

Analysis and Strategy Research on Influencing Factors of Classroom Teaching Quality in Higher Vocational Colleges

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Abstract: In this study, the questionnaire “Influencing Factors of Classroom Quality in Higher Vocational Education” was self-compiled. By using the questionnaire survey method, the research conclusion was drawn that the main factors affecting the classroom teaching quality in higher vocational education were teaching and student factors, teacher factors, and classroom factors based on 2,683 samples. According to the research results, the measures to improve the quality of classroom teaching are put forward, in order to provide guidance for improving the quality of teaching in higher vocational colleges.

Keywords: Higher vocational colleges; Classroom teaching quality; Influencing factor

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1. Introduction

The state issued the Opinions on Promoting the High-Quality Development of Modern Vocational Education in 2021, which explicitly emphasized the imperative to foster a profound integration between modern information technology and education, thereby enhancing the caliber of classroom instruction. The classroom, as the primary locus of instruction, constitutes the fundamental structure and pivotal nexus of teaching, exerting a decisive influence on enhancing instructional quality^[1]. The enhancement of classroom construction, the promotion of classroom vitality, and the mobilization of students’ enthusiasm and initiative have become crucial aspects in response to the “classroom revolution” initiative. From previous research, the quality of classroom teaching was mainly based on review research, and the focus on higher vocational classroom teaching quality research is lacking. The study will adopt the empirical research method, focus on the quality of classroom teaching, and identify the influential factors affecting the quality of classroom teaching in higher vocational colleges, in order to provide references for improving the quality of teaching in higher vocational colleges.

2. Research design

2.1. Research subjects

The subjects in this study were students from a higher vocational college. 2,800 questionnaires were distributed by random sampling, and 2,683 valid questionnaires were collected, with an effective rate of 95.82%. According to the Raosoft Sample Size Test, the total sample size is 16,000, and the minimum sample size is 638 with a confidence level of 99%. Therefore, the effective sample number was 2,683 (> 638), which met the statistical requirements. Among them, 1,051 were male, accounting for 39.2%, and 1,632 were female, accounting for 60.8%, with an average age of 18.99 ± 0.955 . The survey covers 13 majors, including e-commerce, marketing, chain operation and management, logistics management, and so on.

2.2. Research instruments

Through interviews, literature review, and other methods, the questionnaire “Influencing Factors of Classroom Quality in Higher Vocational Colleges” was self-compiled, with a total of 28 questions. The questionnaire was scored by Likert 7 points, with 1 stands for very unimportant and 7 stands for very important. After the questionnaire was designed, two teachers in charge of teaching in the Academic Affairs Office were asked to read the questionnaire and delete the two questions with similar semantic expressions, leaving 26 questions in the questionnaire. Then, four students were asked to fill in the questionnaire, and a question with unclear semantic expression was modified to form the final questionnaire.

3. Result analysis

3.1. Exploratory factor analysis

The KMO value of the sample is 0.954, indicating that there are many common factors among the variables. The χ^2 value of Bartlett’s Sphericity Test was 190781.24 and $df = 325$, which reached a significant level, indicating that there were common factors in the correlation matrix of the population. The above two aspects indicate that the data is suitable for factor analysis.

According to the shape of the steep slope in **Figure 1**, the amount of “gravel” before the maximum inflection point in the figure is three. Therefore, it can be preliminarily judged that there are three common factors affecting the quality of classroom teaching.

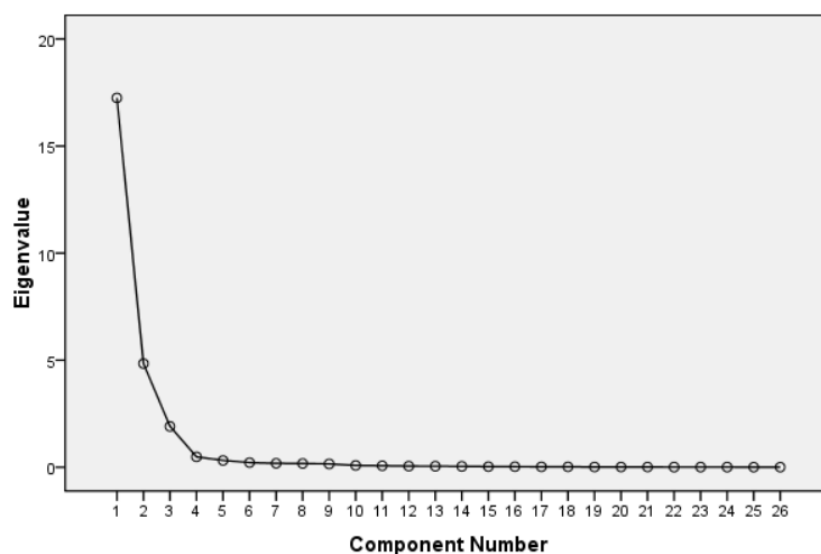


Figure 1. Scree plot

The principal component analysis method was used to calculate the values of each item in each dimension based on the principle that the eigenvalue was greater than 1 and the factor load level was above 0.40. As can be seen from **Table 1**, each item has a large load of corresponding factors (0.853–0.912), and the variance explained of each common factor is 66.346%, 18.629%, and 7.339%, respectively. The cumulative variance explained of the three common factors is 92.314%, indicating good validity of the questionnaire. According to the situation of the three common factors, the three common factors are named, which are teaching and student factors, teacher factors, and classroom factors.

Table 1. Rotated component matrix

Items	Component		
	1	2	3
a17 Clarity of teaching purpose	0.897		
a16 Students' learning habits	0.897		
a12 Selection of teaching materials	0.897		
a14 Students' motivation for learning	0.896		
a18 Form of teaching organization	0.895		
a13 Choice of teaching content	0.894		
a11 Practical conditions	0.894		
a19 The way teaching is evaluated in schools	0.889		
a20 The way teachers are evaluated in schools	0.888		
a15 Students' existing knowledge, ability, and quality	0.887		
a7 Age of teachers		0.885	
a8 Teachers' titles		0.881	
a5 Assessment and evaluation methods for students		0.878	
a2 Teaching behavior norm		0.871	
a4 Teachers' teaching method		0.871	
a1 Teachers' teaching attitude		0.870	
a6 Teachers' personal temperament, appearance, degree of humor, etc.		0.868	
a3 Relationship between teachers and students		0.868	
a9 Teachers' knowledge level		0.856	
a10 Teachers' teaching ability		0.855	
a23 Teaching hardware level			0.912
a22 Interaction effect between teachers and students			0.889
a26 Class attendance rate			0.884
a25 Classroom environment			0.868
a21 Application level of teaching informatization			0.854
a24 Class size			0.853
Variance explained	66.346	18.629	7.339

3.2. Confirmatory factor analysis

The fitting index of the model is shown in **Table 2** with the confirmatory factor analysis results. According to

the values of the fitting indicators, it can be seen that the fitting indicators meet the fitting index standards (CFI, TLI, IFI, NFI, RFI generally need to be greater than 0.90, RMSEA is below 0.1), and the obtained model fits the theoretical model well.

Table 2. Fitting index of structural equation model of the entrepreneurial university model

Fitting index	CFI	TLI	IFI	NFI	RFI	RMSEA
Model	0.971	0.964	0.971	0.969	0.963	0.089

3.3. Reliability test

Cronbach's α value of the questionnaire survey was ≥ 0.9 , which indicates excellent internal consistency. The Cronbach's α value of each dimension is 0.941–0.997 (**Table 3**), indicating that the self-compiled questionnaire is stable with high overall reliability, and the data collected by the questionnaire can well reflect the situation of each dimension.

Table 3. Reliability of questionnaire

Dimensions	The number of items	Cronbach's α value
Dimension 1: Teaching and student factors	10	0.997
Dimension 2: Teacher factors	10	0.994
Dimension 3: Classroom factors	6	0.941
Scale	26	0.944

4. Research conclusions and prospect

The above analysis results indicate that the primary determinants influencing the quality of classroom teaching in higher vocational colleges encompass teaching and student factors, teacher factors, and classroom factors. The teaching process depends on the active interaction between teachers, students, and the learning environment ^[2]. Therefore, it is necessary to focus on the above three aspects and propose specific improvement measures.

Firstly, it is necessary to build a student-centered classroom action mode in classroom teaching. The quality, knowledge, and ability objectives of each class should be clearly defined by following the work ideas of analyzing industrial cluster demand, talent demand, job group task analysis, job quality requirements, and knowledge and ability requirements of each classroom. This will further lead to course learning objectives and classroom teaching objectives fully considering students' existing knowledge, ability, and quality, clarifying the course teaching objectives, following the basic law of students' vocational ability training, selecting textbooks suitable for students in vocational colleges, integrating the content of textbooks, and integrating new technologies, knowledge, and methods into the teaching content. The new job standards will be connected with the curriculum teaching standards, highlighting the characteristics of vocational education types, strengthening the practical and vocational teaching, which is an important difference between vocational education and general education, providing personalized and diversified teaching programs for students at different levels, and promoting students' active learning, tapping their potential and all-round development. Previous teaching quality evaluations often had problems such as too single evaluation subjects and too quantitative evaluation results ^[3]. The evaluation index system should be optimized, multiple evaluation subjects should be established, and feedback on evaluation results should be timely provided to effectively guide teaching and improve teachers' teaching work.

Secondly, as the designers and implementers of classroom teaching, teachers are the main factors that determine the quality of classroom teaching^[4], and teachers' attitudes towards teaching and teaching methods have a vital effect on the quality of classroom teaching. Teachers are encouraged to participate in teaching ability competitions, and various training forms such as expert reports and experience exchange meetings are held to continuously improve teachers' teaching ability. Teachers should strengthen teaching research before, during, and after class, and use research results to guide teaching. It is also important to enhance teachers' sense of humor and give careful consideration to the assessment of students' learning and developmental processes, ensuring that evaluations are conducted objectively and impartially. Thirdly, teachers should make full use of information technology such as Vocational Education Cloud, Excellent MOOC, and other teaching platforms to increase classroom interaction. Teachers are encouraged to use pictures, animation, and virtual simulation in teaching, adopt flipped classroom teaching mode^[5], exert students' subjectivity, mobilize students' learning enthusiasm, and improve class attendance. The enhancement of digital education resource development and the facilitation of co-construction and sharing of high-quality teaching resources should be prioritized. Creating a suitable classroom environment is also significant for improving the quality of classroom teaching^[6]. Small class-size teaching is adopted as much as possible to encourage students to use inquiry-based learning, teamwork, and other ways of classroom learning. The most crucial aspect is that we should give full play to students' subjective initiative in learning and enhance their innovative thinking and practical skills.

Disclosure statement

The authors declare no conflict of interest.

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