

A Study on the Practical Challenges and Pathways to Enhancing Governance Capabilities in University Secondary Schools in the Context of Digital Transformation

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Abstract: Against the backdrop of the popularization and high-quality development of higher education, secondary colleges have become the core entities responsible for university operations and governance. Enhancing their governance capabilities is therefore critical to establishing a modern university system. Digital transformation offers a crucial opportunity to shift secondary college governance from experience-based to data-driven precision governance. Based on theoretical analysis and an examination of practical challenges, this study explores the empowering logic and real-world dilemmas of digital transformation in enhancing governance capabilities at the secondary college level. The findings reveal practical challenges including a lag in governance mindset, imbalanced data authority and responsibility between university and college levels, blurred managerial accountability, and uneven digital literacy among diverse stakeholders. In response, this study proposes four pathways: shifting toward a service-oriented philosophy, clarifying data authority and responsibility, reengineering business processes, and systematically enhancing digital literacy. This implies that to truly unleash the empowering effects of digital transformation on secondary college governance, it is necessary to move beyond the limitations of “technological instrumentalism” and achieve a deep coupling of technology and institutions across four dimensions: mindset shift, clarification of authority and responsibility, process reengineering, and capacity building.

Keywords: Digital Transformation; University Secondary Colleges; Governance Capabilities

1. The Practical Necessity and Empowering Effects of Enhancing Governance Capabilities in University Secondary Schools Amid Digital Transformation

1.1 Practical Necessity

The governance of secondary schools is a crucial issue in university administration. [1] It is not only key to stimulating the vitality of university operations and building world-class universities and disciplines, but also a vital component in establishing a modern university system and advancing the modernisation of the higher education governance system and capacity. Against the dual backdrop of the popularisation of higher education and high-quality development, secondary schools—as the grassroots academic organisations responsible for talent cultivation, scientific research and social service within universities—have evolved from mere executive units into the primary entities responsible for running and governing the institution. Relevant national policy documents on deepening the reform of the education supervision system and mechanisms in the new era explicitly call for shifting the focus of governance downwards and consolidating the autonomy of schools in running their institutions. As the consensus within the higher education sector states, ‘A school should not be a bureaucratic organisation, but rather a self-organising entity with self-adaptability, developmental capacity and control; governance is the natural choice for enhancing the school’s capabilities.’ [2] This establishes the irreplaceable core status of secondary schools within the university governance system. At the same time, digitalisation is emerging as a defining factor reshaping the higher education ecosystem; the digitalisation of education represents a crucial breakthrough for China in opening up new avenues for educational development and forging new competitive

advantages. Against this backdrop, the Ministry of Education is vigorously implementing the Digital Education Strategy Initiative, aiming to drive transformative changes in educational governance through technological empowerment. This implies that secondary colleges are not only the ultimate focal point of the higher education digitalisation strategy but also the pivotal fulcrum for assessing the effectiveness of modernised university governance.

Viewed in this light, digital transformation serves as the key engine for enhancing the governance capabilities of secondary colleges. It is not only the inevitable path to breaking free from the traditional management constraints of grassroots academic organisations and revitalising the intrinsic vitality of university operations, but also a crucial lever for deepening educational evaluation reforms in the new era. Achieving a systematic reshaping of school governance from ‘experience-dependent’ to ‘data-driven’ is the core essence of aligning with the trends of higher education transformation in the digital age. It holds significant strategic importance for further unlocking the potential of data as a key factor and for advancing the construction of world-class universities.

From a fundamental perspective, digital transformation addresses the intrinsic need for secondary colleges to transition from ‘experience-based governance’ to ‘evidence-based governance’. Traditional college governance relies heavily on administrative directives and individual experience; when faced with complex interdisciplinary issues, faculty evaluation and personalised student development, it often results in decision-making blind spots and management delays. The introduction of digital technology provides schools with comprehensive, real-time data analytics capabilities, enabling them to use data to accurately assess disciplinary trends, identify shortcomings in faculty structures, and understand patterns of student development. Consequently, for schools, digital transformation is no longer merely a technical upgrade, but a strategic imperative to reconfigure the power structures, operational logic and evaluation systems of grassroots academic organisations; it serves as the foundational support for fulfilling their responsibilities as autonomous academic entities.

1.2 The Multidimensional Effects of Digital Technology on Enhancing the Governance Capabilities of Schools and Colleges

Digital transformation is not merely the accumulation of technological tools; rather, it involves the systematic reshaping of the governance structures, processes, and capabilities of schools and colleges through the deep integration of data elements, thereby generating significant empowering effects. The Association for the Advancement of Computing in Higher Education (EDUCAUSE) defines digital transformation as “a dynamic process that leverages deep and coordinated changes at the cultural, human, and technological levels to optimize institutional operations, adjust strategic decisions, and reshape value orientations.”

1.2.1 Enhancing governance effectiveness and decision-making rationality

Faculties serve as the “last mile” in fulfilling the fundamental mission of fostering virtue through education; their governance effectiveness directly impacts the overall high-quality development of universities. The most direct empowerment of secondary school governance through digital transformation is manifested at the level of instrumental rationality. Its core lies in embedding data elements to address issues in traditional governance—such as information asymmetry, delayed responses, and subjective decision-making—thereby achieving a fundamental shift in the governance paradigm from experience-driven to data-driven intelligence. By transforming implicit management experience into explicit data evidence, it significantly reduces the subjectivity and lag in decision-making, leading to an overall leap in governance effectiveness.

Traditional secondary school governance often relies on the personal experience and intuitive judgment of administrators, with information acquisition characterized by fragmentation and delays. Digital transformation builds a comprehensive data center to integrate data resources—such as those related to teaching, research, human resources, and student development—that were previously scattered across different business systems, thereby creating a comprehensive, real-time, and traceable data asset. Building on this foundation, administrators can use visualization tools to monitor key indicators in real time, such as the status of program development, faculty research output trends, and student academic warning

flags. This shift from experience-based management to evidence-based governance significantly enhances the precision and timeliness of governance.

Second, by leveraging big data analytics and artificial intelligence algorithms, schools can conduct predictive analyses of resource allocation efficiency, disciplinary development potential, and talent cultivation quality. For example, by analyzing laboratory usage data, they can optimize resource allocation plans; by modeling student learning behavior data, they can implement early warnings for academic risks and precise interventions. This “preemptive prevention” addresses the lag inherent in traditional “reactive” governance, shifting decision-making from passive response to proactive foresight and enhancing the scientific rigor of decisions.

At the same time, digital transformation streamlines governance processes by eliminating unnecessary steps through process reengineering. By embedding routine administrative tasks—such as course scheduling, expense reimbursement, approvals, and performance evaluations—into digital platforms, processes are automated and standardized, significantly reducing repetitive work and human error in management. This not only alleviates the administrative burden on administrators and faculty but, more importantly, frees up governance resources from tedious daily tasks, allowing them to be redirected toward more strategically valuable governance innovations and teaching and academic activities.

1.2.2 Optimizing governance structures and operational mechanisms

The integration of digital technology platforms has made it possible to break down entrenched information barriers and hierarchical divisions, driving governance structures toward a flatter hierarchy and operational mechanisms toward greater collaboration.

Traditional university governance typically adopts a three-tier hierarchical structure of “university—school—department,” which involves multiple layers of information transmission and a high rate of distortion. Through a disintermediated information flow mechanism, digital collaboration platforms break down communication barriers between levels, making cross-level communication and cross-departmental collaboration the norm. This permeative management not only reduces

information loss caused by administrative hierarchies but also grants grassroots academic organizations greater autonomy and responsiveness, thereby stimulating institutional vitality.

In traditional governance models, functional departments such as teaching, research, student affairs, and administration often operate in isolation, creating “data silos” and “operational barriers.” Digital transformation, however, breaks down these information barriers between departments. Specifically, intelligent technologies can be used to conduct linked analyses of students’ academic performance and extracurricular activities, and to facilitate the sharing of faculty research outputs with graduate student training data, thereby implementing the “all-round education” philosophy at the institutional level. This not only optimizes services by ensuring “data travels more while faculty and students travel less,” but also streamlines redundant management layers through integrated online-offline coordination. Consequently, the exercise of academic and administrative authority becomes more transparent and efficient, promoting a flatter and more flexible governance structure within the college.

1.2.3 Reshaping governance concepts and the cultural ecosystem

In practice, educators tend to habitually adhere to long-established educational philosophies, models, and methods, and their professional development often lags behind technological iterations and updates [3]. The deepest significance of digital transformation lies at the conceptual level; it is not merely the introduction of technological systems, but a fundamental shift in the values, behavioral patterns, and power dynamics of organizational members. At the core of this transformation lies the shift of school governance from a traditional logic of management and control to a logic of service and empowerment.

Traditional governance models emphasize the control of “people” and “resources,” with an underlying logic of control and constraint. Digital transformation, however, provides precise information and data, shifting the focus of governance from supervision and control to supporting development. College governance is gradually moving away from traditional, rigid control-oriented thinking and shifting its focus to the personalized needs and developmental

trajectories of faculty and students. This fosters a new academic ecosystem based on data-driven trust, encouraging innovative exploration and emphasizing substantive development, ultimately achieving the organic integration of technological empowerment and humanistic care. For example, this includes providing intelligent recommendations on research directions for faculty, personalized learning path planning for students, and intelligent decision-support tools for administrators. In this process, the role of the college shifts from that of a traditional administrator to a service provider, and the governance objective evolves from “managing people” to “empowering people.”

Digital transformation breaks down the “information walls” between academic teams, promoting interdisciplinary and cross-team knowledge sharing and collaborative innovation. However, technology alone does not automatically foster a culture of openness and sharing; without corresponding cultural support at the organizational level, digital tools may degenerate into “electronic shackles” that reinforce administrative control. Therefore, fostering a cultural atmosphere within schools that embraces open data sharing, transparent processes, and a culture of innovation that tolerates trial and error is a crucial safeguard for the sustained deepening of digital transformation. At the core of this new governance culture lies a shared value system based on trust, collaboration, and data ethics, which constitutes the fertile ground for digital transformation to empower the enhancement of governance capabilities.

2. The Practical Challenges Facing the Enhancement of Governance Capabilities in University Schools Amid Digital Transformation

Digital transformation is profoundly reshaping the operational logic of higher education; however, this process has encountered significant resistance at the school level. On the surface, the problem appears to stem from inadequate technical systems and lagging hardware and software infrastructure; yet a deeper analysis reveals that the true obstacle lies not in the technology itself, but in the structural friction caused by its integration into the school’s existing governance structure. This friction manifests across four intertwined dimensions—philosophy, data, authority and responsibility, and personnel—collectively

hindering a substantial leap in governance capabilities.

2.1 A lag in the Shift Toward a Governance Mindset and Superficial Implementation of Digital Technologies

2.1.1 Managers’ understanding of digital transformation remains limited to the instrumental level

Margaret Borden points out that the evolution of technology into a tool is inevitably accompanied by a dual dynamic of the expansion of instrumental rationality and the decline of value rationality; this structural contradiction has permeated every sphere of modern society. [4] For a long time, secondary schools have operated under a management model characterized by a hierarchical structure, where administrative directives and experiential judgment have formed the primary basis for daily decision-making. Following the introduction of digital tools, a significant number of administrators have interpreted them simply as technical means to enhance administrative efficiency—such as replacing paper-based reporting with online forms and shifting offline approvals to online workflows. While this perspective is not without merit, it obscures a deeper issue: digital transformation does not merely alter the tools themselves, but rather the logical foundation of decision-making. Digitalization inherently requires data sharing and process transparency, which inevitably challenges existing power boundaries and information barriers. Out of concern for maintaining control over information, some administrators adopt a negative attitude toward deep digital transformation; while superficially supporting system development, they effectively continue to rely on traditional decision-making methods. This has led to a situation where “systems are built, but the logic remains the same,” resulting in a significant gap between technological investment and governance effectiveness.

2.1.2 Cognitive limitations make it difficult to sustain the momentum for transformation

College administrators’ understanding of digitalization often remains limited to paperless offices or online form-filling, failing to grasp the deeper value of digitalization in transforming governance models. This limited understanding directly undermines the internal momentum for transformation. When digital systems initially

run poorly and actually increase the burden of data entry, administrators are prone to feeling frustrated and questioning the effectiveness of digitalization. More concerning is that when system-generated reports fail to accurately reflect deeper governance issues—such as teaching quality or research team collaboration—administrators often attribute the problem to the technology itself, rather than reflecting on how to use data to optimize management. This cognitive bias traps digital transformation in an awkward predicament where it is “considered important in theory, secondary in practice, and neglected when things get busy.”

2.2 Poor Data Sharing Between Schools and Colleges, Coupled with Inconsistent Quality of Basic Data

2.2.1 Imbalance in the allocation of data responsibilities between the university and the college levels

Ultimately, teaching and research activities at universities must be carried out at the college level. In this sense, colleges should be the primary users of data and the main beneficiaries of the digital dividend. However, the reality is that under the current system, core business systems are largely controlled by the university’s administrative departments, while data related to academic affairs, human resources, and finance is scattered across various departments, creating data silos. The interplay between an administration-led governance model and the blurring of responsibilities among multiple stakeholders has led to institutional barriers in data-sharing mechanisms. [5] Although the schools are the actual producers of data, obtaining it requires multiple layers of approval and repeated communication; even when approved, the data is often already outdated. This data distribution pattern reflects a structural imbalance in data authority and responsibility between the university and the schools. For the sake of administrative convenience, administrative departments tend to maintain tight control over data interfaces; while schools have a strong need for data, they lack institutionalized channels for obtaining it. This imbalance in authority and responsibility directly limits the schools’ ability to conduct self-assessments and make dynamic adjustments based on data.

2.2.2 The lack of data standards makes it difficult to ensure quality

Even when colleges are able to obtain relevant data, they often face issues of inconsistent standards and conflicting definitions. Student data, faculty data, and instructional data are stored in separate systems, resulting in vastly different values for the same metric across these systems. While this phenomenon may appear to be a technical issue, it actually reflects a management gap—namely, the absence of unified data standards and the failure to establish a verification mechanism ensuring a single source of truth. At the college level, there is neither the authority nor the capacity to cleanse and integrate data, leaving institutions with no choice but to passively accept data of varying quality. The accuracy and timeliness of the data are difficult to guarantee, resulting in a lack of reliable data to support critical decisions such as program adjustments, faculty hiring, and resource allocation. When the data itself cannot be trusted, data-driven decision-making is naturally out of the question.

2.3 The Application of Technology Has Led to Unclear Lines of Responsibility and Blind Spots in Management Oversight

2.3.1 The system has been set up as a tool for managers to evade responsibility

In theory, the integration of digital technology should make management processes clearer and delineate lines of responsibility more precisely. In practice, however, the reality is quite different. One notable phenomenon is that some managers have begun to shirk responsibility by citing system settings. When faced with questions from faculty and students regarding a particular decision, their response is often, “That’s how the system is set up; there’s nothing I can do about it.” While this response may seem reasonable, it actually evades the manager’s duty to provide explanations and communicate effectively. Behind this phenomenon lies a subtle shift in managerial responsibility, wherein the judgment and communication tasks that should be undertaken by people are simply delegated to technical systems. What warrants further reflection is that some managers have grown accustomed to allocating resources directly based on system algorithms; when injustices arise, they refuse to make adjustments by citing “that’s how the system is set up,” resulting in rigid management that lacks human warmth. Far from promoting refined governance, technology has instead become a tool for managers to evade

responsibility.

2.3.2 Limited coverage of digital tools leaves gaps in governance

Big data has established a data exchange platform to facilitate digital governance within universities, creating an intelligent governance environment supported by algorithms and data. However, digital empowerment does not mean that technology is a panacea; not everything in human society can be measured or predicted by technology. [6] Most existing digital tools focus on the recording and statistics of administrative tasks, such as attendance management, expense reimbursement, and equipment borrowing. When it comes to governance aspects that are difficult to quantify—such as academic program development, research team collaboration, faculty development needs, and the quality of faculty-student interactions—technological solutions often fall short. This selective digitization leaves the truly critical areas of college governance outside the scope of data monitoring, creating new blind spots in management. Faced with these blind spots, college administrators lack both data support and effective analytical tools, leaving them no choice but to continue relying on experience-based judgment. Rather than broadening the scope of governance, digital transformation may actually overlook the essential aspects of governance by focusing solely on easily quantifiable tasks.

2.4 A Dual Shortage of Digital Literacy and Willingness to Participate Among Diverse Stakeholders

2.4.1 There are significant differences in the willingness of various stakeholders to participate. University governance is closely intertwined with the university's diverse stakeholders; the insights and resources provided by their participation help ensure that governance decisions are more scientific and reasonable. [7] The same applies to secondary colleges, which require the joint participation of diverse stakeholders; however, there are significant differences in willingness to participate among different groups during the digital transformation process. Administrative staff, who have long been burdened with complex administrative tasks, generally feel overwhelmed by the new demands of system upgrades and data maintenance, and thus show little willingness to participate in digital transformation efforts. Among faculty members, younger teachers tend

to be more receptive to digital tools and are willing to try new ways of participating; some senior faculty, however, find it difficult to change their established technical habits and adopt a wait-and-see or even resistant attitude toward digital initiatives, gradually becoming marginalized in college governance. Students are increasingly concerned about data privacy and usage regulations; if the college's data collection and usage lack transparency, this can easily lead to mistrust or even resistance. This divergence in willingness to participate exacerbates information asymmetry within the college and makes it increasingly difficult to build consensus.

2.4.2 There is a structural mismatch between workforce skills and digital requirements

As daily users of digital systems, college administrative staff face a significant gap between their skill sets and the demands of digital transformation. Personnel in roles such as academic secretaries and research secretaries vary widely in age and professional background, and they generally lack sufficient skills in data processing and system analysis. Faced with increasingly complex digital tasks, they must not only handle routine administrative work but also take on new responsibilities such as data maintenance and report generation. Many feel overwhelmed and even experience occupational burnout. This skills gap directly hinders the effective operation of digital systems. At the same time, there is a disparity in data literacy among faculty and students. Some are unfamiliar with system operations; when they encounter problems, they cannot obtain timely assistance and consequently choose to gradually withdraw from digital engagement. Clearly, this skills mismatch prevents digital systems from achieving their intended effectiveness.

3. Pathways to Enhancing Governance Capabilities in University Schools Amid Digital Transformation

In light of these challenges, relying solely on technological investments is no longer sufficient. True breakthroughs require systematic adjustments across four key areas: governance philosophy, data mechanisms, management processes, and staff development. The key lies in transforming digital transformation from a technical project into a process of governance reform, ensuring that technology truly serves the institution's educational objectives and the needs

of both faculty and students.

3.1 Clarify the Service-Oriented Approach to Digital Transformation and Foster a Data-Driven Decision-Making Culture

3.1.1 Taking the service of faculty and students as the starting point for digital transformation

To break free from conceptual dilemmas, we must first answer a fundamental question: What is the true purpose of digital transformation? If the answer points to “improving management efficiency” or “facilitating monitoring,” then system design and implementation will inevitably lead to control and restriction. However, if the answer points to “helping teachers and students solve problems,” “supporting teachers’ professional development,” or “serving students’ growth and success,” the entire logic will be entirely different. This is not to deny the value of efficiency, but rather to understand it within a broader context. In driving digital transformation, we must adopt a service-oriented approach and prioritize security to achieve a shift from “educational governance” to “digital and intelligent governance.” [8] Clearly, truly effective digitization means reducing the administrative burden on faculty and students while increasing the flow of data; it frees administrators from tedious, routine tasks, allowing them to devote more energy to teaching and research itself. In this regard, the value orientation of digital transformation should be empowerment rather than control. Before introducing or developing new systems, we should first conduct research into the genuine needs of faculty and students, rather than forcing them to passively adapt to the fixed processes of the software. The comprehensive faculty performance evaluation system should not merely serve as a conduit for data; rather, it should function as a tool to help faculty members identify their strengths and plan their academic careers.

3.1.2 Encourage managers to shift from relying on intuition to making data-driven decisions

Ultimately, this shift in philosophy must translate into a change in decision-making practices. The college should gradually foster a culture of evidence-based decision-making, encouraging administrators to move away from relying on experience and toward data-driven approaches. In the digital age, data has become one of the most valuable assets for universities, and strong data governance capabilities are

essential for universities to shape the future and drive change.[9] This means that administrators must learn to interpret and utilize data, and establish a culture of data-driven discussion within their teams. Specifically, they can hold regular data analysis meetings to bring together relevant personnel and jointly analyze governance issues revealed by the data, focusing on core topics such as teaching operations, research output, and resource allocation. The purpose of these meetings is to identify problems and seek improvements, not to assign blame. At the same time, the college should establish a feedback mechanism for data application to collect feedback from faculty and students regarding their experience with digital systems and suggestions for improvement, thereby continuously optimizing system functionality. Through ongoing cultural cultivation, data-driven decision-making should gradually become an ingrained behavioral habit among administrators.

3.2 Clarify the Division of Responsibilities for Data Management Between the University and the Colleges and Enhance the Colleges’ Data Governance Capabilities

3.2.1 Clarify the boundaries of authority and responsibility regarding the provision of university data services and the use of such data by academic departments

The key to overcoming data challenges lies in clarifying the division of data responsibilities between the university and its schools. At the university level, the role should shift from being a data controller to a standard-setter and service provider. While ensuring data security and privacy, a standardized data feedback mechanism should be established to enable schools to promptly access operational data closely related to their own development. Specifically, core business data that has been cleaned and de-identified can be regularly and selectively transmitted to the schools via data interfaces or data warehouses, enabling the schools to possess their own data assets. The university should also assume responsibility for establishing data standards to ensure that data across various business systems is consistent, comparable, and integrable. To address cross-departmental data conflicts, a “single source for each data point” verification mechanism should be established to clarify the authoritative source of key indicators.

3.2.2 Establish a college-level data governance team and conduct regular data audits

Once data usage rights have been secured, the college must establish its own data governance capabilities. A data governance team may be formed, comprising college leaders, academic leaders, key administrative staff, and IT personnel, to be responsible for refining college-level data standards, reviewing data quality, and developing data applications. The responsibilities of the data governance team include: regularly verifying the accuracy and completeness of core data, and promptly communicating and coordinating with relevant university departments when data issues are identified; developing applicable data analysis models and visualization tools tailored to the school's specific needs; and organizing training and guidance on data applications to enhance the data literacy of all faculty and students. Through this two-way interaction, data silos will be gradually broken down, fostering a virtuous cycle in which the university empowers the school and the school, in turn, contributes back to the university.

3.3 Establish Transparent and Standardized Business Processes and Develop Governance Tools Focused on Core Business Operations

3.3.1 Digitize the process and clearly define the responsible parties for each step

This involves using digital tools to streamline and optimize the college's core operations, establish transparent and standardized operational procedures, and reduce the arbitrariness of human intervention. Specifically, for key areas such as teaching schedules, research project management, faculty evaluations, and resource allocation, the responsible parties, processing timelines, required materials, and handling standards should be clearly defined and formalized through digital systems. For cross-departmental collaboration, virtual teams can be formed through collaboration platforms to enable real-time information sharing and coordinated task advancement, thereby reducing communication costs. In process design, it is essential to clearly define the boundaries of system-defined rules and the scope of managerial discretion, ensuring that technology standardizes processes while preserving room for managerial interpretation and communication. At the same time, a hybrid mechanism should be

established, with "system processing as the foundation and human intervention as the safety net." For disputes or anomalies arising from system determinations, clear channels for manual review and appeals should be designed, and specific personnel should be designated to bear the responsibility for final interpretation and adjudication, thereby institutionally closing loopholes that allow managers to shirk responsibility.

3.3.2 Develop a college-level governance dashboard and focus on areas that are difficult to quantify

Rather than pursuing a comprehensive university-wide system, institutions should develop data dashboards tailored to the college level that focus on core operations. These dashboards should not only display static data but also feature dynamic alert and analysis capabilities. For example, when a graduate student falls behind in their academic progress, a research team shows irregularities in funding utilization, or student evaluations for a course exhibit significant fluctuations, the system should automatically send alerts to the relevant personnel to facilitate timely intervention. The dashboard should also support multi-dimensional data drilling to help administrators gain insights into issues from various perspectives. At the same time, attention should be paid to areas that digital tools cannot fully cover; offline mechanisms should be utilized to strengthen support for soft aspects such as interdisciplinary integration, team culture building, and personalized needs of faculty and students. Technology should serve governance, not replace it.

3.4 Differentiation Motivates Diverse Stakeholders to Participate and Systematically Enhances Digital Literacy

3.4.1 Implement tailored incentive measures for different groups

In the new era, the governance of secondary colleges should "transcend the single institutional framework of administrative governance," [10] adopting stakeholder theory to achieve collaborative governance. [11] Differentiated incentive measures should be implemented based on the characteristics of different groups. For administrative staff, the focus should be on providing training and guidance to help them master basic skills in data processing and process management, enabling

them to transition from mere executors to professionals capable of using data to improve their work. At the same time, their efforts in digital work should be recognized in performance evaluations to prevent job burnout caused by the increased technical workload. For the teaching staff, a flexible technical support mechanism should be established to provide personalized assistance to faculty members with varying levels of technical proficiency. At the same time, institutional frameworks should be designed to encourage teachers to participate in the college's data development and governance initiatives, ensuring they genuinely perceive digitalization as a convenience rather than a burden. For students, their rights to information and participation must be safeguarded. First, prior to data collection, students should be informed of the data's intended use, storage methods, and security measures through concise agreements or informational sessions, thereby obtaining their informed consent. Second, during the data usage process, an audit and disclosure system should be established to maintain transparency, allowing students to understand how their data is being used to improve educational services. In this way, students' "distrust" can be transformed into a foundation of trust based on "co-construction and sharing." When necessary, students can also be invited to participate in data analysis and governance practices.

3.4.2 Conduct digital literacy training in a tiered and categorized manner and establish a long-term mechanism

Prioritize developing data leadership skills among mid-level managers. Key mid-level personnel—such as department chairs, institute directors, and deans' assistants—serve as the critical link between strategy and execution. Training for these individuals should not be limited to software operation but should focus on cultivating their ability to use data to identify problems, facilitate collaboration, and drive change. For administrative staff, provide technology-empowerment training that emphasizes improving their data processing, process design, and communication skills using digital tools. For faculty members, establish a technical support mechanism featuring one-on-one or peer-mentoring assistance, develop user-friendly guides, and create rapid-response channels for problem-solving to alleviate tech anxiety. For students, create

student data assistant positions to involve them in the collection and analysis of college data, thereby cultivating their skills while strengthening their sense of ownership in college governance. Through tiered implementation and comprehensive capacity-building that covers all members of the college community, we will gradually narrow the digital literacy gap and foster a collaborative governance model.

Overall, digital transformation offers new opportunities for enhancing the governance capabilities of secondary colleges; however, to truly achieve this goal, it is necessary to overcome multiple obstacles related to mindset, data, authority and responsibility, and capacity. This requires not only the continuous improvement of technical systems but also the ongoing optimization of governance structures and the simultaneous enhancement of human capabilities. Only through a virtuous cycle of technological integration and institutional reform can digital technology truly become embedded in the daily operations of colleges and serve as a key driver of modernizing governance capabilities.

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