Reform and Research on Teaching Mode of Computer Basic Course in College

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Abstract. The paper proposes the reform of the multi-dimensional teaching mode based on the research and analysis about the current teaching mode of computer basic course and teaching practice in the university in China, which is the integration of information and the contents of the courses. Finally, this paper studies and discusses the reform of curriculum contents, teaching methods and evaluation methods.

1. Introduction
The basic computer course in colleges is a prospective course for computer majors and a basic course for learning information technology for non-computer majors. Its teaching content and emphasis are the basic application of computer basic education and program development. Computer basic course in colleges and universities integrates the basic requirements of information technology, become the main way to carry out lifelong learning, and can also show and disseminate the latest scientific research achievements.

2. Current Situation about Teaching Mode of Computer Basic Course in College
At present, among the basic teaching objectives of computer science in colleges and universities in China, the practicability of information technology has been basically highlighted, and the cultivation of students’ undefined skills and innovative abilities has been strengthened. Students of liberal arts are mainly concerned with popularizing computer science and information technology. Science is not only to master computer knowledge, but also to master certain programming skills. However, with the rapid development of information technology, such as wireless communication, mobile interconnection, Internet of things, cloud computing and so on, college computer courses must have a new vision, especially for the rapid growth of software applications and fields. Universities are required to further improve students’ programming skills. These problems inevitably require the reform of the basic teaching mode of computer in colleges and universities, so that students can adapt to the needs of the society quickly. The basic course of computer in colleges and universities include computer basic knowledge, Access database technology, Visual Basic programming, C language programming and so on. [1] The teaching mode adopted mainly includes the traditional teaching mode based on lectures and the multimedia teaching mode. The network teaching model, the Blending teaching model and the multi-dimensional teaching model based on information integration are put forward to make full use of task-driven teaching methods to ensure that our teaching can reach the final goal. Next, we use basic C language programming to analyse the multi-dimensional teaching model and other models.

In the teaching of C language programming, it is not difficult to find that there are many examples of task-driven teaching, but the structure of knowledge is relatively poor, such as adopting the traditional
teaching mode. If teacher pay too much attention to detail teaching, it is more difficult for students to set up an overall frame structure, let alone master the key points and difficulties of knowledge, so the students who have just entered the school have the fear of programming learning.

A teaching model based on lectures. It is easy to organize courses and supervise teaching activities through the interaction of students and teachers undefined gestures, expressions and so on. [2] However, the knowledge is scattered, the teaching focus is not clear, the teaching content and the internal logical relationship are unreasonable, it is not realistic to reach the expected goal. Finally, the interest of students will be reduced, teaching effect cannot be guaranteed. And the traditional teaching method is not conducive to the cultivation of innovative thinking and innovative ability.

Multimedia teaching mode. It has rich expressiveness and strong attraction, multi-sensory stimulation as the main means to stimulate student's undefined interest and enthusiasm. But in the teaching, it embodies the function of "multi-function, convenient teaching aids", lacks of the thinking process, and is not suitable for the programming teaching.

Network teaching mode. Network teaching is the product of modern education technology, computer technology and communication technology. The main features of network teaching are the integration of education management, daily work management, teaching resources management, examination management, and then improve the teaching effect and teaching efficiency. But from the actual examination, it is found that the convenience of online education becomes the learning trouble of the freshman college students, and the lack of effective interaction and supervision leads to the decline of the learning effect.

Blending teaching mode. Multimedia teaching and network teaching model make up for the shortcomings of traditional teaching mode, highlight the role of information technology in computer teaching, but weaken the advantages of traditional teaching model. In this case, in order to expand the teaching scale, a Blending teaching model is proposed. From the enterprise training field originally produced the foreign Blending learning concept. It effectively combined the three models to make up for the problems such as short teaching time, lack of learning resources, difficult to implement the contents, difficult to deal with data and widen the teaching scope. In Blending learning mode, teachers do not instill knowledge, students are learning frame. Students are no longer passive behavior, but actively acquire knowledge and embody the educational concept of "leading" and "dual subject" [4] In the field of education, the Blending teaching model has made a lot of theoretical achievements, but the specific teaching practice is still in a state of exploration, because the weight of each element in the specific teaching is very difficult to grasp.

3. Reform and research on teaching mode
It is the core of teaching reform to combine teaching theory with practice systematically and obtain satisfactory teaching effect. [4] Multi-dimensional teaching mode based on network can integrate all kinds of teaching resources, train students from knowledge, ability, practice and innovation, integrate and deal with all kinds of teaching modes, teaching methods and information resources. The teaching mode of "computer basic course" has been changed from single to multi-dimensional, and gradually matured into a new teaching mode, which provides students with a broader, more flexible and innovative learning space. The new teaching mode of "student-centered, multi-resource based discussion and communication" has been realized. The new teaching model plays an important role in the acquisition of knowledge, emotional exchange, cultivation of cooperative spirit and improvement of practical skills.

The reform framework of the teaching model includes teacher guidance, autonomous learning and group learning, network resources and teaching support services. Through the technology platform, the traditional class, the experimental class and the virtual class are combined together. Under the guidance of the teachers, they can be flexibly combined according to various needs, which is conducive to communication. Aiming at the need of adjusting teaching content moderately, we adopt more effective teaching methods and diversified teaching forms to achieve our goal. "Stereo" is mainly reflected in the external combination, such as the combination of teaching and scientific research, the combination of
curriculum and related courses, the interaction between teachers and students across time and space, the interaction between students and enterprises, and the interaction between society and so on.

The multi-dimensional teaching mode is guided by philosophy epistemology, takes the basic knowledge module of computer as the unit, takes the information technology ability construction as the core, integrates the teaching resources platform, combines the psychological factor and the emotion factor, provides the service for the computer teaching. Therefore, in order to improve teaching quality and efficiency, optimize and allocate teaching resources, we must make full use of advanced teaching science theory and information technology to construct multi-dimensional teaching mode. The system of multi-dimensional teaching mode of computer basic course mainly includes teaching schedule control, classroom teaching, network teaching, class compiling, tutor platform, teaching resource sharing, etc. As shown in Fig.1.

![Multi-dimensional teaching model](image)

**4. Conclusion**

In the multi-dimensional teaching mode, the combination of traditional teaching mode and modern information technology, through the organic integration of teaching links, teaching evaluation and teaching resources, is conducive to the richness of teaching practice to promote the improvement of teaching quality. Especially the computer-aided examination not only meets the objective needs, but also greatly reduces the labor intensity of teachers, and saves a lot of time for teachers undefined self-development and innovation.

The teaching content of multi-dimensional teaching mode. It not only accepts the traditional teaching content, but also accepts the innovative thinking, adds new content, new technology and new scientific research, and pays attention to the basic teaching content, systematisms and epochal of the course. Under the supplement of new content, new technology and new scientific research, the knowledge structure is more reasonable, the module interacts with each other, and stimulates the students undefined interactive program design interest. It can solve problems directly through network teaching resource platform and can also get help through teaching support service (QQ group, website, BBS etc.), discuss and exchange learning process and experience, complement each other and strengthen learning.

Methods and means of multi-dimensional teaching model. Through the combination of traditional teaching and network teaching, the extension of practical teaching is conducive to improving the efficiency of teaching feedback by computer-aided testing, mainly through the establishment of network courses, virtual classes, group discussion and other means to guide students to learn actively. This paper organically organizes the scattered knowledge points or teaching modules according to the actual needs, develops the network teaching course, enriches the principle teaching of C language programming, and promotes the students undefined programming ability. This can make up for short teaching cycle, fast progress of classroom teaching, scattered knowledge and other shortcomings. In the virtual classroom,
students can upload homework; simulate test and online test to realize real-time online teaching evaluation. They can also use QQ group and email for group discussion to exchange learning experience and learning results. In this way, we can make full use of the network interactive platform to communicate in time, develop homework management, realize paperless management, encourage students to improve their operation ability, realize data accumulation in teaching process, and adjust teaching strategies in time.

The evaluation system of multi-dimensional teaching model. The evaluation of computer courses in colleges and universities focuses on practice, which is correct. However, the earlier single test cannot accurately reflect the actual learning situation of students. Therefore, we can establish a digital evaluation system, which includes not only the traditional examination evaluation (final grade), it can also analyse the new contents of educational resources, such as paperless homework and knowledge point test. This not only completes the computer practical skills test, but also can carries on the examination timely to the student undefined theory study, the information technology master degree, the program design and so on comprehensive ability carries on the examination. Such a comprehensive evaluation system needs the construction of teaching resources database. Paperless management and test management need a practical and flexible test database system, which not only meets the requirements of the syllabus, but also needs to be collected according to the specific requirements of various chapters and knowledge points. Standardized teaching provides a strong support and guarantee, but also requires more early teachers to pay.

The effect of multi-dimensional teaching model. Through the multi-dimensional model, students can obtain abundant learning resources more conveniently and the teaching method is more flexible. In this way, students undefined interest in learning can be improved, their learning activities can be enriched, their ability of fully applying information technology can be improved, their self-learning ability can be improved, and the students undefined innovative spirit can be effectively stimulated. The construction of various classes can effectively improve the team spirit and strengthen the students undefined transition from passive learning to active learning.

The reform of teaching mode of computer basic course in colleges and universities has always been the research hotspot of educational reform. Students undefined needs and market demands are constantly changing, knowledge is rapidly updating, and the invariable teaching mode can no longer adapt to the changing teaching process. Only by deepening the teaching reform, exploring the advanced teaching mode and learning the new teaching idea, can we meet the needs of the social development and cultivate the high-quality learning applied talents. We think that the use of multi-dimensional teaching mode is an exploration of the teaching reform of the basic course of computer teaching, and its application will gradually expand the integration of educational resources, gradually form an intelligent teaching system, and construct a visual, listening, speaking and reading system. All-round teaching mode of practice can even contain all teaching activities. In the aspect of teaching object, according to the objective demand of teaching, the evaluation mechanism should be carried out according to different students undefined individual and group. Through deepening the teaching reform of computer basic course in colleges and universities, the innovation of concept and effect can be realized. With the popularization of information technology and the requirements of the information age, the role of information technology is becoming more and more important. The improvement of students undefined information literacy and the change of educational concept are closely related to creativity. Computer teachers should explore and practice the application mode of modern education, make full use of information resources and technology, make great efforts to carry out quality education and promote teaching reform.

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