

Optimizing GPT Technology in Educational Administration: Strategies, Practices, and Action Research Insights

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Abstract. With the rapid advancement of information technology, artificial intelligence (AI) has shown broad application prospects across various fields, particularly in educational administration. GPT technology, with its powerful natural language processing and understanding capabilities, can enhance the efficiency of educational administration, optimize resource allocation, and promote managerial innovation. This study aims to explore the practical applications of GPT technology in educational administration through action research, analyzing its potential value and challenges, and proposing targeted solutions. The findings reveal significant benefits of GPT in course content creation, contributing to improved efficiency in educational administration. However, the study also identifies challenges such as the complexity of technical integration, data security and privacy issues, dependency and misuse risks, and technology acceptance. To address these challenges, this paper offers a series of detailed strategies and operational recommendations, providing evidence-based support and practical reference for educational administrators to promote intelligent and efficient development in educational management.

Keywords: GPT technology, educational administration, AI applications, educational management challenges, educational innovation.

1. Introduction

With the rapid development of information technology, AI has demonstrated extensive application potential in various fields, including educational administration. GPT technology, known for its robust natural language processing and understanding capabilities, has garnered significant attention. Although GPT technology has the potential to enhance efficiency, optimize resource allocation, and even promote managerial innovation in educational administration, research on its applications in this field remains relatively limited. Notably, there is a clear research gap in strategic deployment, practical case studies, and addressing challenges.

In response, this study aims to fill this research gap by adopting an action research approach to deeply explore the practical applications of GPT technology in educational administration. Specifically, we will focus on analyzing the potential value of GPT technology in educational administration, identifying existing challenges and obstacles, proposing targeted solutions, and exploring how to better promote the intelligent and precise development of educational administration. This study's objective is not only to fill academic research gaps but also to provide innovative application pathways and directions for the field of educational administration. By conducting in-depth research on the application of GPT technology in educational administration, we hope to offer valuable references for researchers and practitioners, promoting intelligent development in educational administration and transforming management models toward greater efficiency.

2. Literature References

2.1 Development of the GPT Series and Educational Applications

Since its initial release in 2018, OpenAI's GPT series (Generative Pre-trained Transformer) has brought significant advancements to natural language processing (NLP) technology. GPT enhances

machine understanding and generation capabilities through pre-training and fine-tuning. GPT-3, the third-generation model in the series, is an autoregressive language model that uses deep learning techniques to generate human-like text. Trained on a vast unlabelled dataset composed of various texts (such as Wikipedia), GPT-3 employs 175 billion parameters, showcasing its powerful text generation capabilities (Floridi et al., 2020).

Among them, ChatGPT is a successful generative AI model released in November 2022 (OpenAI, 2022b), demonstrating significant potential in language understanding and knowledge retention (Dwivedi et al., 2023). Multiple evaluations and tests have confirmed its capabilities, particularly in higher education. For instance, ChatGPT has passed graduate-level exams in law and business schools (Kelly, 2023), and the latest GPT-4 model has achieved top 10% scores in legal tests (Koetsier, 2023). ChatGPT's performance has even been recognized by academic publications, with several papers listing it as a co-author.

However, testing GPT-3 has revealed that, despite its significant advantages in handling large amounts of information and generating text, it struggles with questions requiring deep semantic understanding and complex logical reasoning. For instance, research by Floridi et al. (2020) shows that GPT-3 often fails to provide reliable answers when dealing with issues that need deep semantic comprehension, which is an important consideration in educational applications, especially in assessing students' understanding and critical thinking skills.

Additionally, GPT-3 tends to reproduce biases present in its training data when it cannot understand the context of its generated text, a concern that requires particular attention when using AI-assisted teaching and evaluation. Despite these challenges, GPT-3 and subsequent models, such as GPT-4, still exhibit tremendous potential in education and research, particularly in writing, translation, and summarization (Mintz, 2023).

2.2 Applications and Impact of ChatGPT in Education

Given ChatGPT's superior capabilities in language and text, it also presents significant opportunities for education. It can offer personalized learning experiences, assist teachers in creating educational content, and overcome language barriers (Schulman et al., 2017). Through ChatGPT, teachers can easily generate questions, quizzes, assignments, and interactive educational content such as games and simulations to cater to different learning styles. Simultaneously, ChatGPT can support students in personalized learning (Wu, 2024) and provide corresponding feedback, potentially significantly impacting teaching and learning outcomes.

However, as GPT technology rapidly advances, its applications in education have increased, attracting widespread attention from educators, scholars, and policymakers. For example, New York City's policy prohibiting the use of ChatGPT in public schools (Rosenblatt, 2023) reflects concerns about its impact on scientific paper authenticity and originality, as well as the risk of students outsourcing writing tasks to ChatGPT, which could challenge academic integrity and hinder the development of students' writing skills. Additionally, content generated by ChatGPT may contain biases or nonsensical information, leading to misinformation spread. Discussions within the global education community regarding its potential impacts reveal society's concerns and expectations about this emerging technology. Despite these concerns, the positive impacts of ChatGPT on education, including providing rich learning resources, supporting autonomous learning, encouraging interdisciplinary learning, enabling personalized learning paths, and enhancing students' writing skills, cannot be overlooked.

If educators effectively utilize large language models like GPT, they can reduce repetitive educational processes, rethinking ways to design student assignments, assess student abilities, and foster growth, ultimately enhancing teaching efficiency. Jiang Li's work, "AI-Driven Educational Reform: The Impact and Prospects of ChatGPT/GPT," highlights how AI can help teachers become super educators (Jiang, 2023).

Lu Yu, Yu Jinlei, Chen Penghe, and Li Muyun, in their paper "Educational Applications and Prospects of Generative AI: A Case Study of the ChatGPT System," discuss the four core capabilities of the ChatGPT system: inspirational content generation, contextual understanding, sequential task execution, and procedural language parsing. The authors re-examine these core capabilities and propose their applications.



This paper proposes a new research model to optimize ChatGPT applications in education as follows:

a. Intelligent Integration of Educational Resources and Development of Personalized Teaching Strategies

Formulating Teaching Outlines: ChatGPT assists teachers in formulating and adjusting teaching outlines based on student needs and course objectives to meet diverse teaching requirements.

Accessing Educational Resources: Using ChatGPT's search and information integration capabilities, teachers can access rich academic research and practical cases to enrich classroom content.

b. Lesson Preparation and Classroom Activity Design

Preparing Lesson Plans: Based on existing teaching outlines, ChatGPT provides lesson plan templates and related resources to help teachers quickly prepare lesson plans.

Designing Classroom and Homework Assignments: Utilizing ChatGPT to create in-depth and challenging assignments expands the range of questions, enhancing students' learning enthusiasm.

c. Support for Learning Processes and Student Performance Evaluation

Implementing Personalized Teaching: Through personalized guidance and support provided by ChatGPT, each student can learn according to their needs and interests, optimizing learning outcomes.

Evaluating Student Performance: ChatGPT helps teachers efficiently assess student progress and outcomes, providing detailed reports on students' strengths and weaknesses.

d. Educational Innovation and Continuous Development

Promoting Educational Innovation: Exploring the potential of ChatGPT in promoting educational innovation, including developing new teaching methods and supporting interdisciplinary learning.

Continuous Development and Improvement: Based on continuous feedback and research, constantly improving ChatGPT applications in education to ensure teaching strategies and tools align with educational needs and technological development.

This new research model aims to leverage ChatGPT's capabilities to enhance teaching quality and efficiency while considering personalized teaching and students' comprehensive development, driving innovation and progress in education. By implementing this research model, we can systematically evaluate and optimize ChatGPT applications in education, providing scientific data support and practical guidelines for future educational practices. Additionally, the author will apply this research model as an outline for action research cases, structuring practical execution steps.

2.3 Impact of Social Media on ChatGPT Applications in Education: Promoting Interaction and Shaping Policy

As generative AI technologies like ChatGPT become widely used in education, social media has become a key platform with significant impact through discussions and feedback (Schulman et al., 2017). Social media not only accelerates knowledge dissemination but also plays a crucial role in forming educational policies and responsibly using AI technologies.

2.3.1 Dissemination Effects of Social Media

Social media's rapid dissemination ability allows ChatGPT applications and impacts in education to quickly reach a broad audience of educators and students (Rosenblatt, 2023). For example, through social media, teachers can share their experiences using ChatGPT for course design, students can discuss its benefits to their learning process, and policymakers can capture this feedback to optimize educational policies and technological practices (Jiang, 2023). This rapid information flow not only promotes real-time knowledge updates but also enhances the interactivity and engagement of educational content.

2.3.2 Forming Key Opinions and Decision Support

Social media enables each link from educational practice to policy formation to quickly form key opinions, which is valuable for rapidly responding to various issues in education (Lu et al., 2023). When facing challenges such as integrating ChatGPT into teaching activities or addressing academic integrity issues arising from AI, discussions on social media provide immediate and diverse perspectives for educational decision-makers, helping them make more informed decisions.

2.3.3 Facilitating Collaboration Among Policymakers and Educators

Social media also creates a platform for facilitating communication and collaboration among policymakers, technology companies, educators, and students. This cross-sector collaboration is key to formulating effective and responsible AI education strategies (Mintz, 2023). Through social media, all parties can share experiences, raise questions, and explore solutions without geographic and time constraints. For example, some educational technology forums and social media groups regularly organize online seminars and discussions on how to reasonably use ChatGPT tools, formulate relevant teaching policies, and enhance teaching quality and efficiency through AI tools. These points will be extracted to form the critical factors for educational applications, allowing the author to adjust and formulate strategies in the action research. The subsequent data collection and analysis steps will be discussed in relation to these factors.

2.3.4 Factors Influencing Data Collection:

Dynamic Information Flow of Social Media: As previously mentioned, social media's dissemination effects greatly accelerate the flow of educational information. In action research, this means researchers can use social media platforms as real-time data collection tools to quickly obtain feedback on ChatGPT applications in education, interactions between teachers and students, and policy changes.

Access to Diverse Perspectives: Social media allows educational practitioners and policymakers to access multiple opinions and viewpoints (Lu et al., 2023). In action research, this helps collect data from educators, students, policymakers, and technology developers with different backgrounds and experiences, providing a more comprehensive perspective to evaluate ChatGPT's educational application effects.

2.3.5 Factors Influencing Data Analysis:

Analysis of Real-time Feedback: Real-time feedback on social media offers action researchers the opportunity to quickly assess the effects of interventions (such as using ChatGPT). This feedback can include direct user experience sharing, problem reflection, or improvement suggestions, providing a basis for the next steps in action research.

Impact Analysis of Policy Formation: As Mintz (2023) mentioned, the impact of cross-sector collaboration on policy formation can be evaluated by analyzing interactions among the education, policy, and technology sectors. Understanding how these interactions influence policy formulation and practice improvement is an important dimension of action research analysis.

The discussion on how social media accelerates information dissemination and promotes collaboration among policymakers and educators is directly related to the methods and strategies for data collection and analysis in action research. The vast real-time data and diverse perspectives provided by social media enrich action research's data sources and enhance the validity and timeliness of research results. By analyzing this data, researchers can more accurately assess the educational application effects of ChatGPT and similar AI tools, identify problems and challenges, and adjust teaching strategies and policy recommendations based on feedback, ultimately promoting educational implementation and feedback. The author will incorporate these points into the second and third stages of this action research, making data collection factors a crucial step in the research strategy planning.

2.4 Applications of ChatGPT in Academic Writing

Beyond education, the GPT series has also shown application potential in academic writing. By learning from vast textual data, GPT can generate coherent, logical text, helping researchers produce literature reviews, provide research design suggestions, and even generate draft research papers, opening new possibilities for academic writing.

In conclusion, large language models like the GPT series bring opportunities and challenges to education, calling for in-depth research and regulation to ensure they positively impact the educational endeavor (Jiao Jianli, Chen Li, Wu Weiwei, 2023).

3. A Case Study of Action Research

Action research is a method that tightly integrates practical action with research, aiming to solve practical problems and improve strategies or behaviors, particularly suitable for application in the field of education. The core feature of this research method is the active participation of participants, where researchers are not only observers in actual teaching scenarios but also active participants. The iterative nature of action research emphasizes continuous reflection, evaluation, and adjustment of action plans during the process to create knowledge while solving practical problems. This characteristic is particularly important for the field of education, as educational practice requires continuous adjustments and optimization based on student feedback and learning outcomes.

This study aims to examine and evaluate the specific applications of ChatGPT technology in education. Through action research, the author hopes to apply ChatGPT in a real educational environment, investigate its impact on educational practice, and gain an in-depth understanding of its potential limitations and challenges. Action research provides an effective framework, enabling researchers to actively participate and adjust teaching strategies in real-time to achieve the best teaching outcomes.

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3.2 Implementation Process of Action Research

The implementation process of action research can be divided into the following stages:

3.2.1 First Stage: Problem Definition

In the problem definition stage, researchers first need to determine the main purpose and problem of the research. This step is the core of action research, as it will guide the direction and focus of the entire research process. In this stage, researchers will have preliminary conversations with educators, students, and other stakeholders to identify the main challenges and needs they face.

For example, if teachers express difficulties in personalized teaching and student engagement, the research question may focus on "How to use ChatGPT to enhance teaching personalization and student engagement?" This involves evaluating the potential of ChatGPT in meeting different learning styles and needs. Researchers need to conduct a literature review, understand existing relevant research and practices, and identify the innovation points and feasibility of the research. Additionally, specific and measurable research goals should be set at this stage, which will be evaluated in subsequent stages.

3.2.2 Second Stage: Data Collection

In the data collection stage, researchers will use various tools and methods to collect data on the application of ChatGPT in education. These methods include surveys, interviews, classroom observations, and analysis of existing data. The purpose of this stage is to obtain sufficient information to understand the current usage and effects of ChatGPT in educational practice.

- (1) **Data Collection Methods: Designing Surveys:** Based on the research questions, design surveys to investigate the experiences and attitudes of teachers and students.
- (2) **Conducting In-depth Interviews:** Select several teachers and students for in-depth interviews to understand the specific issues and successful experiences they encountered when using ChatGPT.
- (3) **Classroom Observations:** Conduct on-site observations of several classes using ChatGPT, recording the teaching methods of teachers and the interaction responses of students.

The data collected in this stage will provide a foundation for subsequent data analysis, helping the author gain an in-depth understanding of the practical application effects and existing issues of ChatGPT.

3.2.3 Third Stage: Data Analysis

The data analysis stage is the core of action research, aiming to extract insights and knowledge from the collected data. This stage requires the use of appropriate statistical and qualitative analysis

methods to process and interpret the data. The analysis results will be used to evaluate the actual effects and impacts of ChatGPT and provide answers to the research questions.

- Data Analysis Steps:

- 1) Statistical Analysis: Conduct statistical analysis of survey results to understand general trends and patterns in large-scale applications of ChatGPT.
- 2) Content Analysis: Perform content analysis of interview records to extract in-depth insights and opinions from teachers and students regarding the application of ChatGPT.
- 3) Comparative Analysis: Compare observed classroom behaviors with traditional teaching methods to assess the changes and impacts brought by ChatGPT.

Through these analyses, the author can objectively evaluate the effects of ChatGPT in education and identify areas that require further research or improvement.

3.2.4 Fourth Stage: Course Development

After successfully designing and implementing the course, the next step is to analyze the data collected during the teaching activities to evaluate the actual impact of GPT in educational design.

- Course Development Steps:

- 1) Designing Course Outlines:

- Use Keywords/Commands: "Generate course outline, topic: [course topic], objectives: [learning objectives]"
- Action: Utilize GPT to generate course outlines for specific subjects and topics, including course objectives, learning outcomes, necessary learning materials, and evaluation standards.

- 2) Writing Detailed Teaching Content:

- Use Keywords/Commands: "Generate teaching unit, topic: [specific unit topic], focus: [learning focus]"
- Action: Use GPT to develop specific teaching units and chapters, filling in detailed lecture content, learning activities, and interactive discussion guides.

- 3) Creating Assignments and Evaluation Tasks:

- Use Keywords/Commands: "Generate assignment content, topic: [unit topic], skill focus: [specified skill]"
- Action: Utilize GPT to design assignment tasks and evaluation standards, testing and reinforcing student learning outcomes, ensuring assignment content aligns with course objectives and teaching content.

- 4) Generating Teaching Materials and Aids:

- Use Keywords/Commands: "Create presentation PPT, topic: [unit topic]"
- Action: GPT assists in generating teaching PPTs and other visual aids to enhance lecture effectiveness and increase student interest.

3.2.5 Fifth Stage: Data Analysis and Action Plan Development

After successfully designing and implementing the course, the next step is to analyze the data collected during the teaching activities to evaluate the actual impact of GPT in educational design.

1) Data Analysis:

- Objective: Assess the impact of GPT-designed course materials on student learning outcomes and analyze teacher and student feedback.
- Method: Use quantitative methods (such as grades and evaluation scores) and qualitative methods (such as interviews and reflective journals) to analyze student learning progress and course acceptance.

2) Action Plan Development:

- Objective: Based on the data analysis results, develop improvement plans to optimize GPT applications in education.
- Action: Identify specific areas that need improvement or adjustment, such as the depth of course content, diversity of teaching methods, or efficiency of student interaction. Develop specific action items, including timelines and responsible parties.

3.2.6 Sixth Stage: Implementation and Evaluation

The practice stage is where the action research plan is put into action, integrating GPT technology into actual educational administration work. During this stage, the author deploys and uses GPT tools, utilizing either the GPT-3.5 version or upgrading to GPT-4.0, to collect data and evaluate the effectiveness and impact of these tools.

3.2.7 Implementation Steps:

- 1) Setting Up and Configuring Systems: Ensure technology compatibility with existing systems and resolve any technical issues that arise during implementation.
- 2) Collecting User Feedback: Continuously collect feedback from educational administrators, students, and teachers to evaluate the specific impact of the technology on educational administration efficiency.
- 3) Executing the Action Plan: Monitor the implementation of the action plan to ensure all measures proceed as planned.
- 4) Effectiveness Evaluation: Regularly evaluate the effectiveness of teaching improvement measures, including student learning outcomes and teacher feedback.
- 5) Adjustments and Optimization: Make necessary adjustments and optimizations based on evaluation results to continuously improve teaching quality and student learning experiences.

The key to the success of the practice stage is effective communication and participation, ensuring all relevant stakeholders—from administrators to teachers and students—understand the purpose and methods of using GPT technology. Regular training and workshops are needed to enhance stakeholder acceptance and technical proficiency. When users move from acceptance to recognition to use and reuse, the task execution can be considered successful.

4. Strategies and Challenges in Deepening the Application of GPT Technology in Educational Administration

Through a combination of literature review and action research cases, this study explores the potential and challenges of GPT and other AI-assisted tools in educational administration and

course development. The author hopes to provide evidence-based decision support and strategic recommendations for educational administrators, offering innovative applications in educational technology and proposing new directions and considerations.

In conducting action research on the effective use of GPT in educational administration, the author identified several key challenges that need to be highly emphasized and addressed during implementation. These challenges, including technical integration, data security and privacy, dependency and misuse risks, and technology resistance and acceptance, are discussed in relation to existing literature and practical experience.

4.1 Complexity of Technical Integration

Challenge Context and Factors: Effectively integrating GPT technology into existing educational administration systems is the primary challenge. This involves compatibility issues, such as ensuring GPT-generated text can seamlessly integrate into existing administrative systems, like student information systems and email platforms. Floridi et al. (2020) highlight that technical integration requires careful planning and execution to ensure new technology does not disrupt the normal functioning of existing systems. Additionally, considerations of system stability and scalability are crucial to ensure GPT technology can adjust and expand with changing demands.

Limitations and Response Strategies: The main limitations include the technological aging of existing systems, inconsistent data standards, and potential issues with data transfer and integration. To address these challenges, the author suggests conducting small-scale pilot tests at the initial stage of technological implementation to test system compatibility and operational smoothness. Close collaboration with IT departments is necessary to develop and test APIs (Application Programming Interfaces) to ensure smooth integration of GPT technology with existing systems. Additionally, establishing a technical support team to provide immediate technical assistance and solutions to potential technical issues is crucial.

In specific operations, priority should be given to easily integrable administrative processes as pilot projects. For instance, using GPT technology to automatically generate routine student communications and reports, which are typically structured and repetitive tasks, serves as an initial test object for technical integration. These measures ensure the stability and efficiency of technical integration, laying the foundation for subsequent comprehensive deployment.

Future Research Directions: Future research should focus on exploring cross-platform compatibility of GPT technology and optimizing technical integration processes. Additionally, more in-depth research can analyze the application effects of GPT in different technical environments, providing best practice guidelines for cross-system technical integration.

4.2 Data Security and Privacy Issues

Challenge Context and Factors: Ensuring data confidentiality and security becomes a crucial issue when using GPT to process large amounts of student and teacher data (Rosenblatt, 2023). According to Schulman et al. (2017), ensuring data security and privacy protection is a core issue in technology applications, especially in education, where a large amount of sensitive personal information is involved. As data volume increases and processing procedures become more complex, the challenges of ensuring data security intensify.

Limitations and Response Strategies: The main limitations include the maturity of data encryption technology, the security of data storage and transmission, and the effectiveness of data access control (Mitchell et al., 2023). Establishing strict data security policies is necessary to ensure that all data processing complies with relevant laws and regulations. This includes data encryption, access control, and regular security reviews. Educational administration institutions should develop clear data usage and protection guidelines and conduct regular privacy protection training for relevant personnel to ensure all participants understand and comply with data security regulations.

Specifically, data encryption measures should cover all sensitive information transmission and storage processes, ensuring data protection at all times. Additionally, implementing role and

permission management systems ensures that only authorized personnel can access specific data. Regular data audits and security checks help identify and address potential security vulnerabilities, reducing the risk of data breaches.

Future Research Directions: Future research should focus on developing more advanced data encryption technologies and enhancing privacy protection measures, especially for data security challenges in big data environments. Additionally, more comprehensive data privacy protection policies should be studied and formulated, exploring how to effectively coordinate and manage data security in a multi-party cooperation environment.

4.3 Dependency and Misuse Risks

Challenge Context and Factors: Over-reliance on GPT-generated content may lead to a decline in decision quality, particularly when this content is not thoroughly reviewed. Moreover, relying on GPT for automated decision-making may overlook the importance of human judgment, especially crucial in policy-making and educational administration (Mintz, 2023). As technology becomes widely applied, balancing the relationship between technical assistance and human judgment becomes a key challenge.

Limitations and Response Strategies: The main limitations include the accuracy of technology-generated content, the depth of contextual understanding, and the tendency of personnel to overly trust technology-generated content. Strict content review mechanisms should be established to ensure all GPT-generated texts are manually reviewed and approved before use. Educational administrators need to be trained to develop critical thinking skills, enabling them to identify and correct potential errors or biases in AI-generated content (Ray, 2023). Implementing regular review and feedback mechanisms allows continuous optimization and improvement of GPT technology applications based on actual usage.

In practice, a multi-level review system can be established to ensure that key content generated by GPT, such as policy documents and important announcements, undergoes review by multiple professionals. Additionally, by implementing regular usage evaluations and feedback meetings, user experiences and suggestions can be collected to continuously improve GPT applications and process design.

Future Research Directions: Future research should delve into how to enhance GPT technology's contextual understanding capabilities and the accuracy of generated content. Additionally, more research is needed to analyze best practices in human-machine collaboration, ensuring technology applications do not weaken human judgment and decision quality.

4.4 Technology Resistance and Acceptance

Challenge Context and Factors: Introducing technology often accompanies internal resistance within organizations, particularly in traditional educational institutions where employees may have low acceptance of new technology, fearing it will replace human labor or change existing work patterns (Lu et al., 2023). With continuous technological advancement, increasing technology acceptance and reducing resistance become significant challenges.

Limitations and Response Strategies: The main limitations include personnel's familiarity with technology, concerns about the potential impact of technology, and organizational support for technological change. To address this challenge, communication and participation should be strengthened, ensuring all stakeholders, including administrators, teachers, and students, understand the benefits and applications of GPT technology. Regular communication meetings, training, and workshops should be held, encouraging active participation in the technology implementation process and listening to their suggestions and feedback, increasing technology recognition and acceptance. Additionally, emphasizing the auxiliary role of technology rather than replacing human labor can showcase how GPT helps improve work efficiency and decision quality, reducing fear and resistance to technology.

Specific actions include:

Training and Support: Conduct targeted training courses covering the basic operations, application scope, and advantages of GPT technology, and provide continuous technical support to solve problems encountered during use.

Demonstration and Showcases: Showcase practical examples demonstrating the specific outcomes of GPT in improving work efficiency and quality, increasing employees' confidence in the technology.

Participation and Incentives: Encourage active participation in the technology implementation process and appropriately incentivize employees who provide constructive suggestions and solutions, enhancing their sense of involvement and ownership.

Future Research Directions: Future research should focus on developing more user-friendly GPT technology interfaces and functions, lowering the barriers to technology use. Additionally, exploring innovative incentive mechanisms and continuous training programs can increase technology acceptance and user participation, promoting widespread applications of technology in education.

5. Future Recommendations: Detailed Guidance and Operational Strategies

As GPT technology becomes increasingly prevalent in educational administration, its potential impact is significant. To maximize the benefits of these technologies and address related challenges, this section provides more specific and detailed future development recommendations.

5.1 Strengthening Technical Integration Strategies

- 1) **Developing a Long-term Technical Blueprint:** To ensure effective integration of GPT technology, educational institutions need to develop a long-term technical strategy blueprint. This blueprint should detail each stage of technology deployment, from pilot stages to full-scale deployment, including timelines, expected outcomes, required resources, and risk assessments. For example, schools can initially implement GPT technology in student service centers to automatically answer common student questions, collecting usage data and user feedback during this process.
- 2) **Conducting Continuous Technical Evaluation and Updates:** Technology evolves rapidly, so regular technical evaluations and updates are necessary to ensure GPT technology continues to meet the needs of educational institutions. This includes performance testing, user satisfaction surveys, and security reviews. Based on these evaluations, institutions should regularly update their technical solutions and adjust their strategies and operations according to the latest technological advancements and policy changes.

5.2 Enhancing Data Security and Privacy Protection

- 1) **Establishing a Comprehensive Data Governance Framework:** With the increasing data volume in educational administration, establishing a comprehensive data governance framework becomes crucial. This framework should cover the entire data lifecycle, from collection, storage, usage to disposal, adhering to strict security standards and regulatory requirements. Additionally, educational institutions should ensure clear data access permissions for all personnel and conduct regular security training for those handling sensitive data.
- 2) **Strengthening the Application of Data Encryption and Security Technologies:** Protecting internal and student data security within educational institutions requires advanced encryption technologies. Implementing the latest cybersecurity measures, such as intrusion detection systems and firewalls, is key to ensuring data security. Regular security drills and audits can help identify and address security vulnerabilities, ensuring system robustness.

5.3 Promoting Technology Acceptance and Usage Efficiency

- 1) **Conducting Comprehensive Training and Education Programs:** To improve all faculty and staff's proficiency and acceptance of GPT technology, comprehensive training programs are necessary. These training sessions should include basic operational teaching, advanced function applications, and solutions to common problems. Training should be regularly updated to include the latest technological developments and use cases, ensuring faculty and staff can fully utilize these technologies to enhance work efficiency and educational quality.
- 2) **Enhancing Stakeholder Engagement:** Successful technology implementation requires support and active participation from all parties. Regular stakeholder meetings and workshops provide a platform for faculty, students, parents, and other community members to discuss and provide feedback on GPT technology applications. This not only helps increase understanding and acceptance among all parties but also promotes continuous improvement and innovation in technology.

5.4 Conducting Ethical and Impact Assessments

- 1) **Establishing an Ethics Review Committee:** As AI technology plays an increasingly important role in educational administration, establishing an ethics review committee to oversee its application becomes crucial. This committee should comprise experts in education, technology, ethics, and law, responsible for regularly reviewing GPT technology usage, assessing its social impact, and providing guidance to ensure the technology's application aligns with ethical standards and social values.

Through these detailed strategies and operational guidance, educational institutions can more effectively utilize GPT technology, fully leveraging its potential in educational administration while managing related risks and challenges. These efforts will ensure that GPT technology brings sustained innovation and progress in educational administration.

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