

The Practice Path of Educating Students by Total Factor Management of Scientific and Technological Innovation Projects

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Abstract: The practical education of science and technology innovation for college students has wide coverage and is deeply loved by students. It is an important way for colleges and universities to train students in talents. Project management is the basic carrier of college students' science and technology innovation practice education. It is necessary to fully tap the educational value of college students' science and technology innovation project management. With the focus of "management means, management carrier, all staff thinking and politics, and students' needs", the author has explored the whole elements of project management education resources and explored the practical path of project management education.

Keywords: College students science and technology innovation project; Management and education; Moral cultivation; All elements of education

Online publication: September 26, 2024

1. Introduction

"Who and how to train people" is the fundamental mission of colleges and universities, and moral cultivation is the central work of colleges and universities. To integrate ideological and political education into every link of education and teaching, and realize the education of all staff, the whole process and all-round, is the value choice and inevitable requirement of the development of various work in colleges and universities^[1,2].

The practical education of scientific and technological innovation for college students has wide coverage and is deeply loved by students. It is an important way for college personnel training. Project management is the basic carrier of college students' scientific and technological innovation practice education. From the perspective of cultivating students, the goal of management should not be limited to the completion of management tasks but should pursue the realization of deeper goals to shape students and cultivate students^[3]. Only by running the work of cultivating talents through every link of the management of college students' scientific and technological innovation projects can the value of educating talents be better demonstrated.

In order to comprehensively improve the education effect, it is necessary to focus on the needs of student's growth and development, emphasize the ontology education value of project management, optimize all elements of college students' science and technology innovation project management, make all elements exert a positive impact on students, integrate ideological and political education into each specific management link, and realize the effective transformation from management to education with all elements of education ^[4,5].

2. The main problems of college students' science and technology innovation project management and education

2.1. Management and education is arbitrary

College students' science and technology innovation project management has the problem of "emphasizing two ends and light middle," paying more attention to the management of project establishment and acceptance stage. There are deficiencies in the management and guidance of a large number of intermediate links, which mainly focus on students' self-management, and have the lack of effective guidance due to time, incident and situation. Whether it is positive education depends on students' quality to a large extent ^[6].

2.2. Education environment utilitarianism

School management departments or instructors pay more attention to project results, but not enough attention to students' "what they think and what they do." There is the utilitarianism of an innovative environment, the utilitarian thoughts of the students, and a few students who participate in the project just for extra points, awards and papers.

2.3. Value guidance is not enough

School management focuses on innovation and entrepreneurship knowledge, policies, procedures and other aspects, the value of education of students is insufficient, which cannot solve students' ideological confusion. Project management tends to "emphasis on technology, light education."

2.4. Separate education from management

Objectively, there is a narrow cognition of "management in terms of management." The management goal is mainly to complete the project management work, and the system design is rarely carried out from the perspective of education. Management and education are separated.

3. The focused analysis of college students' science and technology innovation project management education

The science and technology innovation project management of college students mainly involves three elements: "people, carriers and means." "People" refers to various roles involved in the implementation of the project, including participating students, instructors, managers and so on. The "carrier" includes the aspects of "subject, place, publicity and guarantee" in the implementation of the project. "Means" refers to the sum of management activities of the project carried out by the school according to certain rules.

"People" is the most important element, to achieve the whole element management education involves two keys. The first is the ideological and political ability of all staff. Whether the educator adheres to the

principle of having a loving attitude, well-prepared methods and beneficial effects, deeply grasps the law of students' growth and talent, the law of teaching and educating people, and the law of ideological and political work, and whether various roles have formed effective interaction, actively pursues the work of all-factor education, creates conditions for the transformation of project management into project education. The second is to accurately meet the needs. In project management, for educators, accurately connecting students' needs, finding the right time to carry out targeted education, ensuring the right ways, and combining solving practical problems with solving ideological problems, can enhance the effectiveness of education.

In combination with the four practical problems in the implementation of university science and technology innovation projects, there are the following four focus points to enhance the educational effectiveness of total factor management. Firstly, take management means as the focus, construct the management process of college students' science and technology innovation projects, strengthen scientific management in the whole process, guarantee "moral cultivation," realize the effective transformation from management to education^[7,8] and solve the problem of "education arbitrarily."

Secondly, with the management carrier as the focus, all-round exploration of ideological and political education resources, rich connotation of management and education, to solve the problem of "environmental utility, value guidance is not enough."

Thirdly, take the subject and object of management as the focus, promote the ideological and political work of all staff, ensure the effect of education, and solve the problem of "separation of management and education."

Fourthly, focusing on the needs of students and the right ways, to solve practical problems to achieve better education, can solve the problem in project management link "education effect is not good."

4. The practice path of college students' science and technology innovation project management and education

4.1. Strengthen the "moral cultivation" of management means

Firstly, take the management system as the starting point, and give play to the value of the system to educate people. Establish a system applicable to the scientific management of the whole process to provide institutional guarantee for project management. The implementation of rules and regulations is people-oriented, both serious and flexible, humanized management to create a serious, relaxed and harmonious atmosphere^[9], create a healthy and rule-based innovation environment, in the "why, what is, what to do, how to do, to what extent" and other aspects of continuous education, to guide students to the overall growth of morally, intellectually, physically, aesthetic, and labor.

Secondly, take the evaluation mechanism as the starting point to strengthen the value orientation. Optimize the evaluation mechanism, introduce the content of the ideological and political evaluation, increase the evaluation of students' practical experience and harvest, and break the simple evaluation mechanism of technical achievements. Evaluation content such as "Why participate and what exercises you hope to get" should be added in the project approval stage; evaluation content such as "Have you gained, what you have gained, what efforts you have made, how to overcome difficulties" should be added in the practice stage; evaluation content such as "experience statement, behavior reflection, whether to continue research" should be added in the acceptance stage, to encourage students to overcome utilitarian thoughts and correct the purpose and attitude of participation. Guide students to pay attention to growth experience, self-exploration, self-evaluation and self-reflection.

Thirdly, take high-quality service as the starting point to strengthen service education. Adhere to the combination of management and service, and define the essence of college students' science and technology innovation project management as serving students. Establish a "student-centered" education concept, respect the principal position of students, innovate service standards, optimize service methods, build a service guarantee mechanism, care about students' difficulties, pay attention to students' demands, continue to provide students with high-quality services, and strive to improve the level of service education^[10].

4.2. Explore the "education function" of management carrier

Firstly, take the management of scientific and creative places as the starting point, and make ideological and political work daily. Introduce the "6S" management concept, strengthen the management of college students' innovative practice places, and guide students to do daily work such as "distinguish between what is necessary and what is not, and eliminate everything else in the workplace except what is necessary to stay" (Seiri), "keep the necessary items in the prescribed position, and placed neatly marked" (Seiton), "put the goods in the workplace according to the requirements and standardize the management according to the enterprise requirements" (Standard), "clean to maintain the above 3s results" (Seiketsu), "each member develops good habits, follows the rules, and develops a positive attitude" (Shitsuke), "pay attention to safety education, every moment has the first concept of safety, preventive" (Safety). Improve the environment of innovation places such as laboratories, pay attention to ideological and political education in daily management, improve the quality of environmental education, cultivate habits through daily training, improve students' professional quality, and highlight the value of "6S" management and education^[11,12].

Secondly, take science and innovation publicity as the starting point to strengthen ideological and moral guidance for a long time. The propaganda content should be positive, actively publicize innovation and entrepreneurship policies, convey the school's concern for students, tell the story of predecessors' struggle for scientific and technological innovation, select role models among teachers and students and carry out disciplinary and violation warning education. Do long-term guidance, put an end to the phenomenon of a gust of wind, and ensure that the idea is led and long-lasting.

Thirdly, take the implementation of innovative topics as the starting point to strengthen practice and education comprehensively. Through the implementation of innovative projects, students' ability to discover, analyze and solve problems, their sense of teamwork and cooperation in communication, their spirit of perseverance and steadfastness, their innovative thinking of daring to deny and make breakthroughs, and their academic morality of respecting science and rigorous research, should be cultivated. Cultivate students' moral cultivation of seeking truth from facts and academic integrity, and encourage students to enhance their ideological quality, extend their professional quality, expand their humanistic quality, and sublimate their physical and mental quality in practice^[13].

Fourthly, strengthen the guidance of political thought by taking condition guarantee as the starting point. In the process of the implementation of the project, we should grasp the favorable factors such as "condition guarantee and policy support, scientific and technological progress in the research field", and tell the story of "achievements and progress of the national scientific and technological innovation cause, the concern and support of the whole society for young people", and grasp the scenes and opportunities that are easy to resonate and empathize with, so that students can strengthen the determination of scientific research and science and technology to serve the country in their personal feelings.

4.3. Enhance the “ideological and political ability” of all staff

The practical education of science and technology innovation for college students mainly involves three main roles: “all departments of the school (including departments), project guidance teachers and participating students.” Do a good job in the education responsibility construction of all types of personnel, and strengthen the effect of educating people in coordination. To be specific, school departments and faculties are project managers and play a leading role in education, students are the implementers of the project and play a major role in education, and teachers are the instructors of the project implementation and play a guiding role in education.

Through strict management, cultivating good manners, caring and careful guidance, and other educational management behaviors, teachers should pay equal attention to teaching and education, management and guidance, and teach students according to their aptitude and needs. They not only teach students professional knowledge and skills but also lead students to grow up healthily in thought and behavior and infect students with the aspects of personality charm and affinity. In the practice of innovation, students increase their knowledge and insight, increase their ability, exercise themselves comprehensively in the experience of perception, transform passive learning into active pursuit, make the object of education become the subject of self-education, and fully tap their potential. Everyone is the main force in education, to solve doubts and puzzles, to ensure that things are going well. Everyone should seize the opportunity, forge ahead, and ensure that thinking following the times. Everyone should grasp the general trend and keep abreast of the times to ensure that the incident conforms to the latest situation and makes new developments ^[14,15]. The students are willing to learn, the teachers are willing to teach, the managers and the managed, the educators and the educated, have the same goal and work together. Based on the collaboration within the school, we continue to join the extended role of education such as cooperation between colleges and the government, cooperation between colleges and enterprises, cooperation between colleges and communities, etc, and cooperate to form a joint effort for education of all staff ^[16].

4.4. Focus on students’ needs and “do a good job”

Make education more targeted by taking students’ needs as the starting point. Due to the many links and large tasks in the practical education of scientific and technological innovation, students are faced with the subjective demand of “solving practical difficulties, doubts and problems” in practice. No matter in the situation of “facing difficulties, poor cooperation, and slack spirit”, or the situation of “making smooth progress, making progress, breaking through problems, and gaining insights”, educators can keenly find out the problems that students face, thus seek educational opportunities, conduct favorable guidance, and give appropriate answers or help to students’ difficulties or problems, combine solving practical problems with educational guidance, and enhance the pertinence of work, to achieve the effect of “the right ways, twice the result with half the effort”, and the ideological work to the heart of the students.

Pay attention to the work of silent recessive education. To be close to reality, close to life, close to students as the premise, pay attention to students’ thoughts and needs, pay attention to students’ feelings and students’ ability to accept, follow the way students like to see the work, pay attention to individuals, make accurate policies, teach students according to their aptitude, complete ideological and political work in care and love, so that students feel the warmth of spring breeze and rain.

Funding

The Research Center of Ideological and Political Education of Sichuan University Students in 2019, “Exploration of the Whole-cycle Education Model of College Students’ Scientific and Technological Innovation Project under the Concept of ‘Cultivating Talents’” (Project No. CSZ19045)

Disclosure statement

The author declares no conflict of interest.

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