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Research on Professional Index System of Applied Technology Universities in China

Qinglan Luo[1, a *], Chunyan Wang[1, b*] and Xin Su[1, c]

[1]College of Business Administration, Jilin Engineering Normal University, Changchun, China

[a]sunny203@126.com, [b]541012329@qq.com, [c]328570200@qq.com

*The corresponding author

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Abstract. The application technology universities developed after the technology universities union building in 2013. In the existing literature, the research about applied technology university is relatively a few, especially for the research about professional evaluation of application technology universities almost blank. There is not a set of complete and effective professional evaluation index system until now. Therefore, based on the analysis of the professional evaluation index system of university in foreign developed countries, this paper built evaluation index system of application technology universities from four aspects, what are professional position and characteristics, teaching staff, teaching construction, teaching effect and social evaluation. We hope it can provide evaluation standard and reference for construction of application technology universities.

Introduction

Since the universities enrollment expansion, Chinese higher education got unprecedented development. It not only satisfies the social demand, but also cultivates more talents for the society. Higher education plays an important role in the development of local economic and social and is paid attention by more and more people [1]. With the development of higher education in China, it is becoming the urgent problems about how to increase the teaching quality of higher education, improve the structure of talent training through professional setting and adjustment to serve for the local economy [2]. Therefore, based on the bottleneck in the developing of application technology university , this paper takes the professional evaluation as the research object of the application technology university, through the design of its index system, to help application technology university find its orientation, avoid the homogeneity development for comprehensive evaluation. And it can also help to avoid the disorientation, talents training target convergence, being short of the corresponding characteristics and advantages in the process of popularization. So that we can promote the application technology universities developing smoothly and orderly, help it transition successfully and give full play to the advantages and functions of all kinds of colleges and universities. This paper has profound significance whether for colleges' evaluation, the application technology development, and high quality applied talents cultivation, or for the government macro management and higher education development.

Analysis on the Professional Evaluation Index System of Application Technology University in Developed Countries

In general, professional evaluation system can be divided into three parts in western developed country [3], namely the university itself, intermediary organization, and government dominant assessment (showing in Fig. 1). University assessment means diagnosing and improving. Intermediary organization assessment means understand and supervision the university's evaluation process. Government assessment means guiding the direction of running and regulating the funds of assessment activities. Analyzing on the lesson of university professional evaluation in the developed countries

experience, it is very useful for the construction of evaluation index system of application Technology University in China [4].

Figure 1. Higher education assessment main body and content of western developed countries

In some developed countries, application technology universities were established in the 1970s. It has been more than 30 years. applied technology university of, Han who is director of the center for Chinese higher education coming from German Osnabruck said, application technology university is a self-contained pillar in the German system of universities, the seven famous application technology universities building the elite league in German. One of vice-chancellors in Stenden University, Dai Hao said there are 70 percent of college students who study in vocational technical college in Holland. Community colleges of 24 states allow for vocational and technical education of undergraduate level in America. In Germany, Switzerland, Finland, the Netherlands and other countries which have more application technology universities, their competitive force are not only in the top of the world, but also the unemployment rates are low.

The first to evaluate is university in the United States. Its main evaluation index as: peer review, freshman admission standards, teacher resources, graduation rates and freshman retention, financial resources, alumni donations, graduate performance, etc. [5]. How to set the professional curriculum, formulate the curriculum standards and decide on procedures of assessment and quality assurance are traditionally depend on profession itself. Its index system mainly include: student satisfaction, research quality, enroll standards, and student-faculty ratios, services and equipment investment, students completion, the good academic reputation, graduate prospects[6]. In Finland, whether to participate in the evaluation is the autonomy of institutions of higher education. The assessment activities carried out on the basis of the principle of voluntary. In the specific assessment activities, according to its development plan institutions of higher education choose domestic or internationally recognized evaluation criteria [7].

Design on the Professional Evaluation Index System of Application Technology University in China

Evaluation Index System Design Process. In actual professional evaluation, it really needs to establish a scientific, comprehensive, and accurate evaluation index system, which is an important part [8]. The steps of evaluation index system are showing in Fig. 2.

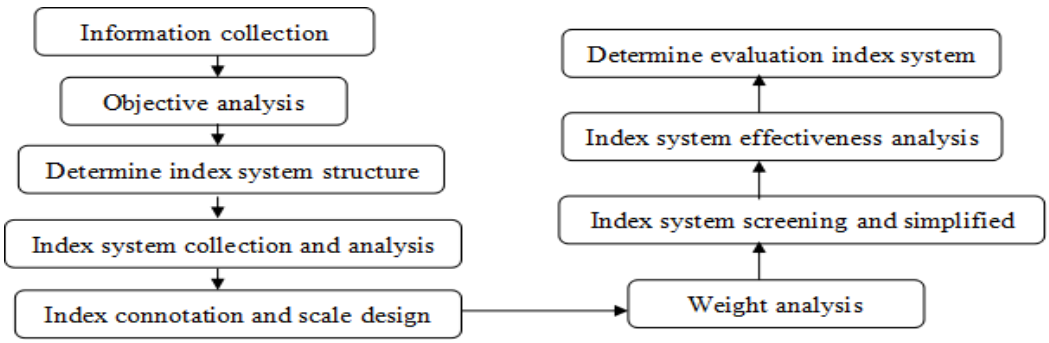

Figure 2. Design process of evaluation index system

Evaluation Index System Design Content. Through the above analysis, the professional evaluation index system of application Technology University is established. It is shown in Table 1.

Table 1 Application technology university professional evaluation index system

Level indicators	Secondary indicators	Evaluation standard	Assessment level			
			A	B	C	D
Professional orientation and characteristics	Talent training target and scheme	Reflecting "application" on the training goal, and "jobs" in the talent training scheme.				
	Professional orientation	Profession adapts to the need of regional economic and social development, and building an innovative country, develops urgent talents of enterprise and industry.				
	Professional characteristics	Profession obtains outstanding outcome on talent training mode, curriculum provision, or university-industry cooperation [8].				
Teachers' team	Professional director	Professional director has a high professional title, more scientific payoffs, high academic level and the strong ability of practice guidance.				
	Teachers' configuration and structure	Professional teachers' quality is higher, who's proportion of 30% or more teachers from enterprise full-time or part time [9]. Theory and practice of guiding teacher ratio is 1.5:1, with one teaching masters. The teachers have the master's degree are in a proportion of 80% or more. Associate professors (or senior engineers) are70% above title, age structure (under the 55 years old teachers accounted for 85% or higher).				
	Teaching ability and level	Obtaining teaching prizes more than two at the provincial level or above. Students are satisfied with the professional teachers (excellent and good rate of 90% or higher).there are one teacher using foreign language and two teachers using double language to have class.				
	Industry-university-research	Scientific research promoting teaching achievements, and closely linking to social practices. scientific research funds (science and engineering, agriculture, medical profession) per capita 30000RMB per year, Other profession per capita 10000RMB per year.				
	Teacher training	Have teachers' introduction, training plan and measures conforming to the professional construction planning.				
Teaching basic construction	Teaching equipment and condition	With characteristic experiment (training) room (such as foundation, teaching, research laboratory), college students' innovative business incubators. Each teaching special funds is enough and sustainable growth.				

Table1 cont.

	Teaching reform	Idea of teaching reform is clear. Having the specific plan and supporting measures. Being granted excellent teaching achievements prize at the provincial level or above in recently four years. Reforming the teaching method and means actively. Mandatory application of multimedia teaching class hour is not lower than 85%. Teaching material is chose and constructed reasonably.				
	Quality of teaching	Teaching quality comprehensive evaluation more than good. Improving the teaching quality monitoring system of scenically, running effectively. Professional steering committee takes part in the whole process of talent training [10].				
	Curriculum planning and construction	Curriculum construction mentality is clarity. Curriculum construction planning is accord with the requirement of training students' core ability. Professional course teaching content and course system reform effect are outstanding. Obtaining the second prize of teaching achievement prizes at the provincial level or above.				
	Practice teaching	Practice teaching plan arranging reasonably. Laboratory equipments are stability, and meet the requirements of practice teaching [11].				
Teaching effect and social evaluation	Graduation design (paper)	Graduation design (paper) subject is in the form of special subject, accord with the requirement of cultivating applied talents. Graduation design (paper) shown in documents, software or other works.				
	Student awards and certificates	Professional students obtaining professional qualification certificate at a rate of 90% or more [12]. To participate in and getting at least two professional discipline competition at school, provincial and national level.				
	Social evaluation	The employment rate in more than 90% for three consecutive years. Employer satisfaction rate more than 85% or higher.				

Remarks. The index system has 4 level indicators and 17 secondary indicators, for each secondary indicator divided into four assessment level what are A, B, C, D. The evaluation outcome has four standards what are excellent, good, qualified and unqualified, as follows:

Excellent: A has 13 or higher, C has 2 or less, D = 0.

Good: A and B together have 13 or higher, D has 1 or less.

Qualification: D has 3 or less.

Conclusions

To design and construct the application technology universities professional evaluation index system, it is not only useful for strengthening the construction of local colleges and applied talents training, but also providing standard for the government to improve the macro management of the application technology universities. It is advantageous to develop reasonably for the application technology universities under the government's guidance, and provide intellectual and talent support for the

development of the economic society and all walks of life. Therefore, this paper has profound significance whether for colleges' evaluation and the application technology profession development, or for the teachers' team building and talent training mode innovation.

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