

Exploring the Path on Cultivating Students' Innovation Ability in Private Normal University

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Abstract—The cultivation elements of innovation ability were analyzed, and the importance of practical teaching to the cultivation of students' innovative ability in private normal university was determined. Based on practical teaching, the "four levels" and "double strengthening" innovation ability training path was proposed, and the double tutor system was implemented. This work built a nurturing and segmented teaching platform, and optimized the education system of students in private normal university. To a certain extent, students' innovation ability literacy and professional skills were improved.

Keywords—Normal University; Innovation Ability; Practical Teaching; Cultivating Path

I. INTRODUCTION

The Outline of the National Medium and Long term Education Reform and Development Plan (2010-2020) proposes to "renew the concept of education, reform the personnel training system and improve the level of talent training". It should "establish the concept of all-round development and strive to bring up high-quality talents with the all-round development of morality, intelligence, physique and aesthetic". It should adhere to the combination of education teaching with productive labor and social practice, develop practical and activity courses, and enhance the effectiveness of students' scientific experiments, production internships and skills training [1-2]. The outline emphasizes the goal of cultivating "high-quality talents with all-round development of morality, intelligence, physique and aesthetic" in colleges, and also points out the importance of carrying out practical teaching to achieve this goal. As the training unit of high-quality teachers in basic education, the normal major in private colleges should actively innovate the practice teaching system around the training target of the innovative teachers, strengthen the training of students' innovation ability in normal university, and improve the effectiveness of the practice teaching [3].

II. OVERVIEW ON STUDENTS' INNOVATION ABILITY IN PRIVATE NORMAL UNIVERSITY

Based on previous discoveries or inventions, innovation ability refers to the ability to creatively propose new discoveries, inventions or improvements through their own efforts. It also refers to the ability to doubt, criticize and investigate, which is the knowledge and theory used by researchers. In the fields of science, art, technology and various practical activities, the ability of new ideas, new theories, new

methods and new inventions with economic value, social value and ecological value is constantly offered.

As for the connotation of students' innovation ability in private normal university, the author thinks that the knowledge structure of students' innovation ability in private normal university includes basic knowledge, professional knowledge, instrumental knowledge or methodological knowledge and comprehensive knowledge. It is the ability of individuals to use all known information, including existing knowledge and experience, to produce some unique, novel, social or personal value products.

Based on the connotation analysis of students' innovation ability in private normal university, the constituent elements of innovation ability can be summarized into three levels, including innovative thinking, innovative methods, and innovative application ability. At the same time, the author thinks that there are three elements to cultivate students' innovation ability in private normal university [4]. The first element is curiosity, which is the driving force of innovation, and the original innovation is often driven by curiosity. The second element is intuition and insight, and the most common thing to evaluate a researcher is that someone has a good sense of science (i.e., they have intuition and insight). It has also proved that the solutions or breakthroughs to many complex problems are based on the intuition and insight of the researchers. The third factor is attention, which determines the depth of thinking.

III. THE ROLE OF PRACTICAL TEACHING ON CULTIVATING STUDENTS' INNOVATION ABILITY IN PRIVATE NORMAL UNIVERSITY

Carrying out practical teaching is not only the requirement to enrich the teaching system in the normal specialty but also an important means to test the effect of theoretical teaching. The theory is rooted in practice and guides practice. The cultivation of innovative teachers needs to deepen students' understanding of teacher education theory through a large number of practical links. Through the study of pedagogy, psychology, management, curriculum teaching theory, teacher development theory, etc., normal university students have laid a theoretical foundation for their growth as innovative teachers. It should adhere to the combination of theory and practice, carry out various and highly flexible practical teaching, and create an open and comprehensive practical environment. The initiative of students' creative thinking and practice can be stimulated, and the teaching effect of teachers' educational theory can also be tested.

Carrying out practical teaching is not only an important basis for students to carry out teaching reflection and theoretical innovation, but also an important means to improve students' educational and teaching skills. The training goal of innovative teachers requires the students trained by normal major to have higher teaching reflection ability and theoretical innovation ability, and master superb educational and teaching skills. Practical teaching can show students the typical situation of teacher education theory in reality, and restore teacher education theory one by one in class. It can not only promote students' consciousness of teaching reflection and theoretical innovation ability, but also lead students to combine their own experience, thinking and experiment, and gradually improve teaching skills.

Practical teaching is not only the main way to train students' innovative thinking ability, but also an important place to test students' innovative ability. The charm of practical teaching lies in that it can make students directly participate in the real practical operation of teacher education, and inspire students to think about the internal law of teacher education through experience. Their independent thinking ability is stimulated to effectively improve the learning quality of learners. "According to the situational learning theory, the fundamental sign of learning is more and more easy and effective participation in important group practices as far as individual learners are concerned". In turn, it is high quality learning that can effectively participate in the important practical activities of the group and enter the specific learning situation.

Practical teaching is the key standard to test the success of innovative teacher training. The innovative ability of normal school students must be reflected in the actual educational and teaching practice, and the innovative thinking of theory and the breakthrough innovation of normal skills must be investigated [5]. A qualified and innovative teacher should have a solid theoretical foundation of teacher education, and be able to integrate the theory with daily teaching and carry out educational and teaching activities innovatively. He should be an expert in teaching, with solid basic teaching skills, and be able to master modern educational and teaching techniques and equipment skillfully to assist teaching. He should have a high degree of sustainable development ability, be able to consciously combine theory and teaching practice, and innovate educational and teaching methods. The dual attributes of "teaching executor" and "teaching researcher" are presented.

Practical teaching is the key link to train and improve the practical ability and theoretical analysis ability of normal students and make them sustainable in the professional development of teachers. It is also a touchstone to test the success of innovative teacher training.

IV. THE TRAINING PATH OF PRACTICAL TEACHING ON CULTIVATING STUDENTS' INNOVATION ABILITY IN PRIVATE NORMAL UNIVERSITY

A. *The main direction of practice teaching*

In the design of the training scheme for normal students, it should adhere to the practice of educating people, pay attention to the combination of learning and thinking, and the unity of

knowledge and practice. It is necessary to attach equal importance to the discipline and professional basis, the basic theory of education and the basic skills of teaching. Excellent teachers with "happy teaching, understanding teaching, teaching, good teaching", strong innovation ability, practical ability, interpersonal communication ability, team cooperation ability are cultivated.

The training mode and goal not only embody the internal drive of higher education talent training, but also reflect the external demand of serving basic education well. In practice, based on the training goal of the students' innovative ability in normal university, the practice teaching system of "double strength" oriented innovation ability is implemented.

First, it should combine the objective existence of the current university-based teacher training, diversified source of teachers, integration of teacher education and professionalization of teachers in private university, and strengthen teachers' professional skills innovation.

Second, it should fully combine the discipline of professional education and strengthen the discipline of professional skills training. Normal students can be engaged in teachers' profession or other professional related professions after graduation, and broaden the employment channels for normal students.

Third, based on students and starting from individual students, it can be strengthened individually or in two ways.

Subject knowledge and skills are the foundation of normal students, and normal students can become an excellent teacher only by relying on the subject specialty. Teachers' educational knowledge and skills are the foundation of normal students' teaching. Only by mastering educational and teaching knowledge and skills can they have the quality of excellent teachers and become students' life tutors.

B. *The setting of practice teaching mode*

The "four levels" are basic, professional, comprehensive and innovative practice. "Double strengthening" means to strengthen both teacher education practice and discipline practice. The practical teaching system of "four levels" and "double strengthening" is designed to improve the normal students' ability to analyze, solve and innovate problems. In order to ensure the connection between practical teaching courses, it is necessary to construct a four-level practical teaching system composed of basic practice, professional practice, comprehensive practice and innovative practice. It meets the requirements of the coordinated development of students' knowledge, ability and quality.

First, basic practice mainly includes language application, text application, information application, foreign language application practice, teacher cultivation education practice.

Second, professional practice mainly includes subject experimental teaching, teaching skill practice, educational skill practice and educational research practice.

Third, comprehensive practice mainly includes subject professional investigation, education trainee, support teaching practice and educational practice.

Fourth, innovation practice mainly includes subject competition, scientific research practice and graduation thesis.

The "double tutor" system should be carried out to take effective measures to absorb some excellent teachers in primary and secondary schools as the teaching and educational practice of educational courses, so as to form the "double tutor" system. It is possible to employ the regional special teachers as part-time professors, set up a studio, and participate in the curriculum design and guidance of the teachers' education. The deep integration of teacher training in basic education can be realized.

C. The construction of practice teaching platform

1) Formative practice teaching platform

First, the professional infiltration platform for normal school students should be constructed. It should set up "normal university lecture hall", invite education experts, curriculum reform experts, university experts and scholars to give special lectures and set up series of lectures to normal students in private university. Local education directors, principals of primary and secondary schools, principals of further education schools, teachers and researchers, teachers of special secondary schools, and backbone teachers were invited to the podium to open classes or give special lectures for normal students [6-7]. Normal students can experience, feel, participate in and study the new curriculum of basic education at zero distance, and normal students are pushed to the forefront of basic education curriculum reform. It should set up "alumni model teachers" lecture hall and invite the model alumni from the school to give lectures. In view of the hot and difficult problems in the new curriculum reform and middle school education and teaching, normal students are led to deeply understand the middle school curriculum and establish the ideal of secondary education based on demonstration teaching, in-depth interpretation, frontier introduction, etc.

Second, the innovation platform of teaching skills for normal students in private university should be constructed. Effective measures should be taken to enable normal students to participate in innovative entrepreneurship training programs and teachers' scientific research projects, to participate in normal students' teaching skills, subject skills innovation competitions and normal students' teaching competitions organized by schools, so as to cultivate the innovative ability of normal students.

2) Segmented practice teaching platform

First, the segmented educational practice mode should be adopted. In the first stage, the simulation training is carried out in the school. The teaching skills of normal students are trained by micro-classrooms, and the classroom teaching design and teaching technology are mastered, so as to lay the foundation for the real teaching in the middle school podium. In the second stage, the teaching practice should be carried out in the experimental area of teacher education innovation. The teaching practice should be carried out to train students to engage in teachers' professional ideal and comprehensive ability, so that normal students will be more willing to teach, feel at ease and be good at teaching in the future [8]. In the third stage, the practice of education and teaching should be carried out in key middle schools. The teaching skills,

educational skills and educational research ability should be strengthened, so as to set up a favorable platform for normal students to carry out quality education and innovative education activities such as autonomy, cooperation and inquiry learning [9].

Second, guided by the training of employment and innovative talents, the training is carried out according to three categories, including academic type, teacher type and application type. Students' employment channels are opened up. Three modes of educational practice are implemented. The training mode of academic talents is 2 weeks' educational practice and 6 weeks' scientific research training (i.e., normal students who choose the mode of academic talent cultivation must participate in the 2-week in-school education practice, not the 5-week out-of-school education practice, but the scientific research training). The training mode of teachers is divided into the traditional practice mode (i.e., 2 weeks' educational practice and 5 weeks' out-of-school practice and 1 weeks' training summary and teaching practice mode. 2 weeks' educational practice and one semester teaching practice). Applied talents training mode is 2 weeks' educational practice and 6 weeks' or one semester production practice.

D. Matters needing attention in cultivating innovation ability

1) Changing the educational concept in private normal university

In order to strengthen the cultivation of students' innovative ability, it must first make two changes. First, from "teacher as the main body" to "student as the main body", the main position of students must be prominent, in order to encourage students' ability of independent thinking and innovation. The enthusiasm and initiative of students' learning should be fully aroused (i.e., "teaching" is the leading role, and "learning" is the main body). Second, from "learning knowledge" to "learning to survive", "learning knowledge" is to turn students' brain into a simple container for storing knowledge, lacking the ability to analyze and solve problems independently. "Learning to survive" is to teach students to use the existing knowledge and new information in a new way in the ocean of knowledge and expanding information, so that students can learn to think and create.

"Teacher's ethics first, practice orientation, lifelong learning" should be regarded as the basic concept of cultivating the students' innovative ability in private normal university. In order to create a large number of teachers who adapt to and support the development of education and have international competitiveness, basic education theory and practice research should be carried out in-depth, and the innovative ability training program for normal students should be jointly formulated [10].

2) Integrating innovative elements into the subject teaching for normal students

The innovation of the teacher's profession is the complex formed by the combination of the rational factor and the non-rational factor. Therefore, the creative personality should have a certain cultural element. It can act not only on the rational factors in the spiritual world, but also on the irrational factors, and can make them organically combine on the basis of fully coordinated development. According to this principle, a

course system of philosophy, science and art should be built. The integration of philosophy, science and art is helpful to balance the rational and irrational factors in the development of students' innovative thinking, and to improve their innovative personality. At the same time, the formation and development of the whole spirit composed of philosophy, science and art is a process from low level to high level.

3) Creating a good atmosphere of teacher's innovative education in private university

It should give full play to the role of students in the management process, and create a good campus cultural environment. Students are guided to participate in a variety of extracurricular and off-campus activities and talents with creative spirit and ability to adapt to the fierce competition of the future society are trained. The student management staff in private university should constantly improve the rules and regulations of students' innovative activities, and strengthen management and assessment. The innovation activities for normal school students are developing in the direction of standardization, systematization and scientization. For example, it is necessary to organize and participate in social practice, hold various levels of academic report meetings, scientific and Technological Paper competitions, mathematical model competitions, discipline professional knowledge competitions, etc. These activities not only enrich the students' life, but also enrich their knowledge, enhance their ability and cultivate their innovative spirit.

V. SUMMARY

The teaching practice system is an important guarantee to change students' education mode in normal university and improve their innovation ability. The private university should actively explore new innovative practice mechanisms, follow the principle of student-oriented and mutual promotion, and make full use of high-quality basic education resources. A systematic and hierarchical practical teaching platform should be built to ensure the quality of students' educational innovation in normal universities. It is necessary to persist in

innovation on the basis of inheritance and train innovative basic education teachers with the ability to analyze, solve and innovate problems. It should actively serve the national education development strategy and regional basic education.

REFERENCES

- [1] Huiyu Z, Ming Y, Boming Y. Application of grey analytic hierarchy process to construct the middle-school student innovation ability index system[C]// IEEE International Conference on Grey Systems & Intelligent Services. IEEE, 2014.
- [2] Wangyuan Z, Hong Z, Haidong H, et al. Searching and Practice on Forming Multiformal Teaching Platform for College Student Practice and Innovation Ability[J]. *Agricultural Engineering*, 2015.
- [3] Bo H, Dongsheng Z. Notice of Retraction Discusse shallowly the student's independent innovation ability raise in the simulation electron basic course[C]// International Conference on E-business & E-government. IEEE, 2011.
- [4] Yuejing L, Dongxiang M. Reform and Practice of Engineering Practice Teaching based on Innovation Ability Training of University Student[J]. *Cancer Research*, 2010, 70(23):9631-40.
- [5] Hu L, Yan G L, Li L. Research and Application on the Research Innovation Ability of the Graduate Student Based on the Fuzzy Neural Network[J]. *Applied Mechanics and Materials*, 2014, 687-691:2909-2912.
- [6] Wang D, Zhang Y, Zhang T. Innovation ability and innovation spirit in photoelectric comprehensive experiment teaching[C]// Conference on Education & Training in Optics & Photonics. 2017.
- [7] Yuhe H. Notice of RetractionOn Current Situation of the Innovation Ability Cultivation of Chinese University Students and Improvement Measures[C]// Second International Workshop on Education Technology & Computer Science. IEEE, 2010.
- [8] Sui G, Liang B, Jia H. Study of the undergraduate student's innovation and entrepreneurship training strategy[C]// Society of Photo-optical Instrumentation Engineers. Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 2017.
- [9] Hassan N F, Sanusi A B M. Implementation of Innovation to Improving Leadership Skill of TVET Student[J]. *Journal of Education & Practice*, 2015, 6:85-87.
- [10] Hui Z. Integration of the Information Technique and Training the Student's Innovation Ability[J]. *Taiyuan Science and Technology*, 2005, 164(3):250-7.