

Reform and Explore on Innovative Talent Training Mode in Universities

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Keywords: Innovative talents, Training mode, Modern distance education, Tutorial system.

Abstract. In today's network era of information explosion, talent cultivation is the key, and cultivating innovative talents is the core, to improve the competitiveness of the country. To comply with the national and social development and the need of the times, the reform on innovative talent training mode is imperative. The issues of cultivating innovative talents on the traditional education concept and education system were analyzed. The innovative talent training mode in universities has been reformed and explored. Basic education and university education are combined; multiple disciplines are overlapped and integrated, which can promote all-round development of students' knowledge, quality and capacity. Student-centered heuristic teaching mode, teaching methods of strengthening the interaction between teachers and students, modern distance education and teaching means are adopted. Tutorial system for undergraduates are adopted; scientific research projects and practice are used to stimulate students interest in learning; evaluation system is reformed; the credit system is optimized; students are guided to learn autonomously; campus environment of innovative talents cultivation is built, which have constructed new ways of innovative talent training.

Introduction

In today's network era of information explosion, to enhance national competitiveness and overall strength, talent cultivation is the key, and cultivating innovative talents is the core, which also is the request of the ages. Traditional education concept constrained the development of education in China. The traditional education system, especially the management system and evaluation system constrained the cultivation of innovative talents. Thus, innovative talent training mode in universities has been reformed and explored.

The Reform of the Innovative Talent Training is Imperative

In our country's higher education, the study of the existing scientific and technological knowledge and achievements has long been as the aim of talent training, and teaching and learning knowledge was paid much attention to. Besides, evaluation for the students was based on how much knowledge the students' have grasped, and the cultivation of students' innovative thinking and innovative ability was neglected [1]. But a country and even the society cannot develop without the innovative talents. In national medium and long-term education reform and

development plan outline (2010-2020), the task of the reform on management system and mode innovation of talents training was put forward in the reform of higher education for the first time [2]. Social huge development impact the talent training in universities, and the reform on innovative talent training mode has become the mainstream of the development of higher education [3]. To comply with the development of national and social and the need of the times, the reform on innovative talent training mode is imperative.

The Analysis of Innovative Talent Training Problem

The Constraint of Traditional Education Concepts

Education in China is constrained by planned economy for a long time; the traditional education notion is deeply rooted. With the arrival of the market economy, there have been some new education idea, but to change the traditional concept of education is not achieved overnight. Most of the teachers and parents always want students to enter a good university, so children were carried out early education and accelerated learning since the childhood, which cause primary school and middle school students learn mechanically and passively now, feeling a little less pleasure of learning. After entering the universities, many students depressed too long began to indulge themselves, and played online games at the university. Furthermore some students are addicted to the virtual world of game, eventually lead to degradation and even school dropout.

The reason of the problem above mentioned in the talent cultivation, is that in Chinese education knowledge is laid much emphasis on, but capacity and quality are made light of. People excessively emphasized the importance of knowledge, and children began to be imparted knowledge since a very early age. Moreover nowadays a lot of children grew up in a very superior environment, and parents and elders spoiled them, which caused them to lack of team consciousness, to have poor psychological quality, and even some to have the thought of suicide. So the cultivation of quality and ability is particularly important, but were ignored by many parents and teachers.

The Constraint of Traditional System

The traditional education system constrained the cultivation of innovative talents. These two aspects of management system and evaluation system are particularly serious.

Management system. Many administrators don't understand the professional technology, so do in universities. Many management policies and system are difficult to conform to the underlying reality. Administrative department manages; few teachers participate in the management. Some universities set up a committee of experts, and frontline teachers participate in some management and evaluation, but many of the underlying opinion and the suggestion is also difficult to reflect to the school significant decision-making and system. Reform on talent training mode put forward by frontline teachers is difficult to take into action without administrators' support. Therefore, professors' academic management and role of the committee of experts should be further strengthened, so as to provide support for training creative talents.

Evaluation system. The evaluation system in universities is not perfect. The evaluation of the level of higher education depends on how many doctor and master station in a university, how many scientific research projects teachers have taken on, how many papers and patents,

book they have published, and how many rewards they have gotten. Teaching effect mainly depends on postgraduate qualifying examination rate and graduate employment rate. And teaching evaluation is simplified and unspecific. The short-sighted cultural atmosphere is bound to affect the cultivation of innovative talents [4]. Therefore, evaluation of teachers in colleges and universities should be improved, at the same time teachers should fully experience the happiness brought about by the glorious career of teacher, thus studying science and research, carrying on teaching reform to cultivate innovative talents and put into practice.

For the evaluation of the performance of students, the final exam was often only paid much attention to, which caused that the teachers' lectures were for the exam, students' learning was for test, teachers lost their teaching goals, students also lost the learning goals, and the cultivation of the students' thinking ability and innovation ability was despised. The emphasis on students' evaluation is how much knowledge the students has mastered, which limits the development of students' comprehensive quality and ability, and can't attain the goal to urge students to enhance the ability and quality by examination. So, the student's evaluation system should be reformed.

Exploration on Way to Cultivate Innovative Talents

In modern education idea, emphasis is laid on the student-centered teaching and education, and cultivation of students' autonomous learning ability. Students' knowledge, ability and comprehensive quality are all-round developed, which promotes each other, complements each other in the teaching process. Knowledge is the basis of cultivating innovative talents, quality is the assurance of cultivating innovative talents, and ability is the ultimate goal of training innovative talents [5]. So, to cultivate innovative talents, their knowledge, quality and ability must be cultivated comprehensively, and advanced teaching methods and teaching means must be adopted to stimulate students' interest in learning and to guide them to learn autonomously.

All-Round Development of Knowledge, Quality and Ability

Combination of basic education and university education. Basic education is indispensable to the success of university education, the success or failure of which directly affects that of university education.

Special attention should be paid to the basic education in elementary school and middle school, and to cultivate students' comprehensive quality and ability. The space of free development should be given to students, and students' interest should be discovered, because interest is the best teacher. If every child can find things most interested in and be cultivated, so sure they can be cultivated to be outstanding talent in all aspects. At ordinary times attention should be paid to cultivate their abilities of observation, imagination and thinking, and to guide the children to think independently, find problems and solve the problem themselves. Besides, children should be encouraged to do things themselves. Some of so-called prodigies who were admitted to the university from their early age have not self-care ability in life, which should be worthy of reflection in basic education.

Integration of multiple disciplines education. In today's age of information explosion, science and technology breakthroughs and innovation are often the research achievements of comprehensive cross disciplines. Fusion education has become the contemporary complex innovative talents cultivation mode, which focuses on teaching reform by overlapping and fusion of multiple disciplines [6]. Integration education is not a list of various subjects, but to

grasp the intrinsic link between different disciplines knowledge, to extrapolate, and to achieve mastery through a comprehensive study. So some relevant cross curriculums need to be considered to add into the teaching plan, which lays the foundation for cultivating innovative talents. For example, metallurgical automation curriculum has been fused into our undergraduate teaching, and the teaching effect is good. In addition, in the teaching process, teachers should make the interdisciplinary knowledge fuse into this professional course, to realize the multidisciplinary cross fusion.

Reform of Teaching Mode, Teaching Method and Teaching Means

Reform of teaching mode, taking student as the main body. The traditional teaching is cramming teaching mode in which the teacher is taken as the main body, students accept knowledge passively. Students have little space to think, not to mention the innovative thinking. So to change the traditional teaching mode, students should be taken as the main body, and the teacher should become mentor and coach for students to explore the truth, rather than the truth speaker [7]. Build a happy and open classroom teaching environment, in which students are encouraged to speak up, and trained to think initiatively and learn autonomously. Teachers should often put forward some problems, inspire and guide students to think actively, and cultivate students' innovative thinking in the process of thinking and the innovation ability in the process of solving the problem.

Reform the teaching method, strengthening the interaction between teachers and students. Teachers infect and attract students by passionate teaching and their own personality charm, to inspire students' thinking, to stimulate students' curiosity, to communicate effectively with students, which is the deep interaction. This kind of communication and interaction is not only the students take the initiative to answer questions, but also students produce impulse in heart, after carefully thinking, to response to teachers' questions. To achieve effective communication and interaction, teachers must grasp the timing of the interaction, to get the resonance of teaching and studying, so as to further cultivate innovation ability.

Innovation of teaching methods, using remote education. Distance education, which is an important part of higher education in China. With the deepening of education reform, the proportion of it in higher education will be bigger and bigger. Teaching resources of modern distance education can be in many forms, such as audio or video teaching material, multimedia courseware, teaching video, and so on. It has the incomparable advantage over the conventional classroom teaching. On the one hand, in the process of recording video teaching materials, it can clip, in order to select the best part of the recording as a teaching resource, and show the best aspect of teachers' performance and help to exert the level of the teachers to the limit. On the other hand, in the process of distance education, students can adjust the teaching process, to slow down and also replay when they don't understand. Furthermore, distance education resources can be used repeatedly, thus distance open education is suitable for students of different levels, which is flexible, and can really realize to teach them according to their aptitude.

Guide Students to Learn Autonomously

If the student makes their efforts to learn actively, coupled with the teacher's effective guidance, quality of teaching will be improved. So the following three aspects of teaching reform can be carried on, so as to guide students to learn autonomously and cultivate interest in learning.

Tutorial system for undergraduates. Counselors manage student's daily life in the university, and have more contact with students. They have more influence on students, and they tend to be more focus on these results of students' test scores, postgraduate qualifying examination rate, level rate, employment rate, etc. But they often know very little about professional knowledge, so they are difficult to guide effectively students on admission, course selection, scientific research, practice, employment and etc. Professional class teachers have the ability of guiding students. So tutor system for undergraduates can be put into practice, by the professional class teacher as a teacher, in order to better guide the students.

Stimulate students' interest in learning with scientific research projects and practice. The freshmen should join the research team of undergraduate tutor. Then influenced by senior fellow apprentice and senior sister apprentice, they can participate in scientific research project. Students majored in automation and relevant subject can join electronics association, learn the actual devices and equipment in the laboratory, and make some small inventions to improve the practice ability. The sophomore can go deep into the enterprise or into college students' scientific research training center for cognition practice, to cultivate the students' consciousness of scientific research and practice. At the same time, cooperated with the junior, actively participate in college students' innovative entrepreneurial training project. In Liaoning University of science and technology, we gained greatly in this area. The number of project joined are increasing in our university in recent years, and provincial level projects, state-level projects are also rising year by year, which has suggested that the scientific research practice ability of students in our universities are on the rise. By senior year, students go deep into enterprise to carry on the graduation practice or to carry on enterprise field work, and they carry on graduation design and graduation thesis at the same time, really combining theory with practice to realize the smooth transition from the school to the society.

Reform of evaluation system by improving the credit system. Most courses in colleges and universities take the form of structural scores in accordance with the regular grades + experiment result + final grades. The final paper grades occupy a large proportion, which generally accounts for 70% to 80% of the total scores. Many students don't usually review in time, until nearly the final exams they began to read and study fast. After the exam they forgot things quickly learned soon; it is difficult to form good learning habits, and knowledge cannot be truly mastered. Therefore, the evaluation to the exam should be reformed specifically. For some courses the form of writing book report and defense can be taken. In the process of writing the book report, students' ability of autonomous learning and independent thinking will be improved. Defense can not only urge students to self-study, but also exercise the student's thinking ability, which is also an indispensable part of cultivating innovative talents.

The management mode of credit system and course selection system should be optimized, to promote coordinated development of students' general character and individual character. Students should be encouraged to select the courses freely, guided by undergraduates tutor. Students choose suitable courses, according to their own interests and development direction, to give full play to the students' autonomy. At the same time training on the students' scientific research practice should be encouraged and give students corresponding credits.

Summary

On the basis of in-depth analysis of issues of cultivating innovative talents, innovative talent training mode has been explored. Basic education and university education are combined;

multiple disciplines are overlapped and integrated, in order to promote all-round development of students' knowledge, quality and capacity. Student-centered heuristic teaching mode, teaching methods of strengthening the interaction between teachers and students, modern distance education and teaching means are adopted. Tutorial system for undergraduates are adopted; scientific research projects and practice are used to stimulate students interest in learning; evaluation system is reformed; the credit system is optimized; students are guided to learn autonomously; campus environment of innovative talents cultivation is built, which have constructed new ways of innovative talent training.

Acknowledgement

This work is supported by innovative entrepreneurial teaching reform major project at university of science and technology Liaoning in 2015 under Grant cxcy-2015-01, and graduate education reform and innovation projects in 2015 under Grant 2015YJSCX02.

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