Study on Cultivation for Innovative Talents with Mixed Abilities in Food Quality and Safety (Childhood Nutrition and Health) Major

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Abstract. Purposes: the cultivation for the innovative talents with mixed abilities in this major is the demand of application-oriented university development, professional discipline development and transformation development of newly-founded undergraduate colleges. Procedures and Methods: we took the way of combining theory and practice to analysis the significance of cultivation for innovative talents, adopted questionnaire method and interviewing method to research the current situation of cultivation, and explored the cultivating mode combining college’s practice. Results: the current situation of talents cultivation is as follows: the cultivating aim is indefinite. The professional feature is not available. Besides, the scientificity of cultivating mode is not sufficient. The learning effect is not good enough. Meanwhile, the cultivating and guiding method is not reasonable. Conclusions: in order to change this situation, it is a must to make efforts in the aspects of teaching staff, curriculum reform and construction of scientific research team, etc.

Introduction

Food quality and safety major is mostly set up in the comprehensive universities which covers agriculture and forestry, medicine and science and engineering, the newly-founded undergraduate college and the vocational colleges. Food quality and safety (childhood nutrition and health field) major is a new undergraduate program established by biological and chemical engineering department of Chongqing University of Education. The development of this major will directly affect the transformation development of biological and chemical engineering department and the whole university.

Significance of Cultivation for Innovative Talents with Mixed Abilities in Food Quality and Safety (Childhood Nutrition and Health) Major

Demand of Application-oriented University

Under the current education background of China, transformation to application-oriented university has become the best way for the development of newly-founded local undergraduate college [1]. The application-oriented university is the positive response to the demand of talents from economic and social development. The practical ability of student cultivated by application-oriented university is higher than the one from student of research-oriented university. In addition, the theoretical basis and professional ability is better than the one from student of vocational college. That has formed the new conception and requirement on talents cultivation of application-oriented university. First and foremost, the cultivating aim for talents should focus on ability rather than knowledge. Secondly, major setup should be oriented by social demand rather than discipline itself. Thirdly, curriculum system should emphasize practice link and reinforce experiment and practical training. Fourthly, the
multiple teaching patterns adapting to the cultivating aim for practical talents should be adopted, such as problem-orientated pattern, case analysis and project actuation etc. At last, the industry-academy cooperation should be deepened continuously. To attract large and medium-size enterprises to participate in the cultivation is the fundamental of success.

**Demand of Professional Discipline Development**

At present, the social science and technology is developing unprecedentedly. The trend that various disciplines infiltrate and intersect each other is obvious increasingly. The talents with mixed abilities own some advantage in social competition. In order to adapt to the domestic economic construction and employment competitions, accelerate the pace to cultivate the application-oriented talents with mixed abilities, creative spirit and practical ability. Mobilize the student’s enthusiasm further. Make students to take more full advantage of our educational resources in different disciplines to learn more knowledge and skill so that their competitiveness on employment can be enhanced. Actively promote the reform of undergraduate teaching. Adopt various measures to create conditions for the cultivation of the application-oriented talents with mixed abilities. In the transformation process of newly-founded undergraduate college, all of these can become the key teaching and researching programs.

**Transformation Development Demand of Newly-founded Undergraduate College**

Food quality and safety (childhood nutrition and health) major is a new undergraduate program established by Chongqing University of Education. On the one hand, as an emerging major, food major has been developed at home step by step. On the other hand, Chongqing University of Education has set up the field of childhood nutrition and health on the basis of major advantage on their own preschool education, which not only can meet the development emphasis of domestic general direction on major but also can reflect the features of dominant majors of university. Originally, food major itself is a major integrating multiple disciplines, including biology, chemistry, nutriology and preventive medicine. The field of childhood nutrition and health not only strengthens the content related to nutriology. It also will integrate the professional knowledge of preschool education, child psychology and other social sciences. Food quality and safety (childhood nutrition and health) not only reserves the content of natural science which food owns as a science major but also integrates the content of social science. As the first university to set up this major in Chongqing district, this major will play a leading development role in this district. Meanwhile, the further cultivation and transformation for the talents in this major can strengthen the employment competitiveness of graduates more. The number of jobs available will increase. The professional practical ability will be improved greatly.

**Current Situation of Cultivation for Innovative Talents with Mixed Abilities in Food QUALITY and Safety (Childhood Nutrition and Health) Major**

**Cultivating Aim Is Indefinite. Professional Feature Is Not Available**

The implementation of innovation-oriented national construction strategy and human resources powerful nation strategy etc. has made the demand for the high-level innovative talents to become more diversified gradually in society [2]. In the questionnaire for the students learning this major in Chongqing University of Education, more than half of students think there is no difference basically and no difference at all (Table 1). In addition, the students participating in the questionnaire think the knowledge and skill they should grasp most are practical ability, professional skill, theoretical knowledge, ability to solve problems and scientific research ability in order (Table 2). This shows the cultivation for application ability and technological innovative ability should be strengthened. Paying more attention to the learning of theoretical knowledge will make the cultivation for talents to lack its due features.
Table 1. Outstanding or not of talent cultivation characteristics in present major and field compared to the other major and field.

<table>
<thead>
<tr>
<th>Effective percentage of outstanding or not of talent cultivation characteristics (%)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>41</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2. The most should be master knowledge and skills (Multiple choice).

<table>
<thead>
<tr>
<th>Effective percentage of the most should be master knowledge and skills (%)</th>
<th>Theoretical knowledge</th>
<th>Practical ability</th>
<th>Professional skills</th>
<th>Problem solving ability</th>
<th>Research ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical knowledge</td>
<td>68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical ability</td>
<td></td>
<td>84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional skills</td>
<td></td>
<td></td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem solving ability</td>
<td></td>
<td></td>
<td></td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Research ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
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Scientificity of Cultivating Mode Is Not Sufficient. The Learning Effect Is Not Good Enough

The survey shows that the teaching method adopted by this major is diversified. Seventy six percent students think the lecturing method is adopted. Fourteen percent students think the curriculum adopt heuristic method. But the students for discussion method are only 10%. For self-study method, there is no student to support (Table 3). Meanwhile, most students have a correct understanding for the cultivating mode of this major. Fifty five percent of them think more attention should be paid to the combination with practice. Thirty percent of them think an emphasis should be made to the cultivation for scientific and technological innovation ability. Fifteen percent of them think more attention should be paid to theory teaching (Table 4). In the specific cultivating link, the first three aspects which teachers lay emphasis on are curriculum learning and academic communication. The aspects which they do not pay attention to are scientific research training and cultivation for practical ability. This shows teachers do not pay attention to the cultivation for practical ability and scientific research ability of students in the specific cultivating process, which is not consistent with the requirement of application-oriented talents with professional degree.

Table 3. Main teaching methods of present specialized course.

<table>
<thead>
<tr>
<th>Effective percentage of main teaching methods of present specialized course (%)</th>
<th>Teaching style</th>
<th>Heuristic style</th>
<th>Discussion style</th>
<th>Self study style</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching style</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heuristic style</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussion style</td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self study style</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td></td>
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</table>

Table 4. The opinion of training model in this major.

| More attention | Effective percentage of the opinion of training model in this major (%) | 55 | 15 | 30 | 100 |
Cultivating and Guiding Method Is Not Reasonable

In this major, the teacher from production and management practice units is less. The main reason is the selection of teachers in universities and colleges focuses too much on their scientific research abilities. For the experience of practical work, there is no too much requirement. The survey result shows more students learning this major accept the guidance of “single tutorial system” (85%). Fewer students accept “double tutorial system” (12%) and “tutorial guiding group” (3%). The frequency of communication between tutors and students is one time per three weeks at most (79%) or one time per month (21%). This shows the single tutorial guidance plays a dominant role. The theory is paid more attention. In addition, the frequency of communication between tutors and students is low. The cultivating task for innovative talents with mixed abilities can be not guaranteed to complete on both quality and quantity.

Innovation Exploration on Cultivation for Innovative Talents with Mixed Abilities in Food Quality and Safety Major (Childhood Nutrition and Health)

Integrate Specialized Course Teachers to Jointly Teach

Integrate advantageous resources to establish an open modern curriculum system and form a course team with multidisciplinary collaboration. Break the boundary between college and department to integrate teachers and establish a professional teaching and research office of food quality and safety (childhood nutrition and health). The teachers from food major of biological and chemical engineering department are responsible for teaching the experimental courses including “childhood nutriology” and “infant hygiene and health”, etc. The specified teachers from college of preschool education and college of teacher education are responsible for teaching the practice courses including “paedeutics” and “children's educational psychology” etc. Meanwhile, the specified teachers from department of economy and business administration take responsibility for teaching the practical courses including “principles of management” and “food logistics” etc [3]. Synergistically create a course team by the method of curriculum group of food quality and safety (childhood nutrition and health) to share resources. Not only invite vocational personnel to give a lesson but also introduce project cooperation into teaching [4]. Invite enterprise experts to participate in curriculum provision. Optimize teaching program in accordance with industry requirement. Focus on cultivating the application skills of students.

Major Is Oriented by Experiment of Enterprise Demand and Reform of Practice Courses

Reinforce and strengthen the cooperation with regional food enterprises and preschool education institutions outside of campus. Establish and optimize the stable and standard experiment and training base of industry enterprise and preschool education institution to reduce the use of observational practice mode. Establish the system that students can really participate in the actual production of industry and the practical training of preschool education institution. Biological and chemical engineering department of Chongqing University of Education organizes the students to take internship-on-duty in Chongqing Morals Village Industry (Group) Co., Ltd., Chongqing Qinyuan Industry Co., Ltd., Chongqing Tian You Dairy Industry Co., Ltd., Chengdu Want Want Group in Sichuan and other local food enterprises. Meanwhile, the department also organizes them to contact with children and understand them in Kindergarten Attached to Chongqing Technology and Business University, Qinghua. Jiaohong Kindergarten of Dadukou District in Chongqing and Chongqing Chunxiao Dadi Kindergarten, etc., so that the operational ability and post consciousness of student can be cultivated during the practice. Their employment competitiveness also can be strengthened. All of these kindergartens have established a cooperative relationship with college of preschool education. Make innovation on practice teaching method. Firstly, construct a teaching system with synergetic experiment and practical training [5]. Secondly, combine classroom teaching and social practice.
Pay Attention to the Counselling from Scientific Research Group of Student

Based on theoretical and practical teaching system, supported by innovation training program and oriented by innovation mechanism and incentive mechanism, establish a hierarchical and diversified innovative design system. Guide students to establish interdisciplinary team. Apply for practical and innovative training program. Create multidisciplinary tutor group. The teachers from different majors are responsible for answering different questions. For some common problems such as patent application and thesis writing etc., tutor multiple team members intensively through course of lectures etc. to cultivate the ability of student to realize innovative achievements. Make analysis, comparison, integration and assessment through group discussion. Optimize designing scheme and make system design to realize the innovative achievements including design works, software, thesis or patents etc [6]. Teachers on campus combine with industry elite. Campus teachers and industry experts jointly guide the graduation design (thesis) of student etc. Professional teachers combine with student affairs personnel to jointly guide students to participate in “challenge cup” scientific research competition etc. Take biological and chemical engineering department of Chongqing University of Education as an example, 10 students’ scientific research project applied were approved finally in 2014 (accounting for almost 1/5 of total quantity).

Summary

The purpose of teaching is to serve the talents cultivation, which should adapt to the change of situation. The cultivation for the innovative talents with mixed abilities in food quality and safety (childhood nutrition and health field) major is the demand of application-oriented university development, professional discipline development and transformation development of newly-founded undergraduate college. However, the current situation of talents cultivation is as follows: the cultivating aim is indefinite. The professional feature is not available. Besides, the scientificity of cultivating mode is not sufficient. The learning effect is not good enough. Meanwhile, the cultivating and guiding method is not reasonable. In order to change this situation, it is a must to make efforts in the aspects of teaching staff, curriculum reform and construction of scientific research team etc.

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