

Research on the Evaluation Index System of Teachers' Professional Ethics in Colleges and Universities Based on Delphi Method

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Abstract: The excellent professional ethics displayed by college teachers in their daily teaching activities can have a profound and lasting impact on the growth of students. Therefore, it is necessary to establish an evaluation index system for college teachers' professional ethics. Using the Delphi method, adhering to the principles of consistency, scientificity, and comprehensiveness, and following the steps of selecting expert group members, constructing preliminary indicators, consulting experts, determining the indicator system, and determining the weight of indicators, this paper constructs an indicator system for evaluating the professional ethics of college teachers, and explores the significance of constructing it, with a view to better promoting the professional ethics of college teachers and assisting in the cultivation of new types of higher talents.

Keywords: Delphi; teachers' professional ethics; evaluation index system

1 Introduction

Colleges and universities are the main channel to cultivate high-quality and professional talents with both virtue and ability. The teachers of colleges and universities are the direct organizers and implementers of teaching activities, the disseminators and interpreters of knowledge, and the guiders and cultivators of moral conduct. Teaching by example is more important than teaching by words. The excellent professional ethics displayed by the teachers of colleges and universities in their daily teaching activities can have a far-reaching and lasting influence on the growth of students. President Xi Jinping, at the National Conference on Ideological and Political Work of Colleges and Universities, put emphasis that we should strengthen the construction of teachers' ethics, adhere to the unity of teaching and educating people, the unity of words and deeds, the unity of dedication and concern for society, the unity of academic freedom and academic norms, and guide the majority of teachers to establish themselves, learn and teach by virtue. This fully demonstrates the importance of the construction of teachers' professional ethics in colleges and universities, and points out the way forward for the construction of teachers in colleges and universities in the new era^[1].

At present, the comprehensive evaluation of teachers in colleges and universities focuses on four aspects: morality, ability, diligence and performance. Among them, "morality" ranks first

in the evaluation content. However, in the actual evaluation process, as long as the teachers do not seriously violate the relevant regulations, the evaluation of their morality will not be too low^[2]. In this way, it is difficult to promote the improvement of teachers' professional ethics. Under such circumstances, it is particularly important to study and construct the evaluation index system of teachers' professional ethics in colleges and universities.

2 The significance of constructing the evaluation index system of teachers' professional ethics in colleges and universities

In 2006, *Cultivation of Professional Ethics of Teachers in colleges and Universities (Revised version)* wrote by the Personnel Department of the Ministry of Education holds that the professional ethics of teachers in colleges and universities refers to the sum of the relatively stable moral concepts, codes of conduct and moral qualities formed by teachers in colleges and universities in the practice of education and teaching. It is the code of conduct regulating the relationship between teachers in colleges and universities and others, between teachers in colleges and universities and the collective and the society^[3]. It is the basic requirement of the society for the professional behavior of college teachers. The evaluation of professional ethics of teachers in colleges and universities refers to the investigation and value judgment of professional ethics cultivation and teaching effect of teachers in colleges and universities in educational and teaching activities. The evaluation results are conducive to teachers' compliance with professional ethics norms and improvement of their own professional ethics.

2.1 It is helpful for colleges and universities to estimate teachers' professional ethics

The construction of the evaluation index system of teachers' professional ethics in colleges and universities is to transform the original language expression of teachers' professional ethics requirements into a measurable and structured index system, which is a ruler for evaluating teachers' professional ethics^[4]. Colleges and universities can evaluate teachers' professional ethics scientifically and objectively according to this ruler, so as to play a role in stimulating and restricting teachers.

2.2 It is conducive to the self-diagnosis of teachers in colleges and universities

The evaluation index system of teachers' professional ethics in colleges and universities is specific and operable. Teachers can constantly check according to the evaluation index system, restrain and standardize their own words and deeds, so as to make the evaluation index system play the role of baton, urging teachers to constantly improve professional ethics and fulfill their duties and missions.

2.3 It is conducive to strengthening the construction of social ethics

In colleges and universities, teachers influence students with their words and deeds and promote the improvement of students' moral quality. After graduation, students will become the major force and backbone of the society^[5]. Their words and deeds also have an impact on the moral quality of officers and soldiers, and therefore, promote the construction of social morality to a certain extent.

2.4 Provide reference for the construction of comprehensive evaluation index system for teachers in colleges and universities

The evaluation of teachers' professional ethics is a part of the comprehensive evaluation of teachers in colleges and universities. The methods and steps of constructing the evaluation index system of teachers' professional ethics in colleges and universities are also applicable to the construction of the comprehensive evaluation index system of teachers in colleges and universities, and can provide references to a certain extent.

3 The Principles of Constructing the Evaluation Index System of College Teachers' Professional Ethics Using Delphi Method

The evaluation index is to refine and organize the evaluation content in order to achieve the evaluation goal. On the one hand, the evaluation index must reflect the evaluation content comprehensively and accurately, on the other hand, the evaluation index must reflect each kind of evaluation content with accurate measurement standards, so as to improve the operability of evaluation^[5]. The evaluation index system is an organic whole composed of several interrelated and interacting evaluation indexes in accordance with a certain hierarchical structure. It is the link between the evaluation subject and the evaluation object, as well as the bridge between the evaluation method and the evaluation object. Only by constructing a scientific and reasonable evaluation index system can a scientific and fair comprehensive evaluation conclusion be reached.

Delphi method, also known as expert survey method, was initiated and implemented by RAND Corporation in 1946. In essence, Delphi method is a feedback anonymous letter inquiry method. Its general process is to collect the opinions of experts on the problems to be predicted, organize, summarize and make statistics, and then anonymously feed back to the experts for comments again, and then it will concentrate information and give feedback until a unanimous opinion is obtained^[6]. The provisions are: first, the survey organizer needs to calculate, make statistic, collate and analyze the results of each round of questionnaire, and then design and formulate the next round of questionnaire content. Second, each expert must participate in each round of questionnaire survey. Third, each expert must express and modify his or her opinions in an anonymous way during multiple rounds of questionnaires. Through this method, high reliability and validity can be obtained. This shows that Delphi method with a certain degree of science and practicality, which is simple and easy to operate, is a collective anonymous thought exchange process in the form of correspondence consultation.

3.1 Consistency principle

First, institutions of higher learning should establish an evaluation index system of teachers' professional ethics construction objectives determined according to their own school-running orientation and school-running philosophy. Second, the evaluation index system is generally composed of multiple indicators at different levels, and the evaluation indicators at each level should be subject to the achievement of the evaluation purpose of the same level.

3.2 Scientific principle

The formulation and selection of the evaluation index system structure, as well as the derivation of calculation formulas, evaluation procedures, evaluation methods and approaches, and the implementation of evaluation programs should comply with a scientific principle.

3.3 Principle of comprehensiveness

The evaluation index system should reflect all aspects involved in the professional ethics of teachers in institutions of higher learning as completely as possible^[7]. It is necessary to consider whether the selected indicators cover all main links of the professional ethics of teachers in institutions of higher learning and whether the influence of the time background is taken into account. For example, with the advent of the “Internet +” era, teachers in institutions of higher learning should not only abide by the professional ethics code in the “real world”, they should also be consistent with their words and deeds in both the “virtual world” and the “real world”.

4 The Process of Using Delphi Method to Construct the Evaluation Index System of College Teachers' Professional Ethics

4.1 Selection of expert group members

There are at least 10 experts on the panel, and the more experts there are, the greater the credibility is. The selection criteria for this study are: at least 15 years of experience in higher education^[8]; teachers or educators with the title of associate professor or above; Bachelor's degree or above.

4.2 Build preliminary indicators

According to the relevant requirements such as *the Code of Professional Ethics for Teachers of Colleges and Universities* issued by the Ministry of Education and the National Committee of Education, Science, Culture, Health and Sports Union of China in 2011 and *the Opinions on Comprehensively Deepening the Reform of the Construction of Teachers in the New Era* issued by the Central Committee of the Communist Party of China and The State Council in 2018, combined with the characteristics of colleges and universities and on the basis of learning from the research results of relevant scholars, following the evaluation index system design principles, this study preliminarily formulated 1 first-level index, 4 second-level indicators, and 50 third-level indicators.

4.3 The first round of expert letter consultation

The first step is to formulate the expert letter consultation form and issue the questionnaire. The expert letter consultation form mainly includes: questionnaire description, main research purpose, requirements and matters of filling, etc.; basic information of experts, including name, gender, age, education background, professional title, years of working in education, etc.; questionnaire contents, including preliminary indicators, expert opinion suggestion column (“agree indicators”, “disagree indicators”, “modify and suggest indicators”). Then send out the questionnaire by mail, and collect the questionnaire a week later. Second, the index selection and analysis. Experts can choose the letter questionnaire based on their own experience, and in

addition, they can fill in relevant opinions in the column of modification and suggestion^[9]. The selection of evaluation indicators is generally based on whether the “agreement indicator” in the expert opinion suggestion column is not less than 2/3 (66.7%) of the number of experts. For the evaluation index that is not less than 2/3 (66.7%) of the number of experts, it is directly entered into the next round of expert letter consultation; otherwise, indicators can be deleted, added or modified according to the experts' opinions and suggestions on the evaluation indicators. For example, in this study, experts believe that among the three-level indicators, the contents of “seriously treat every teaching link”, “carefully teach” and “pay attention to teaching effect” are repeated, so they suggest that only “carefully teach” should be retained. “Treat people with sincerity” and “treat people with courtesy” overlap and repeat, so it is suggested to keep only one of them. It is suggested that the index of “being a good teacher and helpful friend of students” should be classified into the secondary index of “teaching and educating people”; “be students' good teacher and helpful friend” and “care about students' health” have cross repetition, it is suggested to keep only “be students' good teacher and helpful friend”; “strictly implement the examination system” and “proposition, marking papers seriously and responsibly” have cross repetition, it is suggested to retain only “strictly implement the examination system”.

4.4 Second round of expert letter consultation

After sorting out and analyzing the results of the first round of expert letter consultation, the index system was designed as a questionnaire again. The questionnaire, based on Likert 5 scale method, designs five opinions and scores for each indicator according to its importance: “strongly agree (5 points)”, “agree (4 points)”, “not necessarily (3 points)”, “disagree (2 points)”, “strongly disagree (1 point)”, and experts will evaluate the indicators. For the screening of the second round of indicators, based on the concentration degree and coordination degree of expert opinions, relevant indicators were screened, modified and sorted out to form the final evaluation index system. The concentration degree of expert opinions is to analyze the choice of indicators by calculating the arithmetic mean of each indicator scored by experts^[10]. Generally, indicators that score more than 3.5 points are considered as the basis for inclusion. The degree of coordination of expert opinions is to judge the degree of coordination of expert opinions by calculating the variation coefficient value of expert's index score. The coefficient of variation value is equal to the standard deviation of each index divided by the arithmetic mean value of the index. Generally, a coefficient of variation value lower than 0.5 is considered as the basis for inclusion of indicators.

4.5 Determine the index system

According to the results of the above two rounds of expert letter consultation after eliminating and combining related indicators, the remaining indicators are reorganized and further refined, and the evaluation index system of teachers' professional ethics in colleges and universities is finally established (Table 2).

4.6 Determine the weight of indicators

On the basis of determining the index system, the analytic hierarchy process is used to construct the judgment matrix, so as to determine the index weight. Firstly, the index of each level B and C is compared with the index of the next level in pairwise comparison, and the importance is scored. The importance level is divided into five levels: equally important, slightly important,

obviously important, very important and extremely important. The value is assigned as 1, 3, 5, 7 and 9 points. If it is in between the two levels, the middle value can be used. For example, compared with “B1 ideology and politics”, the importance of “C1-1 firm ideal and faith, C1-2 strong sense of ethics, C1-3 practice socialist core values consciously, C1-4 strong sense of responsibility” index is scored as 1, 2, 4, 5 points respectively (Table 1).

Table 1. Judgment matrix relative to “ ideological and political” indicators

	C1-1	C1-2	C1-3	C1-4
C1-1	1	2	4	5
C1-2	1/2	1	2	2
C1-3	1/4	1/2	1	1/2
C1-4	1/5	1/2	2	1

Construct the corresponding judgment matrix according to the scored value, and use the sum product method of analytic hierarchy process to obtain the weight of each index: 0.51, 0.21, 0.11, 0.17. Then the consistency test is carried out on the weight, that is, whether the consistency ratio CR value is less than 0.1 to determine whether the weight is reasonable. If CR value is less than 0.1, the judgment matrix is reasonable and the weight obtained is appropriate; otherwise, the judgment matrix should be rebuilt until the consistency requirements are met. The weights of each index can be obtained by using the same method (Table 2).

Table 2. Evaluation index system of teachers' professional ethics in colleges and universities

Level 1 indicators (A)	Level 2 indicators (B)	Level 3 Indicators (C)
A Evaluation of professional ethics of teachers in institutions of higher learning	B1 Ideological and Political (0.37)	C1-1 Firm ideals and convictions (0.51)
		C1-2 Strong sense of teacher ethics (0.21)
		C1-3 Consciously practicing socialist Core Values (0.11)
		C1-4 Strong sense of responsibility (0.17)
	B2 Love job and dedication (0.21)	C2-1 Love education (0.22)
		C2-2 Conscientiously fulfill the duties of his post (0.08)
		C2-3 Rigorous studies (0.13)
		C2-4 Hard Work (0.10)
		C2-5 Master the ability to cope with Internet information (0.03)
		C2-6 Rational use of the Internet (0.04)
		C2-7 Teach with Care (0.09)
		C2-8 Strong sense of responsibility (0.11)
B3 Be a model of virtue for others	C2-9 Tracks the frontiers of discipline (0.08)	
	C2-10 Keep teaching content up to date (0.06)	
	C2-11 No teaching accidents (0.03)	
	C2-12 Strict implementation of examination system (0.04)	
B3 Be a model of virtue for others	C3-1 Focus on self-cultivation (0.10)	
	C3-2 Incorruptible and self-disciplined (0.04)	
	C3-3 Is consistent with his words and conduct himself with decency (0.04)	

(0.21)	C3-4 Is honest and trustworthy (0.05)	
	C3-5 Plays fair (0.05)	
	C3-6 Loves the group (0.05)	
	C3-7 Works together (0.09)	
	C3-8 Establish equal, respectful, harmonious and healthy interpersonal relationship (0.05)	
	C3-9 Participate in academic exchanges (0.02)	
	C3-10 Pay attention to research ethics (0.07)	
	C3-11 Modest and prudent (0.06)	
	C3-12 Has a good demeanor (0.03)	
	The dress and clothing of C3-13 meet the stipulated requirements (0.02)	
	C3-14 Value pursuit of correct (0.11)	
	C3-15 Healthy life and Fun (0.09)	
	C3-16 Positive (0.07)	
	C3-17 Treats people sincerely (0.06)	
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	B4 Teach and educate (0.21)	C4-1 Strictness and kindness for students (0.03)
		C4-2 Be a good teacher and friend to students (0.07)
C4-3 Respects students' personality and treats students fairly and justly (0.08)		
C4-4 Adopts Internet, WeChat and other means to communicate with students (0.04)		
C4-5 Teaches students to judge, screen and apply knowledge (0.09)		
C4-6 Cultivate students' good moral character and behavior habits (0.15)		
C4-7 Cultivate students' innovation ability (0.18)		
C4-8 Be tireless in teaching (0.09)		
C4-9 Teach according to your aptitude (0.09)		
C4-10 Gives lively lectures with flexible methods (0.06)		
C4-11 Explains clearly, is organized and logical (0.06)		
Solid Professional knowledge and profound knowledge of C4-12 (0.06)		

5 Conclusions

On the basis of analyzing the professional ethics of teachers in colleges and universities, this paper analyzes the current situation of the professional ethics of teachers in colleges and universities. In view of the characteristics of teachers' professional ethics, this paper constructs the evaluation index system of teachers' professional ethics in colleges and universities by using Delphi method. It has a positive effect on summing up the experience and lessons, putting forward countermeasures and suggestions, improving the management of teachers in colleges and universities, forming a benign management mechanism of teachers. So as to further improve the teaching ability of teachers in colleges and universities and students' satisfaction. In the follow-up, the mathematical model of the evaluation index system of teachers' professional ethics in colleges and universities should be further studied, the post-evaluation index system

should be quantitatively studied, and the index system should be verified by the examples of colleges and universities, so as to promote the wider application of the evaluation of teachers' professional ethics in colleges and universities.

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