Journal of Contemporary Educational Research, 2025, Volume 9, Issue 6
http://ojs.bbwpublisher.com/index.php/JCER
ISSN Online: 2208-8474
ISSN Print: 2208-8466

Exploring a Hybrid Teaching Quality Evaluation System Based on the CIPP Model Construction in Higher Education

Lin Chen[1,2]*

[1]Postdoctoral Research Work Station, Beijing Yinghua Online Technology Co., Ltd., Beijing 102600, China
[2]College of Education, Capital Normal University, Beijing 100048, China

Author to whom correspondence should be addressed.

Abstract: Hybrid teaching has become an essential direction of the teaching reform and innovation of higher education, and puts forward new requirements for the evaluation system of teaching quality. The background of hybrid teaching, the CIPP model, and teaching quality evaluation system, and the necessity of constructing a hybrid teaching quality evaluation system are further discussed. This paper also discusses the evaluation focus of the CIPP model and its applicability in the hybrid teaching quality evaluation and believes that the CIPP model can reflect the concept innovation, target diversity, process advancement, and subject participation; the evaluation indicator system of hybrid teaching quality is designed based on the CIPP model, which provides a reference for the hybrid teaching quality evaluation and teaching reform.

Keywords: Hybrid teaching; Evaluation; CIPP; Higher education; Quality

Online publication: June 30, 2025

1. Introduction

Teaching quality is the core of higher education quality. As an essential part of the national implementation of undergraduate teaching level evaluation, evaluating teaching quality in higher education is vital for deepening the teaching reform, strengthening the connotation construction, and improving the quality of talent training. Constructing a teaching quality evaluation system in higher education is essential to enhance the management level of education and teaching and realize the connotation development. With the development of big data, the Internet, artificial intelligence, and other electronic information technologies, digital education has gradually entered the teaching field, and hybrid teaching has received significant attention. Hybrid teaching is an organic system of online and offline teaching. Hybrid teaching has developed with the popularization of "Internet + education." It has become the mainstream mode of teaching reform in colleges and universities, and the teaching focus has also changed from technology integration to teaching content and teaching mode. Hybrid teaching

can break the limitations of time and space, improve efficiency, enhance teachers' and students' interests, and provide psychological satisfaction. However, hybrid teaching still has problems in specific teaching practice activities. The CIPP evaluation model, proposed by American evaluation scholar Daniel L. Stufflebeam, combines diagnostic evaluation, formative evaluation, and summative evaluation with context evaluation, input evaluation, process evaluation, and product evaluation as the evaluation steps. Its primary purpose is evaluation, and the most essential purpose is not to prove but to improve. Due to the traditional teaching quality evaluation system fails to assess a comprehensive evaluation of hybrid teaching quality, this study considers the characteristics of hybrid teaching using the CIPP evaluation model, sets the corresponding evaluation standard and evaluation method, builds the whole process of hybrid teaching quality evaluation indicator system, to achieve a multi-angle, diversified evaluation of teaching quality and provide reference to improve the teaching quality and level.

2. Literature review

2.1. Hybrid teaching

With the popularization of information technology and the rapid development of various MOOC platforms, the field of education is undergoing unprecedented changes. New teaching methods, such as online and offline hybrid teaching, have gradually become the mainstream teaching methods of higher education and have become the new normal of higher education teaching [1].

2.1.1. Definition of hybrid teaching

Hybrid teaching is a learning model that combines face-to-face learning with computers, TV, and other learning [2]. Hybrid teaching is a combination of multiple teaching methods without regard to limiting the techniques used [3]. According to Hidayah, hybrid teaching is an innovation in education, using cutting-edge technology or the Internet for offline and online teaching [4]. The author combines the definition of hybrid teaching as a teaching model where hybrid teaching combines face-to-face teaching with online teaching.

2.1.2. Benefits of hybrid teaching

First, hybrid teaching is more flexible, allowing students to study according to their schedule. Second, hybrid teaching is more in line with personalized learning experiences. Using various tools and data analysis, teachers can more accurately understand students' learning habits, interests, and abilities and thus provide more appropriate teaching content and methods. This personalized teaching method can enhance learning effects and increase students' participation in courses. Third, hybrid teaching can help students improve interaction, communication skills, confidence, and self-awareness, and it encourages discussion and collaboration with lecturers and classmates, and course materials to obtain an overall positive student reporting experience [5].

2.1.3. Limitations of hybrid teaching

However, hybrid teaching has some drawbacks. Hybrid teaching is time-consuming and demanding in creating materials, preparing, and evaluating. In addition, students and teachers sometimes need more knowledge of the use of technology, and technical failures can occur at any time. Besides, students' learning skills must be fully developed to maximize their benefit from hybrid learning [6]. Finally, students' learning interactivity will decrease. Across the computer screen, students often neglect to give feedback or delay giving feedback. The interaction between students and teachers could be timelier [7].

2.2. CIPP model

The CIPP model originated in the 1960s and was founded by Professor Daniel L. Stufflebeam from Purdue University in the United States. The CIPP model is a comprehensive formative, project, personnel, product, institutional, systematic, and summative assessment framework [8]. Today, it is widely recognized as one of the most complete scientific evaluation theory systems [9]. The CIPP model includes context, input, process, and product evaluation. Context evaluation mainly analyzes and evaluates the educational environment and checks and assesses the program of academic activities. Input evaluation primarily evaluates the resources and conditions needed to achieve the goal and the program's feasibility. Process evaluation mainly supervises the implementation of the program, checks the implementation of the program, and provides timely feedback on the existing problems to adjust and optimize. The product evaluation mainly evaluates the program's effect and the achievement of the goal [10]. The CIPP model is shown in **Figure 1**.

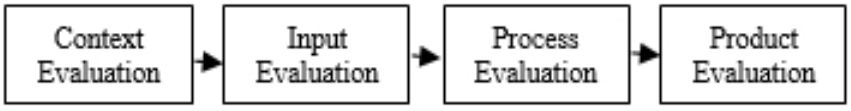

Figure 1. CIPP model

2.3. Teaching quality evaluation system

Evaluating teaching quality is vital to ensure quality education, teaching, and talent training in colleges and universities. Still, it is also an essential channel for teaching reflection and improving teachers' teaching levels. Teaching evaluation is an objective, scientific, fair, and value judgment on the teaching state, process, and results according to the corresponding evaluation standard [11]. Teaching quality evaluation is based on the classroom teaching quality evaluation standard, objective, scientific, fair, and fair to "teach" the "learning" state, process, and the result to make a value judgment is to help students grow, spur teachers constantly learning and essential means of improving the quality of classroom teaching, and judge the value of specific classroom teaching activities, mining and promotion process [12].

3. The necessity of a hybrid teaching quality evaluation construction

3.1. Complying with the requirements of the era

It is the era of the Internet, real-time, convenient, and efficient. Hybrid teaching is a combination of online and offline teaching. Using digital teaching platforms enables teachers and students to connect and communicate in two ways. Still, it also realizes the organic integration of the natural and virtual worlds and improves teaching and learning efficiency. Hybrid teaching makes the traditional teaching process flexible and convenient; colleges and universities need to combine their operational situation and teaching characteristics to build a hybrid teaching quality monitoring and evaluation system to better adapt to the requirements of the times and the characteristics of hybrid teaching.

3.2. Meeting the needs of the teaching model change

Online and offline hybrid teaching modes have become an important starting point for reforming the current teaching mode in colleges and universities, which can enrich the teaching content and optimize the teaching model. In hybrid teaching, students can use the network to obtain learning resources, and teachers can expand

the classroom teaching paths to ensure the realization of teaching objectives and the completion of teaching tasks. Not only that, the teaching model also focuses on establishing an excellent teacher-student relationship and tries to break the restrictions of traditional education in time and space through the convenience of online education resource retrieval, and strengthens the information exchange between teachers and students. Therefore, to adapt to the development of a hybrid teaching model, colleges and universities must continuously enhance the evaluation of hybrid teaching quality to maximize the educational value.

3.3. Meeting the need to improve the quality of teaching

Teaching quality evaluation is very important in higher education, and it is the primary way to ensure that the student training effect meets the teaching expectations. In the hybrid teaching, it is more important. Constructing a scientific and reasonable teaching quality monitoring and evaluation system can effectively improve the quality of hybrid teaching. The hybrid teaching quality evaluation in colleges and universities is not only an inevitable requirement to ensure the pertinence and sustainability of their teaching but also an internal requirement to improve their teaching quality.

Although the construction of the teaching quality evaluation system has been studied, there are few studies on hybrid teaching, mainly based on the CIPP model [13,14]. Hence, this study is conducted to fill the gap and allow specialists to voice their opinions in a hybrid teaching quality evaluation system. Besides, based on the literature review and the necessity of hybrid teaching quality evaluation construction, here are two research questions:

(1) What are the issues of the traditional teaching quality evaluation system?

(2) How can the hybrid teaching quality evaluation system be constructed under the CIPP model, and what indicators should be included?

4. Methodology

A qualitative methodology was considered the most appropriate for this study because the researcher explored specialists' insights in-depth [15]. This study adopted a case study design to explore potential qualitative data missed by previous research. Participants of this study are six specialists from three universities who often use and are familiar with hybrid teaching and have good experience in teaching evaluation to solicit their opinions on the second and third-level indicators of hybrid teaching quality evaluation based on the CIPP model. The participants were interviewed both online and offline three times, and each interview lasted around 60 minutes and was conducted separately.

All the data were recorded and transferred manually. Content analysis was used for data analysis by NVivo 12. Participation in this study was voluntary, and participants were free to withdraw at any time and did not need to specify their reasons. All recorded interviews were stored in the researcher's password-protected computer. To achieve internal validity for the study, the interview protocol was reviewed by other researchers with experience in the field. In addition, either participant involved in the interviews practiced the procedure or ensured that their methods were consistent. In data analysis, the emerging themes were communicated to the participants to eliminate potential bias in the content analysis process. After the results indicated data saturation, the data were deemed reliable or consistent, accomplished by simultaneously running the analysis and data collection.

5. RQ1: What are the issues of the traditional teaching quality evaluation system (Figure 2)

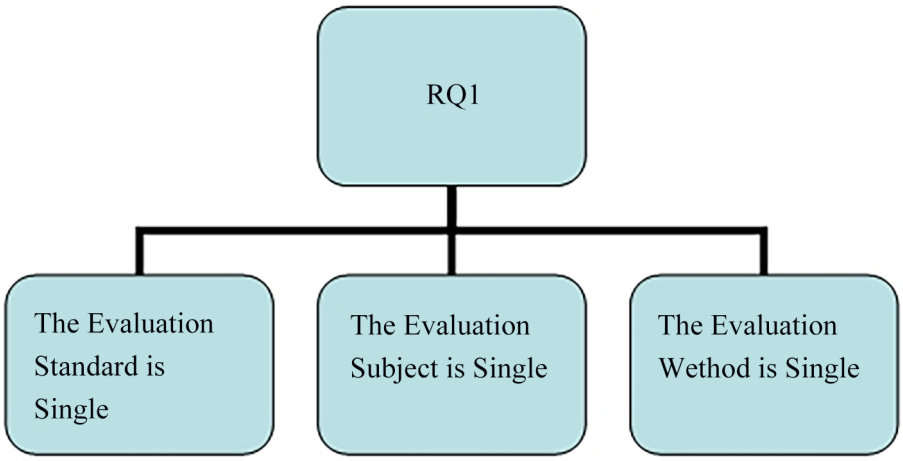

Figure 2. Themes of RQ1

5.1. The evaluation standard is single

The traditional teaching quality evaluation model is mainly based on the final evaluation, and the evaluation model is rigid, blind to students' efforts and progress in the learning process, and cannot fully and genuinely reflect students' learning effect and ability improvement. It is mainly reflected in the evaluation of examination results, excessive emphasis and reliance on quantitative indicators and students' mastery of theoretical knowledge, and in the measurement of students' practical operation ability, innovative thinking, teamwork, and other aspects, which fail to fully reflect the importance of students' practical skills.

5.2. The evaluation subject is single

The main aspects of evaluation are students, teachers, and society. Among them, student teaching evaluation is the most essential part of evaluating the quality of teaching in colleges and universities. Students are the direct evaluators of teaching quality in colleges and universities, but are also the most critical evaluators. Due to the influence of traditional ideas, the current students' evaluation of teaching accounts for a large proportion of teaching quality evaluation, and students' evaluation of teaching has a particular subjectivity, so its authenticity and objectivity cannot be guaranteed. Teachers are the prominent teacher leaders, but in the actual teaching process, teachers' participation in evaluating teaching quality is low due to the influence of various factors. Society is an indispensable part of the development of teaching quality evaluation in colleges and universities. Still, the current society has a certain degree of distrust and incomprehension regarding evaluating the quality of education of college graduates, employers, parents, and other stakeholders. In addition, all walks of life pay great attention to the quality of college education and teaching. Still, the need for a more necessary and objective understanding of the evaluation of education and teaching quality in colleges and universities has also, to a certain extent, affected the evaluation of education and teaching quality in colleges and universities.

5.3. The evaluation method is single

Under the hybrid teaching model, the ways and means of course teaching have profoundly changed. However, the reform of the teaching quality evaluation method is not synchronized with it, resulting in the evaluation

results not fully reflecting the students' learning and ability improvement. The traditional teaching quality evaluation system is complex in effectively evaluating students' independent online learning ability. The lack of diversified, modern evaluation methods cannot comprehensively assess the student's ability and quality. At the same time, the evaluation tools did not keep pace with the times, and digital tools and platforms were not used for data collection and analysis.

6. RQ2: How can the hybrid teaching quality evaluation system be constructed under the CIPP model, and what indicators should be included (Figure 3)

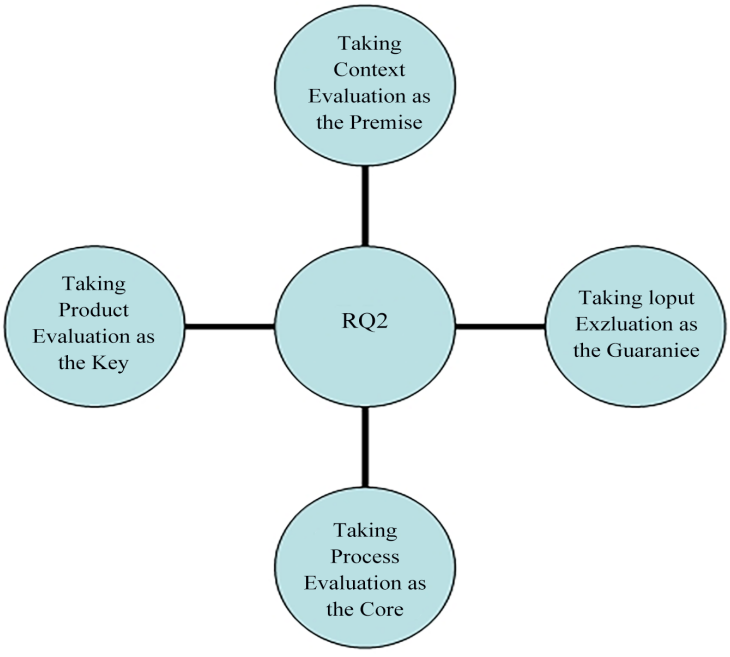

Figure 3. Themes of RQ2

According to the characteristics of the CIPP model, it can solve the existing problems of the hybrid teaching quality evaluation system, which conforms to the basic principles of the construction of the hybrid teaching quality evaluation system. Therefore, this model can be used for reference, and the four different dimensions of evaluation indicators include context, input, process, and product evaluation in the framework of the hybrid teaching quality evaluation system. In each dimension, straightforward, specific evaluation indicators explore the construction of a hybrid teaching quality evaluation system.

First of all, according to the evaluation content of the CIPP model and the teaching process of hybrid teaching, the specific contents of the four first-level indicators of hybrid teaching, including content evaluation, input evaluation, process evaluation, and product evaluation, were summarized. The interview outline of the hybrid teaching quality evaluation index system based on the CIPP model was formed. Secondly, according to the data collection and participants' views, the scope of the second and third levels of the hybrid teaching quality evaluation indicator system based on the CIPP model was formulated, and the first draft was formed. This study finally formed a hybrid teaching quality evaluation indicator system including four first-level indicators, 11 second-level indicators, and 32 third-level indicators, as shown in **Table 1**.

Table 1. Hybrid teaching quality evaluation indicator system

Level 1 indicators	Level 2 indicators	Level 3 indicators
Context evaluation	Target setting	The compatibility of national hybrid teaching laws, policies, and regulations.
		Social talent demands a good degree.
		School development positioning fits the degree.
		The fit of professional training objectives.
	Facility configuration	Hybrid teaching hardware and software facilities configuration degree.
		The degree of safeguard measures for the allocation of facilities.
	Teachers' level	Teachers have a knowledge reserve and mastery of hybrid teaching facilities and teaching methods.
	Students' level	Students already have a knowledge reserve and mastery of the hybrid teaching facilities, learning methods, etc.
Input evaluation	Teaching materials	Rationale of the teaching plan.
		The rationality of the online resources, textbook content, and courseware.
	Teaching management	Hybrid teaching organization and structure are guaranteed.
		The completeness of hybrid teaching resources.
		Hybrid learning platform completeness.
	Teachers' strength	The number of teachers.
		Teachers' degree.
		Teachers' title.
Process evaluation	Teachers' level	Organization and management of hybrid teaching activities.
		Classroom interaction between teachers and students.
		Rational performance of the teaching schedule.
		Teachers' classroom and after-school guidance, personalized guidance.
	Students' level	Students' recognition of hybrid teaching.
		Student engagement in the hybrid teaching system.
		Students' cooperation with hybrid teaching.
Product evaluation	Teacher development	The number of awards for teaching.
		Number of scientific research awards.
		The number of scientific research papers.
		Evaluation of teaching scores.
		Quality improvement in Internet use.
	Student development	Competition award.
		Achievement improvement.
		Improvement of independent learning ability.
		Quality improvement in Internet use.

6.1. Taking context evaluation as the premise

Context evaluation mainly investigates what needs to be done before implementing hybrid teaching, that is, the

preparation of external factors, including four aspects: target setting, facility configuration, teachers' level, and students' level. The apparent target of hybrid teaching should be based on the relevant requirements of laws, policies, regulations, and other documents, and follow the overall principle of integrated construction. The demand for social talents is mainly reflected in whether the hybrid teaching training meets the requirements of society for talents and whether it participates in local social services, resulting in teaching, social, and economic benefits. The development orientation of the college and university is based on their orientation. They should highlight the orientation and characteristics of the college and university when carrying out hybrid teaching. The fit of professional training objectives means that hybrid teaching should help students develop good professional qualities.

6.2. Taking input evaluation as the guarantee

The input evaluation focuses on the hybrid teaching plan and discusses how to implement it. The internal factor preparation of hybrid teaching is mainly evaluated from teaching materials, teaching management, and teachers' strengths. Teaching resources include the preparation of teaching resources. Before teaching, we should fully consider whether the teaching plan is reasonable. Teaching resources include technical tools and online resources used to support hybrid teaching, such as electronic textbooks, interactive exercises, video lectures, etc., and offline teaching resources related to teaching materials, such as courseware, teaching content, etc. Teaching management focuses on whether the college and university have set up an organization of hybrid teaching management, including a hybrid teaching team and management team. Also, it focuses on whether the college and university have complete hybrid teaching resources and whether it has built an interactive platform for hybrid teaching. Teachers' strengths mainly include the number of teachers, teachers' degrees, and titles.

6.3. Taking process evaluation as the core

Process evaluation is mainly a formative evaluation of the implementation process of hybrid teaching. It solves the problem of being done, including the teacher and student level participation in the hybrid teaching process. The teachers' level includes the organization and management of hybrid teaching activities, whether the hybrid management and organization are orderly, whether the teaching methods are practical, whether the teaching methods are targeted and applicable, and whether the teaching methods are interactive, mainly role play, group discussion, or the establishment of online teacher-student interaction platform and social media groups. For classroom interaction, special attention should be paid to the continuity and fundamental frequency of interaction, that is, the length and frequency of communication between teachers and students in the classroom; The depth and quality of interaction, that is, the depth, inquiry and thinking, and the improvement of students' critical thinking and cross-cultural communication ability; to analyze the specific ways and diversity of interaction, such as group discussion, role play, and debate. The interactive atmosphere and equality should be evaluated, whether the interaction between the two sides is based on mutual equality, whether the classroom atmosphere is relaxed and harmonious, whether students are encouraged to express their ideas boldly, whether they respect their views and ideas, etc. Teachers' classroom and after-class and personalized guidance mainly investigate teachers' mastery and follow-up degree of students' learning in hybrid teaching. The students' level includes students' recognition of hybrid teaching, student engagement in the hybrid teaching system, and students' cooperation with hybrid teaching. It mainly focuses on the performance of classroom interaction, after-class learning, cooperative learning, and other aspects, such as whether to speak and ask questions in class, whether to complete homework on time after class, actively participate in extracurricular activities, preview

new content, etc.

6.4. Taking product evaluation as the key

Achievement evaluation directly measures teachers' teaching and students' learning results. The evaluation content of hybrid teaching should be centered on teachers' development and students' growth. The purpose of reflection and improvement is achieved through the factors that positively affect the development of teachers and students in implementing the curriculum. Among them, teacher development includes the number of awards for teaching, the number of scientific research awards, the number of scientific research papers, the evaluation of teaching scores, and quality improvement in Internet use. Student growth includes competition awards, achievement improvement, improvement of independent learning ability, and quality improvement in Internet use.

7. Empirical analysis

Two representative private universities were selected for empirical analysis to validate the rationality and practicality of the proposed teaching quality evaluation system for hybrid learning in private higher education institutions. These universities were chosen based on their differences in teaching modes, faculty quality, student demographics, and teaching resources, allowing for a comprehensive evaluation of the adaptability and applicability of the evaluation system.

7.1. Research methodology and data collection

A mixed-methods approach was employed, combining questionnaire surveys, in-depth interviews, and classroom observations to collect feedback from teachers, students, and teaching administrators. Additionally, quantitative data was gathered to analyze student performance, classroom interactions, assignment quality, and independent learning activities. These data provided a solid empirical foundation to assess the rationality of the hybrid learning quality evaluation system.

The key evaluation indicators included:

Student learning outcomes: Mastery of academic knowledge, innovation capacity, and interdisciplinary practical skills.

Teaching process: Classroom interaction frequency and use of online learning platforms.

Teacher-student interaction: Student engagement in class discussions and the timeliness of teacher feedback.

Student autonomous learning ability: Completion of assignments, participation in self-directed learning projects, and development of critical thinking skills.

7.2. Case study 1: University A

University A is a private institution focusing on applied talent cultivation, and it has actively adopted blended learning since the pandemic. In the survey, we found that the university had made notable progress with its blended learning initiatives, but there were discrepancies in the teaching quality evaluation system.

Student learning outcomes: University A demonstrated strong performance in academic knowledge acquisition, especially in understanding course content. However, the development of students' innovation capacity and interdisciplinary skills was relatively weak. Students reported that "the courses are theoretical and lack cross-disciplinary practical projects."

Teaching process: Although online courses were rich in content, survey data showed low student engagement in online interactive sessions. Many students viewed online learning as supplementary and neglected its interactive and self-learning components.

Teacher-student interaction: The frequency of teacher-student interaction was relatively high, but most occurred in the classroom in real-time. Online interactions were insufficient to stimulate student participation.

Student autonomous learning ability: Students spent limited time on autonomous learning, and the design of learning tasks was ineffective, leading to low-quality independent learning.

Based on the analysis, the teaching quality evaluation system at University A effectively assessed academic knowledge acquisition and the teaching process. Still, it lacked sufficient emphasis on innovation capacity and interdisciplinary practical skills. More comprehensive assessments of cross-disciplinary projects and practical abilities in the evaluation system are recommended.

7.3. Case study 2: University B

University B is a private university with a strong emphasis on vocational training and practical skills. Hybrid learning is widely adopted, integrating extensive online practical courses with in-person internships. Through surveys and interviews, the following data were gathered:

Student learning outcomes: University B excelled in developing students' practical and innovative abilities, particularly in interdisciplinary projects and team-based collaboration, demonstrating strong hands-on skills.

Teaching process: The teaching process at University B heavily relied on online practical platforms, where students engaged in simulations and exercises. However, student feedback indicated that some online platforms lacked technical support, with poor functionality and limited learning resources.

Teacher-student interaction: There was frequent teacher-student interaction, especially in practical courses, with timely feedback. However, some students pointed out that the online feedback mechanism was inadequate, with delays in grading assignments and answering questions.

Student autonomous learning ability: Students generally completed their autonomous learning tasks on time and displayed strong practical skills in hands-on assignments. However, some students reported that the online self-learning content was too essential and lacked depth and critical thinking exercises.

The hybrid learning quality evaluation system at University B was comprehensive in assessing practical abilities and innovation skills, but it highlighted shortcomings in technological support and online feedback mechanisms. The system should be improved by addressing the technological limitations of online platforms and enhancing the feedback mechanisms for better learning outcomes.

7.4. Discussion

The empirical analysis of University A and University B validated the applicability and rationality of the proposed hybrid learning teaching quality evaluation system. Overall, the evaluation system demonstrated strong adaptability in assessing student learning outcomes, teaching processes, and teacher-student interactions. However, specific adjustments are needed based on the unique characteristics of each institution.

For University A, the evaluation system should emphasize innovation capacity and interdisciplinary practical skills, which are critical to the institution's educational goals. For University B, the system needs to address the limitations in online platform functionality and improve feedback mechanisms to better support student learning.

8. Conclusion

Taking the characteristics of hybrid teaching as the starting point and based on the CIPP evaluation model, the hybrid teaching quality evaluation indicator system is constructed from four evaluation stages: context evaluation, input evaluation, process evaluation, and product evaluation, including four first-level indicators, 11 second-level indicators, and 32 third-level indicators observation points. This evaluation system determines the evaluation dimension according to the relevant national policy requirements and has strong operability. More precise and detailed guidance is needed to improve the quality of hybrid teaching, which is conducive to the long-term development of students, teachers, schools, and society. Follow-up research can be continuously optimized and improved on this basis, forming a quantitative evaluation tool that enhances the hybrid teaching quality in colleges and universities and provides a strong guarantee for the training of excellent engineering and technical talents in China.

Acknowledgments

Appreciation is given to the six specialists who participated in this study; with their assistance, the second and third-level indicators of hybrid teaching quality evaluation based on the CIPP model were designed initially. The completion of the article is inseparable from the three universities.

Funding

The 2025 Beijing Postdoctoral Research Activity Funding Project "Exploring Hybrid Teaching Quality Evaluation System Based on the CIPP Model Construction in Higher Education" (2025114)

Disclosure statement

The author declares no conflict of interest.

References

[1] Zhou Q, Jiang L, Liu Z, 2024, Research on College Students' Learning Investment and Learning Satisfaction Under the Background of New Normal of Mixed Teaching. Science, Education, and Literature, 18: 180–183.

[2] Verawat D, 2019, Solusi Pembelajaran 4.0: Hybrid Learning. Seminar Nasional Pendidikan, 1183–1192.

[3] Margaret D, 2002, On Certain Integrals of Lipschitz-Hankel Type Involving Products of Bessel Functions. E-Learning and Digital Media, 3: 999–1015.

[4] Hidayah SN, 2019, Hybrid Model-based Learning in Welcome Era Industrial Revolution 4.0. The Innovation of Social Studies Journal, 1: 46–54. https://doi.org/10.20527/iis.v1i1.1262

[5] Chan YF, Narasuman S, Dalim SF, et al., 2016, Blended Learning as A Conduit for Inquiry-based Instruction, Active Learning, Formative Assessment, and Its Impact on Students' Learning Outcomes in Higher Education, 74–78.

[6] Klimova BF, Kacetl J, 2015, Hybrid Learning and Its Current Role in the Teaching of Foreign Languages. Procedia - Social and Behavioral Sciences, 182: 477–481. https://doi.org/10.1016/j.sbspro.2015.04.830

[7] Syafril S, Latifah S, Engkizar E, et al., 2021, Hybrid Learning on Problem-solving Abilities in Physics Learning: A Literature Review. Journal of Physics: Conference Series, 1796: 012–021. https://doi.org/10.1088/1742-

6596/1796/1/012021

[8] Mathison S, 2004, Encyclopedia of Evaluation, Sage Publications, London.

[9] Zhong J, 2024, Construction of Teaching Quality Evaluation System Based on CIPP Model. Chinese Journal of Multimedia and Network Teaching, 6: 120–123.

[10] Singh MD, 2024, Evaluation Framework for Nursing Education Programs: Application of the CIPP Model. International Journal of Nursing Education Scholarship, 1: 120–123. https://doi.org/10.2202/1548-923X.1023

[11] Yi S, 2022, Digital Thinking: An Innovative Framework in the Process of Fashion Sustainability. Art and Design Research, 2: 17–22.

[12] Yan J, An J, Sun G, 2023, Reconstruction of Classroom Teaching Quality Evaluation Index System. China University Teaching, 12: 74–78, 91.

[13] Feistauer D, Richter T, 2016, How Reliable are Students' Evaluations of Teaching Quality? A Variance Components Approach. Assessment & Evaluation in Higher Education, 8: 1263–1279. https://doi.org/10.1080/02602938.2016.1261083

[14] Goos M, Salomons A, 2017, Measuring Teaching Quality in Higher Education: Assessing Selection Bias in Course Evaluations. Research in Higher Education, 8: 341–364. https://doi.org/10.1007/s11162-016-9429-8

[15] Denzin NK, Lincoln YS, 1996, Handbook of Qualitative Research. Journal of Leisure Research, 2: 132.