Application of Multivariate Video Analysis in English Teaching Effect Evaluation Based on Computational Neural Model Simulation

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ABSTRACT

Video observation and content analysis are used to make a "quantitative-qualitative" analysis of English teachers' teaching behavior reflected in English classroom teaching videos, and to accurately describe, analyze, and summarize the characteristics of English teachers' teaching behavior from various aspects. Based on this, this study uses video analysis methods and NVivo 11 qualitative analysis tools to import quantitative data obtained from teaching video content into Excel tables for statistical analysis, objectively describe the rules and characteristics of junior high school English teachers' teaching effects, and then put forward suggestions to optimize teaching effects and strategies and suggestions to promote English classroom development. This paper establishes a video analysis and evaluation model. First, calculate the weights required by the model, then calculate the relationship matrix, and then calculate the second-level video analysis and evaluation. Using the second-level weight and relationship matrix, the teacher's evaluation value will be obtained.

INTRODUCTION

The evaluation of English teaching effect is helpful to improve the teaching effect (DeMers et al., 2021). The key is to accurately grasp and evaluate the effect of classroom teaching of middle school English teachers (Manghani et al., 2020). It establishes a video analysis and evaluation model. First, calculate the weights required by the model, then calculate the relationship matrix, and then calculate the second-level video analysis and evaluation. Using the second-level weight and relationship matrix, the teacher's evaluation value will be obtained (Joy et al., 2021). The third pair and school can well meet the current needs of various educational evaluation fields.

In addition, in the past teaching evaluation, qualitative analysis method is often used. It also causes difficulties for the evaluators in specific operations. but this method often ignores the existing factors (Ha, 2021). Therefore, it is scientific.

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With the development and application of the Internet, there has emerged a general method that uses teaching coding to interpret and analyze teaching content, and then achieve visual and understandable data quantification results (Dharmawardene&Wijewardene, 2021).Therefore, in order to understand the practical application of quantitative content analysis method of classroom video in educational research, the author selected six provincial-level high-quality English classroom recording videos in the educational resource platform of "one teacher, one excellent course" as research cases, to analyze the effect of English teachers' teaching. The proportion of teachers' TPACK knowledge structure is used as "quantitative-qualitative" statistics and analysis, to expand the application research of video quantitative content analysis in teaching effect (Tamur et al., 2020). At present, with the continuous development of the Internet, intelligent technology and the promotion of teaching reform in China, the traditional teaching mode and evaluation mode have undergone significant changes. The traditional English teaching evaluation methods are relatively simple. Generally, the evaluation results are obtained by comparing the scores and the degree of completion of practical teaching. Although the expected evaluation results can be achieved, they are easily affected by external teaching factors in the actual processing process. The final evaluation results of English teaching effects are not accurate and reliable.

To solve the above problems, in this paper, the multivariate video analysis method is used to evaluate English classroom teaching in middle school (Yan, et al., 2015). The methods used include a scoring method, fuzzy comprehensive evaluation, and other methods. It can be seen that the evaluation of the effect of middle school English classroom teaching is a fuzzy comprehensive evaluation (Thompson, et al., 2022). The traditional comprehensive evaluation methods will be in such a field. To solve specific problems in a specific field, it is necessary to integrate and analyze the system based on the actual situation, and then re-establish a suitable system, which can be realized by suitable algorithms (Chien et al., 2020). Therefore, this paper proposes that this research has one. At the same time, other professional comprehensive evaluation methods also have reference value.

BACKGROUND

Teaching Evaluation

There are problems of evaluation subject and evaluation object. In addition, the evaluation methods have similarities and differences, and there are quantitative and non-quantitative points. Simply put, the value judgment of things by numerical quantitative methods is called quantitative evaluation (Zhang et al., 2020). This method is generally used to clarify the level of the object's memory ability. There are great limitations, and the non-numerical quantitative method is used for value judgment, which is called qualitative evaluation.

Evaluation of English Classroom Teaching

"English Curriculum Standards" pointed out that it is the teaching process that allows students to develop their abilities in an all-round way and teachers to get feedback from students in a timely manner and promote it (Ministry of Education of the People's Republic of China, 2003; Yun et al., 2020). In the evaluation of other methods in the process of English teaching, it can make a judgment on the learning attitude, interest, and English ability of students and promote the enthusiasm of students (Hu & Yang, 2022). The evaluation method of classroom teaching should follow the following principles.

The Principle of Integrity

They are reasons that have effects in middle schools. In the process of selecting indicators, such evaluation will be noted. The standard of recording is in seconds, logical division is performed once per second, and there is about one code in one minute of class (Qadha & Alward, 2020). Taking time as a unit can better reflect quantification and objectivity, but it is not conducive to the overall understanding of teaching events in teaching activities. Moreover, there are certain difficulties in

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