Hindawi
Mathematical Problems in Engineering
Volume 2021, Article ID 6528058, 9 pages
https://doi.org/10.1155/2021/6528058

Research Article

Microclassroom Design Based on English Embedded Grammar Compensation Teaching

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Received 26 May 2021; Revised 12 June 2021; Accepted 23 June 2021; Published 10 July 2021

Academic Editor: Sang-Bing Tsai

In recent years, as a new type of educational resource, microclassroom continues to attract the attention of many domestic and foreign scholars and professionals due to its short, convenient, and effective features. How to improve the quality and effectiveness of English grammar teaching has always been a concern of teachers. Researchers at all stages of education are also exploring effective teaching methods in the new era through the microclassroom model. This article aims to study the English embedded grammar supplementary teaching method and apply it to the design of the microclassroom mode. This article puts forward the definition of microclassroom and English grammar and conducts related research on microclassroom and English grammar teaching. It also proposes the theory of constructivism and the analytic hierarchy process, which are effectively applied to the experimental part of this article. The experimental part is designed from four aspects: research questions, research objects, test and survey questionnaires, and experimental research process. The experimental results of this article show that the embedded oral supplementary teaching in high school English teaching is in line with students' academic conditions and teaching rules and is taught in a microclass mode. Totally, 58.97% of students believe that this mode is more beneficial for in-depth mastery of basic knowledge.

1. Introduction

The popularization of the Internet and the application of computer technology in the field of education have provided new possibilities for the reform of the traditional education model. In this case, the "microclassroom" model was born, which combines advanced network information technology and innovative education. The combination of ideas overthrew the traditional education model. This education model originated in the United States. Through in-depth research and promotion by researchers and educators, it has been well received by American teachers and students. Chinese scholars have also begun to research and apply microclasses. At present, the widespread application of mature network information technology and the policy support of the Ministry of Education provide a good opportunity for the promotion and implementation of disruptive courses in my country.

The English major in my country's colleges and universities has a history of 116 years since it was established in 1902. The development of over a hundred years has made great achievements and has delivered a large number of excellent English talents in various fields across the country. With the continuous expansion of the scale of English majors and the continuous increase in the number of students enrolled, the teaching of English majors also has many problems that cannot be ignored, such as a single teaching model, low learning enthusiasm of students, and lack of autonomous learning habits. Grammar plays a very important role in English education. In traditional classroom teaching, teachers mainly use conclusions and guidance methods for grammar teaching. Reasoning and guidance methods have improved the effectiveness of English grammar education to a certain extent, which is good for students and can improve language ability and skills. However, many students are not interested in learning grammar and may even dislike grammar because traditional grammar classes are not interested in them and students are in a passive position.

With the implementation of the new curriculum standards, more and more teachers insist on respecting the dominance of students, focusing on developing students' autonomous learning ability and helping students learn. Therefore, in order to enhance the influence of English grammar education, effective teaching is particularly urgent and necessary.

In the article, Šimonová introduced the implementation of iTunesU in the English course of the middle school grammar school. This study first introduced the theoretical background of the proper use of mobile devices, reflecting the Comenius principle and Koole's FRAME model. Second, it describes the strategies for practicing English pronunciation. Third, it describes three courses that are enhanced or not enhanced by mobile touch technology and shows learner feedback [1]. However, there is no feasibility analysis of the principles and models used in the experiment. Considering the importance of grammar, how to teach grammar or how many languages to integrate into language teaching is still a question of discussion. Polat believes that the attitude of learning teachers to grammar teaching is very valuable to researchers. Therefore, a scale is designed to identify teachers' attitudes towards grammatical effects in the process of English teaching, conduct a trial, and find out the reliability and validity of the designed scale and other psychometric qualities. The results of exploratory and confirmatory factor analysis show that the scale developed in this research is a fairly effective and reliable data [2]. However, the study did not consider other factors besides teachers' attitudes towards the role of grammar. English has become a common language, but the current education system still cannot provide students with access to pure English by focusing on traditional school grammar. Hong, Young Yeah strongly recommends that teachers apply error analysis to language lessons, which will be useful and helpful for learning grammar in a practical way. The purpose of this research is to suggest explicit and implicit teaching of grammar by identifying the mistakes students often make in writing, which has an important impact on knowledge, skills, and emotional English grammar ability [3]. However, this teaching method requires the cooperation of a certain number of teachers to be effective, and the advantages and disadvantages of this teaching method can be seen.

The innovation of this article is (1) proposed English embedded grammar supplementary teaching, embedded a few minutes of grammar supplementary lessons in English grammar teaching, to carry out basic grammar training for students, so that students can gradually achieve grammar in both knowledge and skills; (2) teaching requirements: introducing the microclass teaching model into English teaching provides a new reference model for English teaching reform. Through further research on the microclass teaching mode, the existing teaching theories have been enriched and the development of teaching theories has been promoted. It is helpful to cultivate students' independent learning ability, form a personalized learning mode, and promote the establishment of students' lifelong learning concepts.

2. Research Method of Microclassroom Design Based on English Embedded Grammar Supplementation Teaching

2.1. Definition of Related Concepts

2.1.1. Definition of Microclassroom. American senior education designer David Penrose first proposed the "microclassroom" in 2008 [4]. He believes that the microclassroom is the pulse of knowledge, and the curriculum knowledge points have been improved in many ways. In designing and creating microclassrooms, he also systematically took five steps [5, 6]. In China, Hu Tiesheng first proposed a more systematic definition of microclassroom in 2010. Microclassroom is a new type of online video course. According to the new curriculum standards, teachers start from practice, explain a single point of knowledge in the form of microvideos and record and explain them in the form of microvideos, use microvideos as a career, and combine support resources for various educational activities [7, 8]. The main content of the microclassroom is the teaching video in the classroom, which also includes related teaching design, teaching materials, practice tests, and other educational support resources, which together constitute a "microintegrated" teaching resource. Microclassroom can be regarded as a summary of knowledge points or learning skills and learning methods. It can be used as an important breakthrough in classroom teaching, and it can also be used as a supplement to classroom teaching. This can not only adapt to the age of mobile learning but also adapt to the individual needs of students [9] to learn. In short, Chinese scholars have different interpretations and understandings of microclassrooms, but they have two things in common. One is to include short videos and related support resources, and the other is to support various forms of learning, including personal learning, independent learning, and scattered learning, which can play an important role in reforming learning methods [10].

2.1.2. English Grammar Teaching. Should grammar be taught directly in the classroom during language teaching? If teaching, how can students effectively master and use grammar rules? These issues have received great attention since the emergence of foreign language teaching and have aroused extensive discussion and research among scholars [11]. Regarding the question of whether the law should be taught or not, there have been two major schools in the history of foreign language teaching. Those who oppose it believe that grammar should not be taught directly, and they believe that teaching grammar in the classroom is out of the essence of language learning. Scholars who agree with the attitude believe that students learning grammar can help them to express language more easily and effectively to master a language faster [12].

In our country, English is taught and learned as a foreign language, and students do not have the real language environment of their native English. Most students learn English knowledge mainly from the classroom, and due to

the limitations of factors such as class time and limited application opportunities, students do not have enough time and opportunities to contact English, and it is difficult to fully understand and use the language from many language practices such as law [13]. What students have to do is to master the basic knowledge of the system and the necessary grammar rules and then understand them reasonably and combine them with language practice activities. Only in this way can students use English better. Therefore, how to teach English grammar more effectively is a long way to go. Although the grammar research in our country originated relatively late compared with the specialized language research abroad, many foreign language education researchers in modern times have devoted themselves to the research reform of grammar teaching. They not only learn effective experience from abroad but also conduct empirical research on English grammar teaching based on specific domestic foreign language teaching practices, enriching the theoretical system of second language acquisition and foreign language teaching, and continuously improving the quality of English grammar teaching in my country [13, 14].

2.1.3. Relevant Research on Microclassroom and English Grammar Teaching. As shown in Figure 1(a), in China, compared with other fields, there are more research studies on English education in microclassrooms. However, as shown in Figure 1(b), at the academic level, although the main focus is on applied research in higher education, there are relatively few studies on English education in high schools. As shown in Figure 1(c), there are a lot of oral studies in the microclassroom in English education, followed by grammar and writing, but there are relatively few training in reading and listening.

2.2. Constructivist Theory. Constructivism theory was first proposed by Piaget. The core of its learning view is that learners must transform information by themselves [15, 16], which is embodied in: First, knowledge is no longer simply taught, but learners actively construct. Second, learners process information according to their own knowledge and experience and actively endow ideas to construct the meaning of knowledge. Third, the acquisition of learning meaning comes from assimilation and adaptation. The intervention of new information makes the original information change, and the cognitive level of learners develops accordingly. In summary, learning is no longer a simple accumulation of information but the interaction between the learner and the learning environment. Learning through microclasses allows students to adjust their learning speed according to their own basis and habits, and personalized learning is supported; in addition, microclasses can enhance the initiative of students in learning. Therefore, the application of microclasses to teaching not only conforms to the view that "students are the subject of cognitive process and the active constructor of meaning" [17] in the constructivist theory but can also take into account the differences between students. It can be said to coincide with each other. Constructivism theory has the following guiding significance for the development and application of microcourse resources [18, 19]: first, although the knowledge points of microcourse are very small, it is necessary to do a good academic analysis before designing and producing, so that it can be targeted; second, the audience of microclasses is wide and the differences are huge, so it is necessary to establish hierarchical learning tasks; and third, students learn through microclass videos, so there may be problems with unilateral information transmission between computers and people. Therefore, in the design and development process, it is necessary to properly enlighten students with questions, attract students to actively participate, and increase the initiative of learning.

2.3. Analytic Hierarchy Process. The analytic hierarchy process (AHP) proposed by Saaty in the United States in the 1970s is a systematic and hierarchical analysis method [20], which combines qualitative and quantitative analyses of nonquantitative events. It is mainly used in uncertain situations and decision-making problems with the analysis of several evaluation criteria [21]. This method can decompose complex problems into various constituent factors, group these factors into an orderly hierarchical structure according to the dominance relationship, and determine the importance of each factor through pairwise comparison. Comprehensive human factors determine the order of each procedure. The purpose of AHP is to simplify complex problems. By establishing an interactive hierarchical structure, different levels can be distinguished, quantitatively judged, and overall evaluated, so as to provide decision makers with information about the correct plan and reduce the risk of decision making. This can cause errors. This method not only guarantees the accuracy of qualitative science and quantitative analysis but also guarantees the unity of the overall evaluation of qualitative and quantitative indicators. This is a simple, flexible, and practical multicriteria decision-making method, which has been widely used in decision making in all fields.

Suppose the set of evaluation factors is U: then there is

$$U = \{u_1, u_2, \ldots, u_n\}, \tag{1}$$

where u_i is each evaluation factor. $U = \{u_1, u_2\} = \{$nonquantitative evaluation, quantitative evaluation$\}$,

$$u_1 = \{u_{11}, u_{12}, u_{13}, u_{14},\}, u_2 = \{u_{21}, u_{22}\} \tag{2}$$

Factor a and factor b, respectively, represent two factors or two comparison indicators compared with a specific factor, and the matrix formed by the c_{ab} scale is a pairwise comparison.

(1) The diagonal value of the table is 1 because each indicator is as important as itself.

(2) The two sides of the diagonal are the reciprocal of each other. For example, if there is a $c_{ab} = 5$, there must be a $c_{ba} = 1/5$, that is, it exists

$$c_{ab} = \frac{1}{c_{ba}}. \tag{3}$$

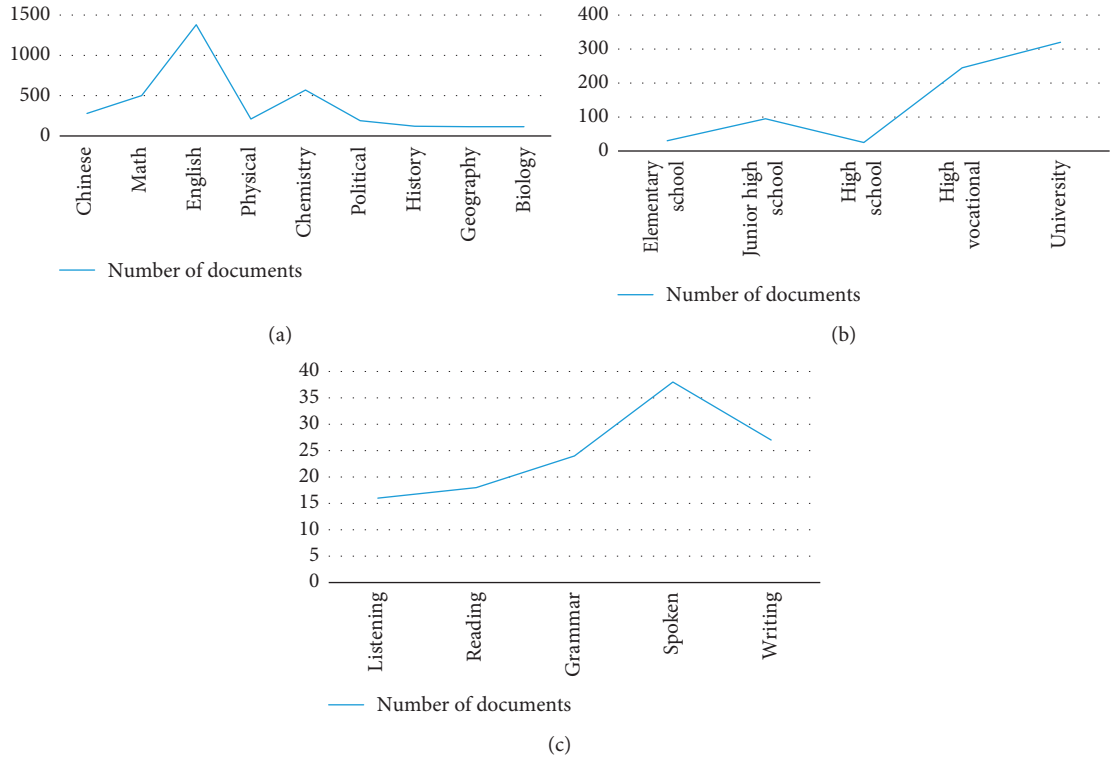

Figure 1: Statistics of related literature between microclassroom and English teaching. (a) A statistical diagram of related literature between microclassrooms and various disciplines. (b) A statistical graph of related literature in the microclassroom and English teaching in various age groups. (c) Microclassroom and related literature statistics for each English class type.

(3) The matrix is consistent. For example, $c_{23} = 5, c_{34} = 1/4$, then there should be $c_{24} = c_{23} \bullet c_{34} = 5/4$. Generally speaking, if the following relationships exist

$$c_{ab} = c_{ad} \bullet c_{db}, \tag{4}$$

then this matrix is said to have complete consistency, and the eigenvector corresponding to its largest eigenvalue can give the relative importance order of each index. If it is orthogonalized, the weight vector can be obtained.

Let the weight factor vector corresponding to the evaluation factor set be $\widetilde{C}$:

$$\widetilde{C} = (c_1, c_2, \ldots, c_n), \tag{5}$$

where c_i is a measure of the size and importance of the evaluation factor U_i in the total evaluation factors, which is called weight. General regulations: $c_i \geq 0$, and

$$\sum c_i = 1, \tag{6}$$

among them,

$$\overline{C}_i = \sqrt[n]{\prod_{b=1}^{n} c_{ab}},$$
$$C_i = \frac{\overline{C}_i}{\sum_{a=1}^{n} \sqrt[n]{\prod_{b=1}^{n} c_{ab}}}. \tag{7}$$

By calculating the maximum eigenvalue α_{max}, the consistency index (CI), and the consistency ratio (CR), check whether the consistency of the comparison matrix established above meets the requirements.

$$\alpha_{max} = \frac{1}{n} \sum_{a=1}^{n} \frac{c_{ab} C_a}{C_a},$$
$$\mathrm{CI} = \frac{\alpha_{max} - n}{n - 1}, \tag{8}$$
$$\mathrm{CR} = \frac{\mathrm{CI}}{\mathrm{RI}}.$$

The consistency index of the inverted matrix generated randomly is called the random index (RI), and its value increases as the order of the matrix increases. The order n and its corresponding random index (RI) value are shown in Table 1 [22].

The five-level evaluation method of $V = \{v_1, v_2, \ldots, v_n\}$ is mostly used in the evaluation of online learning [23, 24]. Then the fuzzy number is used to represent the grade used by the teacher in grading. The calculation of fuzzy numbers is complicated. Choosing a suitable fuzzy number will bring a lot of convenience to the following discussion. Here may as well take the L-R type fuzzy number. To choose the L-R type fuzzy number, first of all, it is necessary to define the benchmark function L', as shown in Figure 2.

A five-level positive trapezoidal fuzzy membership function $V_{Li}(x)$ can be obtained:

Table 1: Order n and its corresponding random index (RI) value.

n	2	3	4	5	6	7	8	9
RI	0	0.52	0.89	1.12	1.26	1.36	1.41	1.46

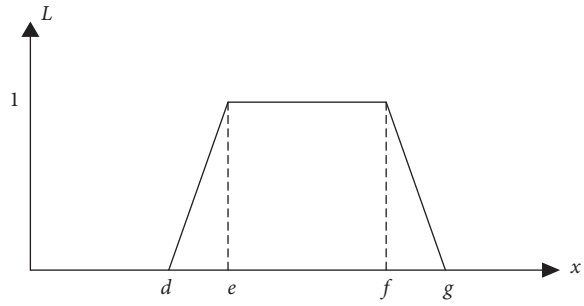

Figure 2: Benchmark function L'.

$$V_{Li}(x) = \begin{cases} 0, & x < d, \\ \dfrac{x-d}{e-d}, & d \le x < e, \\ 1, & e \le x < f, \\ \dfrac{x-g}{f-g}, & f \le x < g, \\ 0, & x > d. \end{cases} \tag{9}$$

The calculation formulas $\tilde{m} = (m_1, m_2, m_3, m_4)$ and $\tilde{n} = (n_1, n_2, n_3, n_4)$ of two positive trapezoidal fuzzy numbers are as follows:

$$\begin{aligned} \tilde{m} \oplus \tilde{n} &= (m_1 + n_1, m_2 + n_2, m_3 + n_3, m_4 + n_4), \\ \tilde{m} \otimes \tilde{n} &= (m_1 \times n_1, m_2 \times n_2, m_3 \times n_3, m_4 \times n_4). \end{aligned} \tag{10}$$

3. Research Experiment Based on the Microclassroom Design of English Embedded Grammar Supplementation Teaching

3.1. Research Questions

(1) How effective is the teaching of English grammar microclasses?

(2) What are the students' attitudes towards the grammar microclassroom teaching model?

3.2. Research Objects. This research was conducted in a middle school in a certain city. The subjects of the experiment are two randomly selected classes from the key classes of the second year of the middle school. Class 12 is the experimental class and Class 22 is the control class. The author will teach the same grammar content in both classes. Table 2 shows the statistics of the number and gender of the experimental class and the control class.

Table 2: Statistics of the number and gender of the experimental and control classes.

	Experimental class	Control class
Number of people	78	83
Boys	43	51
Girl	35	32

In order to know whether there is a significant difference in the academic performance of the two classes before the experiment, the midterm test scores of the two classes are specially counted as descriptive lines, as shown in Table 3.

It can be seen from Table 3 that the average score of the midterm exam for class 12 is 99.682, the average of class 22 is 98.753, the difference between the two classes is only 0.9, and there is no significant difference in other values. In order to further prove whether there are significant differences between the two classes, the test scores of this time are tested by independent samples. It can be seen that sig (two-sided) = 0.730, and the upper and lower limits of the 95% confidence interval are −4.0317 and 6.5620, respectively, indicating that there is no significant difference between the two classes before the experiment, so the experimental research can be carried out in the two classes.

3.3. Test and Questionnaire. The previous test is the second semester midterm English test of the second grade of the school. The total score is 150 points. The question types include listening comprehension (30 points), reading (40 points), use of English knowledge (45 points), vocabulary, sentence patterns, and writing (35 points). The instant test questions are all real questions from the college entrance examination over the years, with a total score of 60 points. The question types include multiple-choice questions (20 points), grammar fill-in-the-blank questions (10 points), correction questions (10 points), and translation (20 points). Among them, questions 3, 6, 8, 9, 10, 25, and 28 are inverted sentences, which appear as interference items in the test questions, totaling 14 points.

Delayed test questions are all from the previous college entrance examination real questions, with a total score of 60 points. The question types include multiple-choice questions (20 points), grammar fill-in-the-blank questions (20 points), correction questions (10 points), and translation (10 points). Among them, questions 2, 4, 8, 9, 10, 16, 17, 18, 19, and 20 are inverted sentences, which appear as interference items in the test questions, totaling 20 points.

After the experiment, a questionnaire survey was conducted among the students in the experimental class to summarize their attitudes towards grammar microclasses. This questionnaire refers to the questionnaire of Chi Yi (2014) "Students' Satisfaction with Microclassroom" and is designed for students' attitudes towards the grammar flipped classroom in this experiment. The questionnaire has a total of 20 measurement variables, divided into three dimensions: The first part is a satisfaction survey on various aspects of the instructional video, including the time of watching the video, the picture, the length, and the presentation method of the

Table 3: Descriptive statistics of previous experiment scores of the experimental class and the control class.

	Class	Minimum	Maximum	Mean	Standard deviation
Midterm grades	Experimental class	52	124.5	99.682	2.0031
	Control class	53	131.5	98.753	1.7840

video (Question 1–Question 5). The second part is the satisfaction survey on the teaching process and effect, including the teacher's teaching ability, teaching content, amount of homework and difficulty, group members, allocation of teaching time, classroom discussion atmosphere, and group activity, etc. (Question 6–Question 13). The third aspect is the survey of the overall satisfaction of the flipped classroom, including the role of flipped classrooms, learning methods, stimulating interest in learning, comparing with traditional learning methods, the advantages of learning effects and efficiency, and the cultivation of independent learning ability. The last question is whether you want teachers to use this teaching mode frequently (Question 14–Question 20). In addition, the questionnaire also provides open statistics on the number and duration of the videos watched by students for subsequent supplementary analysis. In order to make this survey reliable and effective, this experiment uses SPSS20.0 software for data statistics and analyzes the reliability of the survey results before creating a suitable survey. The analysis results are as follows: the reliability of the questionnaire is 0.871, indicating that the reliability of the questionnaire is high, and the results of the questionnaire truly reflect the real thoughts of the students.

3.4. Experimental Research Process. The first step is to select the teaching content, compile a questionnaire, list the outline of the interview, and organize and compile the test questions for the immediate test and the delayed test. The second step is to compile the teaching plan of the grammar microclass teaching method, prepare the learning task list, and record the microclass video used in the flipped classroom. The microlesson video is an important part of the grammar flipped classroom. On the basis of further research on the textbook, the author made a teaching plan based on the psychological and cognitive characteristics of high school students. According to the arrangement in the teaching plan, I made a beautiful PPT, and then used the screen recording. The software recorded the author's whole process of explaining the grammatical content in the PPT. After many attempts, individual teachers and students were invited to watch, and finally a video suitable for students in the experimental class was determined.

In order to ensure that the students in the experimental class can effectively watch the video for preclass learning and make the experiment achieve a certain effect, two measures have been taken. First, communicate adequately with relevant school leaders and parents. Second, in order to meet the needs of students' personalized learning, a learning task list and teaching videos are issued to the students' QQ group on weekends. The learning process is carried out in strict accordance with the specific requirements in the learning task list. The parents provide mobile terminal equipment and cooperate with monitoring. In order to test their own learning effects, students complete related exercises after video learning. Teachers can communicate with students in the QQ group to grasp the situation of students' autonomous learning, draw up targeted learning goals and learning content, and conduct five links in the grammar class during the week to achieve the effect of knowledge internalization. The teaching design of the control class refers to the teaching plan of the key English teachers of the fourth high school in the second grade. It is divided into two classes to complete, the first class is the explanation of grammar knowledge, and the second class is the practice of grammar knowledge. The experimental class adopts the "microclass" teaching method. Before class, it is necessary to design a study task table, record microvideos, and upload the videos to the QQ group. Students use their mobile terminals to study and formulate the important and difficult content of the class.

4. Experimental Results and Analysis

4.1. Effect of Grammar Learning. In order to know the teaching effect of the experimental class and the control class after the grammar class, first carry out descriptive statistics on the results of the instant test.

It can be seen from Table 4 that the mean value of the instant test of the experimental class is 41.5, and the mean value of the control class is 41.7. The difference between the two is not obvious. In order to further illustrate whether there is a significant difference in the results of the two classes, an independent sample T test was carried out for this time. It can be seen that the two-sided sig. value is equal to 0.693 and greater than 0.05, and the upper and lower limits are −1.9207 and 2.0593, respectively, within the 95% confidence interval. The interval includes 0, indicating that there is no significant difference in the test results.

In order to know the difference between the experimental class and the control class two weeks after the flipped class, the descriptive statistics of the delayed test results of the two classes are carried out.

It can be seen from Table 5 that in the delayed test, the average value of the experimental class is 38.3, and the score of the control class is 36.7. There is not much difference between the maximum value and the minimum value. In order to further verify whether there is a significant difference in this test, an independent sample T test was carried out on this result. It can be seen that the silent bilateral sig. value of the delay test is 0.005, which indicates that there is a significant difference in the results of the two classes. It can be concluded that after two months of study, the teaching mode of grammar microclasses is more effective than traditional grammar teaching methods.

Table 4: Descriptive statistics of real-time test scores of students in the experimental class and the control class.

	Class	Minimum	Maximum	Mean	Standard deviation
Real-time test	Experimental class	13.5	46	41.5	0.9926
Test score	Control class	14	45	41.7	1.0058

Table 5: Descriptive statistics of delayed test scores of the experimental class and the control class.

	Class	Minimum	Maximum	Mean	Standard deviation
Delay test	Experimental class	38.3	18	40	2.8937
Test score	Control class	36.7	16	40	1.5038

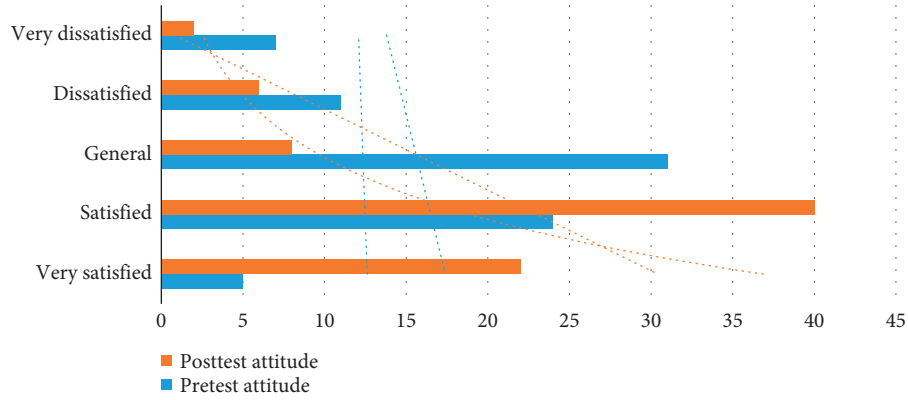

Figure 3: Students' attitudes towards grammar microclasses before and after the test.

4.2. Students' Attitudes towards Grammar Microclasses. The main subjects of this questionnaire survey are 78 students in the experimental class. Seventy-eight questionnaires were distributed anonymously, 78 questionnaires were returned, and the recovery rate was 100%. The survey on video quality is shown in Figure 3. It can be seen from Figure 3 that some students are satisfied with the video, and some are not satisfied with the video, but in general, the students hold a positive attitude towards the video. The so-called video is not simply to record the courseware in the classroom as a video for the students to watch, but to fully consider the students' interest in learning. The students hope to see wonderful, interesting, and humorous short films. Of course, a whole lot of technical support is needed in the process. Therefore, in order to make videos that students like, in addition to being an excellent English teacher, the teachers should have a technical control, must work hard to improve their computer skills, and have to grasp all kinds of video production skills. Figure 3 shows the comparison diagram of students' attitudes towards grammar microclasses before and after the test.

The survey results of the pretest questionnaire question ("Can the current curriculum teaching model stimulate interest in classroom learning?") and the posttest questionnaire question ("Can the classroom teaching model based on microclassroom stimulate interest in classroom learning?") are shown in Figure 4.

It can be seen from Figure 4 that under the teaching mode that is mainly based on teacher lectures, only 24.36% of the students in the entire experimental class think that this mode can better stimulate their interest in learning; in the microclass teaching mode, a total of 57.70% of the students think this teaching method can or very much encourage their interest in learning. In addition, 17.95% of students said that they could not do this under the microclass teaching model. And 39.74% of students believe that the education model based on teacher lectures cannot stimulate their interest in learning. It can be seen that, compared with the traditional teacher-based teaching model, the microclass teaching model has greater advantages in stimulating students' interest in learning and can better stimulate students' interest in learning.

According to the survey and analysis of the students' advantage in the traditional teaching mode and microclass teaching mode in mastering basic knowledge in the pretest questionnaire, statistical analysis can be drawn in Figure 5.

It can be seen from Figure 5 that 33.33% of students think that it is conducive to the in-depth mastery of basic knowledge when the traditional teacher teaching is the main mode of teaching courses; 58.97% of the students think that this mode is used for teaching in the microclassroom mode. It is more beneficial to master the basic knowledge in depth. It can be seen that the teaching of "Comprehensive English" in the microclassroom mode, students believe that it can better promote the mastery of basic knowledge.

In addition, in terms of learning efficiency, the statistical results of the pretest and posttest questionnaire for the two teaching modes are shown in Figure 6:

It can be seen from Figure 6 that after adopting the microclass education model, more and more students

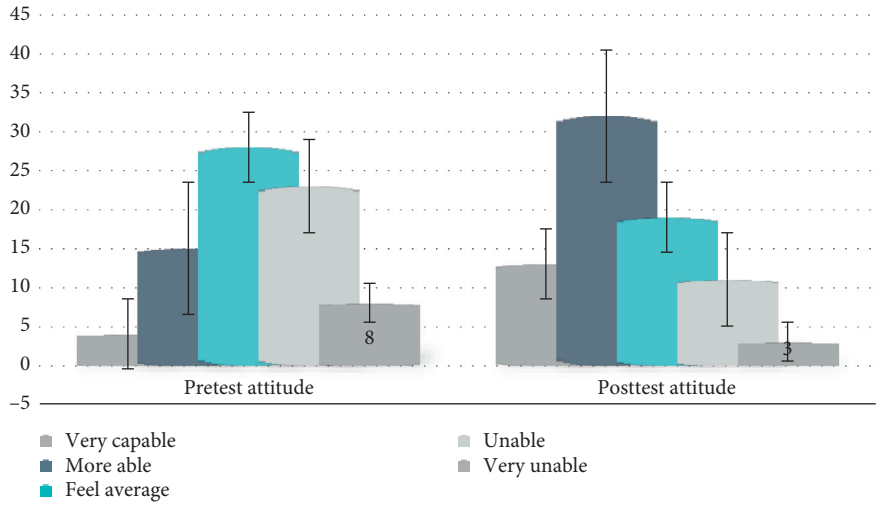

Figure 4: Pretest and posttest attitudes towards whether different teaching modes can stimulate interest in learning.

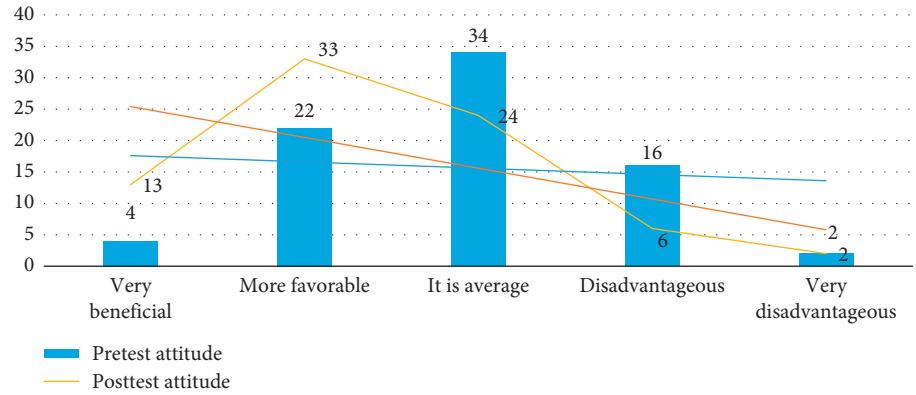

Figure 5: Pre- and posttest statistics of the degree to which the two modes are beneficial to the mastery of basic knowledge.

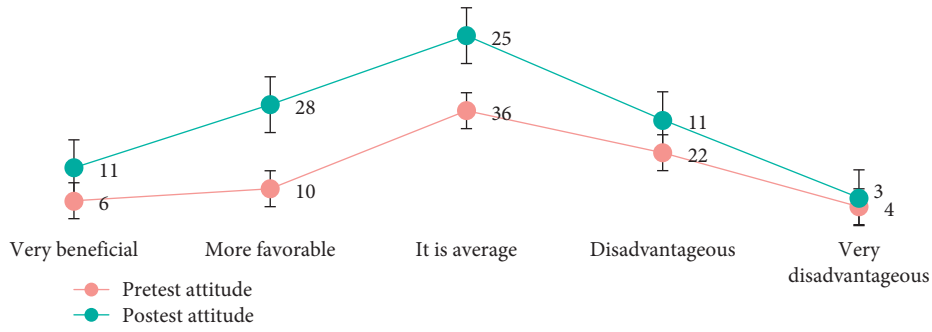

Figure 6: Pretest and posttest statistics of the degree to which the two modes are beneficial to improving learning efficiency.

believe that the model can improve academic performance. In the questionnaire, the number of students who believe that this mode is more beneficial to the study of English grammar has increased significantly; the number of students who believe that this type of education does not help improve their academic performance has been greatly reduced. It can be seen that the microclass teaching model has played a role in promoting students' grammar learning.

5. Conclusions

In this research, a teaching model based on English embedded grammar supplementary teaching was designed and combined with microclassroom to apply to teaching practice and verified the actual teaching results of the supplementary teaching model based on comprehensive English grammar. However, this research has the following shortcomings: First of all, in this research, only one article is selected as the

content of the teaching experiment, and only one natural class is selected as the experimental class. The number of students is small and the experiment cycle is relatively long. Second, this teaching practice failed to make full use of the existing campus teaching network platform. Due to the limitation of time and related technology, the teaching practice of this research failed to combine the practice of microclassroom teaching with the existing school network teaching platform. The research shows that the embedded grammar teaching in English complies with the academic requirements and rules of students. The teacher incorporates 5–8 minutes of grammar teaching into the daily classroom teaching, which will gradually improve the students' English grammar level. As shown in the original research, teachers need to design interesting and vivid links in educational design to make educational work interesting. In total, 52.18% of students believe that the way to improve oral English is by singing, which shows that most students want to learn in a relaxed and comfortable environment. In short, teachers need to change more teaching methods in the implementation process in order to gain a solid understanding and attract students. This study integrates grammar supplementary teaching into classroom teaching through experiments, which can undoubtedly improve students' actual grammar level and is worthy of promotion in high school English education. This article also provides a certain reference value for scholars who will study this topic in the future.

Data Availability

No data were used to support this study.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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