

Empirical Analysis of the Construction of University English Teaching Evaluation System Based on Dynamic Optimization Theory

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Abstract: Teaching evaluation plays a crucial role in university English teaching, as it is a key link in ensuring the achievement of teaching objectives. The core concept of dynamic optimization theory, as an advanced optimization method, is to make timely adjustments based on the dynamic changes of the problem in order to achieve the optimal state. This theory provides a new perspective and approach for the reform of the evaluation system of university English teaching. Integrating dynamic optimization theory into the construction of the evaluation system for university English teaching means that we need to break the fixed framework of traditional evaluation models and instead focus on the flexibility and adaptability of evaluation. This requires us to not only consider students' current learning status but also predict their future development trends when designing an evaluation system, so as to develop evaluation strategies that can reflect current learning outcomes and guide future development. This article explores the construction of a university English teaching evaluation system based on dynamic optimization theory, which is not only an innovation of traditional evaluation models, but also a powerful promotion for improving teaching quality.

1. Introduction

On the broad stage of university education, classroom evaluation is like a mirror, reflecting both students' learning efforts and achievements, as well as teachers' teaching wisdom and effectiveness^[1]. It is an important part of the teaching process, not only a direct consideration of learning effectiveness and teaching quality, but also a key tool for promoting mutual learning and continuously optimizing teaching strategies^[2]. University English, as an indispensable part of the higher education system, carries the responsibility of cultivating students' cross-cultural communication skills and enhancing their overall quality^[3]. It is not only a language course, but also a window for students to glimpse the diversity of the world and the deep integration of cultures^[4]. Therefore, how to scientifically, comprehensively, and effectively evaluate the teaching effectiveness of university English has become a common focus of concern for educators and researchers. The traditional evaluation system for university English teaching, although able to reflect students' learning situation to a certain extent, has increasingly highlighted its limitations^[5]. Firstly, the lack of internal evaluation is a significant issue.

Internal evaluation, which evaluates students' learning process, learning strategies, and learning attitudes, is an important way to understand the overall picture of students' learning and tap into their learning potential^[6]. However, in traditional evaluation systems, there is often an excessive emphasis on exam scores as a single indicator, neglecting the in-depth analysis of students' learning processes, resulting in one-sided evaluation results. Secondly, insufficient integration of teaching objects is also a major challenge. The university English curriculum faces a diverse group of students with different English foundations, study habits, and interest preferences. However, traditional evaluation systems often fail to fully consider individual differences among students, making it difficult to achieve personalized teaching and accurate evaluation^[7]. Furthermore, the monotonicity of evaluation forms is also an urgent issue that needs to be addressed. The traditional evaluation methods mainly rely on written exams, neglecting the balanced development of listening, speaking, reading, and writing abilities, especially in the evaluation of oral and listening skills,

which restricts the cultivation of students' practical application abilities^[8]. In the face of these challenges, it is particularly important to establish a scientific, comprehensive, and targeted evaluation system for university English classroom teaching.

This system should not only accurately reflect students' learning outcomes, but also guide teachers to improve teaching methods and enhance teaching quality. The emergence of dynamic optimization theory provides new ideas and methods for the construction of this system. The core of dynamic optimization theory, as an advanced optimization method, lies in a profound understanding of the dynamics and variability of problems, as well as flexible adjustments and continuous optimization based on this foundation. It emphasizes that in the evaluation process, it is not only necessary to pay attention to the current state, but also to predict future trends, adjust teaching strategies in a timely manner based on the evaluation results, and form a virtuous cycle of mutual promotion between evaluation and teaching. The construction of a university English teaching evaluation system based on dynamic optimization theory is not only a profound reflection and innovation on traditional evaluation models, but also a powerful promotion for improving teaching quality. It aims to stimulate students' learning potential, promote teachers' professional growth, and ultimately achieve a comprehensive improvement in the quality of university English teaching by constructing a more scientific, comprehensive, and targeted evaluation system.

2. The Application of Dynamic Optimization Theory in Teaching Evaluation

2.1. Current Situation of Teaching Evaluation

For a long time, the construction of classroom teaching evaluation system has mainly relied on evaluation teams composed of school leaders, senior teachers, and academic departments. This top-down evaluation method gives the evaluation teams great decision-making and initiative power^[9]. Although this structure to some extent ensures the stability and consistency of the evaluation system, allowing courses of different subjects and types to be evaluated according to unified standards, it also exposes a series of urgent problems that need to be addressed^[10]. The primary issue is that traditional evaluation systems overly focus on external evaluation, which involves direct observation and assessment of classroom teaching by evaluation teams, while neglecting internal evaluation, including key aspects such as teacher self reflection, student feedback, and peer review. The lack of internal evaluation weakens the comprehensiveness and depth of the evaluation system, making it difficult for the evaluation results to truly and comprehensively reflect the actual effectiveness of teaching. Especially for university English teaching, language learning is a complex and personalized process, lacking in-depth consideration of students' learning experience, teachers' teaching strategies, and the appropriateness of course content, which will greatly limit the effectiveness and guidance of evaluation.

Secondly, traditional evaluation models often treat students as a single evaluation object, ignoring the main position of teachers in teaching evaluation and the rationality of curriculum design. Although this student-centered evaluation perspective has its rationality, excessive simplification may lead to one-sided evaluation results. The teaching style, professional ability, classroom management, and innovation and practicality of course content of teachers are all key factors that affect the quality of teaching and should be included in the evaluation system. Furthermore, in the evaluation of university English teaching, excessive reliance on quantitative standards such as exam scores and homework completion rates neglects the diversity of students' intellectual structures and personalized learning needs. This evaluation method not only fails to accurately measure students' language proficiency, but may also inhibit their learning interest and creativity, affecting their overall development. The ideal evaluation system should combine quantitative and qualitative evaluation, focusing not only on students' academic achievements, but also on the cultivation of their language proficiency, cross-cultural communication skills, and self-learning abilities.

2.2. Specific Applications

The dynamic optimization theory emphasizes the close integration between teaching and evaluation, aiming to promote the comprehensive development of students' abilities through a continuous and flexible evaluation mechanism, and thus promote the formation of a new English teaching system. The core of this system lies in the use of progressive serialized interactive design, which not only meets the needs of students' psychological development evaluation, but also deepens their understanding and application of dynamic evaluation concepts, promotes effective communication and collaboration among students, and significantly improves the quality and effectiveness of learning. In the process of building a dynamic evaluation system, optimizing the interactive environment is crucial. A dynamic and exploratory learning environment can greatly stimulate students' enthusiasm for English learning, enabling them to participate more actively in the learning process, thereby ensuring the overall quality of university English teaching.

Through carefully designed classroom activities and diverse evaluation methods such as group discussions, role-playing, project-based learning, etc., students can continuously try, reflect, and grow in practice, truly experiencing the joy and value of English learning. The dynamic optimization theory fully considers the needs of both teachers and students when constructing the evaluation system, forming the factor layer of the evaluation system. This hierarchical structure not only covers multiple dimensions such as students' learning attitudes, ability development, and innovative practices, but also involves teachers' teaching strategies, classroom management, feedback mechanisms, and other aspects. Through this design, the evaluation system can comprehensively and objectively reflect the real situation of teaching and learning, provide timely and accurate feedback for both teachers and students, and promote mutual growth between teaching and learning. Figure 1 shows the specific composition of the factor layer in the evaluation system, which are intertwined and together form the cornerstone of the dynamic evaluation system, providing strong support for the continuous improvement and innovation of university English teaching.

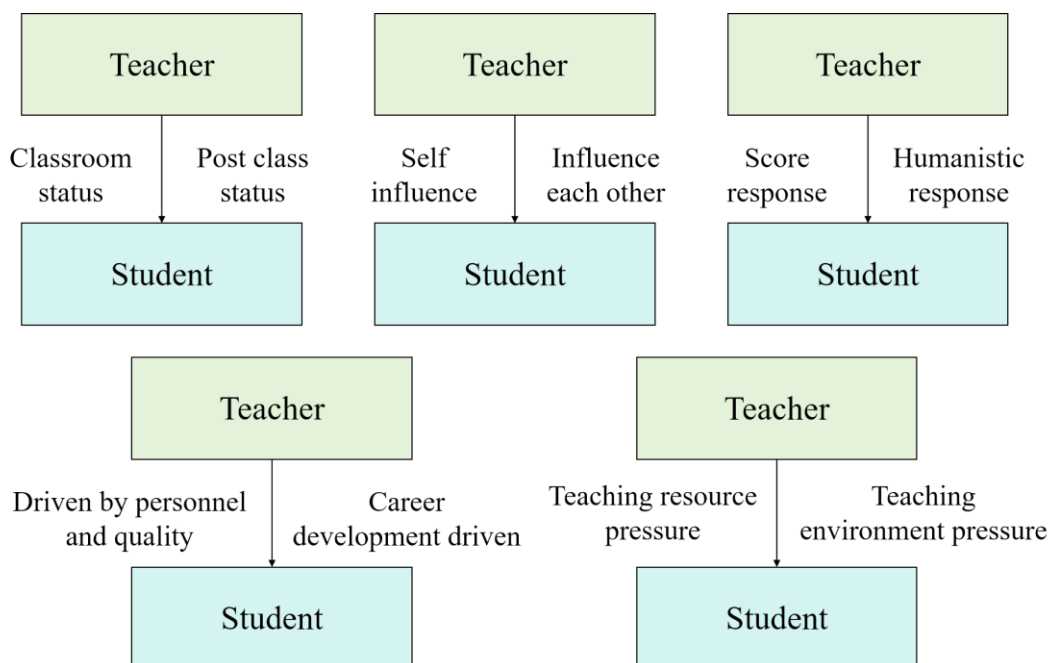


Figure 1 Evaluation system factor layer

3. Construction of Dynamic Evaluation System

3.1. System Construction

The construction of a dynamic evaluation system is a profound and comprehensive innovation in the field of education, aimed at comprehensively and fairly evaluating students' learning outcomes

and comprehensive abilities through diversified evaluation methods. This system not only covers traditional stage tests and final exams to test students' mastery of basic knowledge, but also introduces non-traditional evaluation factors such as classroom performance, participation in extracurricular activities, and self-directed learning, achieving an organic combination of formative evaluation and summative evaluation. Classroom performance evaluation encourages students to actively participate in classroom discussions and demonstrate their thinking activity and teamwork ability through interactive learning; The extracurricular activities provide students with a platform for practical exploration and interest development, and their participation and outcomes have become important indicators for measuring students' comprehensive quality. The evaluation of self-directed learning ability focuses on the cultivation of students' abilities such as self driven learning, information retrieval, and problem-solving, reflecting the emphasis on students' lifelong learning ability.

At the subjective evaluation level, students make value judgments on the knowledge and skills they have learned based on their personal learning experience. This reflective self-evaluation helps to enhance students' metacognitive abilities. At the same time, the introduction of a peer evaluation mechanism, consisting of external teaching experts in the same field and teachers with high teaching levels within the school, forms an evaluation panel to provide objective and professional feedback on students' academic performance from a professional perspective, promoting the comprehensiveness and authority of the evaluation. It is crucial to establish a professional teaching supervision team to ensure the effective operation of the evaluation system. This group is responsible for developing and improving relevant evaluation systems, regulating and supervising teachers' teaching behavior, ensuring that it meets educational standards and stimulates teaching innovation. Through regular teaching inspections, teaching seminars, and feedback meetings, the teaching supervision team guides teachers to continuously explore and practice new teaching content, methods, and models based on their existing teaching experience, in order to continuously improve teaching quality and create a better learning environment for students.

3.2. Empirical Analysis

To verify the effectiveness of the dynamic evaluation system proposed in this article, we selected a university English writing teaching class from a certain university as the empirical research object. During the research process, we comprehensively utilized various methods such as questionnaire surveys, in-depth interviews, and classroom observations to systematically collect data on students' learning behavior and effectiveness under different evaluation systems. By conducting statistical analysis on these data, we compared the effectiveness of the teaching evaluation system guided by dynamic optimization theory with that of the traditional evaluation system. Table 1 clearly shows the significant differences in student learning interest and learning outcomes between the two systems. In the dynamic evaluation system, students' interest in learning has significantly increased, and they are more actively involved in learning English writing. Classroom interactions are frequent, and homework completion quality is high. More importantly, students' writing ability has been significantly improved under the guidance of a dynamic evaluation system, demonstrating remarkable progress in terms of article structure, language expression, and innovative thinking. The results of this empirical study not only verify the feasibility and effectiveness of the dynamic evaluation system, but also provide strong data support for further optimization and promotion of the system.

Table 1 Comparison of students' learning interest and learning effectiveness under different systems%

Grade evaluation		This article system	Traditional system
Interest in learning	High interest	73	53
	Low interest	27	47
Learning effect	Good learning outcomes	71	58
	Moderate learning effect	29	42

4. Conclusions

It is crucial to establish a systematic and comprehensive evaluation mechanism for the teaching and learning evaluation of university English teachers. This mechanism must be able to truly and comprehensively reflect the teaching situation in the classroom, thereby promoting the development of the entire teaching evaluation system towards a more scientific and reasonable direction. Currently, with the continuous advancement of educational concepts and the increasing richness of teaching methods, traditional static evaluation methods are no longer able to meet the practical needs of university English teaching. Therefore, promoting the integration of dynamic optimization theory into the evaluation system of university English teaching has become an urgent task. The dynamic optimization theory emphasizes continuous adjustment and optimization during the evaluation process to adapt to changes in the actual teaching situation. Applying this theory to the evaluation of university English teaching can achieve continuous optimization of the teaching evaluation system, making it more in line with teaching reality, more targeted and effective. This article explores in depth the construction of a university English teaching evaluation system based on dynamic optimization theory. Through empirical analysis, we have verified the application effect of this system in actual teaching, promoting the improvement of teachers' teaching quality and students' learning outcomes.

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