, nor can they predict new forms of academic misconduct that may emerge. Therefore, when facing complex and unpredictable difficult situations, whether postgraduates can adhere to the pursuit of truth ultimately depends on their personal morality. Moreover, the personal morality of numerous postgraduates collectively shapes the academic environment of the postgraduate group, which in turn exerts a reverse impact on the academic behaviors of individual postgraduates.

Table 3 Analysis of key influencing factors of academic misconduct among graduate students

model	Standard Coefficient Trial Version	t	P	Collinearity statistic VIF
(Constant)		3.945	0.000***	
Academic behavior in middle school and university	0.191	6.348	0.000***	1.040
Course Teaching Design	0.222	7.405	0.000***	1.030
Personal moral values	0.115	2.657	0.008***	2.160
Academic ethics education in schools	0.072	1.556	0.120	2.456
Academic system and enforcement in schools	-0.053	-1.245	0.214	2.099
Personal sense of social responsibility	0.049	1.073	0.284	2.429

* $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$

The survey of this study shows that as high as 48.19% of respondents stated that they could understand academic misconduct committed by peers, indicating that there is still a certain degree of ideological acceptance for postgraduate academic misconduct. This finding of the study provides support for clarifying the moral nature of postgraduate academic misconduct and highlighting the necessity of strengthening academic ethics education for postgraduates.

However, it is noteworthy that Table 3 shows that school academic ethics education has no significant impact on postgraduate academic misconduct. The survey of this study reveals the following: 31.89% of respondents stated that they did not have a good understanding of the academic norms of their universities, while only 22.33% reported being relatively familiar with them; 52.31% of respondents indicated that the effectiveness of academic ethics education in their universities was not significant. The reasons for this are as follows: 40.85% of respondents believed that the form of academic ethics education was relatively single and formalized, making it difficult to arouse postgraduates' learning enthusiasm; 41.15% of respondents thought that the content of academic ethics education was too outdated to guide postgraduates in accurately judging and addressing potential misconduct in academic practice; 14.89% of respondents pointed out that supervisors lacked the time and energy to provide academic norm education for their supervised postgraduates, as well as to guide, standardize, and supervise postgraduates' academic research; 2.21% of respondents mentioned that the teaching methods of teachers conducting academic ethics education were simplistic, which did not help postgraduates gain an in-depth understanding of the specific forms of academic norms and ambiguous behaviors. At the same time, the survey of this study shows: 45.48% of respondents believed that their universities lacked sound academic system norms, and some even stated that they did not know whether their universities had relevant systems; 48.48% of respondents thought that their universities imposed insufficient penalties for academic misconduct; 3.12% of respondents indicated that supervisors held a conniving attitude toward academic misconduct of their supervised postgraduates (on the premise that it would not be discovered). The study indicates that there is still significant room for improvement in the specific implementation of current governance for postgraduate academic misconduct.

5. Conclusion

This study proposes a framework for the precision governance of postgraduate academic misconduct. Based on this, a survey was conducted to identify the key influencing factors of postgraduate academic misconduct among 994 master's students from 15 universities using a questionnaire, and SPSS 21.0 was

used for data regression analysis. The survey shows that three dimensions—academic behavior in middle and university stages, curriculum and teaching design, and personal morality—have a significant impact on postgraduate academic misconduct. These are the key influencing factors of postgraduate academic misconduct and the core targets for its precision governance. The survey also reveals that current governance of postgraduate academic misconduct in China has room for improvement, as evidenced by issues such as low enthusiasm and initiative among teachers, unclear implementation rules for systems, inadequate policy implementation, ineffective academic ethics education, and insufficient understanding of academic norms among postgraduates. Based on the above research conclusions, this study puts forward the following policy recommendations to strengthen and improve the governance of postgraduate academic misconduct in China:

5.1 Extend Governance Scope

Extend the scope of academic misconduct governance to include middle school and undergraduate stages. Before entering postgraduate studies, postgraduates have already formed relatively stable, pre-existing academic ethics and cognitive levels under the influence of the academic atmosphere in middle school and undergraduate stages. Personal experiences also exert a significant empirical impact on postgraduates' behavioral choices, leading to differences in the foundational context for academic misconduct governance across universities at the postgraduate level. Therefore, governance of academic misconduct cannot be isolated to the postgraduate stage alone. Due to the exam-oriented education orientation in middle schools, middle school students in China still focus on intensive knowledge learning; upon entering undergraduate studies, the main teaching goal shifts to knowledge comprehension. Undergraduates have few opportunities to directly participate in teachers' research activities, rarely engage in education related to academic ethics and norms, and lack corresponding awareness and understanding. In comparison, 90% of undergraduates at Johns Hopkins University and 60% at Yale University have the opportunity to directly participate in teachers' research projects, resulting in a deeper understanding of academic ethics and norms. With the in-depth advancement of innovation and entrepreneurship education in China, and the widespread development of various levels of innovation and practice competitions, more and more undergraduates have begun to engage in research activities. This has created a need to introduce academic misconduct governance to ensure the healthy development of innovation and entrepreneurship education practices. Therefore, it is recommended to adhere to a problem-oriented approach, extend the scope of academic misconduct governance to include middle school and undergraduate stages, and implement overall planning, targeted focus, continuous improvement, and result-oriented efforts across middle school, undergraduate, and postgraduate stages. In particular, emphasis should be placed on strengthening academic ethics education and guiding academic norms in innovation and entrepreneurship practices, thereby improving the effectiveness of postgraduate academic misconduct governance from the "source" (i.e., the early educational stages).

5.2 Deepen Supply-Side Reform in Postgraduate Education and Teaching

Conduct supply-side reforms in postgraduate education and teaching to optimize external factors for governing postgraduate academic misconduct. Postgraduates' academic behaviors are influenced by many internal and external factors. It is incomplete to simply attribute postgraduate academic misconduct to factors such as individual postgraduates, social atmosphere, or academic environment. This incomplete attribution reflects a binary educational concept that views postgraduates as objects of discipline and centers on teachers, while ignoring the subjective status of postgraduates. Foreign educational practices have shown that effective teaching reforms and interventions can significantly reduce the likelihood of students engaging in academic misconduct [30]. Therefore, it is recommended to focus on the needs of postgraduates in learning, research, and development, prioritize the improvement of postgraduates' capabilities, carry out supply-side reforms in postgraduate education and teaching, enhance the quality and standard of postgraduate education and teaching, optimize the external environment for governing postgraduate academic misconduct, and reduce such misconduct at its source.

5.3 Strengthen and Innovate Postgraduate Academic Ethics Education

Continuously strengthen and improve academic ethics education for postgraduates. Conducting academic ethics education for postgraduates to enhance their sensitivity and judgment regarding academic misconduct, and supporting and encouraging postgraduates to adhere to academic norms when facing difficult choices, is a key approach to governing postgraduate academic misconduct. The survey of this study shows that the methods of academic ethics education for postgraduates are still too simplistic,

mostly limited to lectures by renowned experts and scholars, resulting in weak sense of participation and gain among postgraduates; the content is overly outdated, focusing on conventional behaviors such as plagiarism, theft of ideas, and data falsification, while lacking analysis of emerging forms of academic misconduct—especially those in gray areas that are difficult to judge—and failing to provide guidance for postgraduates' academic practice. Foreign academic ethics education emphasizes giving play to students' subjectivity: it enhances students' participation through well-designed blended teaching (combining online and offline methods) for academic ethics education; and through approaches such as case teaching, peer mentoring, and group discussions [31], it even encourages students who have been disciplined for academic misconduct to participate in academic ethics education, thereby improving the reflective, critical, and educational nature of such education. These practices provide valuable references for universities to continuously strengthen and improve academic ethics education for postgraduates.

5.4 Fully Promote Precision Governance of Postgraduate Academic Misconduct

Promote and accelerate precision governance of postgraduate academic misconduct. The survey of this study shows that current governance of postgraduate academic misconduct in China still has shortcomings in practice, particularly in terms of insufficient attention to the subjectivity of postgraduates and incomplete information disclosure. The achievements of China's targeted poverty alleviation, combined with the characteristics of the influencing factors of postgraduate academic misconduct, determine that promoting and accelerating precision governance will be the future direction for addressing postgraduate academic misconduct. It is recommended that degree administrative authorities develop a systematic, comprehensive, and continuously improved policy system for academic misconduct governance, clarify the concept, nature, characteristics, and manifestations of academic misconduct, standardize the procedures, institutions, and processes for preventing, reporting, handling, appealing, protecting rights and interests, and providing assistance for academic misconduct, and in particular, establish an information disclosure system and a case database to provide unified references for governance practices in universities. Universities should establish and improve their own detailed rules for academic misconduct governance, encourage and support teachers to carry out education and teaching reforms, strengthen and improve academic ethics education, and build a green academic ecosystem. While improving the quality of academic ethics education courses, universities should rely on the integration of ideological and political education into courses, encouraging teachers of professional courses to integrate academic ethics education into professional teaching and all aspects of postgraduate learning. Universities should also give full play to the key role of colleges in the precision governance of postgraduate academic misconduct: colleges should accurately analyze the key influencing factors of postgraduate academic misconduct based on the characteristics of their disciplines, student sources, courses, and research, and formulate and implement targeted measures for precision governance. In addition, universities should fully implement supervisors' responsibility of fostering virtue through education: through supervisors' words and deeds, as well as full-process supervision and guidance in all aspects of training, supervisors should act as gatekeepers for postgraduates' academic behaviors. Finally, a mechanism and platform for multi-subject consultation and participation should be built to "focus on students, care for students, and serve students", respect the subjective status of postgraduates in academic misconduct governance, promote academic ethics, stimulate the internal motivation, enthusiasm, and initiative of postgraduates to abide by academic ethics and norms, and build a precision governance system for postgraduate academic misconduct that involves all members, covers the entire process, and encompasses all aspects.

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