ISSN 2522-6398 Vol. 5, Issue 15: 56-59, DOI: 10.25236/FER.2022.051512

Research on the Implementation Path of College Students' Innovation and Entrepreneurship Ability Training——Take the New Semiconductor Cooling Clothing Innovation and Entrepreneurship Projects for College Students of Automatic Temperature Control System as an Example

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Abstract: *Under the guidance of the policy of "mass entrepreneurship and innovation", college students' innovation and entrepreneurship have gradually played an important role in major universities, laying a solid foundation for the cultivation of undergraduate applied talents. This paper mainly takes the new semiconductor cooling clothing project of automatic temperature control system as an example, combined with the existing problems in the cultivation of innovation and entrepreneurship of college students, from planning, design, implementation to the realization of the whole process training path, to improve the cultivation of innovation and entrepreneurship ability of applied undergraduate college students, Encourage college students to better adapt to the society after graduation.*

Keywords: *Innovation and Entrepreneurship of College Students, Cooling Clothing, Ability Training*

1. The connotation of college students' innovation and entrepreneurship

College student entrepreneurship developed rapidly after the first College Student Entrepreneurship Design Competition held by Tsinghua University in 1998. After 2003, the Internet gradually began to change people's consumption habits, and the sharing economy became the main form, China entered the period of e-commerce and creative entrepreneurship. Since 2015, with the rapid development of science and technology, under the guidance of our innovation and entrepreneurship policy, the whole society into the entrepreneurial wave, the Internet concept continuous development penetration into all walks of life, "Internet +" era is changing all aspects of people's life. In recent years, with the expansion of enrollment in colleges and universities, the scale of higher education population has been expanding, and the problem of difficult employment has become a widely concerned social problem. Since the concept of "mass entrepreneurship and innovation" was put forward, various universities have responded to the call of the state to continuously enhance the innovation and entrepreneurship education of college students, encourage college students to innovate and start their own businesses, and to some extent, start businesses to solve the problem of "difficult employment". Colleges and universities have vigorously carried out innovation and entrepreneurship education to constantly improve their ability of innovation and entrepreneurship. Since 2014, the success rate of Chinese college students' participation in innovation and entrepreneurship has been increasing year by year. The school holds various innovation and entrepreneurship education activities, Let the students really understand the innovation and entrepreneurship, Combine theory with practice to enhance students' practical ability; Hold lectures, invite off-campus experts to share their experience, offer courses related to innovation and entrepreneurship, Let the students learn in practice, In combination with the theoretical knowledge, To better improve the comprehensive ability of Bai Ji; Holding learning lectures and courses on innovation and entrepreneurship education, Let the students participating in innovation and entrepreneurship play a pioneering role, To arouse other students to identify with innovation and entrepreneurship education, To better cultivate students' entrepreneurial ideas, Create a good learning atmosphere; Innovation and entrepreneurship teams should be created, Provide them with excellent innovation and entrepreneurship teachers as community instructors, Providing a platform for students with innovative ideas enables them to exchange different experiences, Let the students feel the management mode of the enterprise in the

ISSN 2522-6398 Vol. 5, Issue 15: 56-59, DOI: 10.25236/FER.2022.051512

simulation, The educational methods different from the traditional teaching make the students feel more novel, It has also increased the interest in entrepreneurship. By designing a new semiconductor cooling suit with automatic temperature control system, this paper aims to explore and study the training path of college students' innovation and entrepreneurship ability.

2. Research on the cultivation path of college students' innovative project ability

2.1. Forming an innovation and entrepreneurship ability training plan

According to the new engineering and engineering education certification standards, combined with the professional characteristics of application-oriented undergraduate students, and taking students as the center, formulate the innovation and entrepreneurship ability training plan for college students in application-oriented undergraduate colleges, and set up special innovation and entrepreneurship courses, so that students can give full play to their strengths and entrepreneurship. Interested, by participating in the school-level and provincial-level innovation and entrepreneurship competition to obtain course credits in the form of projects, papers and patents, and the credits should not be lower than 5% of the total credits[1].

2.2. Build a case library of innovation and entrepreneurship courses with projects as the starting point

Sort out the whole process from planning, research, implementation to final completion of the project, and establish a course case library for college students' innovation and entrepreneurship education. Through these case studies, students can fully understand the basic process and process of college students' innovation and entrepreneurship, and lay a solid foundation for subsequent innovation and entrepreneurship training. The construction of the course case library is described below by taking the new semiconductor cooling clothing Dachuang project of automatic temperature control system as an example.

2.2.1. Project profile

In order to avoid serious harm of high temperature working environment to the human body, designed a temperature based on thermal silicon temperature control alarm system combined with new semiconductor cooling, through the temperature changes, reach the maximum temperature trigger alarm lights and buzzer abnormal alarm, trigger the mobile power switch at the same time, the cooling power system, heat exchange pipe network system and thermoelectric refrigeration system began to work at the same time, to achieve the refrigeration effect. Its advantages of low cost, good refrigeration capacity, long refrigeration time, light and convenient, can be used in many fields.

2.2.2. Purpose and significance of the project implementation

In 2020, during the novel coronavirus pandemic worldwide, medical workers must wear tight protective clothing and receive long-term high-intensity work; they will pose a great threat to the health of medical workers due to their poor air permeability. In addition, aviation and navigation personnel, field personnel, firefighters, delivery workers, delivery men and other workers who work in the hot summer months, will be threatened by heatstroke, dehydration, fainting and other situations. In order to prevent the harm caused to the human body in the high-temperature environment, based on the thermoelectric refrigeration chip, the thermoelectric cooling technology and clothing are combined, to make a low-cost, high-practical green new cooling clothing.

2.2.3. Project planning

The thermal thyristor has both functions of a temperature sensor and a thyristor. Its switching temperature can also vary with the control electrode resistance and the applied voltage. At the same time, the switching temperature can be remotely controlled.[5] It is designed to be used in cooling clothing. When the temperature of the human body reaches a specific value, the thermal thyristor circuit sounds an alarm and triggers the thermoelectric cooling chip, so that the cooling suit starts to cool down and realizes real-time monitoring of the temperature of the human body.

2.2.4. Project implementation

2.2.4.1 Simulation experiment of thermal thyristor alarm system

Using multimedia technology, database technology, network technology, and computer animation technology, the real physical experiment is simulated, and the surrounding temperature of the thermistor

ISSN 2522-6398 Vol. 5, Issue 15: 56-59, DOI: 10.25236/FER.2022.051512

and the change of its resistance value are simulated.

2.2.4.2 Build a measurement model

Model the ambient temperature change of the thermistor and the resistance value change of the thermistor, the software can display the curve of the thermistor resistance value and the applied voltage value with time, the change of the DC ammeter reading and save it in the system , over the maximum temperature, the thermal thyristor alarm system will issue an abnormal alarm.

2.2.4.3 Performance test of thermal thyristor alarm system

Place the debugged thermal thyristor alarm system on the cooling suit, and the performance test of the cooling suit should be carried out in a temperature-controlled manual adjustment room. First, an experiment to test the cooling effect was carried out. [2]After ensuring the safety of the test, then let the volunteer testers stay in the artificially adjusted room, change the indoor temperature, obtain the tester's heart rate, blood pressure and other physiological data at different temperatures, and get the effect of the cooling suit and whether the user will have a good experience.

2.2.5. Project achievements

The structure of the cooling clothing setting system based on the thermal SCR temperature control alarm system and the new semiconductor includes two parts: the basic SCR structure and the cooling clothing system structure. The basic structure of thermal SCR is a four-layer, three-end semiconductor device. The cooling service system is mainly composed of three parts: power system, heat exchange pipe network system and thermoelectric refrigeration system. The power system is composed of the mobile power supply, the control switch and the circulating water pump. In the heat transfer network, the circulating water pump is powered by the circulating water pump. [6]The heat transfer network includes clothing materials and heat transfer tubes, which exchange the heat with the human body through the flow of the cooling medium in the pipeline to cool the human body. The refrigeration system keeps the circulating cooling medium in a long-term low temperature state.

2.3. Introducing enterprise mentors to establish a dual-mentor innovation and entrepreneurship faculty team that combines enterprise and school

Students who are familiar with the project will take a lot of detours without the guidance of teachers. In response to this problem, the introduction of corporate industry mentors and school teachers will combine full-time and part-time jobs to create an innovative and entrepreneurial team with complementary advantages.[3] Encourage school teachers to use the holidays to go to the company for temporary training, let the teachers integrate into the company's product projects, and participate in the research and development of corporate innovation projects, so as to improve teachers' own skills, and improve their level and innovation ability for being a good college student's innovation and entrepreneurship instructor.

2.4. Introducing the OBE concept to cultivate college students' innovation and entrepreneurship ability

The OBE philosophy is student-centred outcome-oriented education. The new semiconductor cooling clothing project with automatic temperature control system focuses on grasping the expected results of the project, and starts from the results to design the reverse teaching process. Based on the problem of cooling clothing production, we will carry out innovation and entrepreneurship education, establish a community of student-teacher innovation projects, introduce a partner mechanism, guide and promote students to improve teamwork spirit, gather collective wisdom, and improve innovation and entrepreneurship education.[4]

2.5. Establish an innovation and entrepreneurship incentive and evaluation mechanism

College students' innovation and entrepreneurship education focuses on the cultivation of students' innovative spirit, innovative consciousness and innovative ability. It should not be based on papers, patents, funds, and physical objects, but should be student-centered, and should focus on students' innovative thinking, pioneering spirit, and teamwork. Consciousness and technical ability and other aspects of assessment and evaluation, promote a diversified evaluation mechanism, and then stimulate students' innovation and entrepreneurship ability[7].

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3. Conclusion

Innovation and entrepreneurship projects are an inevitable requirement of my country's current development and the theme of today's era. Innovation and entrepreneurship refers to entrepreneurial activities based on one or several innovations in technological innovation, product innovation, brand innovation, etc. Innovation is innovation and entrepreneurship. Entrepreneurship is the goal of innovation and entrepreneurship. This paper takes the new semiconductor cooling clothing Dachuang project of automatic temperature control system as an example to explore a suitable training path for college students' innovation and entrepreneurship education ability.

Acknowledgement

Xijing College's 2022 "College Student Innovation and Entrepreneurship Training Program" project (Project No.: X202212715005); Xijing College's 2021 Undergraduate Teaching Reform Research Project (Project No.: JGGH2103 JGYB2117), 2021 Shaanxi Undergraduate and Higher Continuing Education Teaching Reform Research Project (Project No.: 21BG051), 2022 Xijing College Undergraduate Talent Training Program Research Special Project (Xijing College Big Data Major Cross-Integration and Support Construction Exploration and Practice) and Xijing College Teacher Education Reform and Teacher Development Research Project (Project No.: JFGG202203)

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