

## Research on the Professional Interest Cultivation Based on the Comprehensive and Innovative Teaching Mode

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### Abstract

Nowadays, whether a college takes an effective education or not, should not be measured with the data of the average employment rate. Today, with the development of the various professional disciplines, if they want to keep moving, it will probably need the power by other majors. Thus, it seems that today's academic research and social development need versatile people who have an appetite for knowledge and innovation ability. In other words, college should pay more attention to the professional interest cultivation of the students. In this way can students continues learning and mining the breadth and depth of the knowledge with energetic conditions, making contributions for social development. This paper will put forward a program to promote the students' enthusiasm in study and it truly does effect on practice.

### Keywords

Comprehensive, Innovative, Practice, Interest cultivation.

### 1. Introduction

Before getting into college, most of students don't have a rough knowledge about their majors in China. Because they had been educated in exam-oriented education system for many years. And the majors that they choose are mainly referred to the suggestion of parents or teachers. If they have passive attitude in learning under external pressure not intrinsic motivation, combining with the educational differences between high school and college, and it may led to vicious circle which will suppress students' confident and positive in future life.

To improve the situation, this paper presents a comprehensive and innovative teaching mode of professional interest cultivation of the program. The implementation of the program will through three aspects, lectures on popular science, research on the group, and hands-on experience. These procedures are carried out along with the progress of the courses respectively before the courses, during the courses and after the courses.

This article is divided into three parts. Section 1 is a general introduction; Section 2 introduces lectures on popular science before the courses, PBL (Problem Base Learning) research group during the courses, and the detail plan about hands-on experience. In addition, there are some auxiliary measures to improve the project; Section 3 is conclusion.

## 2. Implementation on the Professional Interest Cultivation Based on the Comprehensive and Innovative Teaching Mode

### 2.1 Lectures on popular science.

Lectures are playing "the first impression" during the program. According to anchor effect, people are easily affected by first impression or information when they make judgment. And during the lectures, the knowledge to students are more willing to absorb. Through our research, candidates, content, form are the factors that decide the effect of lectures.

Experienced teachers or some entrepreneurs can be selected as the candidates. Experienced instructors inspire students in a professional way; However, entrepreneurs can encourage students

through business perspective even entrepreneurial perspective, contacting our daily lives, so that students will have a more specific understanding of their majors. As Orin Institute of Technology Dean Richard Miller said “The next generation of engineers must be the dominant players in technology commercialization process, rather than simply surrendering it to business people. I believe that rich country will make the ultimate decision maker of the project.”[1] Definitely, these speakers will also add some personal experience in speech to motivate students.

The content of the lectures can be made up of 80% popular science, 20% professional knowledge or any other percentage depends on the learning ability of the students.

The form of lectures can refer to TED, introducing topic with brief problem formulation or product display. And in the process of talks, the speakers can make an appropriate list of books or studying video for students’ study.

### **2.2 PBL research group.**

Focusing on the key problems during the teaching process, we can use PBL/SP teaching methods to guide students. Under the guidance of teachers, students look it up and panel discussions, and then puts forward solutions to the problem.[2] After the report, teachers and others students will make a fair and objective evaluation.

In this way, on the one hand, students will have a deep understanding about the key part of the majors, enhancing the ability of analyzing and solving problems, and mobilize students’ interests. On the other hand, during teachers’ guide, students’ understanding of the knowledge and feedback can help teacher adjust the progress of the course, and be targeted in accordance with their aptitude.

### **2.3 Hands-on experience.**

Although in many schools’ syllabus, there are many experimental courses. However, the class hours are few and diffusate, and syllabus is out of date. It is difficult to make students get the practice of exercise and a sense of achievement. Therefore, it is essential to make few changes on experiment courses. For instance, for communication engineering students, we can integrate scattered basic experiments into comprehensive experiments. Comprehensive experiments will let the students have a more thorough understanding of the communication system. We should also combine with basic theoretical knowledge in comprehensive experiments, truly integrating theory with practice.

Whether it is involved hardware, software or a combination of both, these operations of the experiment requiring the lots of practices to realize the theory better. So the class should give students plenty of time for practice and FAQ. Not only enable students to understand, but also draw inferences about other cases from one instance.

Except the necessary experimental courses, we can also add some other interesting projects. For example, teachers could select calendar contest topics that are related to the majors to enlighten students giving the rein to their imagination to complete the answer. Or teacher take a technical problem of a project which is studied for a long time, launching the students to find solutions by mutual discussions. Or we can take products that have put on the market for a while in class to research them. Finding the disadvantages and advantages, we also could try to perfect them.

### **2.4 Auxiliary measures.**

The final score must be above three processes that we talk about before, so that we could evaluate the students’ learning effect in a comprehensive and impartial way.

In addition, in the process of learning, students may have overwhelmed, discouraged and not confident condition. At the moment, students may need to be assisted by the teacher. Teachers undertake the mission to encourage them, helping them to pick up the loss of time of confusion and to find their own directions. In other words, when we pay attention to students’ professional knowledge learning. At the same time, we must also focus on students’ psychological development. Because the student’s psychological state has a decisive influence on the learning efficiency. Each student has

different values and outlook of life, once the system set, it will be very difficult to change in the future.

Many teachers except teaching at the university, taking little interest in college students' mental and emotional development, dropping the responsibility of teach by precept and example, and teacher's example and role model is getting weaker. Many of them ignore the core of the university education "Educating People". [3] However, if the students can't find any interest in their major. What can we do? We should always support and encourage them. Because their lives are not restricted by their profession. There are still many choices in the future. Though the students can not find what they are good at, then just to discover their favorite and other interests. In addition, undergraduate education can only cultivate students' learning ability, but can't limit students' employment direction in the future.

### 3. Conclusion

We can see the whole process of the project through Fig.1. This paper proposes a comprehensive system of education program to compensate the lack of teaching, and has some innovations on the basis of the conventional scheme. Through the practice of school and students' feedback, the students' enthusiasm on learning and motivation are getting higher at a short period of time. It seems that this scheme is effective to a certain extent. During the project, we still have some shortages and it will be perfect in our future research.

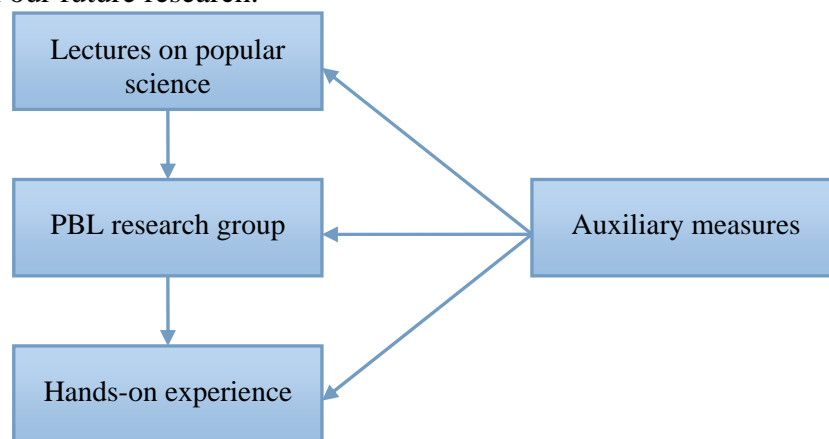


Fig.1 The whole process of the project

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