On the Cultivation of College Students' Sci-Tech Innovation Ability in the New Era

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ABSTRACT

The new era is the age of knowledge economy. Technological innovation has become the driving force of the national economic development. The problem of cultivating innovative talents has drawn increasing attention. This article mainly explains the basic problems of undergraduates' cultivation of science and technology innovation ability, including the connotation of college students' science and technology innovation, the status quo and necessity of the cultivation of college students' science and technology innovation ability, and the specific measures for the cultivation of college students' science and technology innovation ability.¹

KEYWORDS

College Students; Innovative talents; Cultivation of innovation ability

INTRODUCTION

The competition of international Sci-Tech and economy in twenty-first Century is fundamentally the competition between knowledge and technological innovation. National independent innovation and entrepreneurship ability has become an important factor determining the level of national development. The cultivation of College Students' scientific and technological innovation ability is to emphasize the cultivation of College Students' innovative ideas, innovative thinking, innovative

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skills and innovative personality so that they can become high-quality talents to adapt to the changes and development of the times[1].

THE STATUS QUO OF THE CULTIVATION OF UNIVERSITY STUDENTS' SCIENTIFIC AND TECHNOLOGICAL INNOVATION ABILITY

1. Students' consciousness of innovation is not strong. The college students which our state needed are a group of advanced technical talents with professional knowledge. According to the investigation, many college students lack creative consciousness and desire for innovation. They are relatively low in innovation ability and are not active in learning. They cannot apply their knowledge and skills flexibly. They lack the ability to find valuable topics and lack of innovative perseverance [2, 3].

2. There is not enough awareness of the importance of the cultivation of innovation ability. (1) Our traditional inculcation education mode has imprisoned student's thinking. The school’s innovative atmosphere is not strong, and it is obviously not enough to cultivate and guide the innovation ability of college students. Classroom teaching content is relatively single, mostly book-based, outdated knowledge; do not pay attention to the intersection with the marginal disciplines and the introduction of the frontier of the discipline. (2) To improve the students' basic sense of innovation and their ability to innovate, they must increase their investment in science and technology innovation activities and make full use of the practical links in the teaching. At present, most colleges and universities haven't put science and technology innovation seminar as a required course into normal teaching plan and curriculum. Some schools are poor in teaching experiment conditions and cannot meet the needs of students' innovative practice. Students cannot carry out practical operation in the laboratory. The theoretical knowledge cannot be applied and expanded in time, which hinders the cultivation of scientific and technical innovation ability [4].

THE NECESSITY OF DEVELOPING COLLEGE STUDENTS' TECHNOLOGICAL INNOVATION ABILITY

Cultivating students' innovation ability of science and technology is an important task in today's higher education. In the era of knowledge economy and information age, the cultivation of scientific and technological innovation ability of college students is of great significance to the development of the country, and the individual development of the university students. (1) Training college students' technological innovation ability is the need to carry out the educational policy of the Party Central Committee. The "Decision of the Central Committee of the Communist Party of China on Deepening Education Reform and Promoting Quality
Education in an All-round Way" points out that "Higher education must attach importance to cultivating the students' innovative ability, practical ability and entrepreneurial spirit, and generally improve the humanistic quality and scientific quality of college students." As a base for cultivating high-quality innovative talents, universities must take the innovative ideas, innovative thinking, innovative skills and innovative personality of college students as their important work goals and create a more relaxed environment for the training of innovative talents [5]. (2) Cultivating college students' ability for scientific and technological innovation is the need of socialist modernization. Higher education must raise the ability of college students' scientific and technological innovation to a higher level [5]. The contemporary college students should not only have a good theoretical foundation, but also develop the habit of being bold in innovation and dare to innovate in the process of learning. (3) Cultivating students' technological innovation ability is the need to improve the comprehensive competitiveness of college students. In the socialist market economy, the employers are more and more favor those who have a solid theoretical basis, extraordinary innovative ideas, and excellent innovative personality of outstanding talent. The students with innovative ability can improve their comprehensive competitiveness and lay a solid foundation for the future to enter the society.

HOW TO CULTIVATE THE STUDENTS' SCIENTIFIC AND TECHNOLOGICAL INNOVATION ABILITY

(1) We should carry out teaching reform and implement innovative teaching methods. At present, many college students have been accustomed to listening to the teachers' knowledge directly, accepting the ready-made knowledge passively, without the habit of independent thinking, and the students in this education often lack creative thinking. Modern education must change this mode of teaching. In the teaching, we should pay attention to cultivating students' innovative ideas, creative thinking, creative skills and the implementation of "innovative teaching" methods. That is, in the teaching process, we should create similar scientific research scenarios and ask questions. Allow students to express their own opinions. In this process, students can explore and think independently, learn to explore knowledge actively, apply knowledge flexibly, and learn to analyze and solve problems with learned knowledge. Through this way of teaching, we can deepen students' understanding of knowledge and cultivate students' innovative thinking and innovative skills and improve their comprehensive quality. (2) Schools should regularly carry out scientific and technological innovation competition activities to provide more exercise opportunities for college students. Scientific and technological innovation competition is an important way to promote college students' technological innovation, and an important way to cultivate college students' technological innovation ability. College Students' scientific and technological competition can create an innovative education atmosphere, cultivate students' innovative ideas, innovative thinking, and innovative skills, cultivate
college students' cooperative spirit and practical ability, and promote the development of College Students' personality. The school should do a good job in the propaganda and organization of scientific and technological innovation activities. It should be good at giving full play to the incentive effect of science and technology competition, making certain incentive mechanism, encouraging students to participate actively and stimulating the creative thinking of students. (3) The communication between various disciplines should be strengthened. Professional teaching can only restrict the students' knowledge to a certain subject and cannot establish the connection between subjects. Usually, we should organize interdisciplinary communication, set up innovative and open courses, and improve the comprehensive quality of teachers.

CONCLUSIONS

With the quickening pace of the construction of the innovative country in twenty-first Century, it is an urgent task to train college students' scientific and technological innovation ability. Higher education should take effective measures to cultivate college students' scientific and technological innovation ability, and make them better adapt to the needs of social development, combining with the present situation of College Students' scientific and technological innovation ability.

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REFERENCES

4. Tianxing Wei. Some thoughts on the cultivation of College Students' innovative ability [J]. Forestry Education in China, 2010(1).