

Promotion Path of College Teachers' Educational and Teaching Ability under the Background of Educational Informatization

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Abstract:

Teaching is a bilateral activity between teachers and students mediated by knowledge, skills and ethics. In this activity, the core that affects the role of teachers is their educational and teaching ability. This paper expounds the effect composition of teaching activities and defines the nature of education and teaching ability. This paper analyzes the dynamic process in teaching activities and puts forward the core factors that help to improve teachers' teaching ability. Exploring teachers' teaching ability is not only conducive to improving the education and teaching level of post service teachers, but also of great significance to construct the ability structure of pre service teachers. This paper puts forward some suggestions on establishing a special teacher professional development organization to provide training and consulting services for the development of teachers' education and teaching ability. At the same time, this paper encourages the establishment of a mechanism to encourage teachers to improve their education and teaching ability, improve grass-roots teaching organizations, and improve the "mentoring" mechanism of old, middle-aged and young teachers. Finally, this paper proposes that we should rely on the "undergraduate teaching project" to comprehensively improve the education and teaching ability of college teachers..

Keywords: Educational Informatization, Educational Ability, Teaching Ability, Promotion Path.

I. INTRODUCTION

From the current situation of talent training, China's talent training is no longer a problem of insufficient quantity, but a more difficult problem of training quality, which is also the reason why the state attaches great importance to undergraduate education [1-2]. The talents cultivated in Colleges and universities attach importance to knowledge, weaken ability, attach importance to theory, weaken practice, lack of innovation ability and weak adaptability. To solve the dilemma of talent training, teachers need to make [3]. In the "practical trend of undergraduate teaching reform and construction in China's first-class universities", Tang Junya said that the goal of first-class undergraduate education can only be achieved through high-quality teacher teaching and student learning [5-6]. In this process, we need to change the

concept of talent training, change the traditional teaching behavior and comprehensively improve teachers' teaching ability, so as to ensure the quality level of higher education and talent training.

II. THE CURRENT SITUATION OF THE DEVELOPMENT OF COLLEGE TEACHERS' TEACHING ABILITY UNDER THE BACKGROUND OF "FIRST-CLASS UNDERGRADUATE"

2.1 Questionnaire design and sample distribution

The a value of the self-assessment scale of teaching ability in the questionnaire (teacher version) is 0.932, the expectation scale of teaching ability in the questionnaire (Student Version) is 0.916, and the evaluation scale of teaching ability is 0.926, indicating that the questionnaire is consistent and reliable [6-9]. The relevant scales of teaching ability include three parts: Teaching Theory (4 questions), teaching awareness (6 questions) and teaching behavior (11 questions). The kmo value is greater than 0.7, and the validity of the questionnaire structure is good.

The questionnaire was distributed in H University from November 12, 2017 to November 30, 2017, and was randomly distributed by education managers. A total of 450 questionnaires were distributed to students. After excluding the invalid questionnaires, 398 valid questionnaires were recovered, and the effective recovery rate was 88.44%; 400 questionnaires were distributed to teachers. After eliminating the invalid questionnaires, 372 valid questionnaires were recovered, with an effective rate of 93%.

Analyze the distribution of valid questionnaire samples of Student Edition (as shown in Table 1): in the student survey samples, boys account for 40.95% and girls account for 59.05%; Students in Grade 1 accounted for 28.64%, students in grade 2 accounted for 25.88%, students in grade 3 accounted for 35.18%, and students in grade 4 accounted for 10.3%; Students in Humanities and Social Sciences accounted for 31.16%, students in Social Sciences accounted for 13.57%, and students in natural sciences accounted for 55.28% [10].

TABLE I. Distribution of student samples

DESCRIBE	CATEGORY	NUMBER OF PEOPLE	PROPORTION
Gender	Male	163	40.95%
	Female	235	59.05%
Grade	First grade	114	28.64%
	Second grade	103	25.88%
	Third grade	140	35.18%
	Fourth grade	41	10.30%
Major	Humanities and Social Sciences	124	31.16%
	Social Sciences	54	13.57%
	Natural Science	220	55.28%

2.2 Analysis on the differences between students' evaluation and teachers' self-evaluation

The overall level of College Teachers' teaching ability is 3.73. The overall ability level of students is 3.75, both between average and good. The average score of teachers' self-evaluation is slightly lower than that of students' evaluation of teaching. In order to understand the differences between students' teaching evaluation and teachers' self-evaluation in the evaluation of various dimensions of teaching ability. T-test the average scores of students and teachers in the overall level of teaching ability and each dimension of teaching ability. The test results are shown in the table below. It can be seen from table 2 that there is no significant difference between teachers and students in the evaluation of all dimensions of teaching ability. In all dimensions of teaching ability, teachers' self-evaluation of teaching theory is slightly lower than students' evaluation of teaching; Teachers' self-evaluation of teaching consciousness is slightly higher than students' evaluation of teaching; Teachers' self-evaluation of teaching behavior is slightly higher than students' evaluation of teaching. It shows that teachers' self-awareness is relatively clear, and the results of teachers' self-evaluation and students' teaching evaluation are highly consistent.

TABLE II. Differences between students' teaching evaluation and teachers' self-evaluation of teaching ability

DESCRIBE		CATEGORY	AVERAGE VALUE	NUMBER OF CASES	STANDARD DEVIATION	MEAN VALUE OF STANDARD ERROR	DIFFERENCE TEST
Teaching ability	Didactics	Teacher self-evaluation	3.9933	372	0.84046	0.221	Sig.=0.79>0.05
		Student evaluation of teaching	4.0148	398	0.65097	0.279	
	Teaching consciousness	Teacher self-evaluation	3.9695	372	0.9404	0.06895	Sig.=0.35>0.05
		Student evaluation of teaching	3.8871	398	0.66403	0.04869	
	Teaching behavior	Teacher self-evaluation	3.7854	372	0.85893	0.06298	Sig.=0.213>0.05
		Student evaluation of teaching	3.6867	398	0.65275	0.04786	

III. CONSTRUCTION AND TEST OF STRUCTURAL MODEL OF COLLEGE TEACHERS' TEACHING ABILITY DEVELOPMENT UNDER THE BACKGROUND OF "FIRST-CLASS UNDERGRADUATE"

3.1 Establishment of theoretical model

This section mainly explains the construction ideas, research assumptions and theoretical models of the structural model of College Teachers' teaching ability development.

(1) Construction ideas. According to the relevant literature discussion and theoretical analysis, society, schools and teachers are set as the influencing factors of teaching ability, which jointly affect the development of teaching ability. That is, teaching ability is the result and society, schools and teachers are the cause, so as to build a structural model of causal type. The basic idea of building the model is to combine the constituent elements and influencing factors of teachers' teaching ability [11-14]. Teachers' teaching ability (constituent elements) is regarded as endogenous latent variables, and the influencing factors of teachers' teaching ability are set as exogenous latent variables.

(2) Research hypothesis and theoretical model. The important purpose of understanding the influencing factors of teachers' teaching ability is to improve teachers' teaching ability. Then we should not only understand what the influencing factors are, but also understand the relationship between the influencing factors and how much they affect teaching ability. Only in this way can we focus on improving the indicators that have a great impact on teaching ability. The internal factor affecting teachers' teaching ability is teachers, and the external factor is society and school. According to the principle of internal and external factors, no matter how important the external factors are, they must act on the internal factors, and make the following assumptions:

H1: society, schools and teachers influence each other and jointly constitute the influencing factors of teaching ability.

H2: Society and schools affect the development of teaching ability by affecting teachers.

The structural equation model in this paper involves 4 latent variables and 11 observation variables, as follows: the component of the model, the influencing factor, is composed of three latent variables. Latent variable 1: society, which has three observation variables, including policy guidance, fund investment and resource allocation, which is referred to as policy, fund and resource for short; Latent variable 2: school, which has three observation variables, including cultural guidance, organization construction and system guarantee, referred to as culture, organization and system for short; Latent variable 3: teachers. There are two observation variables, including personal development and group cooperation, referred to as individual and group.

3.2 Verification and analysis of structural model

The influencing factors are that the questionnaire is attached to the questionnaire on the current situation of teachers' ability, and the level 5 scale is also used in the questionnaire. Respondents (teachers) should rely on personal experience and subjective understanding to judge the impact of impact indicators on promoting teaching ability. After the analysis of the tested samples, it can be seen that the kmo value of the questionnaire is 0.927, which is greater than the "very consistent" standard of 0.9, and the significance is 0.000.

Data source: College Teachers' Teaching Ability Questionnaire (teachers' Edition). In order to ensure the reliability and stability of the questionnaire, the reliability and efficiency of the data must be tested before the sample data is used for model fitting. Using SPSS to analyze the reliability of the whole scale, the Cronbach's α value is 0.939, which shows that the scale has consistency and reliability. Teaching ability includes teaching theory (4 questions), teaching consciousness (6 questions) and teaching behavior (11 questions). The α coefficients are 0.811, 0.935 and 0.946 respectively; The influencing factors include teacher level, school level and social level.

The path coefficient model includes the path coefficient model and the path coefficient model. The specific results are as follows. (1) Measure the path coefficient of the model. The relationship between factor and latent variable is tested by data, and the path coefficient of the measurement model is obtained. As shown in the following table, at the level of composition content, the valuation between teaching theory, teaching consciousness, teaching behavior and teaching ability is greater than 0.5; At the teacher level, the valuation between individuals, groups and teachers is greater than 0.5; At the school level, the valuation of culture, system, organization and school is greater than 0.5; At the social level, the valuation of policies, funds and society is greater than 0.5, and they are significant.

(2) Path coefficient of structural model. The standardized coefficient value of the structural model path is 0.69-0.95, and the standardized coefficient does not have a negative value or exceed 1. The results show that the model does not violate the estimation and fits well. According to the path coefficient of the structural model, the following conclusions can be drawn: Teachers' factors directly affect the development of teaching ability; Colleges and universities and society play an important role in the development of teaching ability through teachers' internal factors. The previous hypothesis is verified. The paths in the structural model have passed the significance test and are all influential indicators.

After the structural model is verified, the survey data are used to make statistics on the development level of College Teachers' teaching ability and the consistency of influencing factors. Divide the mean value of each observation variable by the highest scale 5 and convert it into a percentage, that is, the coincidence degree of the observation variable; The mean value of the latent variable is calculated by the equal weight of the observed variable, and the coincidence degree of the latent variable is obtained in the same way.

3.3 Interpretation of structural model

The analysis of structural equation model shows that the content of College Teachers' teaching ability is composed of teaching theory, teaching consciousness and teaching behavior. The estimated values of these three dimensions and teaching ability are greater than 0.5, which is significant; The influencing factors of College Teachers' teaching ability are composed of teachers, schools and society. The estimated values between each measurement factor and potential factor are greater than 0.5, which is significant. The above conclusions directly verify the correctness of the dimension division of the framework of first-class teaching ability. It can be seen that it is more scientific to describe the structural model of College Teachers' teaching ability development in two aspects: constituent elements and influencing factors. The constituent elements are composed of three dimensions: teaching theory, teaching consciousness and teaching behavior; The influencing factors include teachers, schools and society. Teachers include individuals and groups, schools include culture, systems and organizations, and social policies and funds.

From the perspective of the whole structural model, the school and social factors in the influencing factors promote the development of teaching ability by promoting teachers' factors, that is to say, only teachers are willing to develop, the external thrust can play its due role; Only when the school allows teachers to develop and the society promotes teachers' development, the internal driving force can continue to play a role. Among the influencing factors of College Teachers' teaching ability, teachers belong to internal factors and schools and society belong to external factors, which is just in line with the theory of external factors driving internal factors. Through the construction of the structural model of the development of College Teachers' teaching ability, we can clearly understand the causal relationship between College Teachers' teaching ability and influencing factors, and quantitatively determine the degree of interaction between various factors, which is convenient for the key management of various factors.

V. CONCLUSION

Taking "first-class undergraduate" as the research background and "teachers' teaching ability" as the research starting point, this paper gradually probes into the constituent elements and influencing factors of first-class teaching ability, and analyzes the relevant paths for the development of College Teachers' teaching ability to the "first-class" level, in order to promote the development of College Teachers' teaching ability and create good conditions for the construction of first-class undergraduate.

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