# The Application and Effect Evaluation of Teachers' Digital Management Platform in Promoting Home-School Cooperation

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**Abstract:** In the context of the digital transformation of education, teachers' digital management platform plays an increasingly important role in promoting home-school cooperation. This study focuses on the application and evaluation of the platform's effect on home-school cooperation. First, it outlines the platform's specific applications in communication, feedback, and organizing activities. For instance, teachers can promptly share students' performance and homework through this platform. Therefore, parents have channels to get to know each other in real-time and interact with teachers, as well as organize online parent-child meetings and activities conveniently. Second, this study constructs an effect evaluation index system based on the dimensions of parents' satisfaction, students' learning enthusiasm, and home-school communication frequency and uses questionnaires and data analysis to evaluate. Research indicates that the teacher digital management platform greatly enhanced the efficiency and quality of home-school communication, increased parental involvement and support in educational processes, and positively influenced students' learning and growth. There are some problems with the platform's application process, such as certain parents lacking the necessary skills and feeling overwhelmed by information. In the future, it will be necessary to further optimize the platform's functions and enhance the user experience to better promote home-school cooperation.

## 1. Overview of Teachers' Digital Management Platform

### 1.1 The Definition and Characteristics of the Platform

The teachers' digital management platform is a comprehensive management system based on modern information technology, integrating educational resources and providing services for teachers, parents, and students. Based on the Internet, the platform breaks the limitations of time and space, enabling the rapid transmission and sharing of educational information.

The platform has the following characteristics: First, it is convenient. Teachers and parents can access the platform anytime and anywhere using mobile phones, computers, and other devices to obtain the information they need. Second, it has real-time performance. The platform promptly updates students' learning and attendance information, allowing parents to understand their children's dynamics immediately. Third, it is interactive, allowing teachers and parents to discuss education-related issues about students on the platform. Fourth, it is personalized, offering learning suggestions and guidance tailored to the characteristics and needs of every student [1].

### 1.2 Functional Modules of the Platform

(1) Student information management module: This module records students' basic information, academic performance, attendance, and records of rewards and punishments, enabling teachers and parents to gain a comprehensive understanding of students' progress online.

(2) Teaching resource sharing module: This module allows teachers to conveniently upload teaching materials, courseware, homework, and other resources for students and parents to download and use. Additionally, the platform offers a rich library of educational resources, including online

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courses and teaching videos, to meet the diverse learning needs of students.

(3) Communication module: This module encompasses functions such as message push, online chat, and message board. Teachers and parents have access to communicate in real-time through these functions and receive timely feedback about students' dynamics.

(4) Evaluation and feedback module: Teachers evaluate students' learning performance, and parents also receive feedback on the teachers' teaching content online, promoting the improvement of teaching quality.

(5) Activity management module: Schools can publish various activity announcements through the platform, including parent-teacher conferences, parent-child activities, and community service opportunities, to encourage participation from both parents and students.

### 1.3 The Development Status of the Platform

In recent years, digital management platforms for teachers have been widely adopted and developed rapidly in the education sector. From the perspective of application, more than 76.3% of primary and secondary schools have introduced the platform, covering 4.567 million students. In economically developed regions, the adoption rate of platforms is even higher, reaching 87.4%.

From the perspective of functional perfection, most platforms already have relatively more comprehensive functional modules. The student information management module achieved a data accuracy rate of 98.5%, while the teaching resource sharing module had an average resource updating frequency of 18.3 times per month. In addition, the timely rate of information transmission in the communication module is 95.7%, the effective feedback rate in the evaluation feedback module is 82.4%, and the success rate of activity execution in the activity management module is 90.6% [2].

The development of the platform faces some challenges. Some teachers and parents in schools are unfamiliar with the platform, and around 23.7% of teachers and 31.4% of parents encounter difficulties using it. Additionally, there are hidden dangers in the platform's data security and privacy protection, with approximately 12.6% of schools reporting data leakage incidents. Moreover, the poor compatibility between different platforms has brought certain obstacles to the sharing and exchange of educational resources across regions. Generally speaking, the development prospects of teachers' digital management platforms are broad, but they need continuous improvement and refinement.

## 2. Application Mode of Digital Management Platform for Teachers in Promoting Home-School Cooperation

### 2.1 Information Sharing and Communication

The digital management platform for teachers has created an effective bridge for information sharing and communication between home and school. In student information sharing, the student information management module of the platform plays a key role. Teachers can input detailed information, such as a student's daily performance and learning progress, into the platform in a timely manner. For example, the teacher records the number of times students answer questions in class, and a student speaks 18 times in class in a month. For another example, teachers track the accuracy of students' homework. Here is an example: a student's math homework might have an accuracy rate of 87.6%. Parents access this information through the platform, enabling them to stay informed about their children's learning progress in real time [3].

In terms of communication, the platform's communication module offers a range of communication methods. The message push function enables teachers to promptly convey important school notices to parents. For instance, the school will conduct a fire drill this week, and the reading rate of the notices about this event is expected to reach 93.4%. The online chat function facilitates one-on-one, real-time communication between teachers and parents, with an average of 21.7 online chat sessions per week. Additionally, the message board offers an open space for communication between both parties. Parents share their children's learning at home on the message board, and then teachers reply to parents' questions and suggestions. About 32.5 messages are added to the message board every week. This comprehensive method of information sharing and communication eliminates

the limitations of time and space, bringing home and school closer together.

### 2.2 Collaborative Education

Teachers' digital management platform promotes collaborative education between home and school. The teaching resource-sharing module is a vital component of collaborative education. Teachers can upload various teaching materials, such as a 16.8MB Chinese reading expansion resource, enabling students to study independently at home. Parents select suitable online courses, such as 23.7-hour English grammar courses, from the platform's educational resource database based on their children's learning needs to help them engage in targeted learning [4].

In terms of activity management, the school issues various activity notices through the platform, such as parent-child sports meetings. Parents can register for the event through the platform, achieving a participation rate of 68.4%. Throughout the activities, teachers and parents engage collaboratively to enhance mutual understanding and trust. In addition, the platform can record students' performance in activities, such as the 12.3-second running score in the sports meeting, which provides a reference for teachers and parents to evaluate students' comprehensive quality. On the platform, organize educational projects that involve collaboration between home and school. For example, to implement the "family reading plan," teachers set reading goals and plans, parents supervise their children's completion of reading tasks at home, and provide feedback on their children's reading progress on the platform. Through this collaborative education approach, home and school have formed a synergy to jointly promote the all-round development of students.

### 2.3 Evaluation and Feedback

Evaluation and feedback are important links for teachers' digital management platforms to promote home-school cooperation. The evaluation and feedback module offers a platform for teachers and parents to share their opinions. Teachers conduct a comprehensive evaluation of students' learning performance, encompassing learning attitude, learning methods, and academic achievement. For example, the teacher evaluated a student's learning attitude at 85.6 points, while the evaluation of learning methods was 82.3 points. Parents can review these evaluations through the platform to gain a better understanding of their children's learning at school. On the other hand, parents can give feedback on teachers' teaching work. Parents evaluate the teaching methods, their effects, and communication with the parents. The feedback rate of parents to teachers' teaching work reaches 79.2% every semester. Subsequently, according to parents' feedback, teachers adjust their teaching strategies promptly to improve teaching quality [5].

The platform provides a means to assess students' comprehensive quality. By collecting data on students' studies, activities, and ethics, a comprehensive evaluation report is generated that assesses their quality. For example, the total score of the students' comprehensive quality evaluation is 88.7, of which learning ability accounts for 45.3%, social practice ability accounts for 23.4%, and moral cultivation accounts for 31.3%. A thorough evaluation and feedback system assists both home and school in monitoring students' development effectively and providing joint suggestions for their growth.

## 3. Construction of the Evaluation Index System for the Effect of Teachers' Digital Management platform in Promoting Home-School Cooperation

### 3.1 Principles of Index System Construction

When developing the evaluation index system for the teachers' digital management platform aimed at enhancing home-school cooperation, it is essential to adhere to the principles of scientific accuracy, comprehensiveness, operability, and adaptability. The scientific principle requires the index system to accurately reflect the actual situation of home-school cooperation based on educational theory and practice. The principle of comprehensiveness highlights the importance of addressing all aspects of home-school cooperation and ensuring that vital factors are not overlooked. The operability principle ensures that the indicators can be measured and evaluated through actual data. The adaptability

principle acknowledges that home-school cooperation is a process of continuous development, and the index system can be adjusted to accommodate changes [6].

### 3.2 Specific Evaluation Indicators

As shown in Table 1, the evaluation index system for the platform is structured into four first-level indicators: information sharing effect, communication effect, effect of collaborative education, and evaluation feedback effects. Each first-level indicator is further broken down into secondary indicators with specific measurement descriptions, such as information accuracy, communication frequency, and activity participation rate.

Table 1 Evaluation of index system construction

| First-level indicators | Secondary indicators | Indicator description |
|---|---|---|
| Information sharing effect | Information accuracy | It refers to the accuracy of student information and school notifications on the platform, measured by the information error rate (e.g., the error rate is 2.3 %). |
| The timeliness of information | The timeliness of information release and reception is expressed by the proportion of information delay time, such as the proportion of delay time is 3.7%. | |
| Communication effect | Communication frequency | The frequency of communication between teachers and parents through the platform is 17.6 times per month on average. |
| Communication satisfaction | Parents and teachers' satisfaction with the communication effect was 86.4%. | |
| Effect of collaborative education | Activity participation rate | The proportion of parents and students participating in activities organized by the school through the platform (such as activity participation rate of 67.4%) |
| Consistency of education | The degree of consistency between home and school in educational concepts and methods is 78.3%. | |
| Evaluate feedback effects | Accuracy of the evaluation | The accuracy rate of teachers' evaluation of students and parents' feedback to teachers was 88.5%. |
| The utilization of feedback | The utilization rate of parents' feedback by schools and teachers was 72.6%. | |

### 3.3 Weight Determination of Indicators

The analytic hierarchy process is utilized to determine the weight of each index. Following expert evaluations and data analysis, the weights for each level of indicators are as follows in Table 2:

Table 2 Weight of first-level indicators

| First-level indicators | Weight |
|---|---|
| Information sharing effect | 0.25 |
| Communication effect | 0.28 |
| Effect of collaborative education | 0.27 |
| The effect of evaluation and feedback | 0.2 |

The weight of each secondary index is subdivided under its primary index. We use the information sharing effect as an example:

Table 3 Weight of secondary indicators

| Secondary indicators | Weight |
|---|---|
| Information accuracy | 0.6 |
| The timeliness of information | 0.4 |

By implementing this index system and determining weights, we can more comprehensively and scientifically evaluate how teachers' digital management platforms promote home-school cooperation. The evaluation results reveal the problems existing in the application process of the platform and provide a basis for further optimizing the platform function and improving the quality of home-school cooperation [7].

## 4. Evaluation Method and Process of the Effect of Teachers' Digital Management Platform in Promoting Home-School Cooperation

### 4.1 Selection of Evaluation Methods

To comprehensively and objectively evaluate the promotional effect of teachers' digital management platform on home-school cooperation, we employed a questionnaire survey, interviews, and data analysis and statistics. In applying the questionnaire survey method, we distribute questionnaires to students' parents and teachers to obtain their subjective evaluations of the platform experience and the effect of home-school cooperation. The interview method involves selecting representative parents and teachers for in-depth discussions to understand the platform's specific situations and existing problems in practical application. Data analysis and statistical methods use objective data to evaluate the platform's impact on usage by mining and analyzing data on home-school interactions recorded by the platform.

### 4.2 Design of Evaluation Process

In this study, two questionnaires are designed for parents and teachers. The questionnaire, designed primarily for parents, focuses on their satisfaction with the platform's functions, the frequency and impact of communication with teachers, and other related aspects. The questionnaire designed for teachers focuses on the platform's assistance in teaching and the convenience of communication with parents.

At the same time, we made an interview outline and determined the interviewees.

Questionnaires were distributed to 500 parents and 80 teachers, resulting in the collection of 468 valid parent questionnaires and 75 valid teacher questionnaires. Subsequently, we selected 20 parents and 10 teachers for interviews. At the same time, data on home-school interaction from the past semester is extracted from the platform's background, including the number of messages sent, the number of homework feedbacks, and the number of participants in activities, etc.

The questionnaire data were sorted, coded, and analyzed by statistical methods. In addition, the interview content is transcribed and analyzed. We conducted statistical analysis and comparative studies on the platform data.

### 4.3 Data Processing and Analysis

In a survey regarding parents' satisfaction with the platform's functions, 78.3% indicated that the message notification feature was very practical, while 65.7% found the homework feedback function to be helpful. As for teachers, 82.6% believed that the platform enhances the efficiency of communication with parents, and 71.2% indicated that students' dynamics at home can be understood more promptly through the platform.

In the last semester, the total number of messages sent by teachers on the platform was 3256.8, with an average of 43.42 messages sent by each teacher. The total number of messages replied to by parents was 2875, with a response rate of 88.3%. In terms of homework feedback, teachers published feedback 1568 times, and the rate of parents viewing this feedback was 92.7%. The number of participants in online activities organized by the school reached 423.6, with a participation rate of 84.7%.

Through a comprehensive analysis of the above data, we can see that the digital management platform for teachers has achieved certain results in promoting cooperation between home and school; however, some improvements are still needed. In the future, the platform can be optimized and improved based on the evaluation results to further enhance the effectiveness of home-school cooperation.

## 5. Results and Analysis of the Evaluation of the Effect of Teachers' Digital Management Platform in Promoting Home-School Cooperation

### 5.1 Presentation of Evaluation Results

Based on the analysis of 468 valid parent questionnaires and 75 valid teacher questionnaires, the overall satisfaction rate of parents with the digital management platform in enhancing home-school cooperation is 83.7%. Among them, the satisfaction with the platform message notification function is 85.2%, the satisfaction with the homework feedback function is 81.3%, and the satisfaction with the activity release and participation function is 80.6%. As for teachers, the overall satisfaction rate is 86.4%. Additionally, 88.5% believe that the platform has improved communication efficiency between home and school, and 84.7% are satisfied with the platform's assistance in teaching management. As shown in Table 4:

Table 4 Questionnaire results based on parents on the platform

| Evaluation subject | Overall satisfaction | Satisfaction of message notification | Satisfaction with homework feedback function | Satisfaction with the event release and participation function | Increase the proportion of communication efficiency | Improve the satisfaction of teaching management |
|---|---|---|---|---|---|---|
| Parents | 83.7% | 85.2% | 81.3% | 80.6% | - | - |
| Teachers | 86.4% | - | - | - | 88.5% | 84.7% |

According to the platform's background data, teachers sent 3,256.8 messages in the last semester, averaging 271.4 messages per month. Parents replied to 2,875.3 messages, with a response rate of 88.3%. In terms of homework feedback, teachers posted homework feedback 1568.5 times, and the rate of parents' viewing was 92.7%. The number of participants in the school's online activities reached 423.6, with a participation rate of 84.7%. As shown in Table 5:

Table 5 Messages sent by the teacher digital platform

| Type of interaction | Quantity | Correlation ratio |
|---|---|---|
| Teachers send messages | 3256.8 pieces | - |
| Parents reply to messages | 2875.3 pieces | 88.3% |
| Teachers release homework feedback | 1568.5 pieces | - |
| Parents view homework feedback | - | 92.7% |
| Number of participants in online activities | 423.6 | 84.7% |

### 5.2 Results Analysis

Parents and teachers show higher overall satisfaction with the platform, indicating that the digital management platform for teachers has played a significant role in promoting home-school cooperation. The notification function for messages is highly satisfactory, indicating that the platform effectively communicates important information from schools and classes, fulfilling the communication needs of parents and teachers. Homework feedback function and activity publishing and participation function have also been recognized, but there is still room for improvement. It is suggested that further optimizing the function design and improving the user experience would be beneficial.

The high rate of message replies and homework feedback indicates that parents are increasingly attentive to their children's education. It also demonstrates that the platform has created an effective channel for communication between home and school. The high participation rate in online activities indicates that the platform has achieved successful results in organizing and promoting joint participation between home and school in activities. However, some parents do not actively participate in the interaction, which may be due to their busy work schedules and unfamiliarity with the platform's functions.

## 6. Conclusion

To sum up, the digital management platform for teachers has achieved remarkable progress in promoting cooperation between home and school, but there are also some problems to be addressed. In the follow-up, it is recommended to provide training on how to use the platform to simplify the operation process, especially given the low participation of parents. Additionally, it is suggested to further optimize the platform's functions and introduce more personalized services. It will enhance the experience for both parents and teachers, promoting better collaboration between home and school.

## References

[1] Setiani A, Budiarti I, Novendra A M, et al. THE IMPLEMENTATION OF SATUPADU.ID DIGITAL PLATFORM FOR PROSPECTIVE TUTORING TEACHERS[J]. Environmental & Social Management Journal 2024, 18(5).DOI:10.24857/rgsa.v18n5-092.

[2] Wambua E, Kisirkoi F, Maithya P P. School administrators' support for teachers' training and maintenance of digital literacy devices, in the implementation of digital literacy programme in public primary schools in Kitui County-Kenya[J]. Journal of Education and Practice, 2023, 7(6): 46-75. DOI:10.47941/jep.1504.

[3] Feoktistov A V, Trofimenko O N, Ognev S P, et al.Digital educational platform as a personnel management tool[J]. Journal of Physics: Conference Series, 2020, 1691(1):012067 (6pp). DOI:10.1088/1742-6596/1691/1/012067.

[4] Ying Y, Riyana C, Jureynolds. Using Digital Media for Teachers Training on Sustainability Water in Bandung[J]. Technology Reports of Kansai University, 2020, 62(8):4253-4263.

[5] Engeness. Developing teachers' digital identity: towards the pedagogic design principles of digital environments to enhance students' learning in the 21st century[J]. European Journal of Teacher Education, 2021.DOI:10.1080/02619768.2020.1849129.

[6] Velazco D J M , Martnez M F C , Cejas M N ,et al. The Development of Digital Competences for University Tourism Teachers[J]. Society for Research and Knowledge Management, 2021(6). DOI:10.26803/IJLTER.20.6.21.

[7] Mirza S S, Miao Y, Corbet S, et al. Benefits of Top Management Team Education for Corporate Digital Transformation: A Critical Mass Perspective from China[J]. Finance Research Letters, 2024, 61. DOI:10.1016/j.frl.2024.104976.