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## Construction of teaching model in colleges and universities on the basis of multiculturalism

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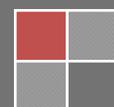
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### ABSTRACT

With the development of economy, the traditional model of personnel training in colleges and universities can no longer meet the needs of social development. Therefore, the cultivation of new diversified talents has become the goal and development direction for colleges and universities. By analyzing the problems in traditional teaching mode in colleges and universities, this essay further elaborates the necessity of establishing the new teaching model under the multiculturalism. Colleges are expected to respect different characteristic of different students and develop their potentials, which is the requirement of multicultural social development, and the need of students' adjustment to the society.

### KEYWORDS

Multiculturalism; New teaching model; Higher education; Education and teaching reform.

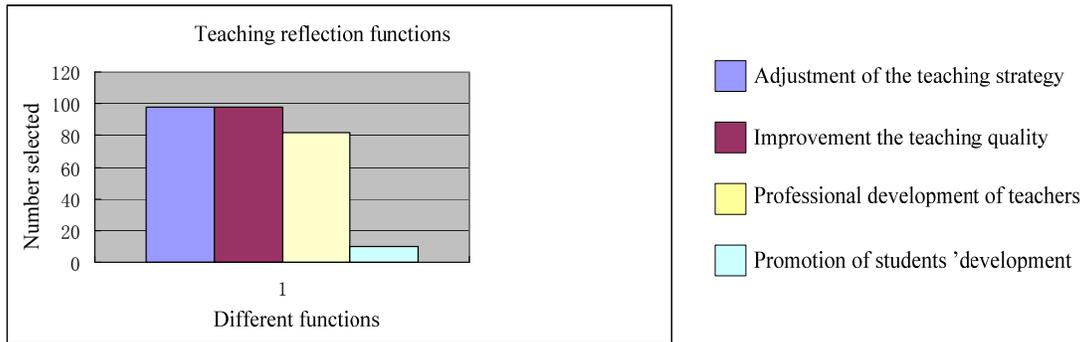


**PROBLEMS IN THE CURRENT TALENTS TEACHING MODELS**

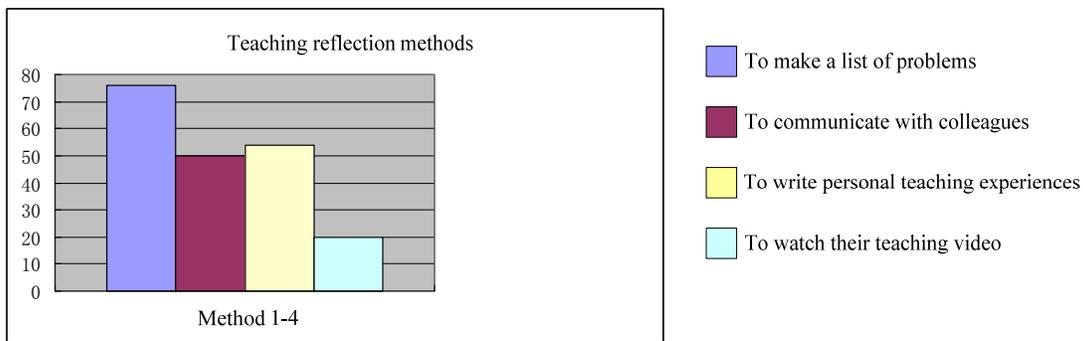
There are several problems in traditional education model, such as major settings, curriculum, training methods, and assessments, which hinder the diversified development of students.

**Inadequacy of teachers' teaching reflection**

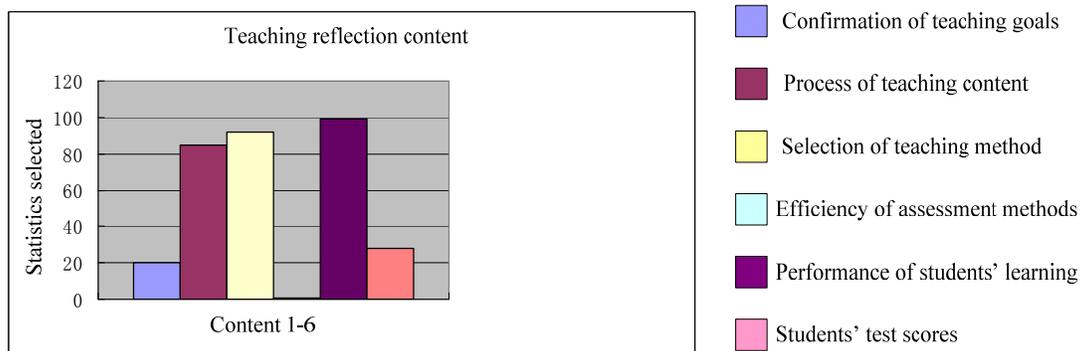
There are survey results and statistics from 100 teachers in one college below. The survey is conducted in the aspect of teaching reflection content, teaching reflection methods and teaching reflection functions. These results are shown as followed Figure 1, Figure 2 and Figure 3.



**Figure 1 : The Teaching reflection functions**



**Figure 2 : Teaching reflection methods**



**Figure 3 : Teaching reflection content**

As we can see in the Figure 4, in order to further improve teaching quality, it fails to realize that the teaching reflection aims to prepare students to adjust the multicultural development, and to promote their diversified qualities. Therefore, most of teachers has not truly understood the importance of teaching reflection in the multicultural society.

From the Figure 2, different teachers share different methods and views about teaching reflection methods, as well as the concrete processing course. There is no consensus on the teaching reflection. Apparently, the teaching reflection varies and does not receive enough attention from teachers.

The Figure 3 is in the aspect of teaching reflection content. Most of teachers think more attention should be put on the teaching content, teaching methods and students' test scores. These are only parts of teaching reflection content, so it is clear that there are limitations on teachers' teaching reflection contents.

### **Teaching dominance of teachers in colleges and universities**

Teaching and cultivating students are the basic tasks of the teachers in colleges and universities, while teaching is the most fundamental task and the main function of teachers. However, most of colleges and universities focus too much on scientific research and serving the society, not on students' research, teaching research and related knowledge research. They are unable to implement the requirements for college students in the pluralistic society. The main problem stems from these excessive college assessments, because teachers do not aim at the subject of teaching. When it comes to new teaching methods, they make research and serve the society without the concern of students.

### **Problems of students' self-positioning**

Students are the foundation of colleges and universities. Without students, colleges and universities will become meaningless. Therefore, to give an appropriate position to students is essential to cultivate qualified talents for the society. Recently, many colleges and universities now are most concerned about school teachers' professional ethics and the teaching environment, little attention the influence of the social diversity in different times received by students. The diversity of society development is filled with college students, a special group of people, who have not been truly integrated into the society, do not have clear self-positioning for their life. Hence, the simple teaching has little help on students' understanding of the social forms and it is vital to give an appropriate position to students to create more chance for them to contact and to learn more about the pluralistic society.

### **Major settings in colleges and universities cannot fulfill the development of the pluralistic society**

Some colleges' personnel training approach is to train the closed-end talents who are proficient in the single skill. Their major settings lack comprehensive consideration and diversified design, and their professional ranges are narrow, which are unable to adjust the demands of talents in the pluralistic society. The global strategic thinking about major settings is quite inadequate, too. Although the major settings in colleges and universities have been relatively improved, they still cannot fully meet the fundamental requirements of the society.

### **Curriculum system is incomprehensive**

The traditional curriculum system is incomprehensive, which attaches great importance to professional courses without the diversified development of students in the teaching process. There are no reasonable and comprehensive arrangements for students' quality structure. Now, in order to adapt to the needs of the society, some colleges and universities add some short-term professional courses and practical disciplines, but fail to take into account students' basic skills, making students' basic literacy unable to meet the requirements.

### **Unreasonable assessment system**

The main assessment mode in most colleges and universities resorts to examination. Examination modes often are traditional examinations and investigation, while test is still the most widely used, mainly focusing on students' theoretical level and test-taking ability. Ineffective assessment modes hinder students' integration into the society and practice. The good exam results get reward, while bad results get punished, which may block students' thinking and cannot achieve a better training and development without innovative thinking.

## **HOW TO CONSTRUCTION DIVERSIFIED MODEL OF PERSONNEL TRAINING IN COLLEGES AND UNIVERSITIES**

Many universities have carried out the construction of students' evaluation of teachers system. In the system, all students can evaluate their teachers in the form of scoring and give a comprehensive evaluation on their teachers' teaching. Therefore, colleges and universities can gain an understanding of teachers' teaching through scores that are marked by their students. However, some teachers' scores are not correspondent with their teaching ability.

According to the formula, we can calculate evaluation results of students' diverse cultures and teachers' scores are between 25 and 52. The formula is shown as followed:

$$x_i = \frac{5.2 \times n_1 + 4.1 \times n_2 + 3 \times n_3 + 2.9 \times n_4 + 2.5 \times n_5}{n_1 + n_2 + n_3 + n_4 + n_5}$$

$n_j (j = 1, 2, 3, 4, 5)$  refers to the number of students who choose the option  $j$ .

The corresponding index rated values of different evaluation component distribution are not reasonable in the formula. These grades, such as "excellent", "good", "fine", "poor" and "awful" should be quantified to reach the centesimal system requirements and reasonable gaps between coefficients. After comprehensive consideration, these coefficients could be 10,8,6,4,2. The formula can be changed as followed:

$$x_i = \frac{10 \times n_1 + 8 \times n_2 + 6 \times n_3 + 4 \times n_4 + 2 \times n_5}{n_1 + n_2 + n_3 + n_4 + n_5}$$

**The preparation of the model**

To confirm the construction of the matrix:

For  $n$  elements, we can get the judgment matrix  $A = (a_{ij})_{n \times n}$ .  $a_{ij}$  presents the important values related to the target between the factor  $i$  and the factor  $j$ . in general, the construction of judgment matrix is shown as the Figure 4:

$P_k$	$A_1$	$A_2$	...	$A_n$
$A_1$	$a_{11}$	$a_{12}$	...	$a_{1n}$
$A_2$	$a_{21}$	$a_{22}$	...	$a_{2n}$
...	...	...	...	...
$A_n$	$a_{n1}$	$a_{n2}$	...	$a_{nn}$

**Figure 4 : Judgment matrix**

In the analytic hierarchy process, to make the decisive judgment quantitative and to form the numerical judgment matrix, the judgment should be quantified on the basis of a certain ratio scales. In general, we follow the common way to scale, which is shown in TABLE 1.

**TABLE 1 : Scales and definition of judgment matrix**

Scales	Definition
1	Comparing two factors, they have the same significance
3	Comparing two factors, the former is slightly more important than the latter
5	Comparing two factors, the former is obviously more important than the latter
7	Comparing two factors, the former is highly more important than the latter
9	Comparing two factors, the former is extremely more important than the latter
2, 4, 6, 8	These intermediate values of adjacent judgment
Reciprocal	If the ratio of importance between the factor $i$ and the factor $j$ is $a_{ij}$ , the ratio of importance between the factor $j$ and the factor $i$ is $a_{ji} = \frac{1}{a_{ij}}$

The consistency of judgment of the matrix  $A$ :

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

The maximum eigenvalue of the matrix is  $\lambda_{max}$ , and the dimension of the matrix  $A$  is  $n$ .

$CI$  value is higher, which represents the deviation between the judgment matrix and full consistency is greater;  $CI$  value is lower, which means the consistency of the matrix is good; when  $CI=0$ , the matrix  $A$  is in the full consistency.

For different orders of judgment matrix, the consistency errors of judgment are different, while the requirement of  $CI$  is also different. In order to make sure whether different orders of judgment matrix have the satisfactory consistency, we

also need to introduce the random consistency index value of judgment matrix, *RI*. For the order from 1 to 9, *RI* values are listed in the TABLE 2.

**TABLE 2 : Average random consistency index**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45

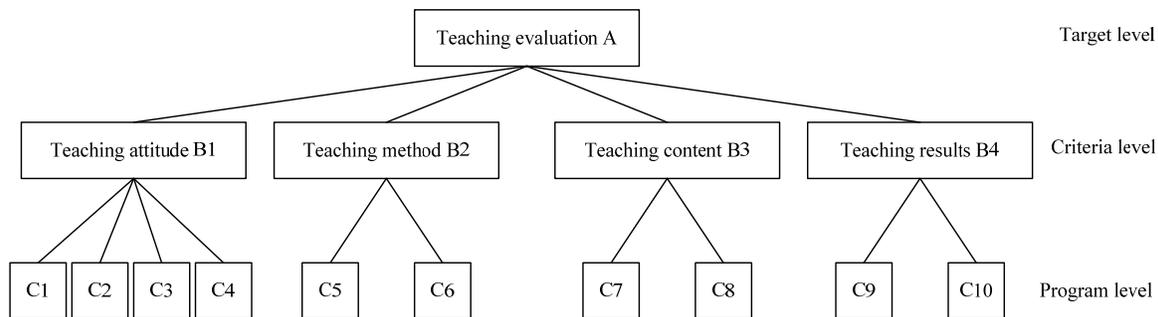
As for the order of 1 and 2, *RI* is only formal, for the matrix of 1 and 2 order has the perfect consistency. Above the order of 2, the ratio between the consistency index of judgment matrix *CI* and average random consistency index under the same order *RI* is *CR*. When  $CR = \frac{CI}{RI} < 0.10$ , the judgment matrix has the satisfactory consistency. Or the judgment matrix should be adjusted for the satisfactory consistency.

**The construction and solution of the model**

**Analysis of the hierarchy structure**

By using the hierarchy analytic approach to evaluate the teaching of teachers in colleges and universities, the first job is to make the problem more structured and organized to construct an the model of analytical hierarchy process structure. A good hierarchy structure is vital to solve the problem, which determines the effectiveness of the analysis results.

According to the analysis, these ten second-level indicators above are classified into four first-level indicator respectively based on their similarity. These four first-level indicators are for the evaluation of teacher's teaching ability, so we can construct a hierarchy analytic structure as is shown in the Figure 4.



**Figure 4 : Hierarchy analytic structure of classroom teaching evaluation**

There are three levels in the analytic hierarchy process model of teachers' evaluation. The highest level is classroom teaching evaluation, which can ensure the scores objectively reflect teachers ' teaching standard. In the middle, the criteria level is also considered as four criteria of teaching evaluation, including teaching attitude, teaching method, teaching content and teaching results. The lowest level is program level, all evaluating indicators.

After the construction of hierarchy analytic structure, it is much easier to analyze the problems, that is, the proportions and priorities of each indicator compared with the total target.

**The establishment and solution of judgment matrix**

After the completion of analytical hierarchy model, pairs of factors in each level can be compared and the comparative judgment matrix can be constructed. When the factors are under comparison, the criticality of the factors can be flexible, for example, due to relevant school policies. The main analytic task of hierarchy analysis is to find out the relative importance of factors in each level. Programming with MATLAB is to examine the consistency of the judgment matrix and to calculate the maximum eigenvalue of each judgment matrix and the corresponding eigenvector, which then will be normalized together.

**The judgment matrix between criteria level and target level**

The first-level indicators are shown in the TABLE 3:

**TABLE 3 : The judgment matrix of four first-level indicators**

<i>A</i>	<i>B</i> <sub>1</sub>	<i>B</i> <sub>2</sub>	<i>B</i> <sub>3</sub>	<i>B</i> <sub>4</sub>	Weight
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$B_1$	1	$\frac{1}{2}$	$\frac{1}{5}$	$\frac{1}{3}$	0.089
$B_2$	2	1	$\frac{1}{3}$	$\frac{1}{2}$	0.156
$B_3$	5	3	1	$\frac{1}{2}$	0.351
$B_4$	3	2	2	1	0.404

In this matrix, we calculate and get :  $\lambda_{\max}=4.177$ ,  $CI=0.592$ ,  $CR=0.0658<0.10$ , which fits the consistency check,  $WC_i=[0.089024 \ 0.15635 \ 0.35116 \ 0.40346]$ .

**The establishment of the model**

To define the normalization factor:  $\alpha = \frac{S - M}{M}$

The score that students give to their teacher in the course is represented by S, the average score of this course in this college is represented by M.

If  $\alpha=0$  , the score that students give is equivalent to the average score of this college.

If  $\alpha > 0$  , the score that students give is higher than the average one.

If  $\alpha < 0$  , the score that students give is lower than the average one.

The difficulty degree of each course can be unified by the average values of different courses, and can be established by using the formula of unified standard for course evaluation:  $P = 50 \times (1 + \alpha)$ ,  $Q = \frac{1}{n} \sum_{i=1}^n P_i$ .

The range of P is  $0 < R \leq 100$ ; Q stands for the average score of different courses that the teacher teaches in the semester.

**The evaluation of the model**

The goal of the diversified teaching training is to establish the planning of educating character-oriented personnel. First, it is the mission for China’s colleges and universities to cultivate innovative talents and new diversified talents. Based on a large amount of practices, we can see the personalization is the basis for innovation, and the individualized education is inevitable route to cultivate innovative talents, who is the powerful force to achieve scientific and technological progress and social development. The core of personalization is innovation, while colleges and universities shoulder the responsibility of the cultivation of innovative consciousness and innovative talents. Second, because different students have different characteristics, the second largest goal for colleges and universities is to cultivate more application-oriented diversified talents on basis of students’ different characteristics with the aim to train application-oriented talents, who can adapt to all economic development demands of different industries under different circumstances. Therefore, it requires that students have a solid knowledge of basic skills, extensive professional horizon and ability to apply what they have learned into practice.

**Strategies of multicultural talents training in colleges and universities**

First, it is necessary to reform teaching and educational thinking and establish the one which confirms to the development of pluralistic society. We should work to effective management and the deepening of the educational reform. From the perspective of teachers ' and students ' needs, the teaching mode of teachers should be transferred from the management mode into a service mode, which makes the knowledge and moral cultivation of students closer to teachers and society. Only when colleges and universities establish a correct understanding of education and teaching, can they work out policies and measures correspondent to students’ personalized development and social development, and can cultivate more diversified and innovative talents for the society. Human is the essence of management. First, we should make out a good teaching system to improve the moral quality of administrators and teachers, who should develop a comprehensive understanding of the diversified development of education and the students ' individual development. Only in this way can they influence their students from educational management and teaching and help students receive more diversified education. First of all, colleges and universities should integrate their discipline systems to expend their students’ professional skills. The professional system should satisfy both the social needs and students’ individual development. University is the educational stage to acquire comprehensive knowledge. Students should develop practical abilities of different subject and integrate different disciplines together. Moreover, colleges and universities should integrate their course systems. The personalized educational mode requires the course system that can meet students’ needs. The course system is

designed to put equivalent emphasis on both arts and sciences, and to complement the two, with interdisciplinary integration. In the meantime, the practical courses and internship courses should be increased to enable students to exercise their ability of adjustment to society in practice, which help foster more diversified talents fulfilling the needs of social development. Third, based on the diversification of education and teaching, we should adopt diverse but non-cramming teaching methods. The course should focus on inspiring thinking and promoting abilities, as well as students' experience and perception during the teaching. Teachers should encourage their students to open their minds to form a student-centered and teacher-directed teaching model, which are the requirement of personalized education and the education aiming at diversified talents cultivation. In order to change the traditional teaching model, during the teaching process, teachers should respect students' main position, turning themselves from a dominator into a participant, and encourage students to talk about problems voluntarily to help students form individual and dominant consciousness.

### CONCLUSION

With the continuous development of society and increasingly more demands for diversified talents, colleges and universities should carry out reforms to conform to the social development, and change the traditional teaching and educational model to cultivate innovative talents who can make more and greater contributions to China's socialist cause. The traditional educational thinking has a deep influence on colleges and universities, so its reform is a gradual process. Only if the personalized training model is fully implemented through protracted and unremitting efforts, the ultimate goal will be achieved and China's science and technology building will be completed, to make China stand on top of the world.

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