

Analysis on Cultivation of Students' Innovation Capacity in Polytechnic Colleges

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Abstract: Nowadays, with the rapid development of economy and science and technology, computer technology has played an important role in people's daily life as well as the social development by virtue of its unique advantages. Therefore, computer teaching is key to the development of the computer industry. Polytechnic colleges should improve the situation of computer teaching, promote the use of new teaching methods in order to improve teaching efficiency, cultivate more computer talents, as well as insure that students can show their innovation. Crucial for a person's growth, innovation can make students become creative and adapt to all kinds of challenges in the future. Therefore, this paper mainly studies on how to cultivate the innovation capacity of students in polytechnic colleges, and puts forward corresponding suggestions by analyzing the current situation of the teaching pattern in polytechnic colleges, so as to cultivate computer talents that can adapt to the new economic society.

1. Introduction

Education in China is exam-oriented, caring only about academic performance. But innovation is the result of the quality-oriented education. So if polytechnic colleges want to cultivate students with innovation capacity, it must reform the traditional education pattern. They should pay more attention to students' innovation capacity and make relevant teaching plans, implement national policies, and reform the teaching pattern to make it correspond to each student's personality. To let students stimulate their own creativity, instead of improving only their academic performance, so as to enable they become all-round and better adapt to society.

2. The Significance of Cultivating Students' Innovation Capacity for Polytechnic Colleges

2.1 To follow the development of society

Because of its convenience and rapidity, computer technology has been widely used in various fields, and it integrates into all aspects of people's daily life. In modern society, mastering computer technology is a necessary skill for people as well as a basic condition for improving people's well-beings. Computer skills have become a criterion for companies when they recruit staff. Although companies attach great importance to computer technology, they more value candidates' innovation capacity. Those who have this ability will have unlimited potentials because they can adapt to the various environment, make bigger contributions for companies. Therefore, polytechnic colleges should pay close attention to the cultivation of students' innovation capacity, so as to enable students stand out in interviews when they hunt jobs in the future.

2.2 To improve students' ability comprehensively

In addition to cultivating students' computer skills, the college should also cultivate students' ability to cope with emergencies. There will be some accidents in any industry. If students only accept knowledge rigidly and cannot use it flexibly or innovate according to the actual situation, then the knowledge they learn is meaningless because it cannot play its due role at all. Polytechnic colleges should cultivate students' innovation capacity, let students show their personality and discover their potentials. The cultivation of innovation needs students to use both their hands and brain, which means the operational ability and critical thinking ability. Meanwhile, it also needs an open mind. Therefore, cultivating students' creativity is comprehensive, in order to make students

better learn computer skills, to improve the basic ability to learn and better developed in the new era.

3. The Deficiencies in the Cultivation of Students' Innovation Capacity

According to current situation, polytechnic colleges mainly cultivate oriented talents. Facing the great demand for talents with computer skills, many colleges have opened courses focusing on computer technology, in order to adapt to the development of society and to cultivate a large number of computer talents. Polytechnic colleges should improve students' computer skills and innovation capacity, and enable students to think independently. However, because China's current education pattern is outdate which cannot develop students' innovation ability. Meanwhile, the reformed teaching pattern still has many deficiencies, especially when in terms of innovation. Therefore, colleges should find out the problems in the cultivation of students' innovation capacity, adopts more effective way to solve these problems, so as to let the students to get better education.

3.1 The outdate cultivation pattern for innovation capacity

Most polytechnic colleges open computer courses, but those courses are often lack of professional personnel engaged in computer industry. The traditional teaching pattern is not adapted to the new technology. So if college use such pattern, that is assessing students by their grades in exams, then learning for computer technology is boring formula for students. And students will just be cramming for exams, and just passively receive the knowledge that the teachers said, some even do not understand, but memorize it without further thinking. In this learning atmosphere, the disadvantages of the traditional teaching pattern are revealed. The dominant position of teachers cannot be shaken, and the concepts learned by students are outdate and can't stimulate the enthusiasm of students in learning, let alone improve their innovative capacity.

3.2 Teachers don't aware the importance of cultivating innovation capacity

To cultivate students' abilities all-round and make polytechnic colleges develop sustainably, colleges should pay attention to students' innovation capacity and enable them to keep up with the changing society. Polytechnic colleges should notice that currently many students are lack of innovation consciousness, therefore aware the importance of cultivating students' innovation consciousness by adopting a variety of methods to change the inherent thinking in teaching. To improve students' innovation capacity, the colleges should establish a brand new teaching method and plan. In current situation, many colleges pay little attention to the cultivation of students' innovative thinking, or just use the traditional teaching pattern, which only brings negative influence on students as it doesn't allow students to think freely and actively participate in classes. Meanwhile, many teachers also attach little importance to innovation consciousness. They only care about finishing classes and imparting the outdate content in the textbooks to students. As a result, students feel that learning is just a mechanical process of receiving knowledge and the outside world has nothing to do with them. Because computer science is a major emerging within a decade, so many students do not aware its great potential and are reluctant to learn it.

3.3 Colleges don't reform the old evaluation system

Teaching computer technology is quite different with that of other subjects, but its evaluating method is still same with others, which means that colleges evaluate students' whether they master this subject by their academic performance and cares little about the practical experience. Under current exam-oriented educating pattern, studying in many polytechnic colleges cannot help students master computer skills and shape innovation consciousness. In addition, students have to attend numerous courses and to take lots of exams. Cramming hard in few weeks before the exams may ensure the students to get high grades, but doesn't benefit students for their future development. It can't improve students' innovation capacity, neither makes them think critically. With this kind of teaching method, students don't have practical experience, which will greatly negatively affect their development.

4. The Strategies for Cultivating Students' Innovation Capacity

4.1 Using situational teaching to attract students' interest

With so much heavy schoolwork, it is difficult for students to gain interest in a certain subject. In order to improve the effect of learning, it is necessary to make students have interest in this subject, so as to turn their interest into motivation and make them learn actively and positively. There are many ways to improve students' interest in studying, and situational teaching is one of them. The new curriculum standard requires that colleges need to change their teaching patterns, which gave rise to the situational teaching. With the resonance in ideas, students will be interested in the learning content. Meanwhile, teachers should also change their teaching methods to make them applied to different situation of each student. In order to deepen students' understanding of computer technology, teachers can make use of multimedia to attract students' attention. By this mean, the learning process of knowledge wouldn't be so boring. For example, when teaching Photoshop skills, teachers can show students how to operate this software through well-made PPTs and videos. Watching these multimedia, students can feel the huge difference between the picture which is modified by Photoshop and that which is not modified, further generating interest in this technology and gain motivation to learn it. When showing how to use Photoshop software, teachers can use pop stars or others which young students may like as examples to attract students' attention. Other tips for teachers when they teach include telling stories closely linked with students' daily life, teaching more practical skills which may be used in the future, allowing students themselves to operate the software so as to enhance their ability to operate, solve problems independently. Those methods can deepen students' understanding of knowledge, and achieve better learning effect.

4.2 Applying task-driven teaching method

Task-driven teaching is a teaching mode that adopts the educating idea of solving problems instead of the traditional teaching method. It changes the students' learning situations and makes students have the awareness to learn and think independently. Task-driven teaching integrates collective learning and individual learning. In order to improve students' innovation capacity, colleges should establish a brand new teaching pattern which is aimed to cultivate students all-round. To motivate students' enthusiasm in learning, teachers should change their teaching thoughts, communicate more with students, and let the students complete their tasks by themselves. For example, when teaching how to create web pages using FrontPage, teachers can ask students to brainstorm and think freely like using other web creation tools to make web pages, which therefore develop students' innovation and creativity.

4.3 Making a good teaching environment

The content that polytechnic colleges teach to students should be in line with the actual situation, and situational teaching should be established to arouse students' interest in computer technology thus make them learn it positively. Environment has a great influence on students' study. A good environment will affect children for a whole life, as it can let students master more knowledge and develop students' imagination. For example, teachers can make use of multimedia when they teach, and set up a good teaching scene. When teacher use the flash animation, they can first show students pictures that they want to change those into a animation, and then require students to do so by giving them some materials. Through the simulation, the teaching let the students themselves make the animation, let students to ask questions whatever they don't understand, comment and discuss those questions. In addition to activating the atmosphere in class, teachers also can show students the process of designing web pages and ask students questions, so as to allow students to think independently about those questions and stimulate their interest in studying. Teachers don't have to teach following the content in textbooks. They can add some their own ideas and thoughts, which may not only enhance students' interest in computer science, but also can promote their innovation capacity.

4.4 Paying attention to each student's personality

To cultivate students' innovation capacity, polytechnic colleges can implement personalized teaching. It means that teachers should teach students according to their characteristics. For example, some students are good at programming while some do well in hardware operation. So teachers should allow each student to do what they are good at and interested in. That requires teachers to care more about students and know what their students are good at. It means teachers should observe students' abilities in various perspective as well as pay attention to their grades. If you ask a student who is good at programming to design a program within a given time, he or she may success and do it effectively. But if you let him or her operate software, he or she is unlikely to complete the task. Only if teachers respect the difference between students and teach them personalized, can students make the best use of their own strengths and success in different fields.

4.5 Establishing a perfect evaluation system

Any teaching pattern must have an evaluation system for the effect of education. It should accurately evaluate to which degree students have mastered the knowledge. A perfect evaluation system should consider the characteristics of each subject. The evaluation for professional courses should focus more on testing the mastery of theories, while that for computer science should pay more attention on practical experience and operating ability. The traditional evaluation system only cares about whether students master the theoretical knowledge, which makes it difficult for students to success in the society after graduating. To change this situation, colleges can organize competitions focusing on innovation that enable students to put their ideas into practice and award the most innovative and practical computer programming works, so as to encourage students and improve their innovation capacity.

5. Conclusion

To sum up, in the new era, polytechnic colleges should pay more attention to cultivating students' innovation capacity, which is more in line with the trend of current society. However, since the computer technology is a new emerging industry, teaching methods have not been innovated so much. Therefore it is difficult for colleges to make the computer teaching truly keep up with the development of computer science. So teachers should combine the standards of the new curriculum with the actual situation, use the method of situational teaching, improve the evaluation system, solve the problem from the root, and stimulate students' innovation.

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