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Construction and Reflection on the New Mentorship System based on "Three Practices and Three Successes"

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Abstract: This paper takes the new mentorship system construction of surveying and mapping engineering major in Heilongjiang University of Technology as an example, and elaborates the new mentorship system construction program based on "Three Practices and Three Successes" from the connotation of cultivating, implementation strategy, implementation pathway, and practice achievements. It proves the feasibility of the new mentorship system construction with practice achievement. The results of the research can provide thoughts and reference for the construction of mentorship system in the new era.

Keywords: New Mentorship System; Three Practices and Three Successes; Undergraduate Mentorship

1. Introduction

With the advent of informationization surveying and mapping, surveying and mapping disciplines and computers, geography, geophysics, artificial intelligence and other disciplines are further integrated, technology update and development is increasingly quick, the professional quality of the cultivating requirements of students is also increasingly high, particularly paying attention to the students' ability to innovate and practical application ability. How to give better play to the tutor's the knowledge and experience advantage, cultivate high-level, abundant practical experience, innovation ability of excellent surveying and mapping talents, is the main problem facing the cultivating of surveying and mapping engineering personnel at present[1].

This paper analyzes and sums up the construction of the new professional mentorship system by combining the specific practice of the surveying and mapping engineering major of Heilongjiang University of Technology in the mentorship system of undergraduates in the class of 2019-2022. The following aspects are elaborated from the connotation of cultivating, implementation strategy, implementation pathway, and practice achievements of the mentorship system for surveying and mapping majors in Heilongjiang University of Technology.

2. Connotation of Cultivating

The new mentorship system for surveying and mapping engineering majors of Heilongjiang University of Technology is on the basis of the school motto "Cultivate Virtue, Cultivate Ability, Become a Man and Reach achievements", on the basis of which we further clarify the connections between the purposes of cultivation and the result of cultivation, explore the essence of cultivation, and set up the connotation of cultivation as "Cultivate Virtue and Cultivate Ability, Become a Man, and Reach achievements". Cultivating one's moral character and ability, and becoming an adult and a person of ability are the approaches to build the mentorship system, while becoming a person of ability is the final result of the mentorship system.

Since ancient times, the Chinese people have always insisted on the teaching that "from the Son of Heaven to the common people, all of them should cultivate themselves"[2]. "Cultivation" Confucianism interpreted as the cultivation of virtue and cultivation of wisdom (ability). The school is a sacred place of education, with moral and talented teachers to cultivate students of excellence in character and learning should be the eternal pursuit.

Teachers cultivate morality, namely, cultivate "virtue", "fraternity", "candlelight" character; teachers cultivate ability, namely, cultivate "preaching", "teaching", "explaining" skills; teachers become men, namely, to become a person of high moral character, high learning

as a teacher; teachers reach achievements, teachers cultivate ability, namely, the achievement of the national cultivation of excellence.

Students cultivate morality, namely, to cultivate "gratitude", "integrity", "responsibility" sentiment; students cultivate ability, namely, to cultivate "independent thinking", "independent innovation", "Practice in person" ability; students become men, namely, to become a moral, intellectual, physical and other comprehensive development of the builders and successors, Reach achievements namely, to realize the value of life, achievement of life Dream.

3. Implementation Strategies

3.1 Habit-formation

Just stepped into the university campus of the freshman students, the treatment of college life is full of unknowns, at this stage if you are not sure of their future development direction, it is easy to lose themselves, slack, follow the crowd and other emotions. Social environment, living environment will let college students in the subtle shaping of life, values and worldview [3]. Therefore, the primary mission of the tutor in the first year of college is to provide guidance on the direction of students' professional development, learning approaches and career planning for students' individual differences, and to further cultivate students' good learning and living habits [4]. Habit-formation is like establishing a high building foundation, the stronger the foundation, the higher and stronger the building can be set up. Cultivation of students is the same, in the first year of college to develop good learning and living habits, the students four years of college or even after graduation and work to maintain good learning, working approaches, to achieve the "becoming a man, reaching achievements, talented" purpose is particularly important.

3.2 Innovative Thinking

By the sophomore stage, the main mission of the mentorship system is to cultivate students' innovative thinking, and the cultivation of innovative thinking ability is an important part of university education and the enhancement of the quality of higher education, and is also the core purpose of the cultivation of talents in new engineering disciplines [5]. By means of conducting the group meeting activity seminar can let students combine professional knowledge to spread their own thinking, and at the same time encourage students to actively take part in various innovation and entrepreneurship competitions such as "Internet+, college students innovation and entrepreneurship competition" and other projects. In addition, students can also take part in the mentor's scientific research projects and scientific and technological innovation projects for undergraduates to establish an innovative scientific research platform, stimulate students' curiosity, while cultivating students' scientific spirit and innovative thinking, so that they are no longer confined to the books, the school space, but further contact with cutting-edge scientific research projects, closer to the actual combat requirements, to stimulate their potential to improve their ability [6].

3.3 Refining Techniques

In the third year of college, the main mission is to improve students' professional skills. In this stage, students mainly refine their professional skills by means of taking on-campus experimental classes, practical training classes, group activities and other forms. At the same time, students are encouraged to actively take part in provincial and national professional skills competitions, such as provincial university students' surveying and mapping skills competition, national university students' virtual simulation surveying and mapping skills competition and other projects, and in accordance with the specific competitions for targeted training and guidance. Competition to test students' theoretical knowledge and ability to solve practical problems, stimulate students' interest in learning and potential, cultivate students' hands-on ability and group work spirit, and enhance students' learning enthusiasm and initiative [7].

3.4 Project Practice

The main mission of the mentorship system in the fourth year is to practice by means of professional internship and graduation design and other practical aspects of the production project. Professional internship is mainly by means of the school-enterprise cooperation, the students will be sent to the cooperative

enterprises to take part in specific production projects, the selection of enterprises experienced technical personnel as a practice tutor, by the practice tutor and the school tutor co-guidance, by means of implementing the real production projects, the real working environment to exercise and improve the comprehensive ability of students. Graduation design is to be implemented after the students return to school after completing the professional internship, combined with the specific production projects for the program design, technical summary, etc., so as to better cultivate the students' professional comprehensive application ability.

4. Implementation Approach

In accordance with the connotation of cultivating, it is established that the mentorship system is on the basis of the realization of "cultivating oneself, cultivating morality, and cultivating ability", and the specific methods of implementation are "daily registration, group meeting activities, and mentorship".

4.1 Habit Formation Approach -Daily Registration

Students' habit formation is mainly realized by means of conducting the daily registration "four one project" on the Dingding platform. Daily registration is the most important thing, not only for students to sharpen their character and perseverance, but also for the formation of good habits. The "Four One Project" combines the teachers' own advantages, such as "reading a good book, learning a professional software, conduct daily registration every day, and conduct self-examination once a day".

4.1.1 Intensive reading of a good book

In accordance with each student's reading notes, through Dingding platform, WeChat and other platforms, the tutor interacts and communicates with them, encourage students to publish their own views, students after a long period of literature tracking reading, document management and pen summarization, able to learn the logical thinking of well-known scholars, cultivate students on the scientific scope of the big picture, from multiple perspectives, multi-disciplinary inquiry to solve the problem of the ability to solve the problem and from which they can condense their own academic point of view, in order to lay a solid foundation for writing a Thesis [8].

4.1.2 Persistence in learning specialized software

Learning professional software can improve your professional ability and enhance your employment advantage, and at the same time, it is also the cultivation of perseverance to study relentlessly every day. Professional software training can be utilized every day after school time to contact in a fragmented manner, not subject to external conditions.

4.1.3 Completion of registration of "Learning Power"

It is the responsibility of young people in the new era to learn science and culture well and become the pillars of the country. Learning points, two-player battles, multi-player battles, online quizzes and other programs in the "Learning Power" APP platform make learning diversified and no longer boring. by means of conducting the "Learning Power" to develop good learning habits, serious study, in-depth thinking, deep understanding, not only to learn systematic theoretical knowledge to guide practice, but also to insist on the truth, the pursuit of truth, bold innovation.

4.1.4 Self-examination once a day

Self-examination is an important approach to improve personal moral cultivation. "Three times to conduct self-examination on myself every day". "When you see a wise person, think in unison; when you see an unworthy person, conduct self-examination on yourself". Since ancient times, the sages in the cultivation of character, perfect themselves, have attached great importance to the power of self-examination The power of self-examination is very important. Only often conduct self-examination on themselves, conduct rational view of themselves, in order to reflect on their own faults, as soon as possible to remove the shortcomings, correct mistakes in a timely manner, and constantly improve themselves [9]. The significance of self-examination is not only to recognize the shortcomings, but also to transcend oneself. With a calm heart to select the good from, with an enterprising mind to learn from the best, self-knowledge and self-reflection, never loose, in order to know the fear of self-examination, be alert, clear direction, and then enhance self-improvement, self-improvement, and constantly sublimate the personality.

4.2 Approaches to Develop Innovative Thinking-group Meeting Activities

Innovative thinking cultivation is mainly realized by means of group meeting activities, such as weekly routine group seminars for team learning, tutors establish missions in advance, students report what they have learned to tutors by means of PPT or other methods, tutors ask questions concerning the content of the report and discuss it. This model allows students to complement each other's advantages in team interaction, multi-perspective thinking, multi-level collaboration, to prevent students from single combat thinking and vision by the limitations of the knowledge background into a dead end, innovation in the exchange and collaboration to produce sparks [10]. The atmosphere of academic discussion can provide tutors and students with a strong academic vitality of education and knowledge creation, easy to stimulate students' innovative thinking.

4.3 Approaches to Professional Skills-mentorship

Professional skills training is mainly realized by means of mentorship system, Since ancient times in China, there is “learning from masters, masters with apprentices” methods of teaching skills, but with the expansion of China's colleges and universities year by year, there is a shortage of teacher-student ratio, teachers are full of heavy teaching load, heavy pressure on scientific research and other issues, this masters with apprentices of efficient talent training approach is gradually weakened until This efficient way of cultivating talents is gradually weakening or missing. mentorship system of surveying and mapping engineering in Heilongjiang University of Technology is to restore the traditional approach of “master taking apprentice” to enhance students' professional skills in the most direct and efficient way.

5. Practical Achievements

Mentoring system of major of surveying and mapping engineering of Heilongjiang University of Technology regards “cultivating oneself, cultivating virtue, cultivating ability, cultivating adults, cultivating talents” as the core purpose, and devotes itself to the cultivation of applied and innovative talents. In accordance with the statistics, in 2020-2023, the total number of innovation and entrepreneurship competition awards is over 10, the number of professional skills competition awards is over 40. Among them, we have won over 10 bronze prizes, 1 silver prize and 1 national third prize in Heilongjiang Province “Internet+” Innovation and Entrepreneurship Competition for College Students. In the National College Students' Surveying and Mapping Skills Competition, we won 2 first prizes and 8 second prizes. In the Surveying and Mapping Skills Competition for College Students in Heilongjiang Province, we have won 9 special prizes, 10 first prizes, 5 second prizes and 8 excellent instructor awards.

Over 90% of the students of surveying and mapping engineering major who take part in internship in school-enterprise cooperation units every year are recognized by the enterprises, and their professional skills and comprehensive quality are generally assessed highly. This part of the students have taken part in the production project, professional quality, employment situation is good. The school has also been widely praised by the school-enterprise cooperation units and student employment organizations.

6. Conclusion

This paper explores and practices the concept of new mentorship system for major of surveying and mapping engineering in Heilongjiang University of Technology, sets up the connotation of “cultivating oneself, cultivating virtue and cultivating ability, becoming an adult and becoming a man”, and formulates the implementation strategies of “habit formation, innovative thinking, refining skills, and project actualization”, and effectively solves the problems of students paying attention to theory rather than practice, poor practical hands-on ability, insufficient innovative thinking, and pressure of employment by means of implementing “daily registration, group meeting activities, and mentorship system”. After several years of research and practice illustrates that the new mentorship system on the basis of “Three Practices and Three Successes” for the major of surveying and mapping engineering of Heilongjiang University of Technology has reached good achievements in the cultivation

of students' innovative ability and professional practice ability, and raised a group of students with excellent professional quality and strong innovative thinking, which has made certain contribution to the construction and economic development of the country. The research achievements can provide reference for the construction of mentorship system in higher education institutions.

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