

## Study on Quantitative Evaluation Mechanism of Achievement Degree of Training Objectives of Traditional Chinese Medicine Major

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**Keywords:** Chinese medicine specialty; Achievement of training objectives; Quantitative evaluation mechanism

**Abstract:** On the basis of the evaluation index system of attainment degree of training objectives of TCM specialty constructed earlier, this paper adopts expert consultation method, from the evaluation ideas, evaluation procedures, evaluation index weights, assessment methods of supporting courses and related observation points, data collection methods, calculation methods of attainment degree of training objectives and evaluation criteria. Quantitative evaluation mechanism of TCM professional training target achievement degree was studied in terms of quasi-evaluation cycle and so on.

### 1. Introduction

Achievement degree of specialty training of traditional Chinese medicine refers to the degree to which the training objectives of undergraduate specialty of traditional Chinese medicine (abbreviated as "specialty of traditional Chinese medicine") formulated by colleges and universities of traditional Chinese medicine have been achieved. <sup>[1]</sup> The evaluation of talent training quality in Colleges and universities can be divided into two ways: in-school evaluation and out-of-school evaluation. The in-school evaluation is based on whether the quality of talent training meets the requirements of professional training objectives. The evaluation of talent training quality is not only to judge the value and level of talents, but also to provide basis for further promoting the reform of education and teaching and improving the quality of education and teaching in Colleges and universities. The evaluation system of talent cultivation quality mainly consists of evaluation index, evaluation weight, evaluation method and evaluation criteria. The scientific, reasonable and operable evaluation system of talent cultivation quality requires objective and scientific evaluation index, reliable and credible evaluation weight reliability, strong operability of evaluation method and evaluation criteria conforming to reality. On the basis of the evaluation index system of training goal attainment degree of TCM specialty constructed earlier, this paper adopts expert consultation method, straightens out the evaluation thinking, clarifies the evaluation procedure, analyses the weight of evaluation index, and determines the evaluation methods, data collection methods, calculation methods of training goal attainment degree, evaluation criteria and evaluation cycle of supporting courses and related observation points. In this paper, the quantitative evaluation mechanism of the attainment degree of the training objectives of TCM specialty is analyzed in depth.

### 2. Research on Quantitative Evaluation of Achievement Degree of Training Objectives of Traditional Chinese Medicine Major

According to the previous research, the evaluation index system of training goal achievement degree of TCM specialty includes 7 first-level evaluation indexes, 21 second-level evaluation

indexes, 74 supporting courses and related observation points. In the evaluation work, firstly, we evaluate the achievement degree of the support courses and related observation points of TCM specialty, then retrospectively evaluate the achievement degree of the corresponding indicators of the support courses and related observation points of TCM specialty (i.e. the secondary evaluation index), and then, by analogy, evaluate the achievement degree of graduation requirements (i.e. the first grade evaluation index), and finally form the training objective of TCM specialty. Thirdly, the evaluation results are analyzed to summarize and summarize the problems in theory teaching, practice teaching and the second classroom. Finally, the relevant countermeasures and suggestions are put forward to improve teaching and improve the quality of personnel training. In the process of evaluation practice, the current curriculum system construction, faculty construction and related guarantee conditions of TCM specialty in Colleges and universities are taken as evaluation conditions, and the satisfaction survey of graduates of TCM specialty and the training survey of talents of TCM specialty are taken as social feedback and the relevant evaluation results are verified.

### **3. Research on Quantitative Evaluation Procedure of Achievement Degree of Training Objectives of Traditional Chinese Medicine Major**

According to the thinking of evaluation work and the actual needs of quantitative evaluation, the specific procedures for quantitative evaluation of training objectives of TCM specialty are as follows: (1) Data acquisition: to collect nearly three courses of TCM specialty from the educational administration department, to participate in the second classroom, teaching practice, graduation practice, teacher-to-teacher practice, graduation examination, clinical skills assessment, etc. Assessment results<sup>[4]</sup>; (2) Calculate the evaluation scores of the first-level evaluation index, the second-level evaluation index, the supporting courses and the related observation points: First, calculate the average scores of the evaluation scores of the supporting courses and the related observation points, and then calculate the evaluation scores of the supporting courses and the related observation points by combining the weight coefficients of the supporting courses and the related observation points, and so on, get the evaluation scores of the supporting courses and the related observation points. The evaluation scores of indicators and first-level evaluation indicators; (3) Computing the comprehensive scores of training objectives of TCM specialty: accumulating the evaluation scores of first-level evaluation indicators means obtaining the comprehensive scores of training objectives of TCM specialty; (4) Analyzing and evaluating results: Evaluating the comprehensive scores according to the training objectives of TCM specialty, and evaluating the comprehensive scores of each level of evaluation indicators, and (2) Evaluating the comprehensive scores according to the training objectives of TCM specialty. Grade evaluation index, supporting courses and relevant observation points were scored, and the overall realization of training objectives, graduation requirements and the realization of relevant training links were analyzed.

### **4. Weight Analysis of Evaluation Index of Achievement Degree of Training Objectives of Traditional Chinese Medicine Specialty**

Weight analysis of evaluation index is an important part of building evaluation system, and it is also one of the conditions for carrying out evaluation practice and guaranteeing objective and fair evaluation results. After constructing the hierarchical structure model and judgment matrix, calculating the combination weight coefficients of each evaluation index, evaluating the weight assignment of each evaluation index, and normalizing the data, the paper tests whether the weight coefficients are in accordance with the relevant logic. The calculation shows that  $CR = 0.0524$ , which shows that both  $CI$  and  $CR$  are less than  $0.10$ . The judgment matrix is reasonable and accepts the score of weight coefficient. The weight coefficients of 20 experts are collected to score the evaluation indexes, and the average number is calculated. The comprehensive evaluation weight coefficients table of evaluation indexes at all levels is obtained (see Table 1). Due to space

constraints, the weight coefficients of the first-level evaluation index and the second-level evaluation index are listed, but the weight coefficients of the supporting courses and related observation points are not listed.

**Table 1 The weight of the evaluation indicators for the goal attainment degree of training in traditional Chinese medicine major**

First-level evaluation indicators	Weights	Second-level evaluation indicator	Weights
Be of good ideological, moral and professional qualities	0.2266	Be of good ideological and moral character, social morality and professional ethics, and have the concept of practicing medicine according to law	0.0851
		Support the leadership of the Party, have a firm and correct political orientation, master the theoretical system of socialism with Chinese characteristics, be willing to serve the development and construction of the country and the people's health, and have the aspiration and sense of responsibility to strive for the prosperity of the country and the nation	0.0896
		Have good professional accomplishment	0.0519
Master the basic theoretical knowledge and skills of the major	0.2135	Master the basic knowledge and skills of basic theory of traditional Chinese medicine, TCM diagnosis, Chinese medicine, prescription and acupuncture and moxibustion	0.0832
		Master the four classical theories and have the ability to apply them initially	0.0680
		Master the necessary basic knowledge of modern medicine and related experimental skills	0.0314
		Be of strong awareness of disease prevention and public health	0.0173
		Master certain knowledge of health preservation and health care in TCM	0.0136
Master the basic clinical theoretical knowledge and skills of the major	0.1907	Master the basic knowledge and skills of clinical diagnosis and treatment on various common and frequently-occurring diseases with traditional Chinese medicine	0.0735
		Master the necessary basic knowledge and skills in modern clinical medicine	0.0350
		Be of the ability to use professional theory and skills to conduct comprehensive, systematic and correct disease diagnosis, collect medical history, write medical record and express. Be of the ability to correctly use traditional Chinese medicine prescriptions, acupuncture and other treatments for syndrome differentiation and treatment of common diseases and frequently-occurring diseases. Be of the ability to rationally select modern clinical diagnosis and treatment techniques, methods and means for initial diagnosis and treatment of common diseases and frequently-occurring diseases.	0.0822
Be of strong scientific literacy and critical thinking, Chinese medicine thinking and Chinese medicine inheritance ability	0.1681	Be of certain scientific literacy and critical thinking	0.0421
		Have thinking ability of TCM such as holistic thinking ability, abstract and mathematical thinking ability, logical thinking ability and dialectical thinking ability.	0.0798
		Have certain ability in studying classics, inheriting the academic thinking of the tutor, and inheriting clinical	0.0462

		experience.	
Master certain knowledge and skills of sports and military theory	0.0560	Have a certain knowledge of sports, master the basic methods of scientific exercise, and develop good physical exercise habits	0.0399
		Have certain basic military knowledge	0.0161
Master a foreign language	0.0451	Have a certain ability in English listening, speaking, reading and writing	0.0167
		Have the ability to access medical literature and communicate in a foreign language	0.0284
Have good humanities, scientific qualities and innovative thinking ability	0.1000	Master certain humanities and social knowledge of medical humanities, traditional culture and art	0.0295
		Master certain natural science knowledge in computer science, biology, etc.	0.0187
		Have the creative thinking ability to creatively propose and solve problems	0.0518

## 5. Research on Other Related Elements

In order to ensure that the evaluation process is scientific and reasonable, and the evaluation results are reliable and credible, besides constructing the evaluation index system, clarifying the evaluation ideas, procedures and analyzing the evaluation weights, it is necessary to clarify the methods of data acquisition, calculation of achievement degree (elaborated in the previous article), support the evaluation methods of courses and related observation points, evaluation criteria of achievement degree of training objectives and evaluation cycle, etc. Content.

In order to ensure the validity of the assessment results of supporting courses and related observation points, the assessment methods are of great importance. According to the nature of the supporting courses and related observation points, their assessment methods can be divided into two categories: examination and examination. The assessment methods of compulsory courses are examination. Most courses adopt written examination, some courses adopt the combination of online examination and written examination, and a few courses adopt the way of online examination. The main assessment methods of elective courses are examination, while a few courses adopt examination. Examination mode; examination mode of the second classroom project; examination mode of teaching practice, graduation practice and teacher-to-teacher practice are all exams, theoretical part is written examination, practical operation part is clinical operation examination; examination mode of graduation examination is exam as its name implies; clinical skill examination is simulated clinical practice examination. In order to effectively judge the quality of TCM personnel training, the evaluation criteria of TCM professional training goal attainment degree are divided into four levels by consulting experts: more than 85 is divided into "excellent" level; more than 70 is equal to 70 is less than 85 is divided into "good" level; more than 60 is equal to 60 is less than 70 is divided into "qualified" level; less than 60 is divided into "unqualified" level. In order to fully reflect the whole process of TCM talents education and teaching, and to ensure the objectivity of data, the evaluation period is determined to be one year.

The evaluation of talent training quality is a systematic project, which not only ensures that the evaluation index system is scientific and objective, but also makes the evaluation mechanism conform to reality and operable. At the same time, the evaluation results can provide reliable realistic and theoretical basis for improving teaching and improving the quality of talent training. This paper will provide a reference for further developing the practice of quality evaluation of TCM personnel training, and also provide ideas and paths for further research on quality evaluation of TCM personnel training.

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