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A Mixed Method Study on Evaluation Methodology of Teaching Practice Evaluation System at Higher Education Institution in Xi'an China

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Abstract

This study explores the assessment methods and feedback mechanisms of the Teaching Practice Evaluation System (TPES) in Spatial Design Courses (SDCs) at higher education institutions in Xi'an, China. Employing a mixed-methods research approach with concurrent triangulation design strategy that combines quantitative surveys, qualitative interviews, and analysis of relevant teaching evaluation documents, this study aims to address two core research questions: (1) What assessment methods are employed in SDCs' teaching evaluation? (2) To what extent do professional educators receive and utilize assessment feedback from TPES? Findings from the study indicate that mixed assessment methods (i.e., combining qualitative and quantitative assessments) are widely used and endorsed by teachers in SDCs' TPES. However, there are challenges in the implementation of feedback mechanisms, such as some teachers not receiving feedback or not effectively applying it for teaching improvement. Based on these findings, this study offers practical recommendations and directions for future research to further enhance and develop teaching assessment methods and feedback mechanisms in higher education institutions.

Keywords: Teaching Practice Evaluation System (TPES); Spatial Design Courses (SDCs); mixed-methods research; teaching assessment methods; teaching feedback mechanisms; higher education institutions.

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1. Introduction

1.1 Research Background

Under the influence of globalization, the field of spatial design is undergoing a series of transformations and developments. Xi'an, as an important city in China, is also continually exploring and adapting to these changes within its higher education system. Particularly in the context of teaching practices in Spatial Design Courses (SDCs), educators face the challenge of integrating traditional teaching philosophies with modern teaching methods. Against this backdrop, the evaluation and enhancement of teaching practices, especially in higher education institutions, have become topics worthy of exploration.

1.2 Research Questions and Objectives

Based on existing literature and preliminary observations, this study poses the following questions:

(1) What teaching assessment methods are employed in SDCs courses in Xi'an, China?
(2) To what extent do teaching professionals in Xi'an receive feedback from the Teaching Practice Evaluation System (TPES) assessments in SDCs?

This research aims to achieve the following objectives by addressing the above research questions:

Understanding and analyzing current teaching assessment methods: Through a mixed-methods approach, delve into the choices and applications of teaching assessment methods in SDCs within higher education institutions in Xi'an. Explore the integration and implementation of qualitative and quantitative assessment methods.

Assessing the implementation and impact of feedback mechanisms: Investigate and analyze how teaching professionals in Xi'an acquire and utilize feedback from TPES assessments, as well as the potential issues and challenges in this process.

Providing recommendations for optimizing teaching assessment and feedback mechanisms: Based on research findings, propose practical recommendations to facilitate further enhancement and development of teaching assessment methods and feedback mechanisms in higher education institutions in Xi'an.

By addressing the research questions and achieving the research objectives, this study aims to provide theoretical and practical support for the teaching assessment practices in SDCs and offer a foundation and insights for future research extended to other discipline of study in the related fields.

1.3 Significance and Value of the Research

This study attempts to construct a bridge at both the theoretical and practical levels. Through a mixed-methods research strategy, it aims to gain an in-depth understanding of the application and effectiveness of teaching assessment in actual teaching processes. This not only contributes to enriching the current theoretical framework

on teaching assessment but also provides empirical evidence for educational policymakers and practitioners to more accurately grasp teaching quality and continually improve teaching effectiveness.

2. Literature Review

2.1 Importance of Teaching Practice Evaluation System (TPES)

The Teaching Practice Evaluation System is considered a crucial mechanism in higher education environments worldwide, primarily focused on improving teaching quality and fostering teachers' professional development [1].

In the specific context of China, the design and implementation of TPES are influenced by various cultural and systemic factors, such as traditional Confucian culture and specific educational systems [2].

2.2 Application of Mixed Methods in Teaching Assessment Research

Mixed methods research provides a multidimensional analytical framework for addressing research questions by combining quantitative and qualitative approaches, combining the use of deductive and inductive reasoning in the research design. This approach offers a more comprehensive and in-depth understanding within the field of teaching assessment, particularly when exploring multiple facets and dimensions of teaching practices [3, 4].

One of the prime reason of selecting a mixed methods research for this research subject is to enhance the precision of understanding on the rationality of the phenomena for the community of practice in teaching the SDCs in Xian China.

2.3 Comparison and Integration of Quantitative and Qualitative Assessment Methods

Quantitative research methods focus on measurable and comparable aspects of teaching practice, while qualitative research methods tend to delve into the underlying mechanisms and reasons behind teaching phenomena. A key challenge lies in effectively integrating both methods to provide a more comprehensive assessment while preserving their respective strengths [5, 6].

2.4 Role of Feedback Mechanisms in Teaching Assessment

As part of the continual quality improvement process in upholding academic operation excellence and sustainable governance, the critical role of feedback mechanisms in teaching assessment is evident in their ability to provide targeted information to guide teachers' future teaching improvements, that in turn, achieve the goal mentioned above. Effective feedback not only needs to focus on teaching outcomes but also cover the entire teaching process to comprehensively support student learning and development [7].

Strategies for designing and implementing effective teaching feedback mechanisms may vary in different educational cultures and systems, warranting further exploration and research [8].

3. Methodology

This study employs a Mixed Methods Research (MMR) approach, combining quantitative and qualitative research methods, with the concurrent triangulation design strategy, to comprehensively explore the Teaching Practice Evaluation System (TPES) in spatial design courses at higher education institutions in the Xi'an region.

3.1 Rationale for Research Method Selection

Considering that TPES involves multi-faceted, interconnected factors, we chose a mixed methods research approach to thoroughly investigate the complex mechanisms behind this phenomenon. Quantitative survey methods allow us to conduct a broad and systematic exploration of research questions using numerical data, while qualitative methods enable a deeper understanding of individuals' perspectives, feelings, and experiences, providing richer context for quantitative findings. Indirectly, through the quantitative survey outcomes, it provided a value added role, guiding the researcher to identify suitable interviewees based on the purposive sampling technique.

3.2 Research Design

3.2.1 Quantitative Research Design

We designed a questionnaire aimed at obtaining a broad understanding of teachers' and designers' perspectives and experiences regarding TPES. The questionnaire included a series of questions on TPES importance, implementation effectiveness, feedback mechanisms, and more. We invited 121 spatial design teachers and designers from Xi'an universities to participate in this part of the study.

3.2.2 Qualitative Research Design

Subsequently, we conducted in-depth interviews with 17 teachers of spatial design courses to explore their specific views and practical experiences regarding TPES. Interview topics covered the purposes, methods, outcomes, challenges, and the impact of teaching assessment on their teaching.

3.3 Brief Explanation of Triangulation

Triangulation, as a validation strategy, is used to check the consistency and reliability of research. In this study, triangulation is achieved by combining three data collection methods: questionnaire surveys, interviews, and document analysis. This approach not only allows us to examine the research questions from different angles and levels but also enhances the credibility and validity of the research findings.

3.4 Data Collection and Analysis Methods

3.4.1 Data Collection

Questionnaire Survey: Questionnaires were distributed through an online platform to collect quantitative data on

TPES.

Interviews: Semi-structured interviews were conducted with 17 teachers to engage in in-depth discussions.

Document Analysis: Evaluation documents from spatial design courses at 12 Xi'an universities were collected and analyzed.

3.4.2 Data Analysis

Quantitative Data: Statistical methods were employed for detailed analysis, primarily focusing on descriptive statistical analysis for in-depth exploration.

Qualitative Data: Content analysis was used to code and analyze interview transcripts for thematic analysis.

3.5 Research Ethics

This study strictly adheres to research ethics guidelines to ensure the confidentiality of all participants' information and protect their voluntary participation rights at all stages of the research. All participants signed informed consent forms after a clear understanding of the research purpose and process.

4. Research Findings

4.1 Importance of Blended Teaching Assessment Methods

4.1.1 Integration of Qualitative and Quantitative Evaluation Methods

Widespread Adoption of Blended Teaching Assessment Methods

All sampled universities' course quality evaluation forms opted for a combined approach that integrates qualitative and quantitative assessment methods, demonstrating a widespread acceptance of blended assessment methods. Qualitative assessment methods emphasize a deeper understanding and interpretation of the content and meaning of teaching practices, such as exploring teacher-student interactions, student engagement, and learning motivation. Meanwhile, quantitative assessment methods use mathematical and statistical tools to quantify teaching effectiveness, providing a more objective, precise means of measuring and comparing teaching performance. In this context, the application of blended assessment methods allows for a more comprehensive understanding and evaluation of teaching practices, showcasing the multidimensionality and complexity of teaching practices.

Teacher Acceptance of Blended Methods

Both questionnaire and interview data reveal a clear endorsement of blended teaching assessment methods by teachers. All 121 respondents acknowledged that blended methods were the primary approach used by their respective institutions for conducting teaching assessments. Specific statistical data can be found in Table 1,

which details teachers' perceptions of the frequency and importance of various assessment methods. The mean scores for both metric – frequency and importance for blended methods instead of single mode method, are higher. Therefore, through blended methods, educators are able to understand and assess the multidimensionality and complexity of teaching practices from multiple perspectives and levels.

Table 1: The Mean (M) and Standard Deviation (SD) of the Evaluation Method Types.

TYPE OF EVALUATION DATA		OVERALL	GENDER		SENIORITY	
			Male	Female	Senior	Junior
FREQUENCY	Quantitative Only	4.00(1.56)	3.55	3.60	3.58	3.79
	Qualitative Only	3.79 (1.70)	3.44	3.50	3.39	3.67
	Both qualitative & qualitative	4.35 (0.78)	4.51	4.56	4.49	4.54
IMPORTANCE	Quantitative Only	4.06 (1.06)	3.94	3.92	3.93	4.07
	Qualitative Only	4.15 (1.00)	4.1	4.05	4.03	4.28
	Both qualitative & qualitative	4.38 (0.63)	4.45	4.49	4.52	4.43
NUMBER OF RESPONDENTS		121	70	51	68	34

4.1.2 Current Status and Challenges of Feedback Mechanisms

Availability of Teaching Feedback

54.55% of teachers were able to access course evaluation results, while 45.45% did not receive teaching feedback. Interview data from the 17 respondents corresponded to the questionnaire data, with 7 teachers believing that all teachers at the school could receive teaching feedback information, 3 teachers believing that not all teachers at the school could receive teaching feedback information, and another 3 teachers believing that some teachers did not pay attention to or prioritize teaching feedback information. This distribution suggests that the current implementation of teaching feedback mechanisms is not ideal, especially as there is a significant proportion of teachers who, for various reasons, did not receive feedback on teaching evaluations. This may hinder the improvement and enhancement of teaching for these teachers.

Quality and Impact of Teaching Feedback

Based on the results of the questionnaire survey, teachers planned their teaching according to existing teaching evaluation indicators and adjusted teaching content and methods based on the content of teaching evaluation

indicators, as shown in Table 2. Teachers generally considered planning teaching based on teaching evaluation indicators (average score of 3.50) and adjusting teaching content and methods based on teaching evaluation (average score of 3.54) to be relatively important. However, the frequency of these activities was not very high (3.45 and 3.37, respectively). Meanwhile, teachers with lower professional titles had a higher frequency of engagement in these two activities compared to those with higher professional titles, indicating that they may rely more on teaching evaluation for planning and adjusting their teaching.

Table 2: The Mean (M) and Standard Deviation (SD) of the Evaluation Feedback Types.

ITEMS	M(SD)	MALE	FEMALE	SENIOR	JUNIER
INVOLVED IN PLANNING(FREQUENT)	3.45(0.99)	3.46	3.44	3.41	3.69
INVOLVED IN PLANNING(IMPORTANT)	3.50(1.16)	3.52	3.58	3.60	3.60
INVOLVED IN DESIGN/ REDESIGN TPES(FREQUENT)	3.37(0.92)	3.42	3.30	3.33	3.73
INVOLVED IN DESIGN/ REDESIGN TPES(IMPORTANT)	3.54(1.06)	3.58	3.54	3.57	3.63

Optimization Suggestions for Feedback Mechanisms

While the current feedback mechanisms are partially implemented and utilized, there is still room for improvement in order to further enhance teaching quality. For instance, strategies to increase the feedback retrieval rate, enhance feedback quality, ensure that feedback provides more specific and actionable guidance for teaching practices, and so on.

5. Results Analysis

Building upon the research findings presented in the fourth section, this section will provide a more in-depth analysis of the results and discuss them within the framework of the research questions.

5.1 Teaching Evaluation Methods for SDCs Courses

Our analysis reveals that teaching evaluation methods for SDCs courses primarily employ a mixed-method approach, combining both qualitative and quantitative assessment methods. This mixed-method approach is not only widely adopted across the sampled universities but is also endorsed by teachers. It allows educators to obtain precise measurements through quantitative methods and delve into the complex factors behind the

assessment through qualitative methods. This comprehensive assessment strategy helps educational professionals gain a multidimensional and nuanced understanding of the multifaceted and intricate nature of teaching practices.

5.2 Extent of Feedback Received by Teaching Professionals from TPES

Current Feedback Retrieval Status: Our data indicates that 54.55% of teachers are able to receive feedback from teaching evaluations, implying that nearly half of the teachers (45.45%) do not receive corresponding feedback. This finding highlights the need to pay attention to the group of teachers who do not receive feedback, explore the reasons behind this phenomenon, and devise strategies to improve feedback retrieval rates.

Quality and Impact of Feedback: Despite the general consensus among teachers that planning and content design based on TPES are relatively important, their actual engagement in these aspects is not high. This may suggest that there is still room for improvement in the quality and impact of current feedback. In particular, attention should be given to making feedback more explicit and specific to guide teachers' teaching practices.

5.3 In-Depth Analysis and Highlights

Teacher Endorsement of Mixed Methods: In the in-depth analysis, it is noteworthy that teachers' endorsement of mixed teaching evaluation methods may stem from their ability to comprehensively reflect various aspects of teaching practices. This endorsement also reflects teachers' willingness and ability to integrate multiple assessment methods in their actual teaching to gain a more comprehensive understanding and improvement of their teaching practices.

Influence of Gender and Qualifications: Our data also reveals the influence of gender and qualifications on teachers' feedback from TPES and its application. These findings provide an opportunity for a deeper understanding of the differences and needs that may exist among different groups of teachers in teaching evaluation and development.

6. Discussion

In this study, we conducted an in-depth exploration of the assessment methods of the Teaching Practice Evaluation System (TPES) for spatial design courses (SDCs) in higher education institutions in Xi'an. We particularly focused on the application of mixed assessment methods, teacher feedback on assessments, and the practical application of assessment results. The following are key discussion points based on the research findings.

6.1 Value and Challenges of Mixed Assessment Methods

While mixed assessment methods (combining qualitative and quantitative approaches) were widely applied in the sampled universities and endorsed by teachers, there may be challenges in their implementation. For instance, teachers might face difficulties in data analysis and interpretation when using these methods,

especially when attempting to understand and integrate information from different assessment methods. Additionally, qualitative assessment methods, while providing rich information, may also be susceptible to subjective biases.

6.2 Importance of Feedback Mechanisms and Existing Issues

While most teachers can access feedback from teaching evaluations, we found that there is a certain percentage of teachers who do not receive this feedback, potentially hindering further improvements in teaching. More critically, even when teachers receive feedback, they still face challenges in practically applying this feedback to enhance their teaching practices. This suggests the need for further exploration of how to improve the quality and practicality of feedback and how to promote teachers' effective use of feedback for improving their teaching practices through effective strategies, in order to strengthen the initiative of Continuous Professional Development (CPD).

6.3 The Role of Teachers in TPES Implementation

This study found that teachers' actual level of engagement in certain aspects of TPES, such as making teaching improvements based on feedback, is not very high. This could be related to various factors, including the quality and specificity of feedback, support for teachers' professional development, and teachers' beliefs and attitudes. Future research and practice need to further investigate how to fully leverage teachers' positive roles in TPES, especially in supporting them to make effective teaching improvements based on assessment results.

6.4 Implications for Existing Research and Practice

This study provides not only new insights and evidence for theoretical research but also valuable implications for educational practice. For example, our research suggests that educators and decision-makers need to focus on the quality and practicality of feedback and promote the establishment of a more open, dynamic, and interactive teaching assessment and feedback mechanism.

7. Conclusion

This study employed a mixed methods approach to investigate the assessment methods of the Teaching Practice Evaluation System (TPES) for spatial design courses (SDCs) in higher education institutions in Xi'an, as well as the acquisition and application of assessment feedback by teachers. In this section, we summarize the main findings of the study and provide some practical and research recommendations.

7.1 Key Findings

Application of Mixed Assessment Methods: The majority of universities and teachers tend to use mixed assessment methods to comprehensively reflect and understand the multidimensionality and complexity of teaching practices.

Acquisition and Application of Feedback: While most teachers can access feedback from teaching assessments, how to ensure that all teachers receive high-quality feedback and how to encourage them to make teaching improvements based on feedback remain pressing issues.

Role of Teachers in TPES: Teachers play an active role in the implementation of TPES, but in certain aspects (e.g., making teaching improvements based on assessment results), their actual engagement is not as active as desired.

7.2 Practical Recommendations

Based on the above findings, we propose the following practical recommendations:

Optimize Feedback Mechanisms: Higher education institutions should optimize the feedback mechanisms for teaching assessments to ensure that all teachers receive timely, clear, and specific feedback and provide support to help them make teaching improvements based on feedback.

Strengthen Teacher Professional Development: Higher education institutions should further strengthen support for teacher professional development, such as providing training and resources related to teaching assessment and improvement.

7.3 Research Recommendations

Future research can further explore issues related to teaching assessment in the following areas:

In-Depth Study of Mixed Assessment Methods: Investigate how to more effectively integrate qualitative and quantitative assessment methods and enhance teachers' abilities and confidence in applying these methods.

Study of Barriers to Feedback Application: Examine various factors that influence teachers' ability to make teaching improvements based on assessment results and explore strategies to overcome these barriers.

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