



The Application of the Second Classroom in the Computer Science Major

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Abstract While students receive higher education and learn scientific and cultural knowledge in school, the second classroom, as an important part of promoting their comprehensive quality, has its unique advantages and rich content. To realize the goal of cultivating innovative, applied and compound talents, to further stimulate students' learning initiative and enthusiasm, to cultivate students' scientific research ability, practical ability, innovative ability and comprehensive ability to solve practical problems, to enhance the academic atmosphere on campus, to cultivate the spirit of teamwork, and to stand out for outstanding talents. The creation of conditions and other plays an important role.

Keywords second classroom, computer science, teaching

Introduction

The so-called second classroom refers to the educational activities (except for those of the first classroom), whose purpose is to improve students' abilities in innovation and practice and further promote their comprehensive quality. It mainly includes professional training, social practice, scientific research, academic competitions, practice in various training bases, accession in relevant student clubs, military training for college students, and other practical activities recognized by the college or its branches.

The teaching content of second classroom is also divided into required courses and elective courses. A college student has to obtain the credits in both the first classroom and the second classroom, and he can't graduate smoothly without obtaining 10 required credits and 2 selective credits.

The selective course modules of the second classroom include discipline contests, research papers and scientific and technological innovations, cultural and sports competitions, social practice, club activities, young volunteers, practice in art troupe and news center of the college, and some other activities recognized by the related departments of the college.

Guiding Principles

The guiding principles of the second classroom is:

1. Teaching students in accordance of their aptitude

Short-term practice education in summer vacation should stress the cultivation of students' sense of "innovation, creativity, entrepreneurship", pay much attention to cultivate diversified talents, encourage independent research study, teach students in accordance of their aptitude, and attach importance to the cultivation of students' interdisciplinary capacities.

2. Independence

The content of short-term practice in summer vacation can further enhance and perfect the teaching plan system. Thanks to its independence and integrity, it can not only reflect the characteristics of the specialties, but also integrate some social practice and researches.



3. Modulization

Modular management should be implemented in short-term practice education in summer vacation, and each module should be well-designed. Every student is allowed to select a practice module in accordance with his own specialty, strong suits, interests and hobbies.

Division of the Practice Education Module

The short-term practice education in summer vacation, which includes professional research, social practice, educational practice of ideological and political theory, and professional training, is carried out in three phases.

1. Practice Education I

Practice Education I is set in the short term of the first school year. In this practice education, the students need to design and plan the research subjects of practice, write research reports, and answer questions of their tutors by integrating professional knowledge with the hot subjects of the political & economic development. Under the guidance of tutors, the student teams should carry out various forms of social practice and training of scientific research. The subjects of Practice Education I should be in line with the aptitude of freshmen, and the establishment of mixed team comprising students from different specialties is encouraged.

2. Practice Education II

Practice Education II is set in the short term of the second school year. In this stage, the subjects of practice don't rely on the specialties of the students, so they can choose any subjects of practice. Practice Education II requires students to conduct the research practice by use of their professional knowledge.

3. Practice Education III

Practice Education III is carried out in the short term of the third school year. In this stage, the subjects of professional practice should be in line with the specialties of students, and they can select the practice subjects set for their own specialties.

The selective course modules of Practice Education II and III include:

1. Training for electronic-design contests. With the purpose of training college students' abilities in innovation and cooperation and their study style of linking theory with practice, the training for electronic-design contests is of great significance in cultivating students' abilities in engineering practice, improving their abilities in electronic design and production in accordance with actual problems, as well as attracting and encouraging young students to participate in extra-curricular activities of science and technology, thereby enabling new excellent talents to come to the fore.
2. Training of vocational quality. Objective: to enable students to learn the basic professional etiquette, develop good behaviors, learn the basic principles and methods of enterprises' pay management, know the basic knowledge of "Labor Law", and roughly understand the methods for labor dispute arbitration. On the one hand, the training content can be regarded as basic management knowledge that is helpful to their self-employment; on the other hand, it can be taken as the preparatory knowledge before entering a company.
3. Innovative product design. Availability is the key to determining whether an electronic product is successful or not. Therefore, integrating availability into the design of electric products is of great significance in cultivating students' abilities in practice & independent thinking as well as sense of innovation.
4. Scientific research of college students. Objective: to further promote the innovative education for college students, enable new excellent talents to come to the fore, encourage college students to take scientific research training as a carrier, and improve their abilities in innovation, practice, self employment, and self study, etc.
5. Production practice. As a very important link in the teaching plans of science & engineering specialties, production practice is set for the purpose of conducting basic professional training for students and cultivating their abilities in operation and linking theory with practice.
6. Professional practice. Objective: to enhance students' abilities in combining professional knowledge with real practice, improve their abilities in analyzing and solving actual problems, stress the practicality, application, design and creativity of professional practice, enable students to apply their professional knowledge flexibly and improve their actual social competitiveness, equip students with necessary basic skills for them to participate in various electronic-design contests, and enhance their sense of teamwork.



Implementation and Process Control

Program system, team system and tutorial system are employed in the implementation of practice education, which is jointly managed by Practice Teaching Center, Student Affairs Office, Teaching Office and Second Classroom Executive Committee.

An oral defense committee affiliated to Practice Teaching Center is set to take charge of the moderation, defense and assessment. The main implementation process of short-term practice education in summer vacation is as follows:

First, Practice Teaching Center organizes teachers to design subjects and determines instructors as well as the content of the practice. Then, Practice Teaching Center organizes defense committee of short-term education in summer vacation to review the candidate subjects, and the education program and teaching calendar of each practice module are developed by the principals.

After Practice Teaching Center publicizes the qualified subjects on the campus network, Student Affairs Office and Second Classroom Executive Committee organizes student groups. The number of members in each group is determined in accordance with the nature of the module, and a team head and deputy team head are appointed through democratic election in each group.

Practice Teaching Center appoints tutors for each group in accordance with its subjects and situation of the student team.

Each student team carries out their practice under the guidance of their tutors. In accordance with the subjects of practice, the tutors may give guidance to the teams in various ways, such as classroom lectures, practical guidance, instruction or tour guidance, and inspection of oral defense, etc. In addition, the practice attendance is checked by Practice Teaching Center, tutors, Second Classroom Executive Committee or the off-campus training bases.

When the practice is over, Practice Teaching Center will ask defense committee of short-term education in summer vacation to appraise each group by holding oral defense and then recommend the excellent student groups, thus stimulating students' enthusiasm for learning.

References

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