

## Brief Analysis on the Cultivation of Students' Innovative Ability in Computer Teaching

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**Abstract.** As is known to all, the core content of quality-oriented education is the innovative ability. Under the background of knowledge-based economy times emphasizing on innovation, it also needs to cultivate high-quality talents with the innovative ability corresponding to the development of current society, which is also the important content during the development process of current advanced education. Especially in the education of Computer Major in colleges and universities, it should attach more importance to the current social demands; make proper adjustments and innovations of the teaching methods, further to effectively improve the innovative ability of university students.

### Introduction

Nowadays, it is the era of innovation. Therefore, it is the most important content of the current advanced education to positively cultivate composite innovative talents conforming to the development demands of the times. In the computer teaching of colleges and universities, even if it is the multi-media classroom equipped with advanced devices, it merely updates the teaching tools, which has not actually change the original classroom teaching mode. Therefore, there has certain difficulty to give the full play of the students' subject consciousness and cultivate the innovative spirit. However, with the continuous development and progress of times, the knowledge covered in the computer teaching of colleges and universities has been not the final destination, but transformed into the way to understand the scientific essence and cultivate the logical thinking ability. Meanwhile, it is also an important process to learn the knowledge and cultivate the exploring spirit. Targeted at the current university students, they not only need to be proficient with the basic application of common software, but also possess the ability to develop platforms of different software. Besides, they should also master the basic knowledge and techniques of the computer, deeply understand the way to solve the computer problems and application of the computer knowledge.

### Important Role of Computer Teaching in Colleges and Universities in Cultivating the Innovative Abilities of Students

Currently, the social economy has developed extremely fast. Meanwhile, science and technology has played an important role, which has already gradually become the first productivity of national economic development. However, the development of science and technology also needs to be supported by powerful professionals. Consequently, it no longer measures the talents by taking the master of more knowledge as the criterion. In addition, under the rapid development of scientific technology, the criterion to measure scientific talents has also changed. It does not merely need people mastering more knowledge, but should possess innovative spirits. Thus it can adapt to the standard of talents required by the society [1]. Currently, computer is the important factor during the progress of talent cultivation. Meanwhile, modern talents must master the skill. Meanwhile, in the meanwhile of consistently developed internet technology, the important role of computers has also been gradually highlighted. If people can proficiently master the computer technology, they can constantly increase the information and then transform that into knowledge, further to let people have diversified recognition of the knowledge. During the process of cultivating modern talents, it is most important to proficiently master a lot of advanced information and make innovations of knowledge. The modern college students lack that. Therefore, during the teaching process of computer in colleges

and universities, in the meanwhile of teaching basic theoretical knowledge, it should consistently improve the practical ability of students, further to effectively improve the students' interests in learning the computer knowledge. Moreover, students can make innovative and organic combination of the computer knowledge and knowledge learned in the discipline, further to improve the innovative abilities of students.

## **Concrete Measures of Cultivating Students' Innovative Abilities in Computer Teaching of Colleges and Universities**

### **Developing Theoretical Teaching, Laying Foundations for Cultivating Students' Innovative Abilities**

Concretely, so-called innovation is to discover, invent and develop, which is one kind of progress creating and applying the high-level knowledge [2]. Meanwhile, innovation is no daydreaming. The most important thing is the strong support of theory. Under general circumstance, if there is plentiful basic knowledge, it can more effectively improve the innovative abilities. During the teaching progress of computer major, it is very important to cultivate the students' ability to master the basic knowledge. Therefore, in order to let students obtain ideal teaching achievements, it must pay attention to the following points during the progress of developing computer education:

Firstly, it should guarantee the theoretical teaching contents to be scientific and reasonable. In the aspect of developing computer theoretical teaching, this most important thing is to correctly select the teaching contents, not merely select the valid concepts, but let students to deeply understand the real meanings. Moreover, in the aspect of selecting teaching materials, teachers should be more careful, which has direct influence on the teaching effects and development of students in the late period. Under normal circumstances, teachers should emphasize on the fundamentality and comprehensiveness of contents while selecting teaching materials. Besides, they should also consider the representativeness and novelty. Only by guaranteeing contents of teaching materials conforming to the above requirements, can it not increase the learning burdens of students. In addition, while interpreting the teaching materials, teachers should fully consider the degree how students master the basic theoretical knowledge. Moreover, they should master the degree of knowledge input, thus students can better digest theoretical knowledge they have already learned.

Secondly, it should realize the optimization of theoretical teaching method. The classroom teaching is divided into two aspects, which is not purely teaching or learning. It must guarantee that teachers and students should communicate with each other well, further to guarantee the teaching effects<sup>[3]</sup>. Of which, for teachers, the main content is to study the teaching method. Moreover, they need to comprehensively understand which method they should adopt to improve the transmitting efficiency of professional knowledge. However, the major task of students is to consistently cultivate and improve the learning ability of themselves. That's because learning of thinking activities cannot be replaced. Consequently, students need to independently explore and think spontaneously. Only in this way, can it produce ideal effects. It can be seen that, learning is the important subject in actual teaching activities. However, in original traditional teaching, teachers have always taken the dominant position in classroom and transmit theoretical knowledge to students, who have seriously neglect the degree how students can accept the knowledge. In the aspect of taking examination, it is quite hard to show the actual abilities of students. Therefore, under the background of exam-oriented education, it is quite easy to present the phenomenon of high scores and low abilities. To effectively improve the abilities of students, it must transform the traditional teaching mode and fully show the dominant position of students, further to better give the play of students. First of all, it should positively develop the seminars. Students can be divided into several groups, so as to develop discussions. All students can give the full play of their own advantages. Moreover, it should gather wisdom of all people, further to obtain ideal educational achievements. Secondly, it should emphasize on cultivating the self-study ability of students. As the cultivation of self-learning ability, the most important thing is to guarantee the self-learning contents and methods of students to be scientific and reasonable under the correct guidance of teachers. In addition, problems to be resolved

should be examined by teachers. Through the self-learning, teachers can test the learning effects of students at first time, further to specify whether the self-learning effects conform to the standards or not. Meanwhile, they should also answer the problems and doubts in details confronted by students in the self-learning progress. On that basis, teachers can also positively organize students to develop self-learning exchanging meeting, thus students can improve their self-learning efficiency and quality during the process of communication. According to the practical experience, it shows that the organic combination of the above two learning methods cannot only improve the learning enthusiasm of students, but also better strengthen the efficiency of classroom at the same time. It can be seen that, in the actual teaching progress, teachers should not merely be restricted by traditional teaching mode, but also make improvements and innovations of teaching methods with the development of times, further to offer better services for students.

### **Innovating Experimental Teaching**

During the teaching progress of advanced colleges and universities, the experimental teaching is an important component. However, it is not appreciated. Moreover, it is merely considered as the adjunct of theoretical teaching in the actual teaching. Therefore, it is quite hard to realize the organic combination of theory and experimental technological teaching. Meanwhile, it cannot guarantee that the experimental teaching can play its role. In the teaching system of computer, experimental teaching is the key teaching link. Consequently, the quality of experimental teaching has certain impact on the future development of students. Especially for the improvement and cultivation of students' own innovative abilities, it is indispensable. Therefore, in order to more effectively cultivate the students' innovative and operational abilities, it should pay attention to the following contents in the experimental teaching of computer:

Firstly, it should reasonably choose members, so as to realize the optimization of teaching staff. While developing the experimental teaching, it must pay attention to the selection and allocation of teaching staff, further to guarantee that the experimental teaching can obtain ideal effects. However, while selecting and allocating teachers, it usually selects teachers with quite high academic level, quite strong management ability and good thought styles to be the leaders of experimental teaching. They can undertake great responsibilities and eventually let the teaching team to be expanded <sup>[4]</sup>.

Secondly, it should start from the cultivation of innovative abilities, gradually innovate and improve the pattern of experimental teaching. In order to construct a new experimental teaching pattern, it is most important to positively transform the concepts and thoughts, guarantee the mutual combination of theory and practical teaching, further to form an organic integrity. It can be seen that, to positively promote the innovations and reform of computer major's experimental teaching, the key is to guarantee experimental teaching to be separated from the entire teaching process. Moreover, it can gradually form a relatively complete and unique teaching system and evaluation mechanism. In addition, it should properly increase the quantity of experimental teaching's class hours and positively design experimental teaching contents with obvious innovations, so as to guarantee the topics of experiment to possess obvious novelty and positively develop open teaching.

Thirdly, it should scientifically and reasonably set the experimental classes and projects. While setting the contents of experimental classes, the key is to guarantee the typicality and technology of titles of selected experiments. Besides, the practicability should be relatively obvious <sup>[5]</sup>. In addition, it needs to positively develop some explorative experimental teaching. Students can select the experiment's titles based on their own interests, further to develop the composition of paper. Such a teaching method can let students really make explorations and consistently improve their exploring abilities. On that basis, it should also increase the number of comprehensive experiments and let students to discover problems while making the experiments, make further explorations and eventually get the correct conclusions, complete the exploration and learning while guaranteeing the quality.

## **Realizing the Organic Combination of Teaching and Scientific Researches, Consistently Improving the Scientific Abilities of Students**

In universities and colleges, senior students have already mastered the contents of professional basic courses. Therefore, it is easy to apply the theoretical knowledge. However, in order to fatherly promote the development, universities and colleges can positively organize senior students to regularly develop scientific trainings. In this way, during the progress of taking part in the activities, senior students can consolidate the professional basic knowledge they have already learned. Meanwhile, they can better expand thinking, further to positively promote the development of students in future. Currently, the organic combination between scientific research and teaching has already gradually become the new teaching method. Therefore, it plays a positive role in cultivating the innovative abilities of students, which is worth of being promoted vigorously.

In the aspect of scientific training, the concrete training methods of senior students will not be limited. Therefore, teachers can totally realize the objective of expanding the innovative thoughts of students by different forms. However, during such a process, the most important thing is to effectively improve the learning enthusiasm of students. Teachers can set different interest groups in the scientific groups. Thus students can choose the group based on their own interests. Among groups selected by individuals, they can find students with the same interests, further to let the communication among students to be more frequent. Students can better share individual suggestions and opinions. Under such a background, students can make communications. Achievements obtained from such a learning method must be higher than that from individual researches. Meanwhile, professional teachers will be equipped for all scientific groups. When students are confronted by problems while carrying out scientific researches, teachers can offer help. Moreover, they can analyze for students from the professional perspective. Meanwhile, they can also make a comprehensive analysis on similar problems, make reasonable integration and summarization, thus students can obtain more professional knowledge during the progress.

In addition, universities and colleges can also positively hold competitions, further to let students increase their interests in learning scientific knowledge. Moreover, it can offer powerful help for them to understand the scientific development orientation, which is convenient for new research. As the concrete implementation process, universities and colleges should organize students loving the computer and establish the learning groups. Meanwhile, they can regularly or irregularly organize these interest groups to develop communication, further to improve the computer level of students. On this basis, it should also consistently strengthen the force of communicating computer knowledge. Professionals and experts understood and familiar to students can be invited to give lectures in universities and colleges. However, it must pay attention to the dominant role of students. Therefore, colleges and universities should also positively offer platforms for students to show themselves. In addition, they can encourage students to design related computer software. To effectively improve the learning interests of students, it can consistently enrich the interests of software, so as to play the role of improving the learning enthusiasm of students.

## **Conclusion**

Above all, with the development of social economy and science & technology, computers have already gradually penetrated into the daily life of people. Besides, they have already become indispensable part of people's life and work. During the process of computer teaching in colleges and universities, students do not only proficiently master the basic theoretical knowledge, most importantly, but also realize the organic combination of theory and practice, apply that into the actual problems. It can be seen that, students majored in computer must consistently improve their individual practical ability, further to expand the innovative abilities and grow into talents conforming to social demands and make contributions for the development of computer industry.

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