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A Preliminary Discussion on the Transformation of Postgraduate Supervisors' Supervision Approaches in the Context of Digital-Intelligence Empowerment

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Abstract: The development of technologies such as artificial intelligence, big data, and cloud computing is driving higher education to gradually shift from an "experience-driven" model of knowledge production and research toward a new "data-driven" form. As the first responsible persons for cultivating top-notch innovative talents, postgraduate supervisors' supervision approaches directly affect the quality of graduate education. Drawing on Actor-Network Theory and Distributed Cognition Theory, this paper systematically analyzes the practical problems that may arise after digital-intelligence technologies intervene in the graduate supervision process. It then discusses practical paths for transforming postgraduate supervisors' supervision approaches from four aspects—knowledge management, research process, supervisor–supervisee relationship, and evaluation mechanisms—in order to provide reference for optimizing the supervision ecosystem and cultivating graduate students' independent innovation ability.

Keywords: digital-intelligence empowerment, generative artificial intelligence, supervisor–supervisee relationship, supervision approach, distributed cognition

1. Introduction

The rapid iteration of digital-intelligence technologies represented by generative artificial intelligence (GenAI), big data analytics, and deep learning is accelerating scientific research from the classic linear path of "hypothesis–verification" toward intelligent exploration characterized by "data-intensive discovery" and "AI-driven research" (AI for Science, AI4S). This new paradigm of "data–pattern discovery–intelligent generation–closed-loop iteration" has fundamentally reshaped the underlying logic of scientific research and the epistemological foundations of knowledge production. In the face of the complex ecosystem brought about by digital-intelligence transformation, accurately identifying and resolving the deep dilemmas faced by postgraduate supervisors in supervision has become a major issue that higher education must urgently address in the new era to achieve high-quality development.

According to data published by the Ministry of Education in 2025, China's graduate student population has reached 4.2995 million, an increase of 125% over ten years ago (Ministry of Education, 2025). Within this enormous base, supervisors are not only transmitters of knowledge but also academic guides (Li, 2025), and their supervision approaches profoundly influence graduate students' academic progress and character formation (Chen et al., 2025). Under traditional supervision approaches, supervisors rely on their own academic accumulation, research intuition, and regular communication to impart knowledge and monitor progress, possessing absolute authority over frontier information and professional methodology. However, with the development of artificial intelligence, digital-intelligence tools are no longer merely marginal means for auxiliary calculation or text editing; they are deeply embedded in the entire cycle of literature review, experimental design, code writing, data mining, and even paper writing.

In this context, supervisors face unprecedented challenges, and the need for role transformation is urgent. Chen et al. (2025), after conducting a visual analysis of 172 studies on the supervisor–supervisee relationship in CNKI, pointed out that future efforts should strengthen the construction of theoretical systems and pay attention to the characteristics and

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challenges of the supervisor–supervisee relationship in the age of artificial intelligence, so as to promote the high-quality development of graduate education. On this basis, this paper applies relevant sociological and educational theories to deeply analyze potential problems in the graduate supervision process under the background of digital-intelligence empowerment and to identify specific paths for transforming supervisors' supervision approaches. It aims to promote the construction of a harmonious supervisor–supervisee relationship and to provide theoretical basis and practical reference for breaking through the current bottleneck in high-level talent cultivation and responding to the country's urgent need for top-notch innovative talents.

1. Deep Dilemmas and Problem Analysis Faced by postgraduate supervisors in the Digital-Intelligence Era

To deeply analyze the impact of digital-intelligence tools on the supervisor–supervisee relationship, this paper introduces Actor-Network Theory and Distributed Cognition Theory as analytical frameworks. Actor-Network Theory originated in the 1980s and is an important research method in French sociology. It is a classic theory for studying interactions among actors in multi-actor fields, capable of presenting in detail the strategies and role positioning of different actors and explaining the patterns and operational dynamics of cooperative networks from the perspective of actors' behavior (Chen & Hong, 2026). In the traditional supervisor–supervisee relationship, the core nodes of the network are the supervisor and the graduate student. However, in the digital-intelligence era, tools such as GenAI are not merely passively used instruments but highly heterogeneous and generative "non-human actors" that strongly intervene in the knowledge production network. This has caused the original power structure and knowledge flow paths to mutate, and the supervisor–supervisee relationship has become alienated into a heterogeneous network jointly constituted by human and non-human actors (Chen & Hong, 2026). At the same time, according to Distributed Cognition Theory (Liu et al., 2026), graduate students' cognitive processes are no longer confined to the individual brain but are distributed among the individual, the supervisor, the environment, and digital-intelligence tools. Although the transfer of cognitive load improves efficiency, it also brings deeper cognitive risks and ethical hazards. In the digital-intelligence era, the deep dilemmas faced by postgraduate supervisors in supervision are mainly reflected in four aspects: authority in knowledge acquisition, the supervision interaction mechanism, the cultivation of research independence, and academic quality gatekeeping. These are detailed below.

1.1 The Ceding of Academic Authority and the "Instrumentalized" Alienation of the Supervisor–Supervisee Relationship

The supervisor–supervisee relationship has multiple attributes, including institutional, cultural, and interactive attributes (Wang et al., 2024), and its formation and evolution are influenced by factors such as the supervisor's supervision style (Xue et al., 2025) and graduate students' motivation for study (Gao et al., 2024). In the traditional cultivation model, when graduate students encounter research difficulties, the first person they turn to for help is their supervisor. However, under the background of digital-intelligence empowerment, AI large models, based on their powerful generalization capabilities, can complete literature summarization and organization, data analysis, and experimental scheme formulation in a very short time. Their convenience and timely responsiveness exceed those of supervisors, which means that when students encounter difficulties or have questions, they first resort to various GenAI tools rather than their supervisors. This imperceptibly reduces graduate students’ dependence on supervisors’ knowledge in the research process and weakens supervisors’ influence.

From the perspective of the sociology of education, graduate cultivation is not only the transmission of academic knowledge but also the

osmosis of academic taste, research intuition, and academic ethics. Invisible knowledge such as academic taste and research intuition can only be acquired through face-to-face discussion, high-frequency intellectual collision, and deep emotional resonance between teachers and students; it cannot be obtained through one-way indoctrination. However, under the background of digital-intelligence empowerment, a large number of basic supervisory functions have been replaced by digital-intelligence tools, and the frequency of offline joint discussions between teachers and students has declined significantly. Through digital-intelligence tools and online communication, supervisors find it difficult to capture students' psychological fluctuations and subtle facial expressions when facing difficulties, which weakens the trust and emotional bond between teachers and students. Over time, the dignity of teachers and humanistic care are gradually dissolved, and the attributes of humanistic care, spiritual inheritance, and sense of belonging to the supervision community that graduate supervision should possess are weakened. Teacher–student interaction gradually evolves into a digital assembly-line model of "task instruction issued—AI tool assistance—online submission."

1.2 The Risk of "Cognitive Outsourcing" and the Dissolution of Students' Research Independence

The "trial-and-error" process repeatedly experienced by researchers is the most attractive part of scientific research and the process that best cultivates graduate students' abilities. In this process, researchers calmly read through a pile of scattered literature, identify contradictions among sources, seek patterns and logical clues in seemingly chaotic data, form their own problem awareness, and improve their ability to analyze and solve problems (Guo & Sun, 2025). However, the powerful generative capabilities of various digital-intelligence tools are quietly changing graduate students' cognitive habits and directly impacting the cultivation of core research abilities. With only a few simple prompts, digital-intelligence tools can quickly provide a complete thesis proposal outline, literature review, and even conclusion derivation. This excessive academic convenience imperceptibly changes students' habits of knowledge acquisition, allowing students to easily delegate deep cognitive work such as logical reasoning, viewpoint construction, and academic questioning to digital-intelligence tools. Over time, students will habitually rely on digital-intelligence tools to provide standard answers, lose the ability to distill scientific questions amid uncertainty and conduct critical examination, and know the outcome without knowing why, resulting in the phenomenon of "cognitive outsourcing." Under cognitive outsourcing, various outputs and reports will exhibit structurally complete, professionally worded, and rigorously analyzed characteristics. Serious information asymmetry will emerge between supervisors and students, making it difficult for supervisors to judge whether a work is the result of the student's repeated thinking or an output generated by digital-intelligence tools based on prompts. Supervisors will find it difficult to understand students' true research abilities. The "black-boxing" of the research process invisibly conceals students' shortcomings in underlying thinking and skills, making it difficult for supervisors to individualized instruction according to students' aptitude, ultimately affecting the cultivation of students' ability to analyze and solve complex problems.

1.3 The Failure of the Academic Evaluation System and the Black-Boxing of Ethical Governance

The determination of academic misconduct such as plagiarism and duplication mainly relies on comparative analysis of static texts; academic evaluation mostly emphasizes easily quantifiable outputs such as SCI/EI papers and patent applications/authorizations. However, after GenAI tools rapidly and widely intervene in the research process, the applicability of traditional methods for determining academic misconduct and conducting academic evaluation has declined significantly. Under the background of digital-intelligence empowerment, the topic conception, scheme design,

code optimization, and language polishing of academic outputs can all be completed with the help of digital-intelligence tools. The boundaries of originality of academic outputs have become blurred, and the evaluation of innovation has become more difficult. The convenience of digital-intelligence tools has led to the massive replacement of basic work such as literature organization and text revision and polishing, making it difficult to cultivate and examine students' writing standardization and depth of literature reading, and difficult to discern their degree of investment in the completion of works. In addition, the existing evaluation system remains result-oriented and finds it difficult to measure students' true abilities at the level of higher-order thinking, such as the proposal of key scientific questions and critical cross-validation of data, significantly increasing the difficulty of individualized instruction. More importantly, digital-intelligence empowerment may also produce more hidden phenomena of academic anomie, such as using AI to "wash" manuscripts to evade plagiarism detection, fabricating references according to predetermined goals (AI hallucination), and making tendentious adjustments to experimental data according to established patterns. Compared with traditional plagiarism, these practices are more concealed and difficult to identify through textual review alone, invisibly increasing the gatekeeping pressure and responsibility risks of supervisors in research supervision. In addition, students often lack awareness of data security risks and, without approval, use public large models to polish or analyze unpublished core laboratory data, patent concepts, or original code, bringing hidden dangers in data security and intellectual property to the team and leading to the leakage of research data.

1.4 The "Capability Inversion" of Supervisors and Anxiety over Digital-Intelligence Transformation

The digital-intelligence era is not only reshaping students but also posing severe challenges to supervisors' own knowledge structures and supervision psychology, making it easy for a distinctive digital generation gap to emerge between teachers and students. As digital natives, graduate students have a natural sensitivity and strong learning ability regarding the iteration of emerging large-model tools, the application of prompts, and the integration of resources in open-source communities. In contrast, many senior supervisors, even if they have worked deeply in their professional disciplines for many years, are usually at a disadvantage in mastering digital-intelligence technologies, understanding algorithmic logic, and using human–machine collaborative tools. This phenomenon forms a subtle "capability inversion" between teachers and students, and supervisors easily develop a sense of loss of control and authority anxiety when supervising students. Faced with this anxiety, some supervisors tend to move toward two extremes: first, out of fear of academic misconduct, they blindly impose a comprehensive prohibition, undermining the possibility of technological empowerment; second, due to unfamiliarity with technology, they completely allow students to use digital-intelligence tools blindly, alienating supervisory authority. Table 1 compares changes in graduate supervision approaches between the traditional model and the digital-intelligence empowerment context.

Table 1 Comparison of Challenges in the Transformation of Supervisor Supervision Approaches in the Digital-Intelligence Era

Comparison dimension	Traditional post-graduate supervision model	Transformation challenges of digital-intelligence-empowered supervisor supervision
Knowledge acquisition and academic authority	Supervisors have relative advantages in literature resources, academic frontiers, and professional methods; graduate students are strongly dependent on supervisors' knowledge.	Graduate students use GenAI to quickly organize literature, generate code, and produce literature reviews; the threshold for knowledge acquisition is lowered, and the leading role of supervisors is weakened.
Supervision interaction mechanism	Tacit knowledge, academic taste, and research ethics are transmitted through face-to-face communication, group meeting discussions, and mentorship transmission within the research group.	Online communication, task-based supervision, and human–computer interaction increase in frequency; face-to-face communication between teachers and students decreases, weakening emotional ties and academic inheritance.
Cultivation of research independence	Analytical and problem-solving abilities are cultivated through literature retrieval and repeated trial and error, enhancing independent working ability.	Students easily become dependent on digital-intelligence tools, causing cognitive inertia; supervisors find it difficult to judge students' true abilities, increasing the difficulty of individualized instruction.
Academic quality gatekeeping	Explicit academic misconduct is identified through static text plagiarism checks and peer review.	The boundaries of originality are blurred; hidden risks of data embellishment and fabricated references increase; academic misconduct becomes more concealed.

2. A Preliminary Discussion on Paths for Transforming Supervisor Supervision Approaches Under the Background of Digital-Intelligence Empowerment

Faced with the above dilemmas, it is not appropriate to simply restrict or laissez-faire students' use of digital-intelligence tools. Instead, supervisors should adjust their supervision approaches from the perspectives of knowledge management, process guidance, the supervisor–supervisee relationship, and evaluation mechanisms to realize digital-intelligence empowerment.

2.1 Knowledge Management: Transformation from Knowledge Transmitter to Leader of Scientific Intuition and Values

At a time when GenAI is comprehensively dissolving barriers to knowledge acquisition, if supervisors cling to the traditional role of transmitting literature resources and frontier information, they will inevitably fall into the alienation and weakening of supervisory functions. In the face of information overload and the proliferation of machine-generated content, the focus of supervisors' guidance must undergo a fundamental shift: from one-way indoctrination of incremental knowledge to the shaping of academic taste, the awakening of scientific intuition, and breakthroughs in complex problems. This shift in focus is first reflected in the reconstruction of evaluation criteria for students' research outputs. When facing literature reviews or data analysis results generated by students with the assistance of digital-intelligence tools, supervisors should examine students' degree of investment and the innovativeness of their works from the perspectives of problem formulation, evidence support, logical chains, and methodological applicability, while weakening the examination of conclusion completeness and expressive

standardization. Supervisors should guide students to deeply analyze the underlying logic, evidence chains, and potential fallacies of generated content, training students' critical thinking. Through methodological discussion, analysis of research ethics, and comparison of interdisciplinary issues, supervisors should guide students to use technical tools reasonably based on human value judgment. In addition, supervisors should guide students to use first principles to directly address the essence of things and to distill the core variables and objective laws driving the evolution of complex systems through logical deduction, thinking decomposition, and exchange of viewpoints, thereby cultivating students' problem-solving ability. This kind of insight into scientific problems and ability to construct underlying logic can only be formed through real research trial and error and teacher–student co-creation.

More importantly, the abundance of technology increasingly highlights the irreplaceability of human beings. No matter how cloud collaboration platforms iterate, supervisors' teaching by example based on physical settings remains the cornerstone of constructing graduate students' academic spirit. Supervisors' own scholarly attitude, ways of dealing with people, ability to accurately grasp problems, and even resilience and open-mindedness when facing research bottlenecks are all subtle educational forces. Therefore, even in today's comprehensive development of digital-intelligence technologies, online platforms can only be auxiliary. Supervisors should pay increasing attention to offline group meetings and one-on-one in-depth exchanges, strengthen emotional connections between teachers and students through discussions of specific offline issues, clarify their value-leading position in graduate cultivation, strengthen spiritual inheritance, and become value leaders in graduate students' growth.

2.2 Reshaping the Research Process: Building Process-Oriented Supervision Centered on "Source-Tracing Questioning"

Against the background of deep intervention of generative artificial intelligence in scientific research, the research process is facing a new crisis of being obscured and conclusions being generated in a "black box." The key to resolving this dilemma lies in breaking the evaluation inertia of result-only judgment and building a traceable and verifiable mechanism that runs through the entire chain of "problem formulation–data generation–method deduction–conclusion distillation." Supervisors should guide students to establish digital archives of logical evolution, not only completely preserving original data, code scripts, and parameter configurations but also recording in detail the deep motivations for methodological choices, the logic for eliminating outliers, and the boundary conditions under which conclusions hold. This dynamic restoration of the research "chain of thought" transforms research progress from vague subjective statements into transparent objective facts, enabling supervisors to accurately perceive the depth of students' understanding of core scientific problems.

Based on this foundation of transparency, the supervision process shifts from "end-point interrogation" to "accompanying correction." Traditional group meetings or periodic reports often have obvious lag, and once the direction deviates, the cost of correction is extremely high. Through version iterations and experimental logs retained in the cloud, supervisors can intervene promptly when students fall into logical confusion, key parameters show systematic deviation, or literature understanding remains superficial, helping graduate students adjust their research ideas. It is worth noting that this intervention is not taking over or replacing students, but rather forcing students to repeatedly scrutinize the rationality of underlying judgments and re-examine their research design by questioning the basis for key judgments.

Supervisors can prevent the "cognitive outsourcing" and cognitive compensation that occur frequently in the digital-intelligence era through data tracing and deeper questioning. Specifically, students can be required, when submitting outputs, to clearly define the scope of AI use in literature review, code writing, or text polishing and to attach the process of

manual verification of key facts and the basis for revisions. By tracing the sources of data and viewpoints, students are pushed to shift from passively accepting generated results to actively examining technical outputs, and through real academic trial and error and logical analysis, they refine rigorous engineering logic, reliable data awareness, and independent academic judgment.

It is worth noting that process intervention must strictly observe educational boundaries and guard against alienating the traceability mechanism into micro-surveillance or mechanical check-ins for students. Through regular review of process archives, targeted interviews, and group meeting discussions, supervisors can more accurately identify students' ability shortcomings and implement differentiated supervision: for students with weak foundations, focus on basic training in data ethics, experimental norms, and argumentation logic; for students with independent inquiry ability, focus on inspiring their vision and methodological innovation in distilling major academic propositions. In this way, process transparency promotes deep interaction, agile questioning protects academic truth-seeking, benign interaction in the supervisor–supervisee relationship is promoted, and a substantive leap in the quality of graduate cultivation in the digital-intelligence era is achieved.

2.3 Reconstructing the Supervisor–Supervisee Relationship: From a Single-Line Apprenticeship to a Cloud-Based Academic Community

Based on Actor-Network Theory, as non-human actors, digital-intelligence technologies have been deeply embedded in the research process and have reshaped the supervision ecosystem (Chen & Hong, 2026). Digital-intelligence technologies should become a bridge that brings teachers and students closer, not a shackle for surveillance. Supervisors need to proactively resolve the emotional alienation brought about by digitalization and reshape a warm supervisor–supervisee relationship. Faced with a multi-level graduate student base within a research group, supervisors can deeply use digital-intelligence collaboration platforms to break the traditional single-line supervision model of "supervisor–single student," which is prone to supervision blind spots, and to promote the traditional one-way, linear apprenticeship supervision model. By setting reasonable digital permissions and task nodes, supervisors can build a tiered academic collaboration matrix in which "the supervisor controls the research direction—senior students lead the core logic—junior students are responsible for data verification," thereby constructing a cloud-based supervision community. In this matrix, supervisors can not only guide specific academic topics and cultivate students' coordination abilities in project implementation but also use digital means to achieve the sedimentation and progressive inheritance of tacit knowledge within the group. More importantly, by clearly defining the boundary between online task management and offline ideological exchange, supervisors strengthen humanistic care and value guidance and reconstruct a warm supervisor–supervisee relationship. In daily supervision, routine and standardized affairs such as progress tracking, preliminary literature screening, and format review are asynchronously completed in the cloud; valuable offline time is mainly used for breakthroughs in academic bottlenecks, psychological counseling for research anxiety, and guidance for students' career development. Ultimately, this achieves a benign complementarity in which technology empowers administrative governance and supervisors deeply cultivate value guidance, dissolves the emotional alienation brought about by the use of digital-intelligence tools, and returns to the educational essence of fostering virtue through education.

2.4 Reconstructing the Evaluation Mechanism: Establishing a Multidimensional Digital-Intelligence Process-Oriented Feedback System

Under the background of digital-intelligence empowerment, texts are highly easy to embellish. To avoid the risk of academic misconduct, academic evaluation must shift from a single result dimension to a multidimensional process dimension. Relying on digital-intelligence technologies, diverse and

dynamic formative assessment can be realized, breaking the static evaluation of result-only judgment. Theoretically, the comprehensive evaluation system model in the digital-intelligence era can be conceived as:

$$E_{total}=\alpha \sum_{i=1}^{n} p_i+\beta \cdot C_{trace}+\gamma \cdot V_{ethics}$$

Among them, p_i represents students' digital footprints across various dimensions on the cloud platform and their quantifiable research outputs; C_{trace} represents the reflective logical tracing score; V_{ethics} represents the verification weight for academic ethics and data security; α, β, and γ are evaluation weighting coefficients that depend on disciplinary characteristics.

Based on this evaluation model, supervisors should implement the following changes: transform the evaluation perspective and take digital footprints such as students' collaboration activity on the cloud platform, standardization of data sharing, and contribution to open-source code as important dimensions for evaluating their research literacy. Through multidimensional profiles of research process data, supervisors can accurately identify each student's strengths and weaknesses and provide more precise individualized instruction. Given that basic text organization and preliminary data screening have been replaced by digital-intelligence tools, when evaluating dissertations or project reports, the assessment weight of human core wisdom—such as the depth of problem distillation, the logical closure of research design, and keen insight into anomalous data—must be substantially increased. Supervisors should embed a full-process "reflective supervision" mechanism in the training program, for example, requiring students to submit the logic of prompts and the revision trajectory of AI-generated content when submitting phased outputs involving AI. In the proposal, mid-term review, and pre-defense stages, the assessment weight of on-site oral questioning and impromptu logical reasoning should be increased, forcing students to strip away technological dependence and restore their true depth of thinking, ensuring that graduate students' agentic research ability is substantively tempered.

3. Conclusion

Digital-intelligence empowerment is by no means merely a technological innovation at the tool level; it is a systemic transformation that profoundly reshapes the knowledge production paradigm and talent cultivation logic of higher education. In the face of the flood of information and diverse cognitive challenges, the transformation of postgraduate supervisors' supervision approaches has become inevitable. In this process, supervisors need to proactively bridge the digital divide, using the reconstruction of the knowledge management system as a breakthrough point, full-cycle process transparency as a key lever, and the construction of a cloud-based academic community as support, thereby steadily achieving a role transition from "experience-driven knowledge transmitter" to "data-driven research navigator."

At the same time, sober academic rationality must be maintained: no matter how digital-intelligence technologies iterate and upgrade, the educational essence of "fostering virtue through education" remains unchanged. Algorithms cannot replace supervisors' keen scientific intuition, and virtual spaces cannot cultivate lofty academic commitment to the nation. Future graduate supervision will inevitably seek a dynamic balance between highly rational digital-intelligence tools and teacher–student interactions full of humanistic warmth, thereby continuously supplying outstanding compound talents with cross-boundary integration ability and independent critical spirit for the country's innovation-driven development strategy.

Conflict of Interest

The author(s) declare that there are no conflicts of interest to this work.

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References

Chen, H., Li, Y., & Zhu, Z. (2025). CiteSpace knowledge map analysis of the current status and hotspots of supervisor–supervisee relationship research in China [Conference paper]. The 13th Academic Annual Meeting of the Moral Education Committee of the China Association of Degree and Graduate Education, Hangzhou, China.

Chen, Z., & Hong, Z. (2026). Mechanism for cultivating graduate students' research ability based on projects: An analysis based on Actor-Network Theory. *Central Higher Education Research, 2*(4), 52–61.

Gao, H., Si, X., Hou, L., et al. (2024). Graduate students' enrollment motivation and learning status under the background of expansion: The chain mediating role of the supervisor–supervisee relationship and learning pressure. *Higher Education Exploration, 2024*(5), 98–105.

Guo, M., & Sun, M. (2025). Disruption and reconstruction: A multidimensional reflection on the impact of ChatGPT on the postgraduate supervisor–supervisee relationship. Heilongjiang Education (Education and Teaching), (S2), 30–33.

Han, D., & Li, K. (2026). A preliminary study on AI + supervision community empowering the cultivation of graduate students' innovation ability. University Education, (3), 23–27.

Li, F. (2025). Reconstruction and transformation of the supervisor–supervisee relationship under the wave of artificial intelligence. *Educator,* (16), 36–37.

Liu, L., Tang, J., & Sun, S. (2026). Construction of an AIGC human–machine collaborative teaching model from the perspective of distributed cognition: Taking the Web Design and Production course as an example. *Science and Education Guide, (*14), 93–95.

Ministry of Education. (2025). 2025 national education development statistical bulletin [Statistical bulletin].

Wang, J., Chang, H., & Du, J. (2024). A review of research on basic issues of the supervisor–supervisee relationship: Essence, types, and influencing factors. *Research in Graduate Education,* (2), 93–100.

Xue, H., Chen, S., & Ding, R. (2025). The influence of supportive supervisory style on the postgraduate supervisor–supervisee relationship: The moderating role of goodwill trust. *Project Management Technology, 23*(9), 20–27.

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