Improving the Innovative Ability of Local University Students by Using the Discipline Competition as a Link

Shujun Zhang and Yangbing Liu

ABSTRACT

In view of the common problems existing in the cultivation of innovative abilities of local college students, this paper proposes a discipline competition as a link to take a series of initiatives such as optimizing training programs, improving the curriculum group, strengthening laboratory construction and practical teaching infrastructure construction, and attaching importance to school-enterprise cooperation, establishment of the discipline competition base, the improvement of the faculty team construction, etc., aiming to improve the innovative ability of local college students and build a multi-level and comprehensive discipline competition system.1

KEYWORDS

Discipline competition, local colleges, college students, innovation ability.

INTRODUCTION

The discipline competition is an effective means for colleges and universities to promote the reform of the education system. It is an effective way to improve college students’ practical ability and cultivate college students’ awareness of

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innovation. It is an effective way to cultivate college students' teamwork spirit, and that is helpful to fostering “applied, pioneering, and innovative” talents [1].

THE ROLE AND SIGNIFICANCE OF SUBJECT CONTESTS FOR TALENT CULTIVATION

Subject Competition is an Effective Means to Promote the Reform of Education System in Local Colleges and Universities

The discipline competition content often involves a curriculum group rather than a single curriculum. The development of discipline competition can promote the reform of a series of professional curriculum systems and curriculum contents related to the competition content. During guiding the discipline competition for undergraduates, teachers can achieve “teaching and education can get mutual improvement.” by the method of asking questions, discovering problems, then integrating teaching content, improving teaching method, and updating teaching philosophy.

Subject Competition is an Effective Way to Improve College Students' Innovation Ability

The subject competition is a platform for students to comprehensively use basic knowledge to solve practical engineering problems, thereby realizing the transformation from theory to practice. It is a useful supplement to theoretical teaching. The content of the discipline competition usually has a certain application background or project background, with a wide range of contents and strong comprehensiveness. Participating in the discipline competition can stimulate students’ interest in learning, enhance their initiative in learning, expand students’ knowledge, and help them exercise their ability to independently access information, analyze problems, solve problems, integrate design, and express language. It contributes for students to developing innovative thinking, shaping innovative personality and enhancing the ability to innovate.

Subject Competition is an Effective Way to Cultivate College Students' Team Spirit

The discipline competition focuses on students' ability to analyze problems and solve problems. Problems have certain of difficulty, students need to use the strength of the team to analyze problems, build ideas, formulate programs and complete the transformation from theory to practice. This process is an effective way to cultivate student team spirit. For example, in the structural design competition, three students form a team, one for the design, one for programming, the other for writing
instructions, and they need to finish certain projects within a specified time. In order to achieve good results, the three people must cooperate closely and work together.

**STATUS OF UNDERGRADUATE DISCIPLINE COMPETITION IN LOCAL COLLEGES**

**Status**

In recent years, local colleges and universities have gradually become aware of the leading role of discipline competition in the training of talents. Colleges and universities have successively introduced relevant management systems that encourage college students to participate in academic competitions and improve the cultivation of innovative abilities in order to increase the level and level of competition. Taking our university as an example, the “Nanyang Institute of Technology College Students Competition Management Regulations” was issued to encourage college students to participate in various national, provincial, municipal and school-level competition programs. And the award-winning college students and instructors can get certain awards as well.

**Cause Analysis**

Although local colleges and universities have introduced relevant management systems that encourage college students to participate in academic competitions and improve their ability to innovate, they also raise funds through various ways and increase their investment in discipline competitions. However, comparing with key universities, there is still a certain gap between them. There are two main reasons for the analysis:

One is the reason for the school; the other is the reason for the teacher. School Reasons: (1) There is lack relatively of educational resources. (2) The competition has insufficient hardware and software resources. (3) Propaganda is not enough. (4) The discipline competition mechanism is not perfect. Reasons for Teachers: (1) Insufficient experience and level. (2) Insufficient guidance for students to participating in competition awareness.
WAYS AND MEASURES TO IMPROVE THE CULTIVATION OF INNOVATIVE ABILITY OF LOCAL COLLEGE STUDENTS BASED ON SUBJECT COMPETITION

Using Variety of Competition Projects as Carriers of Undergraduates' Cultivation of Innovation Ability

The discipline competition is a mass science and technology activity for college students [2]. Schools can increase the propaganda of the discipline competitions to expand the impact of academic competitions by organizing competition experience exchanges, award-winning exhibitions, etc.; carry out rich and colorful academic competitions so as to enhance students’ learning atmosphere; popularize scientific knowledge and stimulate the students' enthusiasm for innovation. Then a practical innovation platform will be created for students to cultivate applied innovative talents.

To Lay A Solid Foundation For Cultivating College Students' Innovative Ability With An Optimized Talent Training Plans

The discipline competition is a contest that examines students' basic theoretical knowledge of a certain discipline and their ability to solve practical problems [3]. In formulating the training plan, combining the contents of the competition, both theoretical teaching and practical teaching should be emphasized. In the training program, some contest-related courses, optimization courses and practical teaching systems are included, and students' innovation consciousness and innovation ability are continuously strengthened in all aspects of practical teaching. For example, it links course content such as civil engineering drawing, CAD basics, house architecture, and BIM technology involved in the graphic modeling and design contest with the experimental content of the students, and increases the applicable experiments to stimulate students' passion for learning. The discipline competition will promote the reform of the curriculum system and teaching content so as to optimize the personnel training program so that the trained personnel will be more innovative and meet the needs of society.

Building a Platform for Cultivating College Students' Innovation Capabilities with a Complete Training Base

RELY ON CENTRAL GOVERNMENT FINANCE TO SUPPORT THE DEVELOPMENT OF SPECIAL FUNDS FOR LOCAL COLLEGES AND UNIVERSITIES AND STRENGTHEN THE CONSTRUCTION OF PRACTICAL TEACHING INFRASTRUCTURE

In order to promote the coordinated development of higher education regions and improve the quality of local higher education, the central government set up a
special fund to support the development of local colleges and universities. This special fund is another major measure for the central government to promote the development of higher education and support the development of local colleges and universities and the characteristics of running schools. The local colleges and universities should rely on this special fund to continuously strengthen the construction of experimental teaching demonstration centers and college students' innovative practice bases, further improve the conditions for running schools, and actively create a large platform for practical teaching infrastructure construction and development.

STRENGTHEN LABORATORY CONSTRUCTION AND OPTIMIZE PRACTICE ENVIRONMENT FOR UNDERGRADUATES

The laboratory is the material basis for college students to carry out academic competitions, the base for cultivating innovative talents, and the cradle of technological innovation. In order to strengthen the construction of laboratories in local colleges and give full play to the role of laboratories in teaching, scientific research, disciplines competitions and serving localities, we must change our concepts, establish an important position in experimental teaching, build a scientific and sound management system, and strengthen the construction of software and hardware environment of laboratories. We should gradually establish open laboratories, innovative laboratories, and simulation laboratories to optimize the environment for innovation and practice for undergraduates and lay a foundation for cultivating innovative talents.

(1) Change the traditional concept and establish the important position of experimental teaching. (2) Gradually establish open innovation laboratories and simulation laboratories to broaden the innovation space for university students. (3) Build a laboratory information management system to standardize the innovative environment for college students.

IMPROVE THE CONSTRUCTION OF LABORATORY FACULTY AND IMPROVE THE LEVEL OF STUDENT INNOVATION

The revitalization of the nation is on education, the revitalization of education is on teachers. The high-level discipline competition and the cultivation of college students' innovative ability are inseparable from high-level teachers. Local colleges and universities should strengthen the training of teachers from the following aspects:

(1) Renew the concept and ideologically attach importance to the construction of laboratory faculty.

(2) Formulate and improve the training system to improve the overall quality of the teaching staff.
(3) School-enterprise cooperation, training "double type" teachers.
(4) Improve the management system and stabilize the teaching staff.

STRENGTHEN SCHOOL-INDUSTRY COOPERATION, JOINTLY CREATE A BRAND DISCIPLINE COMPETITION PROJECT, AND CREATE A DISCIPLINE COMPETITION PRACTICE TEACHING BASE

Local colleges and universities should make full use of their professional advantages to strengthen cooperation with local enterprises, promote the integration of discipline competition resources inside and outside the school, integrate into localities and gradually develop their own characteristics, and create discipline competition practice teaching bases. Through the cooperation between schools and enterprises, the discipline competitions are jointly conducted. On the one hand, enterprises provide college students with practical and innovative venues and advanced scientific instruments and equipment to make up for deficiencies in the educational resources of local colleges and universities; on the other hand, the key and difficult issues that enterprises met can be used as the subject of the competition. Thus, it can not only solve the practical problems of the enterprise, but also optimize the practical teaching of college students, allow students to participate in practical activities with problems; guide practice with theory; analyze problems and solve problems in practice; enrich the theory with practice; enhance the scientific spirit and practical ability of practical innovation as the same time.

CONCLUSIONS

The discipline competition activity is an important carrier for improving the innovation ability of college students, an effective way to cultivate innovative talents, and a basic platform for improving students’ ability to apply the basic knowledge comprehensively into practice and solve practical problems, thereby realizing the theory to practice transformation. It is a useful supplement to theoretical teaching, and it is of great significance to improving college students' teamwork spirit, scientific research ability and innovation consciousness. All universities and colleges have used the effective approach and carrier, discipline competitions, to continuously enhance the level and level of academic competition in order to promote the reform of the education and teaching system, so as to improve the school's educational level and teaching quality, demonstrate the school’s strength, and continuously improve the school’s Well-known for providing qualified personnel to social science and technology fields.
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