About Thinking and Creation for Talent Cultivation Mode in Forestry University

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Abstract. The comprehensive reform of university has become a hot spot in current educational field in China, among which the talent cultivation mode reform is the core content, improving the quality of talent cultivation is the starting point and ending point, so as to forestry university. Using the method of transformation bridge, it may convert the contradiction problem of forestry economy and management’s professional personnel training mode into the coexistence problem, and make extension change. Thus put forward the traditional talents training mode of forestry economy and management specialties should be shifted to the applied talents training mode, then do systemic change for curriculum to train high-quality workers and skilled talents, the innovative talents training mode of forestry economy and management specialties should be consolidated and improved for curriculum to train top-notch innovative talents.

Introduction

In recent years, the higher education sustainable have been concerned by many researchers, especially the reform and innovation of talent training mode in university[1][2].Forestry universities take up the task of training professional talents in forestry, promoting the construction of ecological civilization and the development of economy and society. Compared to other types of universities, however, the economy and management majors of forestry universities have three bottle-necks: the foundation of subject is weak, the ability of scientific research is weak, and the ability of students' employment is weak. Presented three typical contradiction problem of talent cultivation: firstly, the contradiction exists between traditional teaching mode and students' practical ability. As the traditional teaching mode is focus on theory and knowledge, lack of thinking and practice in the course of configuration. So the traditional teaching mode not only failed to construct a solid theoretical foundation, but also lead to poor practice ability for students, even do not conform to the target of talent cultivation of government: innovative, practical, comprehensive. Secondly, the contradiction exists between homogenized cultivation mode and narrowed employment. According to the specialty of economy and management in forestry universities, its talent training plan is biased in favor of the "big economy" and "big management" professional, demonstrating greater homogeneity compared with other types of universities. As lack of forestry features and careful analysis of social demand, it is not possible to cultivate specialized personnel of financial institutions who have an intimate knowledge of value assessment in forestry. Thirdly, the contradiction exists between the traditional training mode and students' poor employment ability. Due to lack of reform and innovation, teachers are accustomed to according to the traditional training mode, applying some kind of "missionary" style to impart knowledge, teaching content remained unchanged over the years. Students are accustomed to according to the traditional training mode, remembering knowledge mechanically, neglecting practical application so that students' employment ability dwarfs.

Consequently, the economy and management specialties of forestry universities need to emancipate the mind, thinking about their own strengths and weaknesses, achievements and shortcomings, to solve the contradiction problem of personnel training, to develop "excellent
economist", "excellent manager", "excellent accountant" as the goal, to innovative talents training mode, devoted to the cultivation talent of innovative, application, compound[3].

Moreover, Extension theory is a kind of rules and methods which process the contradiction problem in reality, exploring the possibility of innovation by application of formal model, which has been widely applied in many areas [4].

This paper focuses on the establishment of element in traditional talent training mode and innovative talent training mode, constructing transformation bridge, conducting extension change, exploring the method to solve contradiction problem of talent training mode, providing a new analysis paradigm for the research of university talent training pattern.

**Analysis Model**

**The Logic of Solving Contradiction Problem**

**Game Theory Approach of "Either This or That".** This approach need the premise based on a party to win or dominant, such as "listen to me", "losers obey winners" and so on. The approach is simple and easy to implement, but it is easy to cause the new contradiction when the power of the two parties undergo changes.

**Game Theory Approach of "This and That".** This approach is a compromise and reconciliation way, such as "fifty-fifty ratio", seventy-thirty ratio" and so on. It achieves a temporary balance in the compromise, so that each of sides has a part of the interests. The approach is workable, but the negotiation process is time-consuming and laborious.

**Game Theory Approach of "Go Their Separate Ways, Play Their Proper Role".** By setting transformation bridge, connecting or separating the contradictory sides, the contradiction problem is transformed into the coexistence problem, such as "one country, two systems", "wolf and chicken within the same cage". That of interests at different positions (or demand) will be satisfied.

**The Method of Transformation Bridge**

Set the contradiction problem, \( P = (G_1 \wedge G_2) \wedge L \), \( (G_1 \wedge G_2) \uparrow L \). \( G_1 \) and \( G_2 \) are the two basic elements of the contradiction problem, \( L \) is the conditional basis. That is, Beneath \( L \), the coexistence between \( G_1 \) and \( G_2 \) is less than 0[3].

If there exist a change, \( T = (T_{g_1}, T_{g_2}, T_L) \), \( (T_{g_1}G_1 \wedge T_{g_2}G_2) \downarrow T_L \). That is, the coexistence of the contradiction basis after changing is greater than 0, called \( T \) as solution changes for the contradiction problem \( P \), so that \( G_1 \) and \( G_2 \) are coexistence, \( B(G_1, G_2) \) as the transformation bridge.

The transformation bridge is composed of a turning part \( Z \) and a conversion channel \( J \), denoted \( B(G_1, G_2) = Z \ast J \). In some cases, if do not need conversion channel, the turning part is the transformation bridge.

As for turning part, two type is available. The first is connection type: set there are two opposing systems \( S_1 \) and \( S_2 \), if exist the combination transformation \( T \), which can connect \( S_1 \) and \( S_2 \) into a large system \( S \), called \( Z \) is the connection type of turning part, denoted \( T(S_1, S_2) = S_1 \otimes Z \otimes S_2 = S \). The second is segmentation type: set there is a large system \( S \) in the contradiction problem, if exist decomposition transformation \( T \), which can divide \( S \) into \( S_1 \) and \( S_2 \), called \( Z \) is the decomposition type of turning part, denoted \( T_S = S_1 \| Z \| S_2 \).

**Empirical Analysis Results**

According to the basic element definition about talent training mode, it may construct basic elements of the specialty of economy and management in forestry universities including two elemental elements \( G_1, G_2 \) and one conditional element \( L \):
The two elemental elements $G_1, G_2$ of the specialty of economy and management about talent training mode are shown 4 main characteristics. Namely, curriculum system, practical link, teaching method, students' characteristics. Course system is a system that the curriculum elements are arranged in combination so that various elements of the curriculum achieve the optimization in the dynamic combination of time and space. Curriculum system should not only reflect the principle for running university and utilization degree of curriculum resources, but also promote all-round development of students. Practice link is a key link that consolidates the theoretical knowledge, to train the students mastering the scientific method, to improve the practical ability, through various forms of practice teaching. The teaching method is the way and means to use the teaching process for the teachers in order to complete the teaching task, to achieve study goals for students’ growth. The conditional element $L$ of the specialty of economy and management about talent training mode are shown 4 function of the university which must be realized through the cultivation of talents, scientific research, social services, cultural heritage and innovation. Training talent is the core function of the university because the original intention of university establishment has certain professional, being responsible for the training of engineers, lawyers, doctors, teachers and other talents. Scientific research is the basis function of the university, and it is required to provide theory and method to solve the increasingly complex problem for production technology and economic management. Social service is the direct function of the university similar as the development of science which is not only the need of the society but also is in line with own development logic for university. So university should take a variety of ways for extensive contact with society, to help the society solve variety of theoretical and practical problems as much as possible. Cultural heritage and innovation is the leading function of the university as the moral high ground, the fortress of social conscience, through education to reflect the moral standard of a nation, booting and demonstrating a national culture foundation form by "virtue", "right" and "goodness".

Obviously, $P = (G_1 \land G_2) \land L$ is an contradiction problem, $(G_1 \land G_2) \uparrow L$, the coexistence is less than 0 under L.

According to traditional talent training mode, for lack of motivation to reform and innovation, curriculum system is fixed in a long time; practice link is a simple simulation practices and out of social practice; teachers are accustomed to preaching style based on the teaching of systematic theory; Students have exhibited rigid thinking due to the passive learning process. By contrast, innovative talent training mode, course system should be the change encouraging students to obtain the latest knowledge; the arrangement of practice link close to reality and meet the real post; Teachers tend to apply inspiring style to guide the students to master solving methods by lead-in questions; therefore, thirst for knowledge among students is strong, showing active thinking. The following need carry transformation bridge analysis to convert contradiction problem of talent training mode into coexist problem.
As connection turning part (the comprehensive reformation in college) Z is decided, it offers the possibility that two contradiction systems: the traditional talent training mode and innovative talent training mode, form a large system. Then do extension changes.

Firstly, when do the expansion changes based on the talent training mode, we can get:

\[ O_1 = O_1 \otimes Z_1 = \text{(The traditional talent training mode in the comprehensive reformation in universities)} \]  
\[ (4) \]

\[ O_2 = O_2 \otimes Z_2 = \text{(The innovative talent training mode in the comprehensive reformation in universities)} \]  
\[ (5) \]

Secondly, form new talent training mode:

\[ T_1 G_1 = G_1 = \begin{cases} 
\text{The traditional talent training mode of the comprehensive reformation in universities} \\
\text{curriculum system} \\
\text{practical link} \\
\text{teaching method} \\
\text{students' characteristics} \\
\text{systematic change} \\
\text{meet the needs of professional skills} \\
\text{applied cultivation} \\
\text{outstanding application ability} \\
\end{cases} \implies G_1 \]  
\[ (6) \]

\[ T_2 G_2 = G_2 = \begin{cases} 
\text{The innovative talent training mode of the comprehensive reformation in universities} \\
\text{curriculum system} \\
\text{practical link} \\
\text{teaching method} \\
\text{students' characteristics} \\
\text{consolidation and enhance} \\
\text{meet the requirements of innovative skills} \\
\text{innovative cultivation} \\
\text{outstanding innovation ability} \\
\end{cases} \implies G_2 \]  
\[ (7) \]

The corresponding transformation of T is composed of two parts T_1 and T_2. Namely, T_1 refers to the traditional talent training mode transformation to the applied talents training mode, and T_2 refers to strengthen the reform of innovative talent training mode. Consequently, the traditional talents training mode in forestry universities should be to focus on the cultivation of student's professional ethics, vocational skills entrepreneurship and employment, meeting the needs of economic and social development with high-quality workers and skilled talents. It carries out systematic reformation in the curriculum system, setting up occupation education curriculum, emphasizing the orientation of “enough of theory, outstanding practical ability”[8]. Close combination of production and education, promote school and enterprise integration. The innovative talents training mode in forestry universities should meet the different needs of students in different levels. In the setting of the curriculum, integrate existing resources, consolidate the excellent courses, increase the proportion of industry characteristic courses, provide a cross disciplinary course platform, and strengthen top-notch innovative talents training. In the end, under the background of the comprehensive reformation in universities, enhance the efficiency of the two different training modes of economics and management majors in forestry universities.

When implement condition L and goal (G_1, G_2) to transform T (T_1, T_2), connected to turning type Z, constructing transformation bridge for contradiction problem alter to coexistent problem, so that \((G_1 \wedge G_2) \downarrow L\). According to the orientation of talent training, economics and management specialty in forestry universities can be subdivided into the training of applied talents (type A) and innovative talents training (type B). For type A, the curriculum emphasizes the importance of discipline foundation and professional characteristics, to increase the practice teaching link hours,
focus on strengthening the practical ability. For type B, the curriculum focus on the basic theory and practice, the addition of scientific research training, pay attention to the cultivation of innovative ability. Each type of talent training programs is in the "platform + module" mode to construct curriculum system. Within the general courses platform, it can be set up cross-disciplinary curriculum. Within the basic course and specialized course platform, it can be set up multiple of curriculum modules, solving the contradiction between the professional caliber and professional characteristics, while satisfying the demand of the industry.

Conclusion

In the case of increasing diversity and heterogeneity of students, for different levels, different types of universities, the objectives and patterns of talent training are not the same. Therefore, for the different specialties of students, study the characteristics of the industry, create space and conditions as far as possible, so that it is the key to the cultivation of innovative talents when students can find the learning system and adapt to their own characteristics. Use transformation bridge of extension, it can rationalize existing contradiction between traditional talents training mode and innovative talents training mode of economics and management majors in forestry universities, providing feasible tactics aimed at the angle of extension theory. According to the industry, talents are divided into applied talents and top-notch innovative talents, so economy and management specialties in forestry universities should promote talent training mode reformation, subdivision for applied talents culture (type A) and innovative talents culture (type B). Type A focus on the application education based on the base of practice. Type B focus on the discussion of teaching mode, relying on scientific research projects to cultivate innovative ability.

No doubt, forestry universities demand respect the students' independent choice and power of learning, targeted for the classification of training, to provide a variety of ways for students to grow up. In addition, for economics and management majors in forestry universities, should encourage to cross school and cross disciplinary training, to provide students with a variety space of independent choice, to improve the collaborative innovation ability of talent training.

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