

## **Research and Practice of Promoting Vocational Core Competency of Software Specialty Undergraduates**

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**Abstract:** As a basic aspect to embody comprehensive quality, vocational core competency of software specialty undergraduates plays an important role in the process of their learning and future life development. Based on the related research status, we have defined vocational core competency of software undergraduates and put forward the corresponding strategies on how to cultivate their vocational core competency. We think that the cultivation of vocational core competency will not be completed overnight and its formation will be the result of a long-term cultivation to a greater extent.

**Keywords:** software specialty undergraduates, vocational core competency, entrepreneurship education, research and practice

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### **INTRODUCTION**

In recent years, with the growing number of college graduates, there are fewer and fewer employment opportunities, the talent market has become increasingly picky, so it has become very urgent for college graduates to improve their employment competency[1]. According to our survey, there are many reasons to account for why the present college students can not find ideal jobs, vocational core competency shortage is one of the most important factors[2]. As we know, colleges and universities have been focusing on their main strength to cultivate students' hard competency, while neglecting their vocational core competency training. Therefore, it has become particularly important how to make full use of the existing teaching resources, improve teaching method and actively cultivate their vocational core competency during the process of their hard competency training.

### **THE DEFINITION OF BASIC CONCEPTS**

Competency is a basic concept that involves many respects, which is considered by psychologists to be the power shown in the completion of certain activities and will affect the quality and result of activities, therefore it is a fundamental manifestation of personal overall quality, also a kind of important way to meet self-need and achieve self-worth. By definition, it is not difficult to find that competency can be divided into two categories: hard and soft competency, or vocational core competency. The so-called hard

competency refers to innate external conditions or specific quantitative indicators, for example, hard competency of college students can be expressed as the gift to study knowledge and skill, the credentials and educational certificate which can be obtained through study and test, even their height and appearance. Generally speaking, hard competency is often visible, tangible, and has explicit, procedural and quantitative characteristics. By contrast, soft competency is a social psychological term, which has close relationship with EQ. It embodies personal traits, social etiquette, communication skills, personal habits, virtues and optimistic attitude. It is usually not inborn, but is acquired by later learning; hidden inside, not easy to quantify and program; and has a close relationship with personal characteristics and psychological adjustment competency. Hard competency comes from professional learning, whereas the formation of vocational core competency is more dependent on self-cultivation, just like in the political class the students can learn political commonsense, but they may not be able to raise political awareness. Vocational core competency, in the final analysis, is not only competency, but also contains such contents as morality, ethics, spirit and so on. Undergraduates vocational core competency, also known as non-professional competency, refers to the competency that they have in addition to special knowledge, experience and skills when they are engaged in some kind of occupation, or occupation psychological characteristics that will directly affect the efficiency of occupation activities and make them be

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carried out smoothly. British scholar Harvey found that enterprise recruitment no longer treated academic degree as essential condition, whereas always paid attention to other qualities such as good communication skills, competency to access to and use of knowledge, competency to analyze and solve problems, competency to adapt to the rapid changes in the work environment and teamwork[3]. In other words, enterprise owners require that the graduates should have good vocational core competency.

### **THE SIGNIFICANCE AND NECESSITY OF ENHANCING VOCATIONAL CORE COMPETENCY OF SOFTWARE UNDERGRADUATES**

#### **Help to improve the employment quality of software graduates**

In recent years, the employment situation of college graduates becomes increasingly acute, which is caused by both the total size of college graduates and employability of graduates. Graduates employment relates to rational allocation of human resources, sustainable economic and social development and social stability, so it has become a grim problem that all colleges and universities must treat severely. Therefore, it has great significance to solve the employment problem of undergraduates in our province for the need of building "harmonious Zhejiang".

#### **Enable to cultivate high-quality application-oriented talents**

The training of undergraduates' vocational core competency helps them to develop potentials, deepen academic accomplishment, expand employment selection, make them enhance the comprehensive occupation competency in addition to develop their knowledge structure, innovation competency, cooperation competency, scientific research competency and so on, eventually they will become such talents with high occupation quality, strong post comprehensive competency and excellent innovating competency, who are warmly welcomed by the enterprises.

#### **Promote employers' degree of satisfaction**

Vocational core competency is the key competency for software professional post groups from the viewpoint of the demand for software talents. Professional corporation survey shows that the employing units put more emphases on the following factors: dedication, teamwork, communication competency, innovating competency and autonomous learning competency. Teamwork is a necessary condition for success because any individual strength is limited, especially for such work similar to software development which is full of complexity, it is nearly impossible without teamwork. In addition, software personnel often have to face customers, understand their requests, hardware, software and database

environment and so on. All these require that software talents should possess excellent expression and interpersonal communication skills. The development speed of software industry is so fast, new technology and new tools are constantly emerging, in this case, software talents must possess innovative thinking and the competency of autonomous learning to adapt to the development of software industry.

Therefore, the study of vocational core competency of software undergraduates is helpful for training of innovative software talents; makes them further understand their advantages and occupation request; finds their own occupation path and improves the employment quality in the end.

#### **Help to deepen the study and exploration of entrepreneurship education**

Software undergraduates can better master vocational core competency for their future development by means of systematic design of vocational core competency required by their occupational development, systematic and professional career planning guidance, entrepreneurship practice[4-6], project guidance to stimulate their aspiration for new technologies and enhancing the influence of teamwork and professionalism.

### **CULTIVATING STRATEGIES OF VOCATIONAL CORE COMPETENCY FOR SOFTWARE UNDERGRADUATES IN COLLEGES AND UNIVERSITIES**

#### **Establish the idea of vocational core competency cultivation**

The cultivation of vocational core competency cannot be separated from the attention of leaders in colleges and universities. If there is no concept of vocational core competency cultivation, then it will become empty talk to cultivate undergraduates' vocational core competency. Many leaders have no clear idea of what vocational core competency is, let alone how to develop it. Even some teachers in colleges and universities are inadequate to understand this concept because they are so busy with work in class and have no enough time to learn theoretical knowledge. Typical example is that many colleges and universities wrongly think that it is enough only if the undergraduates can master the skills of one major and ignore their vocational core competency cultivation. Therefore on the problem of vocational core competency cultivation, what we must first solve is the idea.

At the same time it needs to be pointed out that we cannot separate apart the problem of vocational core competency cultivation to handle. It is clearly wrong that many colleges treat students' occupational technical competency training as vocational core competency cultivation. Employment competency is

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an integral part of vocational core competency, but we must establish the concept of overall training. We need to handle and treat the problem of vocational core competency cultivation from the perspective of system, look on it as a system engineering, design scientific training plan and evaluate the effects of vocational core competency cultivation.

### **Reform teaching mode to strengthen the cultivation of vocational core competency**

Vocational core competency cultivation is inseparable from professional education content development, so we must conduct some scientific arrangement and system design from major setting, teaching content arrangement to teaching method, so as to provide stronger support for vocational core competency cultivation.

### ***Entrepreneurship education is the way and carrier to enhance students' vocational core competency***

The goal of entrepreneurship education is corresponded to the requirements of vocational core competency, we can rich entrepreneurship knowledge and experience through innovative competitions, lectures, visiting and investigation, project actual combat, students studio and secondary classroom, promoting students' spirit of innovation and entrepreneurship. On entrepreneurship education we pay more attention to cultivate students' independence, self-reliance, self-confident spirit and competency of innovation; guide them to master theory of entrepreneurship, accumulate entrepreneurial knowledge; carry out the practice of entrepreneurship; enable them to know themselves better, determine clear development direction and path; learn to communicate, cooperate, create and eventually improve occupation development skills.

### ***Take the initiative to develop and enhance their competence elements by depending on inside and outside of class practice activities***

The enrolled students can enhance their competence elements by a variety of means[7-9]: First, they can participate in some activities, such as business association, speech and eloquence association; Second, they can participate in various social activities and competitions, such as computer application competency competition, graphic design competition, webpage design competition and so on. By taking part in these games, they can enrich their professional knowledge, improve their practical competency, exercise their communication and cooperation competency; Third, they can participate in social practice, internship, volunteer activities. Besides, students also should temper themselves, adjust mentality, adapt to the environment, learn to communicate, respect and understand other people, cooperate with group members through a variety of activities.

### ***Take the engineering project as the carrier, accumulating occupation experience***

Students should take an active part in all kinds of computer software project development, for example, in the construction of campus network, in enterprise software development project and so on. These project practice can train students' communicative competence, the competency of theory combined with practice, the team cooperation competency, strain capacity and innovation competency, thus accumulate their practical experience in computer field.

### ***Make full use of community activities***

Community activities can promote mutual improvement among members, especially the intercollegiate association cooperation exchange can effectively expand the scope of activities of college students, improve their learning competency, social competency, the competency to adapt to the environment and the competency of mental adaptation. In conclusion, institutions of higher education should go through objective activity arrangements to enhance students' vocational core competency.

### **Increase humanities curriculum, improving students' comprehensive quality**

Cultivation of humanistic quality is one of the key factors to promote students' vocational core competency cultivation. Humanistic quality includes human knowledge, perceptions, and emotional factors; can show a person's character and temperament, is also the manifestation of a modern man to accept the degree of civilization. Humanistic quality and vocational core competency are directly relevant because idea, emotion, character and temperament contained by the former are closely related with the implicit shown by the latter. At the same time the cultivation of humanistic quality can promote students' scientific and humanistic spirit, which are indispensable to cultivate their vocational core competency[10,11].

Humanities teaching in the classroom is an important way to improve students' vocational core competency. It's more easy to develop their teamwork spirit in a humanities class, more conducive to the formation of their creative thinking. The goal of cultivating students in colleges and universities is not just to make them master a kind of professional skill, but to strengthen the cultivation of their healthy personality in order to achieve the unity of soft and hard competency training.

### **Strengthen cultivating of students' correct values and psychological adjustment**

The modern age is an era of rapid development. With the diversification of social and economic composition, forms of organization, means of employment, interests relationship and distribution

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mode, many college students are easy to appear confused thought, and generate many psychological problems in employment, seriously affecting their employment quality. Accordingly, during the process of promoting the reform of employment system in higher education institutions, it is more imminent that we should continue to strengthen students' ideological and political education; cultivate their profound patriotism and collective emotion; help them establish correct world outlook, outlook on life, values and employment outlook[12,13].

Colleges and universities should carry out various forms of patriotism education as the theme of some activities to help college students establish lofty ideals. We should make them establish correct, reasonable value orientation, combine together personal desires, needs of the state and employment reality; strengthen their sense of social responsibility and historical mission. College students should carry on self-cognition and self-localization correctly. They are not inferior nor conceited; strengthen their learning and training; improve psychological enduring capacity in the face of objective reality. We should cultivate their hard-working spirit; make them dare to face setbacks encountered in life and be able to learn from lessons; foster their positive and optimistic mentality.

## CONCLUSION

In conclusion, cultivating vocational core competency of college software students is a system engineering and can not be completed overnight. Therefore vocational core competency cultivating is not only the need of soft students to achieve self development and realize life development objective, but also the need to realize the sustainable development of China's economy construction. Thus it brooks no delay to strengthen vocational core competency cultivation of college students. The undergraduates should enhance it in the long-term life of learning. Only if they have both hard and vocational core competency, then they will surf freely in the workplace.

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