On Cultivation of Engineering Teachers in Application-oriented Universities

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Abstract. The significance of strengthening cultivation of engineering teachers in application-oriented universities is discussed. It is pointed out that engineering teachers in application-oriented universities mainly need to strengthen moral cultivation, professional training, teaching ability, teaching and scientific researching quality, humanistic quality, psychological quality and new media literacy, etc.

Introduction

According to school-running orientation, ordinary undergraduate universities can be divided into research-oriented universities and application-oriented universities. In China, application-oriented undergraduate education accounts for a large proportion in higher education. Application-oriented undergraduate education has played a positive role in meeting the needs of economic society for high-level practical personnel, in developing economy and society, and in promoting the popularization of higher education in China. There are a large number of engineering majors in application-oriented universities. These majors bring together a large number of professional teachers. These teachers play a vital role in improving quality of application-oriented undergraduate education. The paper focuses on cultivation of engineering teachers in application-oriented universities.

Significance of Strengthening Cultivation

Mikhail Ivanovic Garlinin, a prominent proletarian revolutionary and educator who was one of the leaders of the Communist Party and the state of former Soviet Union, once said, "Teachers are engineers of the human soul." The British philosopher Francis Bacon also said, "Teachers are the disseminators of knowledge seed, the cultivators of the civilization tree, and the designers of the human soul." Teachers shoulder the responsibility of designing and shaping the human soul, therefore, teachers themselves must have good cultivation.

The educational objects of universities are college students, who are full of vigor but childish, full of hope but lack of self-confidence, cherish dreams but often confused, hope to understand the society but not deeply involved in the world. They are of very large plasticity. They will healthy growth in a positive environment, but may go astray if they are affected by negative factors. As human soul engineers, the university teachers are important factors affecting college students. Therefore, the university teachers must have good cultivation.

Since the reform and opening up, people thought has become open more and more. Internet and modern communication technology provide a huge amount of information, and people's thinking mode presents a diversified trend. Some people worship money, some people pursuit of power, some people are star’s fans, and others are narcissistic. Although nobody admits his idol complex verbally, in fact, many people have their idols in their hearts. As one of the most active groups in social life, engineering students in application-oriented universities have their own worship objects. Shall we guide them to admire the famous scientists and the ordinary laborers who work silently, or let them worship the superficial stars or the internet celebrities who get rich overnight? The teachers who get along with college students day in and day out will have a great impact on them. Their
outlook on world, life and value, their professional level and ways of dealing with people and things will directly affect college students' learning and life style, may affect their value orientation, even their lifelong. Therefore, engineering teachers in application-oriented universities must have good cultivation.

Goals of Strengthening Cultivation

Moral Cultivation

As a special vocation, the teacher’s duty is not only to impart knowledge but also to train students how to be a human. Teachers influence students’ words and deeds with their own words and deeds, nurture students' personality with their own personality, and shape students' souls with their own souls. The noble morality of teachers is a textbook which exerts a subtle, long-term and beneficial influence on students. Mr. Tao Xingzhi, a famous educationalist, has a famous saying: "Lofty morality is a teacher, and right behavior is a norm." As a college teacher, his lofty ideal, belief and moral sentiment is the cohesion which attracts, inspires and guides the students. Professional ethics is basic requirement of college teachers. Teachers should make continuous efforts, accumulate over time and exercise for a long time to have a good moral cultivation. It is a compulsory course for every teacher to strengthen his moral cultivation, so engineering teachers in application-oriented universities are no exception.

Professional Training

The professional training of college teachers includes theoretical training and practical training. On one hand, application-oriented universities are different from research-oriented universities and vocational colleges, and they have their own characteristics. Although the engineering majors of application-oriented universities mainly cultivate students' application ability, these majors are not only to train students to work in production line, but also to train skilled workers, but also to teach them the principles of production, the methods to analyze and solve the problems that arise. Therefore, students must master certain theoretical knowledge in addition to mastering the job skills. So the teachers must have a comprehensive, systematic, advanced and cutting-edge theoretical knowledge of the profession, and strengthen their theoretical training. On the other hand, the application-oriented universities mainly cultivate the students' ability to apply the knowledge and technology they have learned to engage in productive and practical activities. These abilities are not innate, nor can they be acquired solely by students' understanding, they must be formed gradually with the guidance of teachers through practical teaching activities such as experiments, training, curriculum design, graduation design and production practice. So the teachers must have the practical ability, be able to summarize the actual operation process into a clear work flow and teach students efficiently.

Teaching Ability

With the continuous development of new technology, teachers are required to have not only theoretical knowledge and practical operation ability, but also strong teaching ability, including classroom control ability, presentation ability, the ability to use modern educational technology, the ability to teach students in accordance with their aptitude, the ability to integrate teaching materials, the ability to absorb and disseminate new knowledge and technology, and the ability to guide students learning, etc.

Teaching and Scientific Researching Quality

Now, application-oriented universities are getting more and more attention, and the requirements of teachers are getting higher and higher. At present, application-oriented universities should be based on undergraduate education, but they should gradually transfer to graduate training in the future. It will become a main development direction of application-oriented universities that universities and enterprises joint to culture graduates. Therefore, the teachers in application-oriented universities must gradually improve their teaching and scientific researching quality. In order to adapt to the
development orientation of application-oriented universities, teachers should possess necessary teaching and scientific research. Through teaching and scientific research activities, teachers can improve their research ability and level, and transform the research results into teaching content, so as to improve their teaching level.

Humanistic Quality

The implementation of quality education in universities requires teachers to have good humanistic quality. Teachers' humanistic quality mainly refers to teachers' cultivation in language, literature, philosophy, aesthetics, history, religion and other humanistic knowledge, and the humanistic spirit of educational mission, responsibility, educational ideals, as well as observation, experience, self-examination and other humanistic methods. Humanistic quality plays an important role in education and teaching. Teachers' humanistic quality can be externalized into their teaching style and characteristics. Then they can easily attract students to learn new knowledge and advanced ideas, and promote students to form a healthy and perfect personality. Teachers in universities improve students' humanistic quality through teaching by precept and example. Teachers' humanistic thoughts and sense of worth affect students' pursuit of life and value orientation to a great extent.

The cultivation of students' humanistic quality is based on teachers' humanistic quality. Only when teachers have good humanistic quality, can they truly carry out quality education on the basis of rich humanistic knowledge, under the guidance of equal humanistic spirit and by means of introspective humanistic methods, and cultivate useful talents with outstanding ability and sound personality for national construction and national progress.

With the improvement of teachers' humanistic quality, their understanding level of education and teaching will also gradually improve. They will come to realize that education is not just a job, but a career, the noblest cause in the sun. They will devote themselves wholeheartedly to the teaching work, and the hard work will eventually produce fruitful results. While training a large number of outstanding talents for the society, they will also realize the value of themselves and find the meaning of life[5].

Psychological Quality

In recent years, with the continuous reform of higher education in China, university teachers have ushered in new development opportunities. Meanwhile, they must face greater challenges. Along with this reform process, teachers feel more pressure than ever before both in frequency and in intensity. If the pressure is too great and cannot be alleviated, it will affect the physical and mental health of teachers, cause job burnout, and affect the quality of personnel training. Therefore, the teachers must have good psychological quality.

On the other hand, college teachers’ students are a large number of adolescents who often have a variety of psychological problems. If the teacher can find the problem that the student encounter carefully, help the student analyze and solve the problems patiently, the distance between teacher and student will be narrowed. Thus the student will trust the teacher and be willing to approach the teacher, so as to study harder and influence more students around him. On the contrary, if the teacher is indifferent to the problem the student encounter, the student will be far away from the teacher. Thus it is difficult to build empathy between teacher and student. Therefore, university teachers must have good psychological quality. They should be good at discovering students' unusual performance when students encounter psychological problems. They should care for students, help students, and be able to show superb ideological work skills.

New Media Literacy

Teachers' new media literacy includes two aspects: media literacy and information literacy. Teachers' media literacy refers to the ability of teachers to make teaching plans, select teaching contents, make teaching courseware, organize subject teaching and answer questions interactively by using modern teaching tools such as computers, networks, projectors and so on. Teachers'
information literacy refers to the ability of teachers to acquire educational and teaching information by using computers, networks, mobile phones, social platforms and so on.

The media literacy of teachers is related to the comprehensive quality of teachers, then affects the media literacy of students, and is related to the growth and progress of students' professional learning at last. Therefore, the media literacy of teachers is not a personal matter of teachers, we must enhance teachers' ability to use media tools and to judge media content in educational and teaching activities.[6]

With the arrival of the era of big data, teachers in universities are required to have higher information literacy. In the era of big data, through analysis of big data, teachers can understand what kind of talents the society needs, which majors meet the needs of the society, which technology is urgently needed by the society; teachers can understand students’ interests and concerns; teachers can find out which content is most important to students and which is not important; teachers can know which mode, method and means can achieve the best teaching effect; teachers can judge which direction, which type of scientific research projects are most likely funded; teachers can learn which research methods may achieve the best results, and so on. To achieve these goals, teachers must be able to retrieve, collect, screen out useful information from a large amount of data, analyze and use the information, that is, teachers must have a high level of information literacy[7].

Summary
In the sequence of higher education, engineering majors in application-oriented university occupy a considerable proportion, and engineering teachers have a long way to go. Teachers should keep up with the pace of times, continue to learn, improve their professional ability and comprehensive quality. Engineering teachers in application-oriented universities mainly need to strengthen moral cultivation, professional training, teaching ability, teaching and scientific researching quality, humanistic quality, psychological quality and new media literacy, etc.

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