

# Research on the Construction of Student-Centered Teaching Evaluation Index System\*

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**Abstract**—Students' evaluation of teaching is an important part of teaching evaluation activities in colleges and universities. The construction of teaching evaluation index system is an important aspect related to the effectiveness of teaching evaluation. Therefore, Qiqihar Medical University carried out research and consultation on the teaching evaluation index system among some teaching managers, teaching supervision experts, and student representatives of the university, with a view to setting up the teaching evaluation indicators and weights that are in line with the law of teaching development and have strong operability through interviews and data analysis, and constructing a set of indicators system of students' evaluation of teaching with clear guidance, scientific perfection and simple operation. The reliability and validity of the indicator system of students' evaluation of teaching can be improved. At the same time, this will provide the basis for the standardization, fairness and objectification of students' evaluation psychology, attitude and behavior, and provide the countermeasures and suggestions for the promotion of teaching development.

**Keywords**—students' evaluation of teaching; index system; construction

## I. INTRODUCTION

Students' evaluation of teaching is an important part of teaching evaluation activities in colleges and universities. It mainly refers to students' accurate, fair and reasonable judgment and definition of the quality of classroom teaching. Its main purpose is to provide teachers with timely information feedback, and the ultimate goal is to improve the teaching effect. Since the introduction of the Western system of students' evaluation in the 1980s in China, students' evaluation has become an important part of the evaluation of teaching quality of higher education teachers in China. It is possible to jointly promote the improvement of teachers' professional quality and teaching level.

In the "2016-2018 Teaching Quality Evaluation Plan", Qiqihar Medical University weights the evaluation methods such as students' evaluation and experts' evaluation, peers'

evaluation, and teachers' self-evaluation to form an evaluation plan for comprehensive assessment of teachers' teaching quality. Students' evaluation accounts for 25% of the comprehensive evaluation weight of the evaluation cycle. At the end of the evaluation cycle, the teaching quality of the teachers in the course is divided into four levels: A, B, C, and D. Among them, A standard of teaching quality requires that students' score in teaching evaluation should be higher than 85 points. If students' score in teaching evaluation should be less than 60 points or students' response is poor, it shall be rated as D of teaching quality after the teaching quality is verified by the teaching supervision group of the university. This shows that students' evaluation of teaching does have an important position in the teaching quality assurance system.

However, in actual work, it is found that the old version of the indicator system of students' evaluation of teaching is more comprehensive and complicated, and the expressions of the indicators are more professional. The students don't understand the content of these indicators, and they can't clearly judge the teachers. Neither from the perspective of students' learning, nor pay attention to students' learning effect, the evaluation results and the actual feelings of teachers and students is deviated. Therefore, the urgent task of improving school teaching management, teaching quality and talent training is to explore and use teaching evaluation activities. Among them, building a scientific and reasonable index system of students' evaluation of teaching is the focus of teaching evaluation activities.

## II. RESEARCH PURPOSE

The establishment of teaching evaluation indicators and the choice of teaching evaluation form are important aspects related to the effectiveness of teaching evaluation. There are many problems that must be paid attention to before evaluating teaching. The scientific nature of teaching evaluation indicators can cover and reflect all aspects of teaching; the indicator elaboration method is student-oriented, and can be correctly understood by students; students' evaluation of teaching activities, etc. stimulate teachers' internal psychological motivation; and teaching managers can use the theory of teacher professional development to guide students to evaluate teaching. Therefore, in April 2017, a survey and consultation of the teaching evaluation index

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system of teaching managers, teaching supervision experts, and student representatives was carried out. The university can set up the teaching evaluation indicators and weights that are in line with the law of teaching development and have strong operability through interviews and data analysis, and construct a set of indicators system of students' evaluation of teaching with clear guidance, scientific perfection and simple operation. This will improve the reliability and validity of the indicator system of students' evaluation of teaching. Also, this indicator system will provide the basis for the standardization, fairness and objectification of students' evaluation psychology, attitude and behavior, and provide the countermeasures and suggestions for the promotion of teaching development.

**III. RESEARCH OBJECTS AND METHODS**

*A. Research Objects*

The objects of this study are teaching management cadres, supervision experts, front-line teachers and students of Qiqihar Medical University. Among them, the teaching management cadres refer to the deans or deputy deans of the secondary colleges; the supervision experts are the experts of supervision department of the university; the selected students include the third-grade, fourth-grade and fifth-grade college student; the front-line teachers refer to full-time

teachers who are passionate about teaching, have profound understanding, actively participate in the teaching reform and practice of medical basic courses. They all participate in or manage students' evaluation of teaching, have a deeper understanding of students' evaluation of teaching, and have an urgent desire to improve the quality of work, which meet the principle of purposeful sampling.

*B. Questionnaire Design*

This research adopts Delphi method. On the basis of "the content of the indicators conforming to the level and characteristics of students' cognitive development", it has absorbed the representative indicator content of students' evaluation of teaching in some Chinese and foreign universities through the literature review and expert consultation. And then, it has developed a questionnaire of students' evaluation indicators of teaching in Qiqihar Medical University, which contains 30 index items. This paper carries out the survey from the item importance evaluation, the main basis of the item judgment and the degree of influence (the basis: theoretical basis, practical experience, domestic and foreign data, intuition), the familiarity with items. After reading through, the survey objects screen the indicators that are deemed important, and fill the judgment basis in the questionnaire. The partial index system of the preliminary design is shown in "Table I".

TABLE I. CONSULTATION FORM ON INDEX SYSTEM OF STUDENTS' EVALUATION OF TEACHING FOR EXPERTS

Number	Consultation project
1	Teachers clarify course requirements and assessment methods before class, and define student learning responsibilities.
2	Before each class, the teacher gives a clear explanation of the teaching objectives and teaching plan of the class.
3	The course content is valuable and informative.
4	The higher requirements put forward by the teachers are enlightening and challenging to me.
5	The teacher's teaching is full of enthusiasm and vigor.
6	The teacher's voice is clear and loud.
7	Good teaching style and characteristics.
8	The teacher is well aware of the difficulties in study.
9	Teachers' expectations of what the students have to master are realistic.
10	Teachers respect and encourage each student to express their views and opinions.
11	Problems encountered in learning can be solved by teachers in time.
12	Using class time effectively.
13	Multimedia resources are properly used in teaching.
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*C. Questionnaire Collection and Statistical Methods*

A total of 20 questionnaires were distributed and 20 were recovered, with a recovery rate of 100%. Among them, 10 copies were distributed to teaching managers; 4 copies were distributed to supervision experts; 3 copies were distributed to front-line full-time teachers; and 3 copies were distributed to students. The questionnaire data was imported into SAS 9.4 for statistical analysis.

**IV. RESULTS**

The weight of students' evaluation of teaching is an important link in the construction of the index system. The index weight reflects the importance of the index in a numerical form. The determination of the index weight is to pave the way for the final rating level. According to the

results of consultation and investigation for the experts, the supervisory experts, teaching management cadres, front-line full-time teachers and students were organized to hold a seminar again, retaining the first 12 indicators and fine-tuning their specific language expressions, condensing into 10 indicators. The order is adjusted according to the implementation process of teaching links, and different weights are assigned according to the importance of indicators, so as to ensure the reliability and validity of evaluation indicators. The index system is shown in "Table III".

TABLE II. ANALYSIS RESULTS OF INDEX SYSTEM OF STUDENTS' EVALUATION OF TEACHING WITH DELPHI METHOD

Number	Indicator	Evaluation of importance	Criterion	Degree of familiarity	Authority coefficient
1	5. Teachers' teaching is full of enthusiasm and vitality.	4.70	0.79	0.76	0.77
2	2. Before each class, the teacher will explain the teaching objectives and teaching plan of this class clearly.	4.60	0.76	0.76	0.76
3	10. Teachers respect and encourage each student to express his/her opinions.	4.50	0.79	0.73	0.76
4	27. I have mastered the main content of this course.	4.50	0.74	0.74	0.74
5	1. Before class, the teacher shall clarify the course requirements and assessment methods, and define students' learning responsibilities.	4.45	0.71	0.74	0.73
6	16. The new terms, concepts, principles and techniques were clearly defined and fully explained by the teacher.	4.45	0.80	0.66	0.73
7	7. Having good teaching style and characteristics.	4.40	0.78	0.72	0.75
8	12. Using class time effectively.	4.40	0.73	0.70	0.71
9	17. teachers and students actively communicate with each other.	4.40	0.84	0.74	0.79
10	6. The teacher's voice is clear and loud.	4.35	0.72	0.77	0.75
11	8. The teacher is well aware of the difficulties in study.	4.35	0.75	0.68	0.71
12	Listening to lectures is helpful for me to understand knowledge.	4.30	0.72	0.72	0.72
13	The teacher makes the class vivid, and we always keep the interest in class.	4.25	0.74	0.75	0.75
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<sup>a</sup> Note: Selecting some indicators as the representative, the prefix number of the entry indicates the original number in the consultation form for the experts.

TABLE III. INDICATORS OF STUDENTS' EVALUATION OF TEACHING IN QIQIHAR MEDICAL UNIVERSITY (TRIAL)

Indicator name	Index Weight	Questionnaire Star Selection form
Before class, the teacher makes clear the teaching objectives of this lesson and students' learning responsibilities.	10	Five stars
Teachers make clear definitions and detailed explanations of new terms, concepts and core knowledge points.	12.5	Five stars
Teachers respect and encourage students to express their views and opinions.	7.5	Five stars
Teachers can effectively arrange and use class time.	12.5	Five stars
Teachers and students actively communicate with each other.	10	Five stars
Teachers' teaching is infectious and attractive.	12.5	Five stars
The teacher gives a lesson clearly and fluently.	10	Five stars
Listening to lectures is very helpful for me to understand and apply the knowledge of this subject.	7.5	Five stars
I was deeply impressed by the teacher's teaching style and characteristics.	7.5	Five stars
I have mastered the main content of this course.	10	Five stars

V. CONCLUSION

Improving the scientific and systematic nature of indicator system of students' evaluation of teaching is a prerequisite for carrying out the activities of students' evaluation of teaching, and is the basis for the expected results of the activities of students' evaluation of teaching. The management of the process of students' evaluation of teaching is also an important factor for good results of students' evaluation of teaching.

When establishing an index system of students' evaluation of teaching, scientific nature requires that it should not rely solely on imagination to construct teaching evaluation indicators. It is necessary to pay attention to investigation and research, and make normalized determination according to certain scientific procedures. In the process of formulating the evaluation index system, this survey has adopted the combination of qualitative and empirical research. From the selection of indicators to the elimination of indicators to the final establishment of the final indicator system, it follows scientific principles. Based

on the scientific principle, the index system of students' evaluation of teaching can be recognized by teachers and students. And then, teachers can try their best to improve teaching. Finally, it can achieve the goal of improving teaching quality.

In the setting of the index content, the language statement should be designed to be specific, contextual, and easy to observe. Some commonly used professional terms will be translated into specific index descriptions, which will help students understand and increase the validity of the evaluation results. At the same time, it is also necessary to avoid duplication or mutual inclusion of indicators. As the most important stakeholders, students are fully involved in the teaching process of the teachers, and they know the teachers' teaching level and teaching status best. If the students can improve teachers' teaching quality through the evaluation, they will be the biggest beneficiary of this activity.

When setting up evaluation indicators, the overall number of indicators should not be excessive. Too many

index items will not be welcomed by students, which will make students feel bored in the process of teaching evaluation, and will also reduce the result validity of students' evaluation of teaching. At present, the students' evaluation of teaching generally use questionnaire survey tools to evaluate teaching. Teachers publish evaluation QR codes before class. Students can answer questions after scanning WeChat. Students are often eager to leave the class, and perfunctory answers will appear. It has been confirmed by research that the number of indicators for students' evaluation is generally 10-15, which saves time and is convenient and operable. Therefore, this study sets the index to 10 items.

It is necessary to improve the process management of students' evaluation of teaching. Although the evaluation index system is one aspect that affects the effectiveness of students' evaluation of teaching, it is far from enough to analyze the integration of evaluation indicators and educational goals. Teachers' intentions and the school's own environment cannot be ignored. One thing that is worth noting is: the subject of teaching is students, especially the fact that it is important to grasp their awareness of teaching evaluation objectively. The implementation of students' evaluation of teaching is also worthy of attention.

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