Research on College Students' Sense of Classroom Acquisition based on Factor Analysis and Improvement Measures

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Abstract

Based on the current situation of College Students' classroom learning, this paper analyzes the factors influencing college students' classroom acquisition by using questionnaire survey and factor analysis, and constructs the index evaluation system of College Students' classroom acquisition. According to the actual investigation and index characteristics, this paper puts forward specific measures to enhance college students' sense of classroom acquisition, which provides practical and theoretical reference for improving college students' sense of classroom acquisition, improving classroom efficiency and stimulating students' interest in learning.

Keywords

College Student; Sense of Classroom Acquisition; Factor Analysis; Lifting Measures.

1. Introduction

Chairman Mao once said to international students at Moscow University: "The world is yours and ours, but in the final analysis it is yours. Your young people are full of vigor and prosperity, like the sun at eight or nine o'clock in the morning. Hope rests on you. Body." Yes, as Mr. Qichao Liang said, a strong youth will make the country strong. The younger generation must have ideals, responsibilities, actions, and understanding. Only then can our country have a future and the important task of national rejuvenation can be realized as soon as possible [1]. College students, as an important part of the younger generation, must work hard for the prosperity and development of the country and the realization of their own values, keep making progress, and strive to be the trendsetter of the times.

Therefore, in order to understand the current learning situation of contemporary college students, improve the quality of college classroom teaching, encourage college students to be more active and active in learning, thereby improving the ability of college students in our country, and provide more high-quality, high-tech, high-knowledge, and thoughtful talents for the country and society. We have launched a survey and analysis of college students' sense of classroom acquisition. The author builds a conceptual framework of classroom acquisition based on the dimensions involved in the influencing factors of college students' sense of classroom acquisition, collects data through questionnaires, and uses factor analysis to measure the sense of acquisition. Based on the overall situation, establish an evaluation index system for college students' sense of classroom acquisition, and combine the indicator system with actual new conditions to put forward countermeasures and suggestions to improve college students' sense of classroom acquisition.

2. Research Design

2.1. Data Sources

We published the online questionnaire on the questionnaire star website, and the subjects of the survey were undergraduates from various universities across the country. The questionnaire is released on October 3, 2019, and the deadline is October 7, 2019. During the questionnaire recovery period, 208 questionnaires were received. After the researchers screened the questionnaires and eliminated the inconsistent questionnaires, 202 valid questionnaires were finally obtained, and the questionnaire recovery rate reached 97.12%.

2.2. Concept Definition

The sense of acquisition is a process involving the organic superposition of "acquisition" and "sense".[2] On the one hand, the active "acquisition" of the subject stimulates the recognition of the usefulness of the object; on the other hand, the confirmation of the value "sense" of the object stimulates the subject's in-depth acquisition. Its essence is a practical activity of equal interaction between subjects, active promotion, and gradual accumulation. Classroom sense of acquisition refers specifically to the sense of acquisition that students get in class, which depends on the degree of realization of material and spiritual needs and the multi-dimensional perception transformed from it. Here we subdivide the factors that affect the sense of classroom acquisition into the following five dimensions: material dimension, thinking dimension, operation dimension, spiritual dimension, and teacher dimension.

At the material level, objective things such as class notes, sorting out and correcting books, and grades can not only visualize students' sense of classroom learning, but also digitize their sense of classroom gain for comparison. College students can discover the increase in their knowledge from these concrete things, which meets the needs and expectations of college students for self-development, and produces a sense of self-satisfaction. on the level of thinking, by listening to teachers explaining cases or communicating with classmates in groups, you can broaden your thinking, change the way you look at problems, and get new ideas and inspirations. This is also an important factor that affects college students' sense of classroom acquisition. on the technical level, after learning new knowledge, through completion of homework or practice to apply the learned knowledge to practice, it can give college students a sense of gain and accomplishment. On the spiritual level, spiritual gain is an important factor that affects the sense of classroom acquisition. For example, the university is infected by a positive classroom atmosphere in the classroom, which produces a sense of struggle for hard work, professional identification and a sense of belonging, and so on. at the teacher level, the students in the classroom are the main body, and the teacher is the leader. Teachers are an important factor influencing college students' sense of classroom acquisition. The teacher's personality charm, teaching style, teaching mode, etc. will have varying degrees of influence.

In summary, the influencing factors of classroom acquisition are composed of five aspects: material dimension, thinking dimension, technical dimension, spiritual dimension and teacher dimension, and the corresponding dimensions have specific content to be weighed, forming the preliminary factors affecting classroom acquisition Concept system. as shown in Fig. 1.
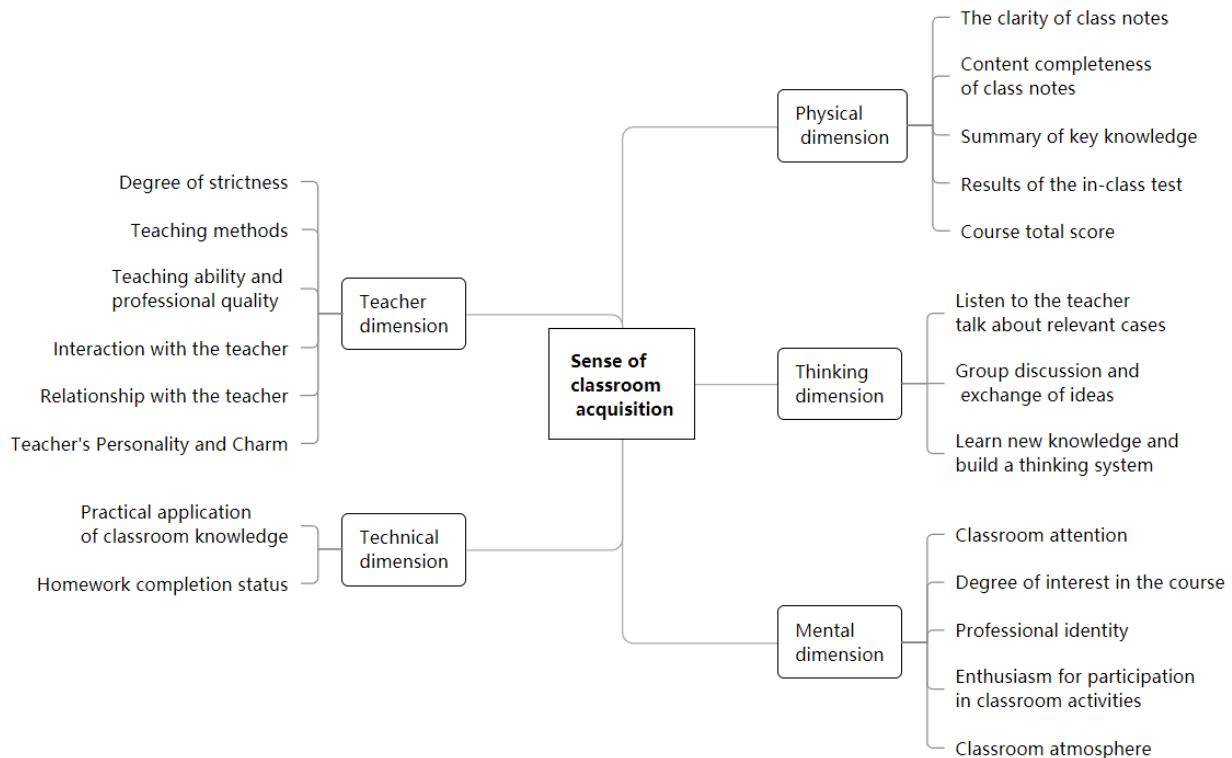
Fig 1. Influencing factors of classroom acquisition

2.3.   Research Method

The factor analysis method is a multivariate statistical method that uses the thinking of dimensionality reduction to reduce the multi-index variables into a few comprehensive indexes that are independent of each other and contain most of the original variable information. In the research of establishing the index evaluation system, the factor analysis method is widely used. This method avoids the subjectivity of subjective weighting, and makes the index establishment and weight assignment more objective and scientific. Based on the basic principles of the factor analysis method, this article uses variables of different dimensions of the sense of acquisition, and uses the factor analysis method to comprehensively evaluate the factors that affect the sense of classroom acquisition. Through the construction of the correlation matrix of the original variables, a few unobservable comprehensive variables that can control all the variables are derived to reflect the influencing factors.

3.   Research Results and Analysis

3.1.   Data Validity Check

Reliability examines whether there is a high internal consistency between items is the prerequisite for suitable factor method analysis. [4] The author uses the SPSS software to use the Alpha reliability coefficient test. the result shows that Cronbach Alpha = 0. 704. Reliability standards are met, and the selected indicators have good internal consistency. The validity reflects the truthfulness of the concept. The author performs KMO sample measurement and Bartlett sphere test on valid samples, and the KMO statistic is zero. 718, greater than 0. 7. It shows that the partial correlation between the variables is relatively high, and the factor analysis is good. It can be seen from the Bartlett sphere test that the independence assumption of the variables does not hold, and the applicability test of the factor analysis is passed.

3.2. Construction of the Evaluation Index System of Classroom Acquisition

The extraction of common factors is an important part of the construction of influencing factors. This paper uses principal component analysis to extract common factors. The factor load table after rotation is shown in the figure below. The factor load table obtained by orthogonally rotating the factor load matrix with the variance maximization can better reflect the relationship between the variables of the common factor. As shown in Table 1.

The first main factor has a greater load on the seven indicators of group discussion, exchange of ideas, enthusiasm for class activities, class atmosphere, class size, the degree of interaction with the teacher, and the relationship with the teacher. Both indicators describe the degree of influence on classroom acquisition in terms of interaction and atmosphere, so it can be defined as an interaction factor.

The second main factor is the degree of concentration in the classroom, the degree of interest in the content of the course, professional identity, the teacher's teaching ability and professionalism, and the teacher's personality charm. These five indicators have a greater load. It can be defined as an attraction factor.

The third main factor has a large load on the actual application of the knowledge learned in the course, the construction of the subject thinking knowledge system, and the completion of homework after class. These three indicators are all in terms of application skills, so they can be defined as Skill factor.

The fourth main factor has a large load on the three indicators of the clarity of the class notes, the completeness of the content, and the summary of key knowledge, so it can be defined as the note factor.

The fifth main factor has a large load on the two indicators of in-class test scores and total course scores. These two indicators are both in terms of performance, so it can be defined as a performance factor.

Table 1. Factor weight table

Interaction with the teacher	0.758				
Relationship with the teacher	0.726				
Discuss problems in small groups and exchange ideas	0.665				
Class size (number of people)	0.652				
Enthusiasm for participation in curriculum activities	0.624				
Classroom atmosphere	0.616				
Classroom concentration	0.142	0.592			
Degree of interest in the content of the course	0.225	0.695			
Professional identity	0.284	0.586			
Teacher's teaching ability and professional quality	0.127	0.722			
Teacher's personality	0.418	0.635			
Practical application of the knowledge learned in the course	0.174	0.171	0.789		
Learned new knowledge an constructed a disciplinary thinking system	0.156	0.277	0.785		
Homework completion status	0.192	0.259	0.58		
The clarity of class notes	0.186	0.124	0.119	0.829	
Content completeness of class notes	0.131	0.073	0.218	0.81	
Summary of key knowledge	0.217	-0.02	0.435	0.641	
Test scores in class	0.074	0.075	0.237	0.193	0.829
Course total score	0.089	0.231	0.155	0.209	0.791

From the main factors and their ranking, it can be seen that interaction, classroom attractiveness, skill use, notes, and grades are the five main factors that affect college students' sense of classroom acquisition. as show in Fig. 2. So in the following we propose improvement measures to enhance college students' sense of classroom acquisition from these five aspects.
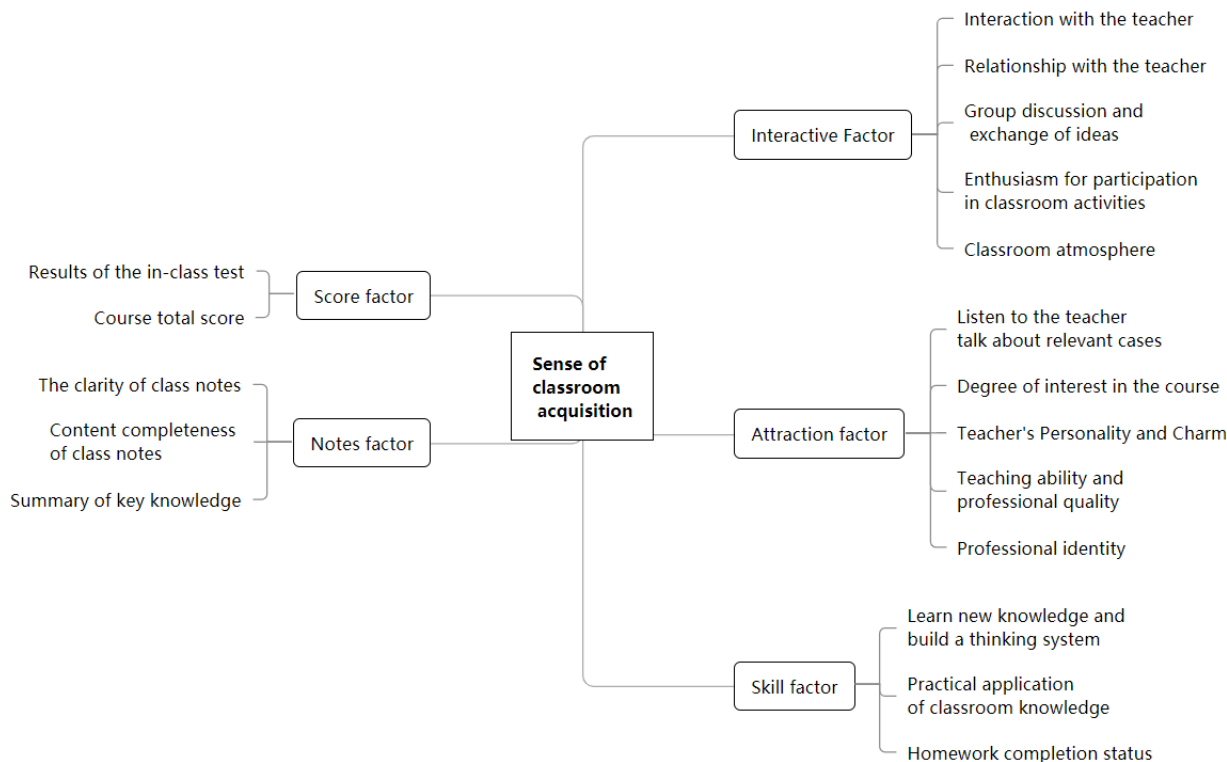

Fig 2. Evaluation Index System of Classroom Acquisition

3.3.　Measures to Improve Classroom Achievement

3.3.1.　Improvement Measures based on Interaction Factors

Relying on the Internet, using the teaching mode that combines blackboard writing and PPT, the combination of blackboard writing and PPT improves classroom efficiency. Teachers will not spend too much time on the blackboard, and students do not have to concentrate on taking notes. This saves a lot of time in class. Teachers can explore knowledge and solve problems together with students. Students can better absorb and digest what they have learned. Knowledge. The combination of blackboard writing and PPT makes the classroom lively and interesting. For example, in mathematics classes, teachers can use PPT to show function images more accurately; for exploratory subjects such as physical chemistry, teachers can use PPT to show experiments.

Enhance the interaction between teachers and students in the classroom. Frequent interaction between teachers and students can increase the activity level of the classroom, which is convenient for teachers to mobilize the active classroom atmosphere, attract students' attention, and promote the relationship between teachers and students, and the relationship between teachers and students. Being good will make teachers and students feel happy in class, can make students devote themselves to the classroom, improve classroom efficiency, and improve students' sense of classroom acquisition.

The construction of small and medium-sized classrooms with a small number of students facilitates teachers' daily teaching arrangements and communication management, and also helps teachers to understand the learning status of each student, improve student participation in the classroom, and make students feel more classroom experience in the classroom.

Small and medium-sized classrooms will not have the noisy classroom voices faced by large-scale classrooms, too many people, chaotic classroom atmosphere, low student participation, and poor classroom quality.

Improve the relationship between teachers and students, and carry out classrooms with emotional warmth. University teachers are not only responsible for teaching students' professional knowledge, but also for guiding students' values. Strengthen the communication between teachers and classmates, teachers can answer questions based on the actual problems faced by students in their study and life, build a warmer classroom, and make students' gains more meaningful.

3.3.2. Improvement Measures based on the Angle of Attraction Factor

Reform the teaching content centered on the needs of students. Combining students' interests, aiming at the current situation of students, and teaching students in accordance with their aptitude. Enhance students' interest and resonance with classroom content. The teaching content should highlight the key points, combine the subject characteristics of different subjects, and the language of teaching should not be overly academic. At the same time, we must strengthen the reform of the content of ideological and political courses and theoretical courses.

Enhance teachers' professional quality, personal charm, and explore characteristic teaching styles. At present, teachers in double-class key universities generally have a higher level of education, and they are mainly doctoring. However, in some ordinary colleges and universities, the academic level of teachers needs to be improved. Teachers must enhance their own personal charm while enhancing their professional qualities. People with personal charm always stand out from the crowd and attract people's attention. Teachers with personal charm will also form a classroom atmosphere that belongs to him in the classroom. Humorous teachers' classrooms are always full of laughter, which arouses students' constant attention, and thus improves the classroom efficiency of students.

Construct a teaching style with clear goals and pertinence. Reasonable and technical teachers are easily recognized by students through their professional subject knowledge and high-level teaching ability. This reflects that students have a clear goal of classroom learning and desire to obtain more and clearer knowledge from the classroom.

3.3.3. Improvement Measures based on Skill Factors

Pay attention to improving students' practical ability and the ability to apply knowledge. First, as college students, we must be clear that learning knowledge is not just for exams, the role of learning knowledge is more to apply it to solve problems in real life. Practice is our goal. Therefore, we must pay attention to after-class practice to cultivate students' hands-on ability and the ability to apply knowledge.

3.3.4. Improvement Measures based on Notes and Performance Factors

Improve the quality of class notes and pay attention to students' usual grades. Note-taking is the most direct manifestation of college students' sense of classroom acquisition, and we should improve the quality of classroom notes. Complete content and clear notes can enhance the sense of classroom acquisition. At the same time, schools should pay attention to students' usual course scores and avoid surprise reviews before exams, which have high scores but no actual gains.

4. Conclusion

With the continuous development of society and science and technology, the teaching methods and methods of universities are constantly innovating. Schools and teachers are using various methods to improve the sense of classroom acquisition for college students. And students gradually understand the importance of knowledge as they grow older, and they work hard to

study harder. Good learning methods can make students do more with less. This article uses factor analysis to analyze the factors that affect classroom acquisition from the material level, thinking level, technical level, spiritual level, and teacher level, constructing an index evaluation system for college students' sense of classroom acquisition, and presents how to improve college students' classroom acquisition. Sense of specific measures. Hope to provide reference for the majority of students, school teachers.

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