

Research of Undergraduate Education Mode based on “Undergraduate Academic Mentors” and “Academic Climbing Plan”

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Abstract

The development of the new era has also put forward higher requirements for the cultivation of undergraduate. In order to make up for the shortcomings of traditional education mode and cultivate high-quality applied and innovative students, the study of new education mode is necessary. Based on the "Undergraduate Academic Mentor" system and "Undergraduate Academic Climbing Plan" implemented by Qilu University of Technology, this paper conducts in-depth exploration and research on new training mode for undergraduate students. It fully utilizes the guiding role of mentors in the cultivation process, improves the cultivation quality, promotes personalized development of students, and has achieved good results.

Keywords

Undergraduate Academic Mentors; Academic Climbing Plan; Undergraduate Education Mode.

1. Introduction

1.1. Research Background

In 1999, Chinese universities began to expand their enrollment. According to statistics, the enrollment of ordinary universities in China was about 1.08 million in 1998, while it had reached about 4.2 million in 2004. The large-scale expansion of enrollment has provided more young people with opportunities to receive higher education. However, at the same time, expanding enrollment also brings great pressure to higher education, exposing many problems in the original teaching management model:

- (1) The teaching system in Chinese universities is an academic year system, which is developed based on grades or majors, rather than personalized training for each student.
- (2) Although the classroom teaching mode adopted by universities is beneficial to the teaching efficiency of teachers and enables students to receive professional basic knowledge more systematically, its limitation is that students passively receive knowledge, and teachers cannot understand the shortcomings and interests of student knowledge.
- (3) The traditional management mode of universities is based on majors, grades, classes, etc., with a homeroom teacher responsible for students' learning, life, etc., and a counselor responsible for students' thoughts, leisure activities, etc. This management mode has advantages when the class size is small, but as the number of students increases, it is difficult for the class teacher or counselor alone to grasp and understand.

1.2. Research Significance

The undergraduate mentorship system is where mentors serve as mentors for several undergraduate students, and based on their personality traits, expertise, and interests, research

directions are formulated in combination with their majors, and teaching is tailored to their individual needs. The undergraduate mentorship system plays a very important role in improving the quality of higher education and cultivating students' innovative consciousness.

Firstly, the undergraduate mentorship system is an objective requirement to adapt to economic and social development and cultivate students with multiple specifications. The undergraduate mentorship system can effectively compensate for the shortcomings of the credit system, avoid the drawbacks of the education mode of "going step by step" and "cooking in one pot", cultivate high-quality applied and innovative person, and meet the needs of society.

Secondly, the undergraduate mentorship system is an inevitable choice to implement the educational philosophy of "people-oriented" and cultivate personalized students. The value of higher education is to promote the combination of personal development and social development. Adhering to the educational philosophy of "people-oriented" in higher education means taking students as the main body, starting from their fundamental needs, and effectively safeguarding their legitimate rights and interests in education. With the increasing differentiation and personalization of the needs of college students in the new era, the targeted guidance content, flexibility in organizing teaching activities, and diversity in teaching methods of undergraduate mentorship have become effective ways to address this demand.

Therefore, exploring the implementation of undergraduate mentorship system, by constructing a new type of teacher-student relationship, leveraging the leading role of university teachers in student cultivation, reshaping the multiple roles of teachers, creating interactive spaces for learning, scientific research, and life experience between teachers and students, helping college students grow healthily, and achieving institutionalization of innovative cultivation, has important theoretical significance and practical value.

1.3. Research History

The "mentorship system" for undergraduate students was originated from the University of Oxford in the United Kingdom. In the 19th century, universities such as Oxford and Cambridge began to implement mentorship in the training of undergraduate students, with the aim of cultivating their mental and moral abilities through free education. Afterwards, universities such as Harvard, Yale, and Princeton in the United States also established mentorship systems. The mentorship system at the University of Cambridge in the UK belongs to a typical "multi disciplinary teacher mode", in which teachers provide comprehensive guidance to students' learning, thinking, and life. Mentors must have rich teaching experience and considerable social experience, while Oxford University is a typical "expert mode" representative, based on the research direction of mentors, providing academic planning guidance to students, with a emphasis on the requirements of mentors' professional competence and teaching skills.

In China, the implementation of the "mentor system" for undergraduate students began in 1938 at Zhejiang University. President Zhu Kezhen widely applied the mentor system to undergraduate education. Given the effective role of the mentorship system in cultivating innovative talents, other domestic universities followed at that time. After the 21st century, universities such as Peking University, Tsinghua University, and Zhejiang University have begun to reintroduce the undergraduate mentorship system in some departments. In December 2004, the Ministry of Education issued several opinions on further strengthening undergraduate education in higher education institutions, stating that "universities with conditions should actively promote the mentor system and strive to provide high-quality and personalized services for the comprehensive development of students." Today, the undergraduate mentor system has become an important cultivation and management system widely implemented and increasingly valued in many universities in China.

Qilu University of Technology has made beneficial explorations in the "mentor system" for undergraduate students. The university has implemented the "academic mentor system" and

"academic climbing plan" for undergraduate students, achieving a breakthrough in the reform of cultivation mode. It fully utilizes the guiding role of mentors in the cultivation process, improves the quality of student cultivation, promotes personalized development of students, and has achieved good results.

2. Research Content

With the increasing differentiation and personalization of the needs of college students in the new era, this research aims to study the new training mode for undergraduate students in terms of targeted guidance content, flexibility in organizing teaching activities, and diversity in teaching methods.

(1) Based on the "Undergraduate Academic Mentor" system and "Undergraduate Academic Climbing Plan" implemented by Qilu University of Technology, this paper conducts in-depth exploration and research on new training models for undergraduate students.

(2) Taking the Electrical Engineering and Automation major as an example, the application and practice of a new undergraduate training model based on the "Undergraduate Academic Mentor" and "Undergraduate Academic Climbing Plan".

(3) Research on how to organically combine the undergraduate academic mentorship system with the undergraduate academic climbing plan, truly achieve student-centered, innovative cultivation mode, and achieve the goal of cultivating high-quality person.

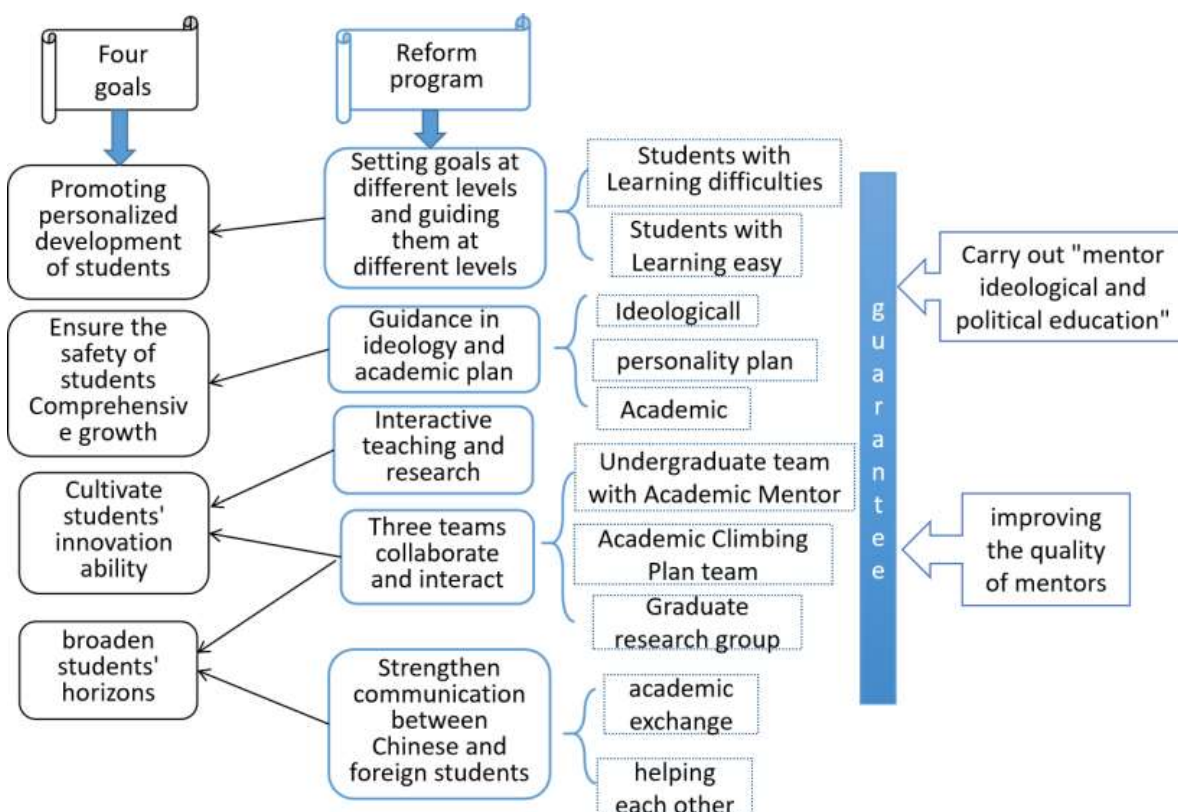


Fig.1 The structure of the research

2.1. Research Goals

(1) Promoting personalized development of students

Only when students' personalities are fully developed can there be more innovative talents. The development of a country requires diverse talents, and the diversity of talents is a solid foundation for a country's comprehensive strength.

(2) Ensure the all-round growth of students

To enable students to achieve comprehensive development in morality, intelligence, physical fitness, aesthetics, and labor, improve the quality of university students, and thus achieve high-quality development of higher education in China.

(3) Cultivate students' innovation ability

Enable students to possess a certain spirit of innovation, improve their innovation ability, and truly cultivate high-quality person that are in line with the development of the times.

(4) Broaden students' horizons

Expand students' professional, academic, and international perspectives, and create conditions for the country to cultivate high-level professional talents with core competitiveness.

2.2. Reform Plan Design

(1) Setting goals at different levels and leading them at different levels

Respecting the personalized development of students, designing goal requirements at different levels based on their actual situation, providing common guidance for the team, creating opportunities for all students to participate in research and innovation, proposing basic goal requirements, and opening up personalized training channels for students with strengths, setting high standards and requirements, so that students in different situations can improve on their existing foundation through hard work.

(2) Provide comprehensive guidance and training to students in terms of ideology, personality planning, and academic aspects

Emphasizing the equal importance of morality and intelligence, mentors influence students through their own knowledge, literacy, and personal charm through words and deeds. Mentors should rely on teaching activities, lead by example, and fully play a leading and driving role. By providing direct and indirect guidance, paying attention to the ideological dynamics of students, guiding them to establish correct worldviews, outlooks on life, and values, helping students correct their professional thinking and learning attitudes, emphasizing the healthy development of their physical and mental health, strengthening the cultivation of their comprehensive abilities and qualities, and promoting the all-round healthy growth of their knowledge, abilities, and qualities.

(3) Interaction between teaching and research

The interaction between teaching and research constantly stimulates students' initiative, enthusiasm, and creativity in learning. Enable students to fully participate in the mentor's research projects and continuously improve their innovation abilities. Actively encourage students to participate in activities such as the "College Student Innovation and Entrepreneurship Competition", the "Challenge Cup" College Student Extracurricular Academic and Technological Works Competition, and the "Siemens Cup" China Intelligent Manufacturing Challenge, etc. to cultivate students' innovation awareness and interest, and enhance their innovation ability in innovation and entrepreneurship practice.

(4) Three teams collaborate and interact, enhancing communication between Chinese and foreign students

The three major teams, namely "the undergraduate academic guidance team", "the undergraduate academic climbing team", and "the graduate research group", are organically combined to collaborate and interact, expanding the professional and academic perspectives of undergraduate students.

Strengthen academic exchanges between Chinese and foreign students, carry out mutual assistance, broaden their international perspectives, and improve their international communication abilities.

(5) Carry out "mentor ideological and political education"

"Mentors' ideological and political education" emphasizes that as undergraduate supervisors, one should consciously shoulder the fundamental task of "cultivating virtue and educating people". They should establish themselves with morality, learn with morality, teach with morality, and cultivate moral character. They should adhere to the unity of teaching and educating people, the unity of words and deeds, and the unity of academic freedom and academic norms. They should actively guide students to establish correct worldviews, outlooks on life, and values, and subtly influence students with good morality and practical actions, silently infect students, and effectively play the role of moral education, speech, and action.

(6) Comprehensively improving the quality of mentors

Firstly, targeted training should be provided for teachers at different levels. For new teachers, focus on understanding the curriculum system, mastering teaching content, and enhancing teaching abilities; for teachers with certain teaching experience, enhance the professional construction, curriculum system construction, and enrichment of information technology teaching methods; for teachers who already have rich teaching experience, emphasis should be placed on training to condense and enhance teaching research results. Secondly, make reasonable and effective use of excellent teachers within the team to provide guidance to young teachers, forming a virtuous cycle of mentoring and mentoring.

3. Conclusion

Through the implementation of the "Undergraduate Academic Mentor" and "Undergraduate Academic Climbing Plan", satisfactory results have been achieved:

(1) Students has grown into high-level composite person with personalized, comprehensive development, innovative spirit, broad professional and international perspectives.

(2) Cultivated the academic innovation spirit and practical ability of students, and created an academic research atmosphere among them. Through various forms of technological innovation practice education, students are stimulated to have an academic enterprising consciousness and cultivate innovative practical abilities. They have achieved good results in various competitions such as the College Student Innovation and Entrepreneurship Competition

(3) Through the implementation of this project, students' sense of belonging to their major and college has been enhanced, and the cultivation of their cooperative spirit and team consciousness has been strengthened. This has promoted the construction of the college's academic atmosphere and formed a good atmosphere for educating all students.

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