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Exploration and Practice of Training Mode for Application-oriented Talents

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***Abstract*—Talents cultivation is the fundamental task of the higher education institutions. How to cultivate applied talents at the undergraduate level is a major task for China's higher education after entering the New Era. The paper explores the mode of applied talent cultivation in local comprehensive universities Based on the guiding ideology of "grounding on the locality, serving the society", this paper puts forward the educational and teaching reform ideas of optimizing the curriculum system, carrying out general education and strengthening practical teaching. The reform constructed a diversified talent cultivation mode which consolidates "the scientific foundation", cultivates "the humanistic accomplishment" and enhances "the practical ability". The quality of personnel training has been improved.**

Keywords—application-oriented talents; scientific foundation; humanistic accomplishment; practical ability; talent training mode; educational and teaching reform

I. INTRODUCTION

The Reform of talent cultivation mode is an important guarantee to improve the quality of higher education. After entering a New Era, China's higher education is also taking its advanced educational ideas and school-running ideas from the developed countries in the world, and constantly reforming the talent cultivation mode. Taking College of Electronic Information Engineering in Inner Mongolia University as an example, this paper discusses the exploration and practice of talent cultivation mode of applied talents in local applied universities.

II. OPTIMIZING THE CURRICULUM SYSTEM AND CONSOLIDATING "THE SCIENTIFIC FOUNDATION"

Scientific curriculum system is directly related to the quality of talent cultivation. The curriculum system should be "basic, capable, practical and cutting-edge" [1]. Inner Mongolia University has carried out a research project on the reform of undergraduate professional curriculum system. It adjusts and optimizes the professional curriculum system according to the professional basic courses, core courses and professional orientation courses. Professional basic courses consist of common basic courses for major subjects. The core courses are made up of compulsory courses reflecting the essential characteristics of the specialty which is different from other specialties and cultivating students' professional thinking and skills. And the professional orientation courses are composed of module courses reflecting the frontier of the subject, reflecting the characteristics and embodying advantages of the specialty and satisfying students' different learning interests. In optimizing the curriculum system, we lay stress on consolidating students' professional foundation, strengthening students' basic academic training, insisting on the basic position of professional basic courses and core courses in the professional curriculum system, insisting on the basic position of professional basic knowledge in students' knowledge structure, and insisting on the basic position of professional academic training in ability cultivation. After the optimization, professional education courses account for more than 65% of all courses. In professional education courses, optional courses account for more than 30%.

On the basis of the pilot curriculum reform of the teaching mode of the main core courses in 2015, Inner Mongolia University formulated and promulgated the "Opinions of Inner Mongolia University on Deepening the Reform of Teacher's Teaching Mode" in 2016, which formally launched the "three in one" classroom teaching reform which includes the reform of teacher's teaching mode, the transformation of students' learning mode and the innovation of curriculum assessment and evaluation mechanism. In the classroom teaching reform, schools actively explore the "middle class teaching, small class discussion, one-to-one to answer the questions". Taking the "three classes" (middle class, small class and one-to-one class) as the main platforms, the "three interactions" (teacher-teacher interaction, the teacher-student interaction and the student-student interaction) as the main methods, and the "three changes" (changes of teacher's teaching model, changes of student's learning style and changes of course assessment and evaluation mechanism)as the core targets, to stimulate students' interest in learning, motivation to seek knowledge and spirit of exploration, to cultivate students' academic literacy, and to improve students' abilities of autonomous learning, analysis and criticism, innovative thinking, communication and expression, and teamwork. "Small class teaching" achieves the purposes of heuristic teaching, inquiry learning, interactive communication and critical discussion. In this process, students are not only the receivers of knowledge, teachers are not only the imparters of knowledge, students and teachers are also the common explorers of knowledge. We reform the

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comprehensive evaluation mechanism of students' curriculum, focusing on the examination of learning process and the evaluation of students' abilities. The course assessment of students is divided into five teaching links: course assignment, discussion class, cooperative learning, mid-term examination and final examination. The grade of each link is assessed separately, accounting for 15%, 10%, 5%, 20% and 50% of the course grade, respectively [2].

Scientific assessment and evaluation methods can truly reflect students' learning status and level. Through reforming the examination methods, we have changed the past practice of determining the results through one or two examinations, emphasized the evaluation of the learning process and methods, and constructed the learning evaluation system of the subjects with diversified assessment methods. The emphasis of assessment tends to be on the assessment of students' analytical, thinking and creative abilities.

The cultivation of college students' abilities should not only stay in classroom teaching, but also create a variety of environments conducive to the growth of talents, so that the vast number of students can play their personality, develop their potential, and obtain practical training of professional quality and innovative ability. Therefore, colleges and universities should constantly innovate talent cultivation mode and reform teaching methods, so as to build a multi-dimensional learning platform for students.

III. Developing General Education and Cultivating "Humanistic Literacy"

General education is an important part of the construction and reform of higher education curriculum system. Inner Mongolia University has set general education as five modules: humanistic accomplishment and art appreciation, social development and cultural understanding, philosophical thinking and life comprehension, mathematical method and natural recognition, engineering technology and technological innovation.

College of Electronic Information Engineering holds the "Peach and Plum Lecture Hall" and invites well-known people from all walks of life, including schools, enterprises, government and businesses to teach. With the help of school-enterprise, school-site and School-School cooperation platform, we invite "enterprise mentors" to give lectures. The lectures are rich in content and information, which greatly expands the students' horizons of humanities. At the same time, secondary colleges are encouraged to actively hold professional academic lectures or open academic forums for the intersection of liberal arts and science, to promote the integration of liberal arts and technology management and higher education both inside and outside the school, and to improve students' humanities literacy.

In a word, local colleges and universities should actively create conditions, optimize the educational environment and enrich the humanities atmosphere in universities, so that students can feel, love and inherit excellent culture.

IV. Strengthening Practical Teaching and Improving "Practical Ability"

Practical teaching is the key link in cultivating applied talents. Innovative practical experience is the important support of the new innovative talent training mode supported by "student-centered, learning and teaching and innovative practical experience" in Inner Mongolia University. Strengthening innovative and entrepreneurial education is an important way to enhance students' innovative practical experience, and scientific research and training is the core content of innovative and entrepreneurial education.

Inner Mongolia University, in line with the principle of "strengthening the link of practical education, highlighting the cultivation of engineering practical ability and innovative spirit", regards the cultivation of practical ability as the focus of talent cultivation. In strict accordance with the provisions of "Some Opinions of the Ministry of Education on Further Deepening the Reform of Undergraduate Teaching and Improving the Quality of Teaching in an All-round Way", the accumulated credits of the practical teaching links included in the teaching plan account for 25% of the total credits. The practical teaching system of college consists of course experiment, course design, graduation thesis (design), practice training and second classroom.

College of Electronic Information Engineering attaches great importance to experimental teaching and holds annual reports on experimental teaching work and experimental teaching courses in secondary colleges to carry out all-round management of experimental courses. In terms of content organization, the proportions of verifiable experiments are gradually reduced, and the proportions of designing, comprehensive and innovative experiments are increased. In the talent cultivation plan of 2015 edition, the experimental courses are required to be designed according to 40% of the verifiable content, 30% of the comprehensive content and 30% of the designed (innovative) content, and increase the examination links. At the same time, it is required to arrange the experiment class and the theory class together and standardize the class hours.

College of Electronic Information Engineering constructs multi-directional practice teaching platform. A three-in-one innovation practice platform, which includes experimental teaching platform, innovation and entrepreneurship platform and subject competition platform, has been initially built based on students' independent development and innovation and entrepreneurship ability enhancement.

V. Practice of Talent Training Mode

A. Teaching Reform

In order to establish a teaching system that meets the requirements of application-oriented undergraduate courses, the College of Electronic Information Engineering has organized a number of educational ideas discussion activities, and teachers have continuously improved their understanding of the characteristics of application-oriented undergraduate courses. The general idea of teaching reform is to optimize the training scheme and curriculum system, innovate teaching

mode, reform teaching methods, strengthen practical teaching and establish and improve the teaching system. On the basis of the orientation of the college and the goal of talent cultivation, the reform of talent cultivation mode is taken as a breakthrough point which strengthens the construction of specialty, curriculum and teaching staff. The long-term mechanism and evaluation system of teaching quality monitoring promotes the continuous improvement of teaching quality in colleges.

In 2016, the college began to reform the talent cultivation mode with the reform of teacher's teaching mode as the core. In teaching, the seminar teaching mode of "student-centered, problem-oriented and task-driven" was implemented. The reform was carried out from the mechanism of student's academic assessment and evaluation to the teaching mode. By June 2016, there were nine courses. The curriculum reform was carried out, and four other courses were set up in the college. The core idea of the newly revised talent training program of the college is to strengthen the professional basic courses and core courses, increase professional orientation courses, increase the proportion of practical links, and strengthen employment and entrepreneurship education. In the new version, the total graduation credits for all majors are 159, which is lower than before. The three majors of the college have unified the basic courses of disciplines and implemented the platform of unified basic courses of disciplines, greatly increasing the practical training credits, accounting for 25% of the total credits of each major. According to social needs and employment orientation, each specialty has two different orientations. In 2016, the college implemented the undergraduate tutorial system. As soon as students enter the university, they are assigned tutors to give guidance on their studies and life, so that students can get guidance and education on learning methods and professional knowledge as soon as possible. In 2016, the college implemented the "Grassland Eagle" innovative talent training program and vigorously strengthened the cultivation of innovative talents. It focuses on improving students' innovative spirit of exploration and practical ability to solve problems, cultivating high-quality projects with strong practical ability, innovative ability and employment competitiveness, and adapting to the needs of new industrialization.

B. Teaching Practice

In line with the principle of "strengthening the link of practical education, highlighting the cultivation of engineering practical ability and innovative spirit", the college regards the cultivation of practical ability as the focus of talent cultivation. In strict accordance with the provisions of "Some Opinions of the Ministry of Education on Further Deepening the Reform of Undergraduate Teaching and Improving the Teaching Quality in an All-round Way", the accumulated credits of the practical teaching links included in the teaching plan account for 25% of the total credits. The practical teaching system of college specialty consists of course experiment, course design, graduation thesis (design), practice training and second classroom.

The College of Electronic Information Engineering attaches great importance to experimental teaching, and holds annual reports on experimental teaching and experimental teaching courses in the whole college, so as to manage the experimental courses in an all-round way. In terms of content organization, the proportion of verifiable experiments is gradually reduced, and the proportion of designing, comprehensive and innovative experiments is increased. In the personnel training plan of the 2015 edition, experimental courses are required to be designed in accordance with 40% of the verifiable content, 30% of the comprehensive content and 30% of the design (innovative) content, so as to increase the examination links. At the same time, experimental courses and theoretical courses are required to be arranged together to standardize the class hours.

1) Improving practical teaching system

According to the principles of simplicity to complexity, from low to advanced, from part to whole, from validation to comprehensiveness and design, and following the law of students' own growth and ability development, the practical activities of students in university are designed as a whole, and experimental teaching, professional practice, social practice and innovative training are preliminarily established. Planned practice teaching system.

2) Constructing a multi-faceted practical teaching platform

A three-in-one innovation practice platform, experimental teaching platform, innovation and entrepreneurship platform and subject competition platform, has been initially built based on students' independent development and innovation and entrepreneurship ability enhancement.

3) Strengthening the construction of laboratory information management

The college has developed the laboratory management system by using the project of the Western comprehensive strength promotion plan and the teachers' self-research. It has been implemented in all the experiments of the college and achieved good results. All experimental network management includes student signing in, submission of experimental report and achievement evaluation.

C. Practice Effect

College of Electronic Information Engineering has been continuously reforming the mode of education and personnel training, which has improved the quality of personnel training and achieved good results.

In 2015, the College of Electronic Information Engineering and ALDEBARAN Robotics co-founded the "Intelligent Humanoid Robot Joint Laboratory". In 2017, the college built a joint education practice base with Taiwan Lingyang Science and Technology Co., Ltd. In the past five years, students have won one national prize, eight first-class prizes, 18 second-class prizes, 20 third-class prizes and 6 excellent prizes in extracurricular academic competitions, and six provincial and ministerial first-class prizes, 16 second-class prizes and 27 third-class prizes. Academic competition team won the Furong Student Team Cooperation Award in 2014. In 2016, academic competition team won the honorary title of "Ten Outstanding Groups" of Inner Mongolia University - Team Cooperation Pioneer. Eighteen innovative entrepreneurship training programs for national and Autonomous University Students and 141 innovative entrepreneurship training programs for university students were approved. Up to now, 38 members

have been recommended to 985 and 211 universities for postgraduate studies.

VI. SUMMARY

Promoting the reform of education and teaching is a long-term, step-by-step process. As a local comprehensive university, Inner Mongolia University has always adhered to the guiding ideology of "based on the locality, serving the society", focusing on improving students' practical ability. By combining the three levels of talent cultivation objectives of "scientific basis, humanistic accomplishment and practical ability", Inner Mongolia University strives to construct a diversified talent cultivation mode, so that we will devote to finding a way of running a school based on the cultivation of applied talents and providing better intellectual support and talent support for the development of regional economy and society.

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