

Research on the Evaluation of Teaching Effect of "Rain Classroom + Flipping Classroom" in Higher Vocational English Based on Fuzzy Comprehensive Evaluation Method

Liu Weiwei

Basic Teaching Department, Shandong Huayu University of Technology, Dezhou, Shandong, China 253034
673559273@qq.com

Keywords: fuzzy comprehensive evaluation method; teaching effect evaluation; vocational English; rain classroom + flip classroom

Abstract: This paper adopts a questionnaire survey on the evaluation of teaching effectiveness of teachers and students in English-language double-class classroom teaching in high vocational schools. Using fuzzy comprehensive evaluation method, the index system of teaching effect evaluation is determined, and the fuzzy relation matrix of each factor is calculated. A fuzzy evaluation model for the effect of double-class classroom teaching in English is established. At the same time, the principle of maximum subordination is used to make a reasonable evaluation of the teaching effect of higher vocational English, in order to play a reference role in the reform of English teaching in higher vocational schools.

1. Research background and research significance

1.1 Current opportunities and challenges faced by higher vocational english teaching

1.1.1 Traditional teaching mode, teaching methods and teaching methods are facing severe requirements for reform

At present, most colleges and universities in colleges and universities follow the traditional teaching mode, which makes students' initiative, self-learning and creative consciousness greatly restricted. Students gradually develop A study habit that does not like to say, does not love to ask, does not like to think, makes the "bilateral activities" of teaching and learning of college English become "single-mouth comics" that only teachers preach. It has greatly affected the effective output of teaching results, which is not conducive to the cultivation of students' English thinking ability, application ability and innovation ability, thus limiting the further improvement of college English teaching quality. In addition, the traditional college English teaching model follows the principle of teacher-centering, focusing on how to teach, ignoring how to learn, so that on the one hand, "learning" revolves around "teaching", and the "bilateral activity" in the classroom becomes Unilateral activities have led to poor classroom teaching results.

1.1.2 The new era of intelligent teaching of information teaching is coming

The requirement of English talent training in the information age forces us to break the current teaching situation of "one sentence, one hall", "full time" and "time-consuming and inefficient", and change the "learning" method of students through the teacher's "teaching" method, so that students can truly Learn how to learn in the true sense. We can improve the quality of English talent training in higher vocational colleges.

1.2 Flipping classroom and mixed teaching have become the inevitable choice for vocational English teaching

Under the background of the challenges and opportunities of deep integration of information teaching and college English teaching, the traditional "teacher teaching, student learning" teaching mode of higher vocational English will undergo major changes. The traditional teaching mode,

teaching methods and teaching methods are no longer Adapt to the requirements of students' English ability and literacy. In the case of less hours and credits, the use of mixed teaching mode for teaching English in higher vocational education is not only the realization of teaching objectives, the need to improve the quality of personnel training, but also the shackles of higher vocational English breaking through traditional teaching, inevitable choice of creating a college English wisdom teaching. .

1.3 The evaluation of ability and literacy is the key to the outstanding application of rain-flipping double classroom teaching

1.3.1 Make up for the shortcomings of the past flipping classroom

The practice of many schools flipping classrooms is thought-provoking. In the process of flipping the application of the classroom, there are also many imperfections. For example, the flipping of the teaching links realized by many schools does not really combine the learning characteristics of the higher vocational students, and the learning effect of the students has not been improved. Capacity and literacy have not been truly improved. What is the reason for not really achieving the purpose of improving the teaching effect? In fact, flipping the classroom is only seen as a flip of the teaching process from “learning after teaching” to “teaching after learning”.

1.3.2 The outstanding characteristics of the double-class classroom teaching effect

In the double-class classroom teaching, the convenient rain classroom teaching tools are fully applied to carry out the flipping classroom teaching activities and implement the hybrid teaching mode. While improving students' English application ability, collaboration ability and self-learning ability, they also cultivate students' critical thinking consciousness, cooperation consciousness and innovation consciousness. The effect of English classroom teaching have been greatly improved in higher vocational schools.

2. Research methods

2.1 Research methods

By preliminarily determining the evaluation index items, and then prescribing the evaluation of the teaching effect evaluation of the high school English "rain classroom + flip classroom" (referred to as "rain-flipping double classroom"), the questionnaires were surveyed from the students and teachers, and the survey was conducted. The opinions of each indicator are scored, and then the data is statistically and screened by the questionnaire. Finally, the indicators are further certified, and the certification indicators of students and teachers are respectively obtained.

2.2 Fuzzy comprehensive evaluation method

The fuzzy comprehensive evaluation method is used to analyze the evaluation indicators, and the qualitative evaluation factors are transformed into quantitative evaluation factors, that is, the total evaluation of the things or objects subject to multiple factors, the method makes the results clearer, the algorithm is more reasonable and better. Solve difficult problems.

3. Index construction and fuzzy comprehensive evaluation

3.1 Building evaluation indicators

This study combines the methods of English classroom teaching evaluation at home and abroad, combines the talent training objectives of higher vocational students, and specifies the evaluation index system for the evaluation of the teaching effect of English classrooms. The indicator system consists of three first-level indicators and eight second-level indicators.

$U = \{\text{knowledge, ability, literacy}\}$

$U_1 = \{\text{Basic knowledge of old knowledge, mastery of new knowledge}\}$

$U_2 = \{\text{intercultural communication ability, language application ability, solidarity and cooperation}\}$

ability, independent learning ability}

U3={cultural literacy, critical thinking consciousness, innovative thinking consciousness, cooperation consciousness}

3.2 Determination of the weight of evaluation indicators

Through the teacher-student discussion, questionnaire survey and expert consultation, the weights of the evaluation indicators at each level are determined, so the weight vector of each evaluation index can be obtained.

$$A=(0.3,0.5,0.2)$$

$$A1=(0.4,0.6)$$

$$A2=(0.1,0.5,0.2,0.2)$$

$$A3=(0.1,0.3,0.2,0.4)$$

3.3 Establish a fuzzy evaluation set for teachers and students

Taking the teachers and students involved in the practice of English-language double-class classroom teaching as the research object, the teaching quality of the double-class classroom teaching in the vocational English is implemented, and four male and female students of different basic levels are invited to participate in the classroom teaching. Two teachers, a total of 10 relevant personnel were evaluated and scored. The final statistical evaluation form is shown in Table 1.

Table 1. Statistical indicators of evaluation indicators and teacher and student scores

Index classification		Teaching quality evaluation			
Primary indicator	secondary indicator	excellen t	good	mediu m	poor
Knowledge(0.3)	Foundation of Old Knowledge(40%)	5	5	0	0
	Mastery of new knowledge (60%)	3	6	1	0
Ability (0.5)	Intercultural Communication Ability(10%)	2	6	2	0
	Language application ability(50%)	4	6	0	0
	Unity and cooperation ability(20%)	5	4	1	0
	Self-learning ability(20%)	7	3	0	0
Literacy(0.2)	Cultural literacy(10%)	2	7	1	0
	Critical thinking consciousness(30%)	4	5	1	0
	Innovative thinking(20%)	5	3	2	0
	Cooperation awareness(40%)	7	3	0	0

Then, the membership matrix of each sub-factor first-level indicator is:

$$\tilde{R}_1 = \begin{bmatrix} 0.5 & 0.5 & 0 & 0 \\ 0.3 & 0.6 & 0.1 & 0 \end{bmatrix},$$

$$\tilde{R}_2 = \begin{bmatrix} 0.2 & 0.6 & 0.2 & 0 \\ 0.4 & 0.6 & 0 & 0 \\ 0.5 & 0.4 & 0.1 & 0 \\ 0.7 & 0.3 & 0 & 0 \end{bmatrix}$$

$$\tilde{R}_3 = \begin{bmatrix} 0.2 & 0.7 & 0.1 & 0 \\ 0.4 & 0.5 & 0.1 & 0 \\ 0.5 & 0.3 & 0.2 & 0 \\ 0.7 & 0.3 & 0 & 0 \end{bmatrix}$$

3.4 Performing fuzzy comprehensive evaluation

3.4.1 Fuzzy comprehensive evaluation of sub-factors

$$\underset{\sim}{B}_1 = \underset{\sim}{A}_1 \circ \underset{\sim}{R}_1 = (0.4, 0.6) \circ \begin{bmatrix} 0.5 & 0.5 & 0 & 0 \\ 0.3 & 0.6 & 0.1 & 0 \end{bmatrix} = (0.5, 0.5, 0.4, 0.4)$$

Similarly, $B_2=(0.2,0.3,0.2,0.1)$, $B_3=(0.2,0.3,0.1,0.1)$

3.4.2 First-level fuzzy comprehensive evaluation

Construct a first-order fuzzy comprehensive evaluation matrix with B_i as:

$$\underset{\sim}{R} = \begin{bmatrix} 0.5 & 0.5 & 0.4 & 0.4 \\ 0.2 & 0.3 & 0.2 & 0.4 \\ 0.2 & 0.3 & 0.1 & 0.4 \end{bmatrix}$$

The weight of the primary indicator is: $A = (0.3, 0.5, 0.2)$, then $B = A \circ R = (0.2, 0.3, 0.2, 0.2)$

4. Conclusion

Judging from the fuzzy evaluation results, the highest degree of membership is in the “good” interval, indicating that the effect of teachers and students on the English classroom teaching in high vocational English is relatively positive, which is consistent with the data of interviews and questionnaires.

From the comprehensive evaluation results of the sub-factor level, the evaluation result is $B_2=(0.2,0.3,0.2,0.1)$ for the “capability” improvement index, indicating the students' English application ability, independent learning ability and cross-culture in practical teaching. Communication skills still need to be improved and strengthened. Only by truly improving the English application ability of students can we improve the quality of personnel training.

Acknowledgements

This work was supported by the projects of vocational education teaching reform research project in Shandong Province in 2017(Project Code: 2017306)

References

- [1] Luo gang Application of Fuzzy Comprehensive Evaluation Method in Teaching Evaluation [J]. Journal of Chongqing University of Arts and Science (Natural Science Edition), 2010(05): 12-13+16.
- [2] Ye Zhen. Research and application of fuzzy comprehensive evaluation method based on AHP [D]. South China University of Technology, 2010.
- [3] Yin Aiqin, Li Yun, Liu Xuecheng, Chen Rui. Application of Fuzzy Comprehensive Evaluation in Teaching Quality Evaluation [J]. Journal of Taishan University, 2011, (03): 17-20.
- [4] Zhou Feifang, Zhou Wenfu. Application of Fuzzy Comprehensive Evaluation Method in English Teaching Evaluation [J]. Journal of Longyan University, 2012, (05): 104-109.
- [5] Yang Hua. Application of Fuzzy Comprehensive Evaluation in Teacher Teaching Quality Evaluation [J]. Journal of Tianshui Normal University, 2012, (02):13-16.
- [6] Tian Lu, Wang Hui. Research on the Application of Fuzzy Evaluation Model in College Teaching [J]. Journal of Hefei Teachers College, 2012, (06): 55-58.
- [7] He Kekang. From the essence of "flip classroom", look at the future development of "flip

classroom" in China [J]. *Research in Audio-Visual Education*, 2014, (07).

[8] Zhao Xiuhong. Based on the MOOC and the “rain classroom”, Tsing hua University has driven 62 colleges and universities to carry out mixed teaching reforms – the classroom changes you, you change the classroom [N]. *China Education News*, 2016-6-17 (1)

[9] Hanson J. Surveying the experiences and perceptions of undergraduate nursing students of a flipped classroom approach to increase understanding of drug science and its application to clinical practice. *Nurse Education in Practice*, 2016, 16(1), pp. 79-85.