

Research on the Reform of Teaching Management in Private Universities Based on Artificial Intelligence

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Abstract: This article addresses the problems existing in private universities, such as insufficient scientificity of teaching management systems, weak technical foundation for informatization construction, scarcity of digital resources, and the alienation of evaluation standards. Based on scientific management theory, PEST and SWOT analysis theory, it analyzes the actual difficulties and opportunities of improving teaching management through artificial intelligence in private universities, and proposes strategies and guarantee measures for integrating artificial intelligence into teaching management and enhancing teaching quality, with the aim of providing reference for private universities to enhance their competitiveness.

1. Introduction

With the development of artificial intelligence technology, integrating artificial intelligence into the teaching management of private universities can improve many traditional teaching management problems of private universities, such as low teaching management efficiency, single teaching methods, and uneven resource allocation. Studying artificial intelligence and improving teaching management methods is very necessary.

In recent years, scholars at home and abroad have conducted extensive research on the application of artificial intelligence in the field of education. Foreign scholars such as Goksel-Canbek [1] et al. studied the application of intelligent personal assistants in education, emphasizing their advantages in language learning and learning guidance; Liu Yongquan [2] et al. analyzed the impact of information technology on teaching and learning, pointing out its changes in teaching concepts, methods, and contents; Bai Yingying [3] explored how information technology has changed teachers' teaching methods, students' learning methods, and the ways of interaction between teachers and students; Wang Yunwu [4] studied the standards and reasons for changes in learning styles, proposing that the fundamental changes in learning goals, learning environment, learning tools, and learning evaluation are the standards for learning style changes. Mu Zhijia [5] focused on the combination of artificial intelligence and personalized learning, proposing the concept of an educational cloud service platform. Wu Lihua et al. designed an artificial intelligence search software to provide personalized information search services for students. However, current research mostly focuses on theoretical discussions and technical applications, lacking systematic research from the perspective of teaching management, and there is relatively less targeted research on private universities.

This paper uses PEST and SWOT analysis methods, combined with literature research and case analysis, to deeply explore the current application status, impact, and reform strategies of artificial intelligence technology in the teaching management of private universities. Utilizing artificial intelligence technology to optimize teaching management provides feasible paths and guarantee measures, thereby improving teaching quality and enhancing the competitiveness of private universities.

2. Conceptual Definition and Theoretical Foundation

2.1 Artificial Intelligence

Artificial Intelligence, abbreviated as AI. It is a new technological science that studies, develops, and applies theories, methods, technologies, and application systems for simulating, extending, and expanding human intelligence.

The ability of a machine to adopt appropriate methods and behaviors in response to problems is called artificial intelligence. Artificial intelligence is a branch of computer science aimed at enabling machines to simulate human intelligent behaviors, including: learning, summarizing patterns from data. Reasoning, drawing conclusions based on logic. Perception, recognizing images, speech, etc. Decision-making, making optimal choices in complex environments. The core goal: to create systems capable of performing tasks that typically require human intelligence to complete.

Weak AI focuses on a single task and lacks the ability to transfer across domains. For example, face recognition, voice assistants, recommendation algorithms, etc. Strong AI possesses human-level general intelligence and can independently think and solve unknown problems, such as autonomous robots in science fiction movies. Currently, all applications belong to weak AI. ChatGPT and other large models still belong to task-specific systems, although they have extensive capabilities.

Machine learning: The system improves performance automatically through data without explicit programming. For example, spam email filters learn user marking behaviors. Deep learning: Uses multi-layer neural networks to process complex patterns, such as AlphaGo learning the strategies of Go through neural networks. Natural language processing: Enables machines to understand and generate human language. Application scenarios include translation tools, customer service chatbots.

Typical applications: In healthcare, AI medical image analysis, with an accuracy rate of over 90% for lung cancer recognition, and a 50% increase in drug development efficiency. In transportation, autonomous driving, such as Tesla's Autopilot and intelligent traffic signal optimization. In industry, predictive equipment maintenance, reducing downtime by 30%. Intelligent quality inspection, with a 20-fold increase in defect recognition speed. In daily life, mobile phone face unlock, short video recommendation algorithms, smart home voice control.

Technical directions: General artificial intelligence, brain-computer interfaces, embodied intelligence, robot physicalization. Social challenges: Changes in employment structure, risks of deepfake, governance of algorithm bias. China's progress: The "14th Five-Year Plan" lists AI as a frontier field, and the core industry scale is expected to exceed 400 billion yuan by 2025. Key points: Currently, AI is essentially a tool to enhance human capabilities, rather than replacing human consciousness. Its development relies on three pillars: algorithm innovation, computing power improvement, and high-quality data.

2.2 Teaching Management

Teaching management is a systematic process in educational institutions to achieve teaching goals, coordinate resources such as teachers, courses, and students, and plan, organize, monitor, and evaluate teaching activities. Teaching management should be dynamic and innovative, combining with social development to update teaching content and methods, and adapting to technological progress and knowledge innovation. Exploring innovative models such as industry-academia integration (such as the establishment of training platforms by schools and enterprises) and digital management.

Teaching process management covers the standardized management of various links such as lesson preparation, classroom teaching, homework grading, and examination assessment, ensuring the orderly and efficient operation of the teaching process. It emphasizes tracking and guiding students' learning processes (preparation, listening, review, etc.). Quality monitoring involves setting quality standards, conducting dynamic evaluations through methods such as classroom observation and evaluation, homework checks, and examination analyses. We should establish a "comprehensive, all-round, all-inclusive, and all-element" quality assurance system that covers all teaching processes and all participants. Teaching resource management involves coordinating resources such as classrooms, laboratories, textbooks, and information technology equipment, optimizing allocation to

support teaching activities. Teacher team building encompasses teacher training, professional development, and performance incentive measures. Teaching organization and system construction, including the formulation of teaching plans and curriculum plans, clear teaching objectives, and reasonable course arrangements. We should establish educational administration mechanisms such as academic affairs office and teaching and research group to standardize the teaching system. Teaching management follows scientificity and standardization, adhering to educational laws and students' cognitive characteristics, ensuring that management activities are in line with teaching theories. Universities should independently design professional training courses based on national education policies and implement the course standards. Teaching management follows the principles of democratization and humanization, advocates democratic decision-making, avoids situations where "one person has the final say", and improves management efficiency through teacher participation. Emphasis is placed on emotional investment and a cooperative atmosphere is created.

Xijing University's "AI Counselor + Human Mentor" dual-track system, with human-machine collaboration, handles over 2,000 inquiries per day. Guangzhou Applied Science University, the construction of an AI literacy framework standard (3 dimensions, 11 indicators), has doubled the usage rate of AI tools by teachers. Wuchang Institute of Technology connects with the national smart education platform, jointly builds virtual training resources, achieving resource reconfiguration, and reducing experimental teaching costs by over 70%. Multiple universities have established 18 AI application safety boundaries, such as disabling direct generation of academic papers, avoiding algorithm bias risks, and ethical governance.

Private universities are leveraging artificial intelligence to achieve "rapid catch-up". The core idea is that they employ lightweight technologies to integrate flexible mechanisms, and through the data cycle of the entire teaching process (collection → analysis → feedback → optimization), they reshape the "precise management + personalized service" educational ecosystem. In the future, it is necessary to further solve deep challenges such as technical ethics calibration and cross-platform data integration.

2.3 Scientific management theories related to teaching management

The application of scientific management theory in the field of education mainly lies in the standardization of teaching management, process optimization, and efficiency improvement. Its core principles are integrated into the education management system through the following dimensions:

Standardized management mechanism. We should standardize the teaching objectives and procedures, establish a clear system for talent cultivation, quantify the teaching plans, including the classroom implementation and evaluation feedback phases, and form replicable operational norms. The standardization of teaching objectives and procedures means formulating a clear system for talent cultivation, and quantification of the teaching plans means quantifying the course progress and evaluation indicators, and forming replicable operational norms. We adopt a method similar to Taylor's "time study", using educational big data to analyze student situations and optimize the allocation of teaching resources. We have established a teacher stratified training mechanism to ensure that teachers' capabilities are in line with teaching demands, similar to the selection method for "outstanding employees". We have also established a differentiated incentive mechanism, distributing performance rewards based on teaching outcomes, similar to the differentiated piece-rate wage system.

We aim to optimize the organizational structure, separate functions and promote collaboration, and separate the teaching design and execution functions. The academic affairs department is responsible for course planning and quality control, while teachers focus on classroom teaching. By separating the planning and execution functions and introducing the concept of "functional supervisor system", roles such as subject group leaders and research guidance teachers are established to achieve decentralized management.

Dynamic control system, application of the PDCA cycle (plan - implement - check - improve), construction of a continuous improvement mechanism for teaching quality. Senior managers focus on strategic decisions, delegating daily affairs to the grassroots level, reflecting the exception

principle.

Theory integration and innovation. The curriculum design of the Taylor model, course development follows the "goal-oriented" framework: determine educational goals → select learning experiences → organize teaching content → evaluate teaching effectiveness. Humanization adjustment, integrating humanistic principles on the basis of standardization to avoid mechanistic management: respecting individual differences of students, balancing quantitative indicators and humanistic care; through home-school cooperation and teacher-student collaboration to build a "friendly cooperation" relationship, corresponding to the "spiritual revolution".

Practical cases and limitations. Typical case of classroom management: quantitative assessment of Wei Shusheng's class: itemized scoring, regular notification. Potential problems are that excessive quantification may neglect the cultivation of creativity. The integration of teaching and research in universities, establishment of a linkage incentive mechanism for teaching and research, conflicts between administrative and academic goals.

Core values and contemporary inspirations: Scientific management theory promotes education management from experience to science. Its contribution lies in: efficiency improvement: standardized processes reduce management costs, and resource utilization significantly increases; quality control: goal orientation and dynamic monitoring guarantee the stability of educational output. However, it is necessary to avoid its limitations: avoiding treating teachers and students as mechanical executors, combining with behavioral science theory to focus on emotional needs and organizational flexibility.

Modern education management needs to integrate system management on the basis of the Taylor framework, achieve overall optimization, adapt to the context of contingency theory, and construct a "standardization + humanization" collaborative model. The realization of scientific management is guaranteed by systems and technologies, such as artificial intelligence for scientific management processes, data statistics, and analysis.

3. Analysis of the Reform Environment for Teaching Management in Private Universities

3.1 Macro-environmental Analysis (PEST Analysis)

In recent years, science and technology have developed rapidly, and enterprises' requirements for graduates have also been constantly changing. They now expect students to master new technologies or skills, and to have certain teamwork and environmental adaptability abilities. Education needs to be reformed and should keep up with market demands.

The PEST analysis of the teaching management reform environment in private universities, based on the four dimensions of policy orientation, economic environment, social demand, and technological change, is carried out: The 19th National Congress of the Communist Party of China also proposed to prioritize the development of education, accelerate the modernization of education, and build an educational power.

Policy support and regulation, the "Regulations on the Implementation of the Law on Promoting Private Education" (revised in 2021) clearly encourage the characteristic development of private universities, but prohibit for-profit education in the compulsory education stage, and strengthen the non-profit orientation. Local governments support private universities through policies such as subsidies and tax incentives. The development of private higher education: In 1981, the first private university was established, and by the end of 2017, the number of private universities across the country had increased to 747.

Regulation becomes stricter, the Ministry of Education requires private universities to improve their internal governance structure, strengthen the supervision of Party building, and enhance the transparency of education.

Economic (Economic): Financial pressure and diversified financing. Private universities rely on tuition income (accounting for more than 60%), and economic downturns lead to a decline in family payment capabilities, requiring the expansion of channels such as school-enterprise cooperation and social donations. Some regions support private universities through land incentives and special bonds.

Employment market impact: The upgrading of the industrial structure forces professional adjustments, and private universities need to align with emerging industries (such as the digital economy, intelligent manufacturing) to optimize course settings.

Social (Social): Intensified competition for students, the decline of the demographic dividend. In 2024, many private universities experienced recruitment shortfalls, and they need to attract students through differentiated positioning (such as vocational undergraduate education). Social perception bias: Public recognition of private universities is low, and it is necessary to enhance the brand image through employment quality improvement.

Technical (Technological): The application of artificial intelligence in education has become a national strategy. This is an opportunity for private universities to soar. Through the Internet and artificial intelligence technologies, resources can be obtained through Internet and artificial intelligence platforms, which can change the weaknesses of private universities such as lacking library materials, high-level teachers, and high-level laboratories. Private universities can obtain better resources with very little investment.

Private universities need to operate within the policy framework, solve resource bottlenecks through characteristic major construction (such as vocational undergraduate education), digital upgrading, and school-enterprise collaboration, and at the same time, address the dual challenges of shrinking student sources and quality improvement.

3.2 SWOT Analysis

Strengths: Flexibility in mechanisms, professional settings can quickly respond to market demands. For instance, emerging majors such as energy storage technology and cross-border e-commerce only require 6 months from research to establishment. Deep school-enterprise cooperation, the industrial college model realizes "teaching as production". The early employment rate of some classes exceeds 87%. Service accuracy: The dual-mentor system (academic and life) covers every student. Psychological counseling and career planning are highly personalized. Student satisfaction consistently exceeds 90%.

Weaknesses: Resource constraints, imbalance in the teacher structure, the proportion of dual-qualified teachers is only 36%, and research funds are far lower than those of public institutions. Limited student quality, enrollment is in a "filling gaps" position, and the new student registration rate is prominent. Social perception bias: Traditional concepts lead to low social recognition of private universities. 72.2% of institutions still hold a wait-and-see attitude in the classification management reform.

Opportunities: Policy relaxation, the promotion of classification management reform, relaxed capital access policies, emergence of new educational models such as Fuyao University of Science and Technology. Special local government support policies have increased, such as the "Double First-Class 196 Project" in Zhejiang Province covering private universities. Market demand: The expansion of the vocational education sector, the number of students in private vocational colleges reached 3.74 million in 2023, with an annual growth of 690,000. AI education integration accelerates, the application of intelligent teaching platforms improves management efficiency.

Threats: Increased competition, expansion of public universities and the transformation of independent colleges squeezing the survival space. In 2024, the proportion of private universities dropped to 27.6%. Financial pressure. The reliance on tuition fees exceeds 80%, and the population negative growth exacerbates the enrollment dilemma. Private universities need to adopt differentiated positioning to hedge against the risk of student sources, use technology to make up for the shortage of teachers, and at the same time, optimize the governance structure to cope with policy uncertainties, in order to regain competitiveness in the education management reform.

4. Exploring the Application of Artificial Intelligence in Teaching Management Reform

4.1 Artificial intelligence transforms teaching tools

Through the above analysis, it is found that opportunities and crises coexist. Private universities

should seize the "artificial intelligence +" era opportunity. Private universities should fully utilize their own advantages and leverage artificial intelligence to innovate teaching management models and improve teaching quality. Artificial intelligence is profoundly transforming teaching tools. For instance, establishing an intelligent teaching platform that integrates cutting-edge technologies such as learning analysis, data mining, and facial recognition can precisely push personalized learning content based on students' learning behaviors and habits. For example, tools like Rain Classroom not only support teachers in pushing multimedia courseware but also enable real-time interaction in the classroom, significantly enhancing the dynamic nature of teaching and students' participation. At the same time, platforms like Tencent Cloud, leveraging the powerful computing power of cloud computing, achieve cloud-based sharing of teaching resources, allowing students to access learning materials anytime and anywhere, greatly expanding the scope of learning time and space.

Intelligent educational robots integrate multiple advanced technologies such as bionics, speech recognition, and natural language processing, and can perform teaching assistance tasks such as roll call and answering questions. The Japanese "Saya" robot is an early example of successful teaching robots, demonstrating the potential of robots in classroom interaction. These robots not only alleviate teachers' burdens but also stimulate students' learning interest through their unique interaction methods. Although the application of intelligent robots in teaching is currently limited by cost and technical maturity, they undoubtedly represent a highly promising development direction in the future education field, indicating that teaching tools will move towards a more intelligent and diversified era.

4.2 Artificial intelligence changes the way of teaching and learning

Artificial intelligence has transformed the traditional teaching and learning methods, making them more intelligent, precise and personalized. From a teaching perspective, artificial intelligence not only assists teachers in completing tasks such as lesson planning, teaching and answering questions, but also optimizes teaching plans through big data analysis to achieve precise teaching. For example, teachers can use artificial intelligence technology to analyze students' learning progress, interests and knowledge mastery, thereby formulating teaching plans that are more in line with students' needs. During the lesson preparation stage, artificial intelligence can efficiently organize teaching resources and provide teachers with rich teaching materials and teaching method suggestions; during the teaching process, intelligent technology assists teachers in accurately grasping the teaching rhythm, adjusting teaching content and methods according to students' real-time feedback, ensuring that every student can keep up with the teaching progress; after class, the intelligent system can also provide teachers with detailed learning situation analysis reports, helping teachers understand students' learning difficulties, so as to provide more targeted tutoring.

For students, artificial intelligence has brought a new learning experience. The intelligent learning platform breaks through the limitations of time and space, allowing students to access global top-notch educational resources at any time. Through the intelligent learning platform, students can choose learning content based on their own interests and learning goals, and the platform will provide personalized recommendations based on students' learning situations, guiding students to conduct in-depth learning. At the same time, with the help of virtual reality (VR) and augmented reality (AR) technologies, students can experience historical scenes and conduct virtual experiments, greatly enhancing the interest and practicality of learning. In addition, the intelligent tutoring system can provide students with immediate answer services, quickly solving problems encountered in the learning process, and improving learning efficiency.

The wide application of artificial intelligence technology in the field of teaching and learning has completely changed the traditional teacher-centered teaching model, forming a new teaching model centered on students, guided by teachers, and assisted by intelligent machines. This model not only improves teaching quality and learning outcomes, but also stimulates students' learning enthusiasm and creativity, injecting new vitality into educational modernization and promoting the comprehensive development of education.

4.3 Artificial intelligence changes teaching evaluation

Artificial intelligence technology is transforming the traditional teaching evaluation model, making it more scientific, efficient and personalized. The traditional evaluation methods mainly rely on teachers' subjective judgment and limited data analysis. However, artificial intelligence, through technologies such as image recognition, speech recognition, natural language processing and data analysis, can comprehensively and objectively analyze students' classroom performance, homework completion and exam results. For instance, intelligent systems can track students' learning behaviors in real time and automatically generate detailed learning behavior analysis reports, providing teachers with a comprehensive understanding of students' learning attitudes and habits. Moreover, artificial intelligence can offer personalized learning suggestions and tutoring resources based on students' mistakes, helping them identify and correct their deficiencies and improve their learning outcomes. In terms of teacher evaluation, artificial intelligence can provide objective teaching quality assessment and professional development suggestions by analyzing students' learning achievements, classroom interaction data and teachers' teaching behaviors. This multi-dimensional, data-driven evaluation method not only enhances the objectivity and accuracy of evaluation but also provides strong support for personalized education and teaching improvement. Through timely feedback and precise analysis, artificial intelligence technology makes teaching evaluation more transparent and fair, promoting the modernization and personalization of education, and providing an important guarantee for improving educational quality and students' comprehensive literacy.

4.4 Artificial intelligence changes teaching management work

The development of artificial intelligence technology has brought profound changes to teaching management, making it more efficient, precise and scientific. Traditional teaching management often faces problems such as complex processes and scattered data management, resulting in low work efficiency and frequent errors. However, with the help of artificial intelligence technology, these problems have been significantly improved.

For example, the intelligent educational administration system uses image recognition technology to quickly input and organize teaching materials, greatly improving the efficiency and accuracy of data management. At the same time, the application of speech recognition technology enables teaching managers to input information more conveniently, reducing the cumbersome manual input process. In terms of course scheduling and class cancellations, the system based on artificial intelligence can automatically analyze teachers' teaching habits, the difficulty of courses, and students' needs, thereby achieving more reasonable and efficient course schedule arrangement. Moreover, the automatic review function of the intelligent system and the real-time push mechanism of class cancellation information further optimize the class cancellation process, avoiding the communication inefficiencies and information delays existing in traditional manual management.

More importantly, artificial intelligence technology can conduct in-depth analysis and mining of data in the teaching process. Through the intelligent system, teaching managers can collect and analyze students' feedback and teachers' teaching behavior data in real time, thereby promptly identifying problems and adjusting teaching strategies. For example, the system can propose optimization suggestions based on course design and students' feedback, helping teachers improve teaching content and methods, and enhancing teaching effectiveness. At the same time, the intelligent system can also combine market demands to select knowledge systems that are in short supply in the next 3-5 years, providing scientific basis for the formulation of school teaching outlines and talent cultivation plans, ensuring that the talents cultivated by the school can better adapt to the needs of society and enterprises.

The application of artificial intelligence technology in campus security and student behavior management is also increasingly widespread. For example, through facial recognition technology, schools can implement campus access management, attendance records, and real-time monitoring of campus personnel movement, effectively ensuring campus security. At the same time, behavior analysis technology can monitor students' behavior patterns, promptly detect abnormal behaviors and issue warnings, helping schools better manage students' daily lives and learning behaviors, and

preventing potential safety hazards.

In conclusion, the application of artificial intelligence technology in teaching management not only improves management efficiency, reduces the cumbersome and error-prone manual operations, but also through data analysis and intelligent decision support, makes teaching management more scientific and refined. It brings unprecedented changes to school teaching management, promotes the modernization process of education management, and provides strong support for improving the overall teaching quality and management efficiency of schools.

5. Teaching Management of Artificial Intelligence in Private Universities

5.1 Introduce an intelligent system

From some current cases of applying artificial intelligence technology to teaching management, it can be observed that integrating artificial intelligence technology into teaching management will surely create new teaching management models and enhance teaching quality and the school's educational level. In private universities, the introduction of intelligent systems has become a key measure to improve teaching management levels and educational quality. The introduction of intelligent teaching management systems and teaching platforms not only changes the traditional teaching management model but also provides teachers and students with more efficient and personalized teaching experiences.

The intelligent teaching management system integrates advanced information technology to achieve comprehensive management and optimization of the teaching process. The system can automatically process a large amount of teaching data, such as students' course selection information, grade records, attendance status, etc., greatly improving management efficiency and accuracy. Moreover, the system also has intelligent analysis functions, which can generate detailed teaching reports and data analysis charts, helping managers and teachers better understand the teaching situation and make scientific and reasonable decisions.

The introduction of intelligent teaching platforms brings more innovation and convenience to teaching activities. These platforms integrate a wealth of teaching resources, such as online courses, teaching videos, interactive courseware, etc. Students can choose appropriate learning content according to their learning progress and interests. At the same time, the platform supports various interactive forms, such as real-time questioning, online discussions, assignment submission and grading, etc., enhancing interaction between teachers and students and teaching effectiveness. Through the intelligent teaching platform, teachers can design teaching activities more flexibly, and students can receive more learning support and resources after class, achieving all-day and all-round coverage of teaching activities.

5.2 Establish a high-quality teaching resource platform

Always relying on others' platforms is definitely not a good approach. Private universities should also build their own intelligent platforms. Therefore, when using platforms, schools should integrate their own advantageous resources.

The teaching staff of private universities is not strong. It mainly consists of three parts: one part is retired teachers from public schools, one part is young teachers, and the other part is external hired teachers. As the backbone, middle-aged teachers are basically absent. This is the disadvantage of private universities, but the introduction of artificial intelligence technology has turned it into an advantage. Let's start with the first part. The retired teachers from public schools are all experienced teachers who have taught for at least twenty years. They have extremely rich teaching experience. However, due to their old age, they may feel physically and mentally insufficient when standing on the podium to teach. The other part is young teachers. These teachers are very willing to learn advanced technologies to improve their teaching abilities and are also willing to try new teaching methods to enhance students' interest in learning, thereby improving learning outcomes.

Therefore, private universities should integrate the high-quality courses of those veteran teachers, combine them with young teachers, and have veteran teachers lead young teachers to create micro-

lessons, MOOCs, video lessons, etc. We hope to place high-quality teaching resources on a teaching platform, providing free online learning services nationwide and awarding learning certificates to those who complete the learning, in order to encourage teachers and students to utilize these high-quality resources.

5.3 Establish an intelligent internship and practice platform

In private universities, internship and practical training are an important part of teaching. However, due to the limitation of funding for operation, many schools have relatively few laboratories, which cannot meet the needs of students' internship and practical training. Some schools sign agreements with enterprises and allow students to go to the enterprises for internships to complete their practical training. This is also a very good method.

Currently, the technology of artificial intelligence is developing rapidly, and technologies such as virtual reality (VR) and augmented reality (AR) are also becoming increasingly mature. Therefore, private universities should make full use of these two technologies and cooperate with enterprises to create an intelligent internship and practical training platform. Students can complete their own internship and practical training through the intelligent platform. Enterprises can also obtain a lot of practical data from the students' internships to improve their products, etc.

Private universities use artificial intelligence to innovate teaching management and improve teaching quality. The final step is to realize an intelligent campus. This requires accumulating experience on the basis of the previous steps, accumulating sufficient data and experience. The school will associate these systems and platforms to form an intelligent campus platform covering the entire campus, achieving intelligent campus management.

6. Implementation of Teaching Management Reform in Private Universities

6.1 Methods for Ensuring the Implementation of Teaching Management Reform

The implementation of teaching management reform in private universities involves the following specific safeguard measures:

1) The tasks we should accomplish: establishing institutional and policy guarantees, implementing classified management, clarifying the boundaries of rights and responsibilities between for-profit and non-profit private universities, promoting the transfer of assets to the universities to avoid debt risks and ensure the independence of legal person property rights. Local governments should formulate implementation plans for "one school, one plan", and accelerate the classification reform process through special supervision.

We have established an account supervision system: the account balance must not be lower than 15% of the annual tuition income to ensure the safety and operational capability of the funds. To promote financial equity, we offer a subsidy of one share per person to reduce reliance on tuition fees.

2) Work in fund management: supervision of funds and resources, full-process financial control, participation of the Party organization in major financial decisions, implementation of annual budget reporting and large expenditure review system, strict prevention of educational funds from being misappropriated, mandatory third-party auditing, public disclosure of fund usage, ensuring that over 80% of tuition income is used for education and teaching. We need to optimize resource allocation, introduce retired experts through the "Silver Teacher Program" to fill the gap in dual-qualified teachers (currently only 36%), strengthen teaching team building, establish regional shared training bases to reduce the hardware investment costs of private universities.

3) We need to enhance quality and governance levels, establish a quality assurance system, implement the dual-track system of "industry certification + government assessment": regular evaluations by third-party institutions commissioned by the education department, and professional quality standards formulated by industry organizations. We need to establish a professional dynamic adjustment mechanism, eliminate backward majors, focus on developing emerging fields such as energy storage and elderly care to improve employment matching. Governance structure reform,

improve the Party organization supervision mechanism: ensure that the Party organization participates in decision-making on core aspects such as personnel appointments and tuition fees. Establish a digital management platform: use artificial intelligence technology to monitor the teaching process and achieve real-time feedback on course quality.

4) Risk prevention and incentive measures: School operation risk warning, establishing a minimum operation guarantee fund to address risks such as a decrease in student enrollment, e.g. measures for a decrease in enrollment. We must strictly control the loan scale, and debts should be collectively reviewed by the decision-making body and reported to the competent authority. Policy incentives: We offer tax benefits or special rewards to compliant operators. We allow non-profit organization operators to legally obtain reasonable returns, set clear upper limits for income distribution, and establish a long-term financial support mechanism lasting for more than 3 years to achieve fair distribution of public resources.

6.2 Stabilize the teaching management team

The construction of the talent team based on the reform of AI-driven teaching management is the core engine driving the digital transformation of education. The following is the specific implementation path:

Empowering the teaching team with AI is an inevitable trend of the times. In response to national strategic demands, educational digitalization is a key link in the "Digital China" construction. AI, by optimizing teaching models and reconfiguring management processes, has become a core tool to solve the imbalance of educational resources and the bottleneck of improving teaching quality. The "AI-driven Teacher Team Pilot Program" of the Ministry of Education has covered 56 universities and 45 local regions, accumulating experience for nationwide promotion. Solving the pain points of education development, AI technology can assist in the implementation of "Five Education Integration", such as intelligent analysis of student behavior data, reducing the mechanical workload of teachers, and such as automatic grading and learning situation diagnosis, releasing teachers' creativity, and promoting education from scale expansion to quality leap.

Under the leadership of the expert team, we have formulated the "Smart Education Leadership Program" to cultivate the backbone forces of intelligent education. We provide targeted training for principals and experts, focusing on enhancing the digital leadership skills of principals and the AI teaching innovation capabilities of teachers. For instance, Guangdong Province plans to establish a team of principal and teacher leaders with intelligent literacy. We need to integrate interdisciplinary teachers and recruit outstanding talents with backgrounds in computer science and data science to strengthen the teaching team, in order to address the shortage of professional teachers in rural and remote areas. All staff capability upgrading, building an AI literacy training system, popularizing AI tool applications, such as intelligent lesson preparation systems, learning situation analysis platforms; deepening AI educational ethics and interdisciplinary curriculum design capabilities; cultivating developers of AI-driven teaching models. We need to build virtual classrooms and intelligent classrooms to support teachers in conducting immersive teaching experiments based on artificial intelligence. For instance, Beijing Normal University has constructed a comprehensive platform based on cloud technology, connecting the entire process from before class, during class, to after class. Innovation in management mechanisms and human-computer collaboration can reshape the educational ecosystem. We need to establish an intelligent assessment system, using artificial intelligence to dynamically track the teaching effectiveness of teachers, improve the quality of classroom interaction, track students' growth curves, replace single examination indicators, and promote the scientific nature of assessment. Chongqing has piloted the inclusion of artificial intelligence analysis in teacher performance evaluations. Balanced resource allocation, through artificial intelligence diagnosis of regional educational deficiencies, can guide the transfer of high-quality resources. For example, for dual-teacher classrooms, intelligent matching has been conducted. The "Excellent Teacher Program" of Northern Chinese Universities has sent over ten thousand hours of customized training resources based on artificial intelligence to the central and western regions.

The key to achieving breakthroughs lies in resolving the disconnection between the talent chain

and the innovation chain. Some universities blindly set up AI majors but lack teachers, resulting in graduates being unable to meet the demands of the industry. It is necessary to establish a "university - enterprise - research institution" collaborative training mechanism, such as Alibaba Cloud's "Baiyan Platform" providing low-code AI application development training for teachers, connecting the cutting-edge technology with teaching practice. Curbing "internal consumption of talents" competition, in 2024, the salary increase of data analysts reached 30%, the gap in chip architect positions expanded by 40%, and the intensification of high-paying recruitment by enterprises has exacerbated talent mobility. It is necessary to guide enterprises and universities to jointly build laboratories, targeted training of interdisciplinary talents, and reduce the impact of structural shortages. We should conduct tiered training based on industry demands. The basic level (data scientists, chip engineers): We should rely on research institutions to deepen the cooperation among industry, academia and research; the application level (artificial intelligence education designers, intelligent mentors): Through teacher training programs, we should cultivate cross-disciplinary capabilities.

Future direction: Building a sustainable new education ecosystem

Re-definition of human-machine roles, AI assumes standardized tasks, such as answering questions, grading homework, while teachers shift to emotional nurturing and creativity stimulation, such as the pilot "AI Counselor + Human Mentor" dual-track system in universities, optimizing the effectiveness of ideological and political education.

We should establish ethical guidelines for educating artificial intelligence, prevent algorithmic biases and data security risks, and clearly define the primary responsibility of teachers in terms of value guidance. The lifelong learning system and the establishment of an AI capability certification mechanism for teachers are being implemented. For instance, Ningxiang City has incorporated "artificial intelligence teaching ability" into the indicators for teachers' career advancement, driving continuous evolution.

The educational transformation in the era of artificial intelligence is not about technological substitution; rather, it is about reshaping the essence of education through human-machine symbiosis. Only by systematically empowering the teaching staff, innovating management mechanisms, and bridging the talent gap can AI be transformed into a core lever for high-quality educational development, laying the foundation for building a "people-oriented" future educational ecosystem.

Only by cultivating a team that possesses management knowledge, is proficient in artificial intelligence technology, and has strong working capabilities can artificial intelligence be better applied to teaching management, thereby improving the level of teaching management. The comprehensive quality training of teaching managers should be placed in an important position, and more attention should be paid to their own thoughts. Specialized training should be provided for those who are interested in learning technology or management, allowing them to apply their professional knowledge and new management concepts to teaching management, making teaching management more professional and scientific.

6.3 Strengthen the scientific management of educational data

During the process of using artificial intelligence technology in teaching, a large amount of teaching data, such as students' exams, assignments, oral communications, etc., will be collected and analyzed. These data are generated through the application of artificial intelligence technology. These big data can be regarded as the "nutrients" for artificial intelligence education systems. Only by effectively collecting and inputting the teaching data generated in the actual teaching process into the computer and using relevant technologies to convert digital information into process-based data can it be of value. Currently, many educational institutions do not effectively collect and utilize educational data in artificial intelligence education. Therefore, strengthening the scientific management of educational data is particularly important. Educators can analyze the effectively collected teaching data to understand the usage of equipment, the utilization of resources, the teaching situation of teachers, and the learning situation of students, and integrate these data. This way, it is convenient for teachers to grasp teaching behaviors and teaching effects, and also

convenient for managers to manage teaching behaviors.

7. Conclusion

This article conducts an in-depth study on the teaching management reform based on artificial intelligence in private universities and reaches the following conclusions:

Due to the application of artificial intelligence, the mode of teaching activities has changed, and the methods of teaching management also need to be changed. The methods of teaching plans, organization, monitoring and evaluation all need to be changed.

The application of artificial intelligence technology in the teaching management reform of private universities has greatly improved the teaching quality and educational level. It breaks through the limitations of traditional teaching in terms of time and space, providing personalized learning experiences for students; the intelligent teaching evaluation system reflects students' learning outcomes and teachers' teaching effects more accurately.

Private universities need to actively introduce intelligent systems. The introduction of intelligent teaching management systems and teaching platforms can effectively improve management efficiency, reduce the complexity and errors of manual operations, and provide scientific basis for teaching decisions through data analysis. The intelligent teaching platform can support online learning, interactive teaching and homework grading, providing convenient and efficient learning support for teachers and students.

The implementation of guarantee measures is the key to the reform of teaching management based on artificial intelligence. To ensure the effective application of artificial intelligence technology, private universities need to start from changing traditional concepts, strengthening teacher training, scientifically managing educational data, and increasing financial support, etc.

The application of artificial intelligence technology has brought new opportunities and challenges to the teaching management reform of private universities. Private universities should fully utilize the advantages of artificial intelligence technology, actively explore and innovate teaching management models, improve teaching quality, and adapt to the needs of educational development in the new era.

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