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The Design and Investigation of Teaching Evaluation Index System under the Background of Research University Construction

Qishui Chi
Business School, Shantou University, Shantou, Guangdong 515063, China

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ABSTRACT

Based on the teaching characteristics of Research-oriented University, this paper designs the teaching evaluation index system of university economics and management courses. The index system includes 6 first level indexes and 31 second level indexes. We select all the graduate students in our school's business school as the survey object to study the importance of indicators at all levels in teaching evaluation. The results show that the weight of learning attitude is the highest among all the first level indicators. In all the secondary indicators, the indicators that can assess research, investigation and other related aspects generally have higher weight. These show that under the background of the construction of Research-oriented University, the traditional teaching mode of instilling knowledge into students by teachers can no longer meet the needs of the development of the times. The education in the new era should transform to the research-oriented teaching mode which mainly cultivates students' research and analysis ability.

Corresponding Author:
Qishui Chi

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1. INTRODUCTION

In the 21st century, with the rapid development of knowledge and science and technology, the traditional "indoctrination" teaching mode in Colleges and universities is more and more difficult to meet the needs of social development for innovative talents under the great changes of the times. The education in the new era requires colleges and universities to deepen teaching reform and innovate teaching modes and methods in order to improve the quality of personnel training.

The development of Yale University, Harvard University, MIT and other top 50 universities in the United States has significantly promoted the economic and social progress of the United States and cultivated many innovative talents.

In the documents of "teaching quality and teaching reform project of higher learning" and "outline of national medium and long-term education reform and development plan", Ministry of education of China proposed to reform the indoctrination teaching mode, explore and practice heuristic, discussion and research teaching methods, so as to realize the transformation of university teaching mode from "injection type" to "research oriented teaching".

It can be seen from the demand for talents, international situation and national policies in the new era that the construction of research-oriented universities is an inevitable choice for many universities in China. Under the background of research-oriented university construction, it is of great significance to explore the teaching reform including undergraduate and graduate courses.

With the development of research-oriented universities, the status of scientific research in university education has been highlighted, which leads to many universities' undergraduate and graduate education paying great attention to scientific research [1]. Neumann (1992) finds that there is a symbiotic relationship between university teaching and scientific research [2]. Kent (2001) conducts a survey on teachers and students of different majors in British universities, and it has found that academic research has a positive impact on teaching. With the profound reform of teaching and learning in higher education system, the university teaching evaluation has also changed [3].

Griffith, Jones and many other foreign scholars pay attention to the new focus issues. Griffith and Reenen (2004) believes that the research on the relationship between teaching and scientific research is more general understanding, without considering the differences and diversity of disciplines [4]. Healey and Jenkins (2006) holds the view that the best way is to let students have the experience of scientific research, evaluate graduate students' learning through research, encourage students to participate in Teachers' scientific research, and pay attention to graduate students' scientific research experience [5]. Jones (2013) believes that the essence between graduate teaching and

scientific research is "two aspects of unity" [6]. Irby and Patricia (2018) believes that teaching and scientific research are symbiotic. It is suggested that universities set up a reward system to encourage teachers to apply scientific research achievements to teaching, so as to promote the common development of teaching and scientific research [7].

2. THE TEACHING EVALUATION INDEX SYSTEM

Before the construction of teaching evaluation system, we should first determine the basic principles of index system construction. Firstly, the research-oriented teaching evaluation index should focus on the combination of teaching and scientific research. Secondly, teaching evaluation needs to balance process assessment and result assessment. Third, we need to consider and balance the universality and particularity of the evaluation index.

Based on the curriculum requirements and the teaching characteristics of Research-oriented University, this paper designs the teaching evaluation index system of university economics and management courses. Specifically, the index system covers five dimensions as follows: teaching content, teaching methods, interactive communication, teacher-pupil relationship, course assessment and learning attitude.

Among them, the evaluation of teaching content has seven observation indexes, as shown in Table 1.

Table 1: Evaluation indexes for course content

Variable	*Observation index*
TC1	Basic principles
TC2	Theoretical application
TC3	Basic concepts
TC4	Basic analysis method
TC5	Frontier knowledge
TC6	Situational knowledge
TC7	Strategic knowledge

According to Table 1, the course content will be evaluated by basic principles, theoretical application, basic concepts, basic analysis method, frontier knowledge, strategic knowledge. Among the seven indicators, there are those focusing on the evaluation of teaching effect, such as Tc1, and those focusing on the evaluation of research, such as TC2.

There are five evaluation indexes of teaching methods, as shown in Table 2.

Table 2: Evaluation indexes for teaching methods

Variable	*Observation index*
TM1	Problem based Teaching
TM2	Exploratory teaching method
TM3	Case teaching method
TM4	Online courses
TM5	Homework based teaching method

The five indexes for evaluating interactive communication are shown as follows (Table 3).

Table 3: Evaluation indexes for interactive communication

Variable	*Observation index*
IC1	Enlightening thinking
IC2	Classroom communication
IC3	Timely response
IC4	Comment on each other
IC5	Project cooperation

The teacher-pupil relationship will be evaluated by TR1, TR2 and TR3 (Table 4).

Table 4: Evaluation indexes for teacher-pupil relationship

Variable	*Observation index*
TR1	Teachers respect students'
TR2	The students listen to the teacher
TR3	Cooperative learning between teachers and students

The eight variables from CA1 to ca8 will be used to evaluate for course assessment (Table 5).

Table 5: Evaluation indexes for course assessment

Variable	*Observation index*
CA1	Course paper
CA2	School assignment
CA3	Software practice
CA4	Group cooperation
CA5	Field Survey
CA6	Research project
CA7	Enterprise practice
CA8	Comprehensive case study

Table 6 shows the three indicators of teaching attitude evaluation.

Table 6: Evaluation indexes for learning attitude

Variable	*Observation index*
LA1	Interested in learning
LA2	The research direction and ideas are clear
LA3	Have the desire to continue to study and

3. QUESTIONNAIRE SURVEY RESULT AND ANALYSIS

3.1 Questionnaire survey result

In recent years, Shantou University has deepened the construction of research-oriented university. Therefore, this study selects all the graduate students enrolled in Business School of Shantou University from 2017 to 2019 as the survey objects. According to the index system designed in front,

consult the relevant opinions on the construction of curriculum index system. The effective questionnaire recovery rate was 73%.

According to the above curriculum index system, it is mainly divided into six aspects: teaching content, teaching methods, interactive communication, teacher-student relationship, curriculum assessment and learning attitude, with a total of 37 attitude evaluation questions. The items were assessed by Likert five-point scale. The items were divided into "very important", "more important", "general", "less important" and "unimportant", and the assignments were 5, 4, 3, 2 and 1 respectively. The designed questionnaire was sent out in the Wechat class groups and circle of friends after the confirmation of counselors and project participants. The indexes weights are determined by students' perception of the importance of each index. The full score of the sample is 5. The average score of each index divided by 5 is the percentage of the index in the full score, and the percentage with higher average score is larger. Then, the percentage of perceived importance of each indicator is normalized, and the corresponding weight of the indicator under the indicator classification is obtained. After calculating the survey data, the corresponding weights of each level of indicators are shown in Table 7.

Table 7: The weight of teaching evaluation indexes

Dimensions	*First level index weight*	*Variable*	*Secondary index weight*
Teaching contents	0.174	TC1	0.134
		TC2	0.146
		TC3	0.127
		TC4	0.148
		TC5	0.148
		TC6	0.152
		TC7	0.146
Teaching methods	0.165	TM1	0.213
		TM2	0.211
		TM3	0.212
		TM4	0.169
		TM5	0.194
Interactive communication	0.170	IC1	0.202
		IC2	0.200
		IC3	0.204
		IC4	0.189
		IC5	0.205
Teacher-pupil relationship	0.159	TR1	0.344
		TR2	0.315
		TR3	0.341
Course assessment	0.153	CA1	0.118
		CA2	0.124
		CA3	0.124
		CA4	0.130
		CA5	0.125
		CA6	0.131
		CA7	0.121
		CA8	0.128
Learning attitude	0.178	LA1	0.329
		LA2	0.333
		LA3	0.339

3.2 Data analysis

According to the results in Table 7, in the design of teaching content, students think that the weight of frontier knowledge, situational knowledge and strategic knowledge should account for a high proportion, reaching 0.148, 0.152 and 0.146 respectively. This is also in line with our expectations. The teaching content should be designed appropriately. Through such measures, it is helpful for students to understand the cutting-edge trend of research and master the relevant knowledge of analyzing business problems and decision-making in different situations. The complete design of teaching content is conducive to the cultivation of students' comprehensive knowledge application ability. Thus, they will have the ability to carry out scientific research projects better.

In the teaching methods, the proportion of problem-based, exploratory and case-based is high, and the proportion is 0.213, 0.211 and 0.212 respectively. This is in line with the current research-oriented university curriculum commonly used teaching methods. Good teaching methods can guide students to find out the shortcomings of enterprise decision-making and inspire them to find out the methods to solve the decision-making problems. The application of enterprise case teaching can make students connect their knowledge with practice and have an intuitive understanding of the phenomenon of enterprise economic management.

In the dimension of interactive communication, the proportion of inspiring thinking, timely response and project cooperation reached 0.202, 0.204 and 0.205 respectively. Students generally believe that it is very important for teachers to inspire students to think, respond and answer their questions. At the same time, students are encouraged to cooperate with each other to solve decision-making problems. In course teaching, the design of communication and interaction is necessary. This is not only conducive to the students to test their own ideas, but also conducive to the expansion of students' thinking.

As to the relationship between teachers and students, the proportion of teachers respecting students, students respecting teachers and cooperation is 0.344, 0.315 and 0.341 respectively. Good teacher-student relationship should be mutual respect, mutual learning and cooperation. Therefore, there is little difference among the three indicators.

Go so far as to the course assessment, the proportion of

scientific research projects was the highest, 0.131, followed by "group cooperation" and comprehensive case study, 0.130 and 0.128, respectively. These show that students pay more attention to the investigation of research.

Finally, in the assessment index of learning attitude, it is found that the proportion of learning attitude is the highest among the six first level indicators, reaching 0.178. This reflects that students believe that the index design of learning attitude is the most important. Change yourself, start with changing your attitude. Good learning attitude can make students better grasp classroom knowledge, so they are willing to participate in research-based learning.

4. CONCLUSION

With the rapid development of economic construction and social development, higher requirements are put forward for the cultivation of talents. Therefore, the traditional "indoctrination" teaching mode in Colleges and universities is more and more difficult to meet the needs of social development for innovative talents under the great changes of the times. The education in the new era requires colleges and universities to deepen teaching reform and innovate teaching modes and methods in order to improve the quality of personnel training. Based on the teaching characteristics of Research-oriented University, this paper designs the teaching evaluation index system of university economics and management courses. The index system includes 6 first level indexes and 31 second level indexes. This selects all the graduate students in STU Business School as the survey object to study the importance of indicators at all levels in teaching evaluation. The results show that the weight of learning attitude is the highest among all the first level indicators. In all the secondary indicators, the indicators that can assess research, investigation and other related aspects generally have higher weight. These show that under the background of the construction of Research-oriented University, the traditional teaching mode of instilling knowledge into students by teachers can no longer meet the needs of the development of the times. The education in the new era should transform to the research-oriented teaching mode which mainly cultivates students' research and analysis ability. In the past 40 years, the reform of China's university education continues to advance, and both the quantity and quality of undergraduates and postgraduates have improved significantly compared with the initial stage. To cultivate innovative talents in the new era to meet the needs of economic construction and social development, we need to implement the concept of integration of science and education, and constantly improve the existing problems in university education. Under the background of the construction of Research-oriented University, the weight of scientific research evaluation index should be increased appropriately.

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