

Research on the Efficiency and Optimization Strategy of Teachers' Digital Management Platform in Education Resource Management

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Abstract. The digital management platform for teachers is an important educational technology component and plays a crucial role in educational resource management. With the advent of the digital age, these platforms provide more efficient and convenient solutions for allocating and utilizing educational resources. This paper explores the effectiveness of teacher digital management platforms in educational resource management and how to further optimize these platforms to improve their efficiency and practicality. Optimizing the digital management platform for teachers can greatly improve the efficiency of educational resource management, provide better services for educators, and promote the improvement of educational equity and quality. This optimization also helps unleash educational resources' potential and create richer and more personalized learning experiences for learners. The continuous research and optimization of the digital management platform for teachers is of great significance for promoting the digitalization process of the education industry.

1 Introduction

1.1 Resource Integration and Sharing Efficiency

The digital management platform for teachers significantly improves the efficiency of integrating and sharing educational resources by centralizing management and optimizing resource allocation. This platform integrates textbooks, multimedia teaching materials, online courses, and other teaching tools, achieving resource integration between disciplines and cross-disciplinary resource connections, providing teachers and students with one-stop educational resource services. In addition, the platform stores educational resources in virtual space through cloud computing technology, allowing teachers and students to access these resources anytime and anywhere, greatly improving the accessibility and time efficiency of information. Teachers can also easily share their lesson plans and teaching experiences, reducing work repetition and achieving optimal allocation and utilization of educational resources [1].

1.2 Teaching Process Optimization Efficiency

Teachers' digital management platform is important in optimizing the teaching process. The characteristics of platform automation reduce the intensity of classroom management so that teachers can focus more on teaching. For example, teachers can save heavy administrative work and improve work efficiency through automated attendance, online job submission and correction, performance records, and other functions. In addition, the digital platform can also help teachers design personalized teaching plans, track students' learning outcomes, and provide a scientific basis for teaching decision-making through data analysis tools. Such systematic management further improves the integrity and scientificity of the teaching process. In addition, the platform stores educational resources in virtual space through cloud computing technology, allowing teachers and students to access these resources anytime and anywhere, greatly improving the accessibility and time efficiency of information. Teachers can also easily share their lesson plans and teaching experiences, reducing work repetition and achieving optimal allocation and utilization of educational resources [2]. As shown in Figure 1:

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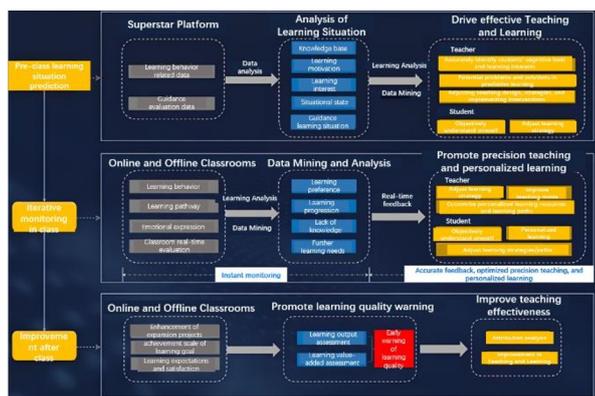


Fig. 1. Teachers' digital teaching process

2.1 Technical Issues

1.3 Teaching Quality Monitoring and Evaluation Efficiency

The digital management platform for teachers is important in monitoring teaching quality and evaluating student performance. The data analysis tools in the platform can help teachers monitor students' learning progress and understanding in real-time, which can help adjust teaching strategies promptly and improve the quality of teaching interaction. By conducting online assessments and tests, teachers can accurately grasp students' learning outcomes, provide timely feedback, and take corresponding teaching interventions. At the same time, the platform's comprehensive reporting and analysis functions can enable teachers and school management to have macro control over teaching effectiveness and, based on this data, make more targeted educational policies and improvement measures [3].

1.4 Teachers' Professional Development and Support Effectiveness

The digital management platform for teachers provides tools and an environment to promote their professional development. The platform integrates various online training courses, teaching forums, and seminar activities to support teachers' lifelong learning and professional skills improvement. Teachers can continuously update their teaching knowledge and broaden their professional horizons by participating in these activities. The platform's collaboration tools and sharing mechanisms encourage experience exchange and knowledge sharing among teachers, creating an open learning community. Teachers can use the feedback and evaluation system of the platform to continuously improve their teaching practices, form a positive professional development cycle, and continuously enhance the quality of teaching.

2 The Problems and Challenges of Teachers' Digital Management Platform

2.1.1 System Stability and Compatibility

The system stability and compatibility of the teacher digital management platform are the foundation for its normal operation. Unfortunately, these platforms are often limited by the challenges of constantly evolving technologies and software and hardware updates. Part of the problem stems from compatibility differences between different devices and operating systems. With the popularization of diversified computing devices within educational institutions, platforms must maintain support for new and old system versions to ensure a seamless user experience. Random system failures, server crashes, or improper maintenance can also seriously affect the availability of the platform. These technical issues will reduce teachers' dependence on the platform and decrease its effectiveness in educational resource management. A solid technical foundation and timely technical support services are key to ensuring the long-term stable operation of the platform [4]. As shown in Figure 2.

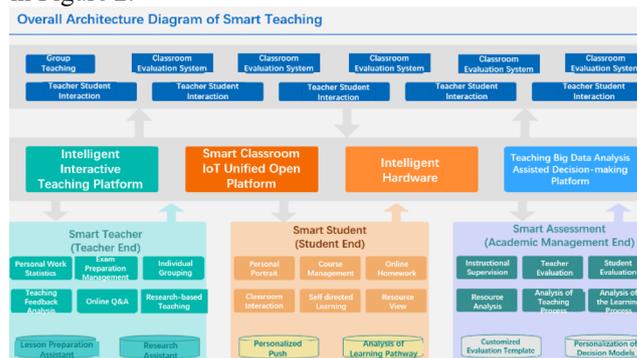


Fig. 2. Frame diagram of teacher digital management platform

2.1.2 Data Security and Privacy Protection

Data security and privacy protection are particularly important in education, and teacher digital management platforms face significant challenges. The platform stores much student information, grade data, and educational content. Once the data is leaked, it not only infringes on personal privacy but may also affect the

reputation of educational institutions. Hacker attacks, internal leaks, and insecure data transmission and storage mechanisms can all become sources of data security threats. The platform must comply with increasingly strict national and local privacy regulations to ensure compliance with legal requirements while maintaining user trust. Strengthening data security measures and privacy protection policies, regularly conducting security vulnerability assessments, and updating encryption technologies are important measures to protect platform data security and improve user trust [5]. As shown in Figure 3.

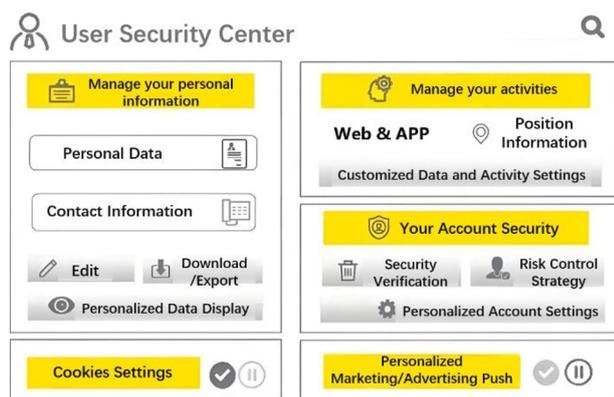


Fig. 3. User security of teacher digital management platform

2.2 Level of Usage Issues

2.2.1 Lack of Teachers' Digital Literacy

Cultivating teachers' digital literacy is key to the digital transformation of educational resource management. Insufficient digital literacy will directly affect teachers' ability to use management platforms, restricting the efficient utilization of educational resources. Despite the powerful capabilities of digital platforms, teachers will not be able to fully unleash the potential of these tools without the necessary information technology knowledge and operational skills. Due to rapidly updating information technology, teachers must constantly learn new technologies and tools to avoid outdated skills. Lack of sufficient training and support can increase teachers' workload and lead to resistance to new technologies. Improving teachers' digital literacy and enhancing their ability to adapt to and use digital educational resources through regular training and practical guidance is a prerequisite for promoting the effective operation of the platform [6].

2.2.2 Inadequate Utilization of Platform Functions

The teacher digital management platform integrates various advanced functions and tools, but the actual use of these functions is not fully utilized. Part of the reason may be that teachers lack a comprehensive understanding of platform functions and fail to realize the potential impact of these functions on improving teaching efficiency and quality. Due to time and energy constraints, teachers may use traditional teaching

resource management methods rather than trying and adapting to new digital tools.

The platform interface design without enough intuitive or nice user experience may also reduce teachers' enthusiasm for using the platform. To better utilize the functions of the platform, it is necessary to provide systematic introduction and guidance to teachers, provide customized training, strengthen practical function operation demonstrations, and optimize the user experience design of the platform, thereby promoting teachers' deep use and integration of platform functions into daily teaching practice.

2.3 Management-level Issues

2.3.1 Resource Allocation and Update Lag

In implementing digital management platforms for teachers, the lag in resource allocation and updates often becomes a key issue affecting their effectiveness. Due to the continuous investment and updating of educational resources, especially digital resources, untimely resource investment will lead to the rapid obsolescence of teaching content, software, and tools on the platform. This lag is inconsistent with the development trend of the education industry and detrimental to improving teaching quality and students' interest in learning. This lag is inconsistent with the development trend of the education industry and detrimental to improving teaching quality and students' interest in learning. Another aspect of the problem of lagging resource updates is the insufficient attention management gives to resource allocation, which often manifests in improper allocation of funds, technical support lack, or unprofessional maintenance teams. To address this issue, schools and education management departments need to establish long-term budget plans, develop strategies for timely resource updates, and establish professional maintenance teams to ensure the continuous connection and development of the platform and teaching content.

2.3.2 Lack of Policy Support and Incentive Mechanism

Policy support is another key factor in promoting the successful implementation of digital management platforms for teachers. Whether it is the government or educational institutions, neglect at the policy level may lead to various obstacles in platform promotion and use. In practical operation, the management may lack policies incentivizing teachers to use these platforms. Teachers who actively use platform resources for teaching and management should be rewarded accordingly.

The lack of effective policy guidance may result in a lack of clear goals and directions for the development and use of the platform, making it difficult for the platform to achieve its intended effectiveness. The lack of incentive mechanisms can also affect teachers' enthusiasm and reduce their motivation to explore and use new technologies. Building a reasonable policy

framework and incentive mechanism is an important part of stimulating teachers' enthusiasm and ensuring the effective use of the platform.

3 Strategies to Optimize the Effectiveness of Teachers' Digital Management Platform

3.1 Technology Optimization Strategy

3.1.1 Strengthen System Development and Maintenance

To improve the technical efficiency of the teacher digital management platform, it is necessary to continuously strengthen the system's research and development and maintenance capabilities, which means investing necessary financial and human resources to ensure the platform can operate continuously and stably and timely update its functions and upgrade its technology. System development needs to focus on integrating new technologies such as cloud computing and big data analysis and ensure that the practical application of these technologies can meet the specific needs of the education field. A strong maintenance team will be responsible for promptly identifying and fixing potential technical issues reducing the inconvenience caused by system failures. System maintenance also includes responding to user feedback to achieve continuous improvement and optimization of the platform and increase user satisfaction. Comprehensively strengthening research and development and maintenance work will ensure the long-term availability and adaptability of the platform, supporting the maximization of educational resource management efficiency [7].

3.1.2 Improve Data Security Protection Capabilities

Data security in the digital age is a major challenge teachers face on digital management platforms. To optimize the platform's efficiency, adopting practical and reliable strategies to enhance data security protection capabilities is necessary, which includes using the latest encryption technology to protect stored and transmitted data and implementing strict identity authentication mechanisms to ensure that only authorized users can access sensitive information. Regular security assessments of the platform are required to identify potential vulnerabilities and make corresponding repairs. Strengthening employee safety awareness education and training is also crucial to prevent data breaches caused by improper operations. At the policy level, establishing clear data management standards and emergency response plans is also a key measure to ensure data security. By combining these technologies with management, the teacher digital management platform's overall data security protection capability can be greatly improved, user trust can be

enhanced, and the healthy development of the platform can be promoted.

3.2 Training and Promotion Strategy

3.2.1 Improve Teachers' Digital Ability

To fully utilize the effectiveness of the teacher digital management platform, the key is to improve teachers' digital capabilities. Education management institutions and schools must invest corresponding resources, organize systematic digital skills training, and continue professional development plans. The improvement of digital capabilities not only includes training in operational skills, such as how to use the basic functions of the platform but also encompasses the understanding and creative use of digital technology in the teaching process. During the training process, emphasis should be placed on practical operations to ensure that teachers can apply the skills learned in actual teaching. Provide personalized learning paths and self-service resources, enabling teachers to learn according to individual needs and progress. Creating an environment that supports exploration and innovation is also crucial, encouraging teachers to try new methods and tools and enhancing their confidence and interest in digital teaching.

3.2.2 Enhancing Platform Usage Training

For teachers to fully utilize the functions of digital management platforms, targeted platform usage training must be provided. This type of training should go beyond basic operational skills and delve deeper into effectively integrating platform functionality with teaching and resource management. The training content should include advanced platform usage skills like data analysis, course design, and personalized settings. Design training courses based on the daily workflow and specific problems teachers face to ensure they can immediately apply what they have learned to practice after the course ends. In addition to group training, one-on-one tutoring or workshops can also be provided to meet the specific needs of different teachers. Ensure timely updates of training content to keep up with the pace of platform upgrades and developments so that teachers can always maintain proficiency in the latest features. Through such continuous training and support, the utilization rate of the platform and the effectiveness of educational resource management can be maximized.

3.3 Management Mechanism Innovation Strategy

3.3.1 Improve the Mechanism of Resource Allocation and Renewal

To optimize the effectiveness of the teacher digital management platform, the primary task is to establish and improve the mechanism for resource allocation and updating, which requires schools and educational

management departments to coordinate and plan to allocate educational resources reasonably, including hardware facilities, software systems, and teaching content. To ensure that these resources are updated promptly, synchronized with educational needs and technological developments, and avoid the adverse effects of outdated information on teaching effectiveness. To achieve this goal, it is necessary to regularly evaluate the utilization and effectiveness of existing resources, establish a rapid response mechanism, and timely revise and supplement the required teaching resources [8].

In addition, it is necessary to ensure transparency and fairness in resource allocation, ensuring all teachers have equal access to and use of the latest resources. Through efficient resource allocation and updating mechanisms, it is possible to ensure that educational resources on the digital management platform remain dynamic and competitive, providing a solid foundation for high-quality teaching.

3.3.2 Strengthen Policy Support and Incentive Mechanism

Strengthening policy support and incentive mechanisms is crucial for inspiring teachers to actively use digital management platforms. Education management institutions should introduce relevant policies and set goals and tasks for promoting the digital application of teachers, including establishing specific usage standards and evaluation indicators and combining them with the teacher evaluation system. At the same time, effective incentive mechanisms should be established, such as setting up reward funds, selecting excellent cases, providing career promotion, and other directly beneficial incentive measures to enhance teachers' enthusiasm and initiative in digital management platforms. In addition to material incentives, it includes spiritual encouragement and professional identity incentives, such as public recognition and sharing of excellent experiences, to create a positive, mutual learning and communicative atmosphere. By strengthening policy support and incentives, teachers can be promoted to become active practitioners and promoters of digital teaching, providing a strong impetus for optimizing the effectiveness of teacher digital management platforms.

4 Conclusion

This paper explores the effectiveness of teacher digital management platforms in educational resource management and proposes optimization strategies to address their existing problems. Nowadays, the digital management platform for teachers has increasingly become an important tool for improving the efficiency of educational resource management and teaching quality. It has demonstrated significant effectiveness in resource integration and sharing, teaching process optimization, teaching quality monitoring and evaluation, and teacher professional development. However, the platform's effective use and sustainable

development also face technical challenges, usage issues, and management bottlenecks. In response to these issues, research has repeatedly emphasized the importance of technology optimization strategies, training and improvement strategies, and management mechanism innovation strategies.

The technical optimization strategy requires strengthening system research and maintenance efforts, ensuring platform stability and reliability while improving data security protection capabilities. We can ensure the platform's smooth operation and win users' trust by building a strong technological foundation. The training and improvement strategy aims to enhance teachers' digital technology capabilities and deepen their understanding and application of platform functions. The education management department should provide comprehensive and multi-level training for teachers to ensure that they can fully utilize the various functions of the platform to improve work efficiency and teaching quality. Finally, the innovative management mechanism strategy emphasizes establishing a scientific and rational resource allocation updating mechanism and strengthening policy support and incentive mechanisms to promote the platform's deep application and continuous improvement.

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