

The Application and Impact of Smart Teaching Platform in TESOL: Perspectives from Junior High School Teachers

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Abstract

The rapid advancement of information technology and ongoing education reforms have introduced smart education as an innovative teaching model. This study aims to explore the application and impact of smart education platforms in Teaching English to Speakers of Other Languages (TESOL) within four junior high schools in China. Through a detailed analysis of questionnaire responses from English language teachers, the study investigates the impact of these platforms on teaching practices. Results indicate that using smart teaching platforms has increased teachers' engagement, motivation, and satisfaction. Additionally, teachers have reported a deeper understanding of smart education concepts, improved practical teaching skills, and overall professional development. Despite these benefits, the study highlights the challenges of implementing smart education platforms. The findings suggest that while smart education platforms can potentially enhance TESOL effectiveness, further improvements, and extensive research are necessary to optimize their use fully.

Keywords: smart teaching platform, TESOL, English teachers, application

1. Introduction

In the rapidly evolving realm of information technology, smart education platforms have emerged as innovative teaching tools widely utilized in TESOL. Their primary objective is to cultivate talents for the new era through classroom instruction. Smart education plays a pivotal role in setting higher standards for professional development among educators (Su, 2021). The English Curriculum Standard for Compulsory Education in China (2022 Edition) mandates that teachers prioritize student development, tailor learning activities based on English learning concepts, and integrate the latest information technology with English education. It emphasizes meeting individual student needs, ensuring accurate assessment, and fostering learning-driven teaching and evaluation-driven learning.

Smart education significantly changes the objectives, content, teaching methods, and evaluation of English courses during the compulsory education stage (Zhu, 2022). However, recent studies highlight challenges facing English teachers, including difficulties in personalizing learning resources, ineffective professional training, unclear integration of AI technology, and platform compatibility issues (An, 2023). In today's information age, students are no longer passive recipients of knowledge; they can access diverse learning resources and sometimes surpass teachers in information acquisition. As a result, teachers must enhance their skills to adapt to the changing landscape of education, evolving student learning styles, and national talent development mandates.

Junior high school English is crucial in bridging primary and senior high school education. However, it faces challenges such as detached teaching contexts, monotonous methods, and delayed feedback (Bai, 2022). Smart education platforms offer solutions with vast resources, learning analytics, and interactive tools, enabling teachers to create precise lesson plans, establish authentic learning environments, engage students, provide data-driven feedback, and improve teaching practices (Ren, 2023). These platforms facilitate communication among teachers and renowned educators, helping formulate effective teaching plans and track students' learning activities and habits (Lin, 2023).

Given these considerations, it is crucial to investigate the use of smart education platforms by junior high school

English teachers. This study aims to assess smart teaching platforms and examine their utilization among English teachers to identify measures for improvement. The study explores three research questions:

- (1) How do junior high school English teachers utilize the functions of smart teaching platforms?
- (2) What is the overall evaluation of smart teaching platforms by junior high school English teachers?
- (3) What impact do smart teaching platforms have on the teaching and professional development of junior high school English teachers?

2. Literature Review

2.1 Definition of Smart Education

Smart education is an advanced form of educational informatization that emphasizes practical operations and smart teaching by integrating advanced technologies (Zhang Yongmin, 2010). Scholars have provided comprehensive definitions of “smart education,” as summarized in Table 1.

Table 1. Definitions of smart education from scholars

Scholars	Definitions/Elements
Zhu Zhiting (2012)	Smart education is a future paradigm that leverages human-computer synergy to innovate the teaching process and enhance learners’ development.
Sykes (2014)	An educational model that allows students to quickly acquire and integrate knowledge with the help of advanced teaching methods, technology, and related equipment.
Huang Ronghuai (2014)	Smart education is an educational system provided by a school, region, or country that offers a high-quality learning experience, high content adaptability, and high teaching efficiency.
Yang Xianmin (2014)	Smart environments, smart teaching and learning, smart education management, smart educational research, smart educational services, smart educational evaluation, etc.
Tikhomirov V (2015)	Smart education is to achieve specific educational outcomes, such as 21st-century cognitive skills, through diversified learning or organizational methods supported by ICT.
Chen Lin (2015)	Smart education is smart teaching, learning, evaluation, management, and services supported by modern technology.
Bajaj R, Sharma V (2018)	Smart education aims to deliver personalized learning anytime, anywhere.
Lytras (2018)	Smart education necessitates innovative teaching methods and tools to expand students’ opportunities for independent learning, fostering and enhancing their creativity.
Kiryakova (2018)	Smart education applies the latest smart technologies to advanced teaching practices, tools, and technologies to effectively provide educational services.
Cao Peijie (2018)	Integrated learning scenarios, flexible and diverse learning methods, and adaptable organizational management.
Abdel (2019)	Smart education environments integrate different information and communication technologies to activate the learning process and cater to the diverse needs of students.
Martin (2019)	Smart education embodies intelligent, personalized, and adaptive learning.
Iqbal (2020)	Smart education is a distinctive learning concept that empowers and advances the overall learning process in the digital age.
Gu Xiaoqing (2021)	Smart environments, smart teaching methods, smart evaluation, and smart talent development.

Amidst China’s digital education transformation, this study draws insights from Professor Zhu Zhiting (2012), who suggests that smart education represents a paradigm shift in future education. It emphasizes an intelligent approach to nurturing students’ cognitive abilities through advanced technologies. In smart learning environments that leverage cloud computing, big data, and artificial intelligence, educators employ innovative methods such as personalized, inquiry-based, and cooperative learning. Through precise teaching and assessment,

smart education aims to cultivate innovative talents with digital literacy, critical thinking, and professional skills.

2.2 Related Research on the Application of Smart Teaching Platforms in TESOL

Research on smart education explores its theoretical foundations and practical applications, particularly in English language teaching. Scholars advocate for integrating smart teaching platforms in classrooms and examine their implementation from various perspectives.

Li Xiaona (2019) proposes three solutions to the problems in smart classrooms: changing teaching methods, altering teaching concepts, and modifying evaluation mechanisms to establish a healthy English smart classroom ecology. Kwet and Prinsloo (2020) investigated the impact of the smart classroom environment on students' academic performance through empirical research, concluding that such environments improve academic achievement. Li (2024) found that an Internet of Things-based smart English teaching platform enhances system stability and student experiences.

Chai Huifang et al. (2022) designed a framework for smart classrooms by analyzing characteristics of blended teaching in the post-epidemic period, using Zhejiang University's "Zhiyun Classroom" as an example. They found that combining smart classrooms and blended teaching improves teaching effectiveness and optimizes student experiences. Similarly, Dai (2023) found that smart classroom interactions better reflect student subjectivity than multimedia classrooms. Stojanovic et al. (2020) discovered that interactions between mobile devices and smart learning environments enhance students' knowledge levels.

Mao Jiadai (2022) developed a virtual reality-based cross-cultural English teaching model guided by smart education and conducted a controlled experiment with 57 English sophomores, finding improvements in cross-cultural communication skills. Thu N. (2020), through questionnaires, interviews, and reflective diary analysis, demonstrated that technology-driven teaching methods in reflective practice benefit learners in spoken English. Lin Li (2022) researched a junior high school English smart classroom, showing that it facilitates precise teaching and personalized learning. Li Furong (2022) concluded that smart classrooms in higher education enhance teacher-student interaction, integrate educational functions, improve teaching efficiency, and promote autonomous learning.

Hwang et al. (2020) integrated artificial intelligence into education to help teachers evaluate, collect data, and improve learning progress, benefiting students and enhancing outcomes. Chen Xiaohui and colleagues (2022) analyzed paths for achieving teacher self-education in smart education by utilizing technologies like portrait technology, video analysis, online learning intervention, visualization, and natural language processing. Yang Ruixue (2023) asserts that emerging technologies in smart education have transformed classroom environments, highlighting the integrated development of IT and education. Teacher professional development involves continuously acquiring knowledge, refining skills, focusing on students, and enhancing literacy.

This review identifies two critical gaps in the current literature: (1) a limited focus on junior high school teachers' perspectives on smart teaching platforms and (2) insufficient exploration of smart platform applications in junior high school education. These gaps suggest a need for teacher-centered research to assess the practical impacts of these platforms on secondary education.

3. Method

3.1 Participants

This study involves 40 English teachers from four junior high schools in North China. These schools have been designated as demonstration schools for smart education since 2014 and have implemented a smart teaching platform (Figure 1). Each teacher and student is equipped with a mobile device, such as a tablet, and each classroom is outfitted with effective multimedia equipment. Teachers use intelligent teaching tools on the platform for various daily activities, including lesson preparation, resource dissemination, real-time courseware display, interactive teaching, smart assignments, attendance tracking, group discussions, work presentations, real-time data analysis, post-class assignment distribution, smart homework grading, automated test paper generation, test score feedback, and academic analysis (Figure 2). Dedicated technicians collect and analyze data generated during equipment operation and teaching activities, providing a robust research environment and resource advantages for this study.

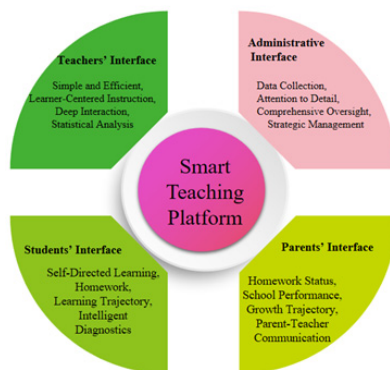


Figure 1. Smart teaching platform framework

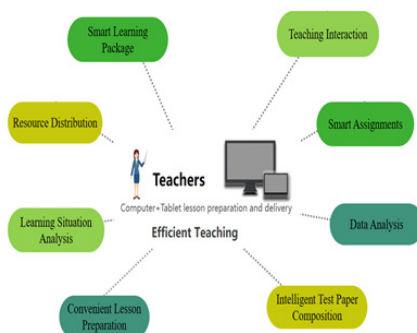


Figure 2. Smart platform main functions framework

A total of 40 questionnaires were distributed online via the Questionnaire Star platform, resulting in 38 completed questionnaires. Of these, 37 were valid, yielding an effective response rate of 92.5%. The valid respondents included ten males and 27 females, representing various age groups with a notable number of younger educators. All participants had at least one year of experience in smart English teaching and provided informed consent for their participation. The sample distribution aligns with the research requirements, as detailed in Tables 2, 3, and 4.

Table 2. Gender Information About the Participants

Gender	Participants	Proportion
Male	10	27%
Female	27	73%

Table 3. Age Information About the Participants

Age	Participants	Proportion
under the age of 30	17	45.95%
31-40 years old	9	24.32%
41-50 years old	9	24.32%
above the age of 50	2	5.41%

Table 4. Teaching Experience in Smart Platform Information About the Participants

Teaching Experience in Smart Platform	Participants	Proportion
1-3 years	14	37.84%
3-5 years	7	29.92%
5+ years	11	32.43%

3.2 Research Instrument

The primary research instrument used in this study is the “Questionnaire on the Use of Smart English Teaching Platforms in Junior High Schools.” This questionnaire was adapted from Liu’s (2022) “Smart Classroom Survey Questionnaire” and consists of three sections:

- (1) Guidance: This section explains the questionnaire’s purpose, theme, and requirements.
- (2) Basic Information: This section collects demographic information about the respondents, such as gender, age, and teaching experience.
- (3) Survey Item Evaluations: This section covers three dimensions with fifty-one questions, including single or multiple-choice questions. These questions assess the various functions and usage of the smart teaching platform.

The questionnaire primarily explores the utilization of the smart teaching platform by junior high school English teachers, their overall evaluation of the platform, and its impact on their teaching and professional development. Teachers are asked to select one or more options that best describe their actual circumstances.

During the design stage, experts in relevant fields reviewed the questionnaire content. Revisions were made based on their feedback to ensure the questionnaire’s professionalism and accuracy. Two pilot studies were conducted with a 30-day interval between them, each involving the same 20 participants. The analysis of the results showed no significant differences between the two pilot studies, indicating satisfactory internal consistency of the questionnaire. The consistency of the results between the two surveys further confirmed the strong correlation between items over time and among participants.

3.3 Data Collection and Analysis

An online questionnaire was distributed during the data collection phase, inviting English teachers to participate. The questionnaire was disseminated to the target audience via the notification feature of the smart teaching platform. The collected data included the selection frequency for each function and overall satisfaction scores.

In the data analysis phase, descriptive statistical analysis methods were employed, utilizing statistical software such as SPSS and Excel to calculate averages, conduct frequency distribution analyses, and compute relative selection frequencies. These analyses aimed to understand the activity frequencies and preferences among English teachers from four junior high schools in northern China who used smart teaching platforms.

Descriptive statistical analysis facilitated the exploration of the correlation between platform usage patterns and teaching effectiveness, as well as the potential impact of these platforms on teachers’ professional development. Detailed analyses were conducted by evaluating scores for each function or item, representing their selection frequencies relative to the total sample size. This approach thoroughly examined the practical application of functionalities like lesson preparation, resource dissemination, real-time courseware display, and interactive teaching in educational practices, directly addressing research question 1.

Additionally, the study assessed teacher satisfaction with platform functionalities, their practical impacts, and acceptance levels, addressing research question 2. The study also explored factors potentially influencing teachers’ professional development, addressing research question 3. Through meticulous descriptive analysis, this research effectively achieved its objectives and provided theoretical and empirical support for the application of smart education platforms in junior high school English education.

4. Results

4.1 The Utilization Status of the Smart Teaching Platform among Junior High School English Teachers

4.1.1 Content/Feature Utilization

The data presented in Table 5 indicates that teachers highly value the features and functionalities of the smart teaching platform. Firstly, 70.27% of teachers recognize the functions of resource co-construction, sharing, and learning package architecture. This highlights the importance of resource sharing and the systematic organization of teaching content, enhancing resource efficiency and fostering teacher cooperation.

Secondly, 64.86% of teachers acknowledge the importance of timely data presentation, analysis, and achievement statistics, emphasizing the value of timely feedback and data analysis. These functions help teachers understand students’ learning situations promptly, allowing for effective teaching adjustments to improve outcomes.

Moreover, 59.46% and 62.16% of teachers recognize the learning guidance and attachment functions, respectively, highlighting the significance of these tools in guiding student learning and managing learning

materials. Additionally, over half of the teachers recognize interactive functions such as question guidance tools, teaching voting, voice answering, and smart homework, indicating their emphasis on classroom interaction and after-school management. These functions enhance student participation and learning effectiveness.

However, the recognition of the work display function is relatively low, with only 43.24% of teachers approving it. Despite this, some teachers still consider this function important for stimulating students' enthusiasm for learning, as noted in subsequent surveys.

Table 5. Content/Feature Utilization of the Smart Teaching Platform

Items	Participants	Proportion
Resource Co-construction and Sharing	26	70.27%
Learning Guidance	22	59.46%
Learning Package	26	70.27%
Timely Presentation and Analysis of Test Activity Data	24	64.86%
Resource Library	19	51.35%
Question Guidance Tool	21	56.76%
Work Display	16	43.24%
Voting	20	54.05%
Voice Answering	19	51.35%
Smart Homework	21	56.76%
Achievement Statistics	24	64.86%
Teaching Feedback	20	54.05%
Learning Attachments	23	62.16%
Other	0	0%

4.1.2 Utilization Frequency

The data in Table 6 highlights differences in the frequency of teachers using smart teaching platforms. Firstly, 45.95% of teachers always use smart teaching platforms, indicating a high reliance on and recognition of the platform among this group. This suggests that smart teaching platforms are crucial in these teachers' daily activities, potentially enhancing teaching efficiency and effectiveness.

Secondly, 48.65% of teachers occasionally use smart teaching platforms. This suggests that while most teachers are familiar with and utilize these platforms in specific circumstances, they have yet to integrate them into their daily teaching practices fully. This partial integration could be due to variations in teachers' familiarity with the platform, the applicability of platform functionalities, and differences in teaching requirements.

Additionally, a small percentage of teachers (2.7%) occasionally do not use the platform, and another 2.7% rarely use it. This indicates a minority of teachers with limited acceptance and dependence on the platform, who may require additional support and guidance to fully utilize the smart teaching tools available.

Table 6. Utilization frequency of the Smart Teaching Platform

Items	Participants	Proportion
Always	17	45.95%
Occasionally not	1	2.7%
Occasionally	18	48.65%
Frequently not	1	2.7%

4.1.3 Classroom Utilization Duration

Based on the data in Table 7, it is evident that teachers use smart teaching platforms in the classroom for specific purposes rather than throughout the entire class. Most teachers (75.68%) use the platform for one-third of their classroom time. This indicates that the platform is widely used for certain aspects of teaching, becoming a part of the teaching process rather than the main method. Teachers commonly use the platform for presentations, exercises, and testing to enhance teaching effectiveness and student participation.

A smaller percentage of teachers (13.51%) spend half of their classroom time using the platform, while an even smaller percentage (5.4%) use it for two-thirds of their classroom time. These teachers recognize the platform's value in various teaching activities and are willing to invest more time using it.

Additionally, a minority of teachers (5.4%) spend only a quarter of their classroom time using the platform. This suggests that they use the platform less frequently and may only utilize it in specific situations or for specific features.

Table 7. Classroom Utilization Duration of the Smart Teaching Platform

Items	Participants	Proportion
The entire class	0	0%
Two-thirds of the class	2	5.41%
Half of the class	5	13.50%
One-third of the class	28	75.68%
One-quarter of the class	2	5.41%

4.2 Overall Assessment of the Smart Teaching Platform by Junior High School English Teachers

4.2.1 Teachers' Overall Experience with the Platform's Functions

The data in Table 8 shows that teachers view the smart teaching platform positively, but there are some notable differences. 32.43% of teachers gave the platform a high score of 90-100 points, indicating high satisfaction with its functionality and user experience. This shows that these teachers recognize the platform's positive impact on teaching effectiveness, providing resources, and supporting teaching activities. Most teachers, 45.95%, scored 80-90, indicating a positive attitude and acknowledgment of the platform's functionality and user experience. However, 18.92% of teachers rated the platform with 60-80 points, suggesting room for improvement. Lastly, 2.7% of teachers scored 0-60, indicating a dissatisfactory experience, which requires attention and improvement from the platform developers and operations team.

Table 8. Teachers' overall experience with the platform's functions

Items	Participants	Proportion
[90-100]	12	32.43%
[80-90]	17	45.95%
[60-80]	7	18.92%
[0-60]	1	2.7%

4.2.2 Teachers' Perceived Key Advantages of the Platform

The data presented in Table 9 demonstrates a strong consensus among teachers regarding the primary advantages of smart teaching platforms. Notably, 86.49% of teachers acknowledge the platform's exceptional role in fostering students' autonomous learning abilities, while 64.86% believe it provides better insights into students' learning processes. Additionally, 43.24% of teachers attribute the platform to enhancing students' learning efficiency and stimulating their interest in learning. Furthermore, 21.62% of teachers recognize the platform's abundant learning materials, and 13.51% believe it alleviates their teaching workload. Despite these recognized benefits, the relatively lower proportions in some areas suggest there are opportunities for improvement and further promotion of the platform's practical applications. This indicates that while the platform is highly valued for certain features, its potential could be more fully realized with targeted enhancements and broader integration into teaching practices.

Table 9. Teachers' perceived key advantages of the platform

Items	Participants	Proportion
Reduce teachers' workload.	5	13.51%
Cultivate students' autonomous learning abilities.	32	86.49%
Enhance students' learning efficiency.	16	43.24%
Stimulate students' learning interests	16	43.24%
Assist teachers in gaining a precise understanding of students' learning situations	24	64.86%
Supply students with abundant learning materials	8	21.62%
Others	0	0%

4.2.3 Teachers' Evaluation of the Platform's Teaching Resources

The data in Table 10 shows that teachers have a high opinion of the teaching resources on the smart teaching platform. Specifically, 32.43% of teachers rated the resources with a score of 90-100, indicating their satisfaction and belief that the resources effectively support their teaching. This indicates the platform's success in delivering high-quality and practical resources. Additionally, 37.84% of teachers rated the resources with a score of 80-90, the highest proportion, showing widespread positive sentiments towards them and recognizing their value and effectiveness. While these teachers see room for improvement, they hold a positive view of the resources overall. Conversely, 24.32% of teachers rated the resources between 60-80, reflecting a more moderate evaluation and suggesting shortcomings in certain areas such as quantity, quality, or practicality. Finally, 5.41% of teachers rated the resources poorly, scoring 0-60, indicating dissatisfaction and a need for significant improvement to meet expectations.

Table 10. Teachers' evaluation of the platform's teaching resource

Items	Participants	Proportion
[90-100]	12	32.43%
[80-90]	14	37.84%
[60-80]	9	24.32%
[0-60]	2	5.41%

4.3 The Impact of Smart Teaching Platforms on the Teaching and Professional Development of Junior High School English Teachers

4.3.1 Core Aspects of the Platform's Impact on Teachers' Professional Development

The data presented in Table 11 reveals diverse perspectives among teachers regarding the impact of smart teaching platforms on their professional development, particularly in fostering students' independent learning abilities, understanding learning conditions, achieving precise teaching, and reducing the burden of homework correction.

Firstly, a significant number of respondents (27%) highlighted that smart teaching platforms have the greatest impact on cultivating students' independent learning abilities. This underscores teachers' belief in the platform's effectiveness in promoting autonomous learning skills among students, facilitating a better grasp of learning content and methodologies.

Moreover, 24.3% of respondents noted the platform's role in enhancing teachers' understanding of the learning situation and facilitating precise teaching. This indicates that the platform's robust student learning data and analysis tools enable deeper insights into students' learning dynamics, thereby supporting more accurate teaching strategies and guidance.

Additionally, 21.6% of respondents emphasized the platform's capability to reduce teachers' workload related to homework correction. This reflects the efficiency gains achieved through automated homework correction functions or other tools, contributing to improved work efficiency and potentially higher teacher satisfaction.

Conversely, 27% of respondents expressed concerns about increased pressure on lesson preparation due to the platform's provision of extensive teaching resources and tools. This aspect underscores the platform's role in enriching teaching materials and support, albeit at the cost of requiring teachers to invest more time and effort in lesson preparation.

Table 11. Core aspects of the platform's impact on teachers' professional development

Items	Participants	Proportion
Fosters student autonomy	10	27%
Aids teachers in tracking student progress.	9	24.3%
Enhances teaching precision.	8	21.7%
Increases teachers' prep load	10	27%

4.3.2 The Platform's Contribution to TESOL Teaching Proficiency

The data in Table 12 shows significant progress in improving teachers' English language teaching abilities through the smart teaching platform. Most teachers report improved information skills and literacy, demonstrating the platform's effectiveness in facilitating learning and skill development in an information-driven teaching environment. Additionally, many educators have learned and applied teaching concepts from the platform, improving their teaching skills and enabling more scientific teaching design and implementation. Furthermore, most teachers have gained a deeper understanding of smart education, highlighting the platform's role in providing a framework for understanding and applying smart education concepts, leading to a more comprehensive grasp of its core principles and practical methodologies.

Table 12. The platform's contribution to TESOL teaching proficiency

Items	Score	Proportion
Enhancement of information skills	28	75.68%
Improvement in information literacy	26	70.27%
Enhancement of teaching philosophy, improving teaching wisdom	26	70.27%
Deeper understanding of smart education	36	97.3%
others	0	0%

4.3.3 Teachers' Willingness to Use Smart Teaching Platforms for Instruction

The data in Table 13 shows that most teachers favor using smart teaching platforms for instruction and are enthusiastic about exploring and implementing the platform's teaching functionalities and resources. Specifically, 35.14% of teachers are enthusiastic about utilizing the smart teaching platform, indicating their eagerness and confidence in leveraging its resources and tools. Additionally, 54.05% of teachers are willing to use smart teaching platforms, making up the largest segment, showing their positive outlook towards platform usage and readiness to experiment with its teaching functions and resources. On the other hand, 10.81% of teachers are neutral about utilizing smart teaching platforms, suggesting a cautious approach, but they remain open to experimentation, indicating a certain level of acknowledgment of the platform's potential.

Table 13. Teachers' willingness to use smart teaching platforms for instruction

Items	Participants	Proportion
Extremely willing	13	35.14%
Willing	20	54.05%
Neutral	4	10.81%
unwilling	0	0%

5. Discussion

The study identifies several key functionalities of the smart teaching platform that have garnered positive feedback from junior high school English teachers. Its resource co-construction and sharing features are particularly praised, as well as learning packages, timely data presentation and analysis, and score statistics. These functionalities have demonstrably enhanced teaching efficiency and effectiveness and increased students' learning enthusiasm. Teachers also acknowledge the platform's role in fostering students' autonomous learning abilities and providing accurate insights into their progress. Moreover, the platform has positively influenced teachers' smart teaching skills and understanding of smart education principles, especially in English language teaching.

However, the study also reveals some shortcomings. For instance, the feature related to work display has not

gained widespread recognition among teachers, suggesting potential design deficiencies or a lack of awareness regarding its benefits. This finding echoes Chen's (2024) emphasis on user-friendly design and comprehensive training to maximize platform utilization.

The favorable reception of the platform's functionalities aligns with previous research. Pandita and Kiran (2023) underscored the positive impact of technology integration on teaching effectiveness and student engagement, highlighting features such as resource sharing and timely data analysis, which contribute to creating interactive and responsive learning environments.

Despite these successes, teacher platform usage disparities indicate a need for tailored support and training programs. Some teachers effectively integrate the platform into their teaching practices, while others require additional guidance. This observation is consistent with Martin's (2021) research on technology adoption among educators, emphasizing the necessity of customized training to bridge adoption gaps.

Furthermore, the platform's role as an auxiliary tool, occupying approximately one-third of classroom time, suggests potential for deeper integration into teaching practices. This potential could be realized by enriching the platform with more comprehensive materials and functionalities, thereby reducing teachers' workload, as suggested by Chen (2024).

In conclusion, while the smart teaching platform has demonstrated significant benefits in enhancing teaching efficiency and student engagement, further efforts are needed to address usability challenges and disparities in adoption. Future research should focus on refining platform features, enhancing user training, and promoting comprehensive integration into educational practices to maximize its potential impact.

6. Recommendations

6.1 Strengthening the Network Environment of Smart Education Platforms

Engage smart education technology institutions to provide technical guidance and support tailored to the needs of English teachers. Customized platform systems should align with smart education concepts and teaching models specific to English language instruction. Implement professional network assessments and efficient implementation plans to ensure robust technical support for the widespread and consistent application by smart English teachers.

6.2 Strengthening Integrating English Teaching with Smart Platforms

Enhance guidance for smart English teaching by involving experts in smart education and English language instruction. Conduct comprehensive research in schools and classrooms to understand the specific requirements and challenges. Develop tailored training plans and courses that help teachers effectively adapt their educational concepts and teaching methods. Focus training efforts on enhancing teachers' information technology skills and provide personalized platform guidance reports from experts to improve smart teaching competencies.

Additionally, smart English teaching practices should be evaluated by employing experts in the field to assess their quality and effectiveness objectively. Utilize diverse evaluation objectives, methods, and process-focused approaches to ensure comprehensive assessment.

Furthermore, schools should enhance the consolidation of lessons learned by conducting thorough research in smart education alliance schools. Explore strategies for deep integration of smart teaching platforms with English education, identify best practices, and refine advanced reform experiences. Establish exemplary models of educational reform that integrate information technology seamlessly into various subjects.

6.3 Strengthening the Construction of Digital Learning Resources

Utilize the smart teaching cloud platform to enhance the development of digital teaching resources created by English teachers during lesson planning and instruction. Ensure these resources are categorized systematically based on subject chapters and types (e.g., micro-lessons, study guides). Implement mechanisms for continuous updates, transmission, and accumulation of high-quality digital English teaching resources.

7. Limitations

While this study provides valuable insights into the application and impact of smart teaching platforms by middle school English teachers, it has several limitations that need to be addressed.

Firstly, although the study explores how teachers utilize various functions of smart teaching platforms, it lacks a detailed analysis of specific functions and their unique impacts on different aspects of teaching and learning. The broad research approach may overlook the subtle differences that individual functions, such as interactive exercises, real-time feedback, and personalized learning paths, have in enhancing teaching effectiveness and

student engagement. Future research should focus on an in-depth analysis of specific platform functions to better understand their individual and combined effects.

Secondly, the study was conducted among middle school English teachers in a specific geographical area with a relatively small sample size, which may limit the generalizability of the results. The experiences and views of these teachers may not reflect those of middle school English teachers in other regions or countries. Future research should explore larger and more diverse samples to improve the external validity of the results.

Additionally, the study predominantly relies on self-reported data obtained through questionnaires. This type of data may be influenced by social desirability and recall biases, potentially impacting the accuracy of the responses. Relying solely on self-reported data may not fully capture smart teaching platforms' usage patterns and effects. Future research should consider integrating alternative data collection methods, such as direct observation, interviews, and analytics, to validate and complement the self-reported data.

By addressing these limitations, future studies can provide a more comprehensive understanding of the effectiveness and impact of smart teaching platforms in various educational contexts.

8. Conclusion

In conclusion, the smart teaching platform has proven instrumental in enhancing teaching efficiency and effectiveness among junior high school English teachers. However, the findings highlight the need for further improvements to capitalize on its potential fully. This study advocates for a multifaceted strategy to address these challenges comprehensively. The recommendations align with established principles in educational technology, emphasizing the significance of user-friendly design, thorough training, and ongoing support. Implementing these strategies is expected to foster more widespread and impactful use of smart teaching platforms in junior high school English education. This will enhance teaching quality and student learning outcomes, increase teachers' recognition and utilization of the platform, support continuous professional development and innovation in educational practices, harness the potential of smart teaching platforms, elevate educational standards, and achieve superior learning outcomes in today's digital landscape.

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