

On the Construction of Basic Computer Curriculum System and Teaching Reform in Colleges and Universities

Chengyu Wei^{a,*}, Kehui Wang

Ya'an Polytechnic College, Ya'an, Sichuan, 625000, China

^a defox0982@sina.com

*corresponding author

Keywords: Basic Computer Courses, System Reform, Reform Strategies.

Abstract: With the development of information technology in our country, computer application has been integrated into various industries. Therefore, in the course of our university education, the cultivation and teaching of computer basic courses for students is aimed at improving students' ability to master computer application and understand the basic control content of computer, so as to train students into technical talents with careful thinking and independent control of computer. This paper will discuss the content of computer teaching in China, provide a plan for its later reform, and promote the modernization process of college education.

1. The Present Situation of Basic Computer Courses

With the rapid development of social economy and the quickening pace of life, the efficient and accurate features of computer are applied to various industries. It also lays a foundation for the computer assessment of students' comprehensive ability and technical practice. Colleges and universities have taken the computer foundation as a necessary course for different majors, and it is also an introductory course for college students to operate computers. Through the study of the course, the students have a new understanding of the computer, which plays an important role in the follow-up study of professional knowledge.

1.1. The Teaching Content of the Theory Course is Old and Out of Touch With Reality

At present, the effect of college education computer is not ideal, most colleges and universities only use the way of computer room teaching, the first half of the course to listen to the teacher's theory lecture, the second half according to the theoretical content of practical ability operation. The way of education reform is to ignore the students' real learning, market demand for talents, and seriously affect the quality of teaching. However, most of the contents are out of touch with the development and practical application of the present era, and the theory that the teacher tells is lagging behind, the students are extremely loose about the teaching content, and lack of certain goal guidance, which results in the immaturity of the educational reform mode and the education system, and the teaching quality is not good[1].

1.2. The Theoretical and Practical Contents of the Curriculum are not Closely Related

However, as a public basic course, the basic course of computer science in universities covers more theoretical knowledge, and some of the contents related to real life and work are generally introduced[2]. Some technical and application methods have only made statements, without giving examples and explanations of the content of practice, the combination of theory and practice can not be combined, resulting in the students can not effectively combine the theoretical knowledge with the content of practice, or because of the inaccurate introduction of some kind of practical content, there are differences between theory and practice content, which affects the cultivation process of students' computer thinking ability, practical ability and comprehensive quality.

1.3. There are Differences in Students' Ability of Computer Manipulation

With the popularity of intelligent terminals, the perfection of mobile phones and tablets makes many students ignore the existence of computers, even if the use of computers, but also ignore his work attributes, just use it for shopping, games, drama and so on. Although in junior high school, each school has set up the computer curriculum, but most schools have changed this curriculum into the examination-oriented education related to the content of teaching, students have different degrees of computer mastery[3]. Some students with good foundation think that the teaching content of computer-based course is too simple, and they are often in the state of inadvertently listening to the class. Some weak students often worry about delaying their learning process or being ridiculed by their classmates for their own reasons, and do not delve deeply into the problem of ignorance and muddle through, affecting the quality of classroom teaching (see figure 1).



Figure 1 Computer-based courses

1.4. Ignoring the Cultivation of Students' Computer Thinking

Most college teachers only pay attention to the cultivation of students' practical ability and neglect the cultivation of students' computer thinking ability. The common way of education and teaching is to inculcate through theoretical knowledge, to complete the operation training of office software through practice, but to the cultivation of students' thinking ability is not at all, students do not understand why such manipulation, the understanding of all knowledge is rote, can not really carry out the shaping of computer thinking ability.

2. Construction of Basic Computer Curriculum System and the Importance of Teaching Reform in Colleges and Universities

2.1. The Needs of the Country

With the continuous development of information technology, the prevalence of e-commerce, Internet, technology companies in China, which also provides unlimited possibilities for college students to obtain employment and entrepreneurship, around the needs of national development, encourage students to learn computer foundation, improve computer application ability, apply the knowledge learned to practical work, and contribute their own contribution to the development of the country (see figure 2).



Figure 2 Computer-based courses

2.2. Market Demand

Every minute of the new era is changing, especially the computer industry, which requires students not only to have the ability of professional knowledge reserve, but also to have the ability to control computer information technology. In practical application, besides the idea of dissolving graph computer and Internet+, it also needs to rely on these ideas to export ideas to the outside, to establish the thinking idea of combining online and offline, to enrich the later thinking module, to improve the future work efficiency, to reasonably avoid the risk of entrepreneurial development and so on. Improving Students' Practical Ability[4].

2.3. Student Needs

Teaching students according to their aptitude is an important viewpoint of quality education in our country. In order to ensure that there are gains in learning basic computer courses, schools need to integrate educational resources according to the needs of computer learning, to help students improve their computer thinking and practical ability, to ensure the unity of the basic curriculum reform tone in colleges and universities in the general direction, and to avoid the problem of waste of resources. At the same time, in order to improve the quality of teaching reform, we should adhere to the management plan of keeping pace with the times, constantly optimize the goal of teaching reform, improve the gold content of this course setting and education, and carry out the setting of teaching content.

3. Construction of Basic Computer Curriculum System and Teaching Reform Strategies in Colleges and Universities

3.1. To Expand the Teaching Content and Connect With the Actual Situation

The basic course of computer should keep pace with the times, understand the advanced technology and consultation, as the auxiliary resource of the teaching content, as the premise for the students to master the knowledge and technology. Teachers also need to constantly update their knowledge structure, and can discuss the latest computer application with students to enhance students' desire to learn about the knowledge. In the knowledge of teaching content, it is related to the actual content, such as the composition of the computing hardware, which can be combined with the content of the students' current purchase of computers, so as to enhance the practicability of the teaching content[5].

3.2. The Teaching Content Should be Related to the Students Major

As mentioned above, basic computer courses are not compulsory courses for non-specialty

students, and the basic computer knowledge of different majors is the same, but the content of practical manipulation is not the same when the follow-up is combined with the actual work. Therefore, teachers can link the students' current major with the teaching of basic computer courses to improve their ability to operate the computer in the industry, which has an important auxiliary role for students to engage in the major in the future, and use this way of education to greatly enhance students' enthusiasm in the classroom and improve the quality of teaching.

3.3. To Enhance the Content of Practical Manipulation and Arouse the Enthusiasm of Students

Improve the construction of computer laboratory in colleges and universities, update the practical equipment, and expand students' cognitive ability to computer. In the process of education and teaching, teachers can demonstrate according to the latest practical equipment, improve students' practical manipulation ability, or set up experimental content according to students' current interests and hobbies. For example, when learning office software word, students can use what they have learned, edit magazine content, and arouse students' interest in learning.

3.4. Layered Teaching

In the course of education, teachers can divide the students' ability into different groups by using the hierarchical teaching method, and the students' learning content and the practical content are different, which requires the students of the unified group to operate their own practical ability according to the teacher's request. Using this way, the students can enhance their initiative in the process of practice manipulation, make students quickly immerse themselves in the practice content, reduce the problem that the students with strong learning ability because of differentiation have nothing to do, the students with poor foundation are at a loss, teach students according to their aptitude, and improve the efficiency of classroom teaching (see figure 3).

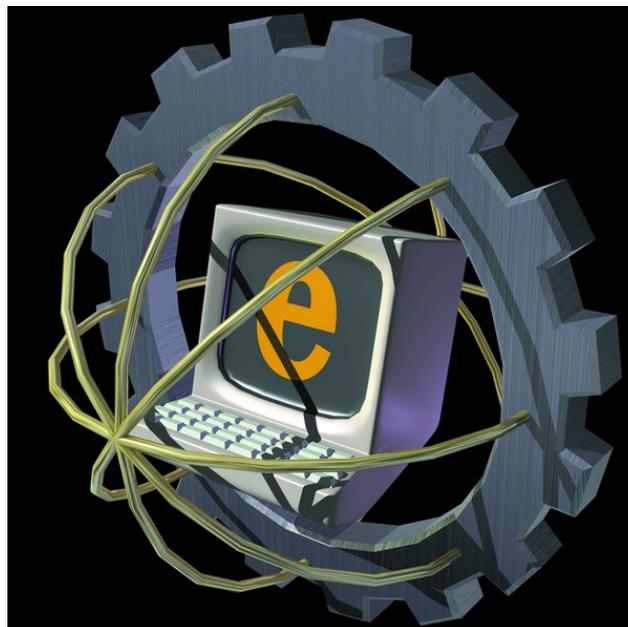


Figure 3 Computer-based courses

3.5. Focusing on the Training of Students' Computer Thinking Ability

The basic contents of computer courses in colleges and universities belong to the form of indoctrination to carry out education, mainly relying on the way of students' rote memorization, remembering the sequence of different software in operation, and neglecting the training process of students' thinking ability. Students don't understand why they're manipulating it. Computational thinking ability is to understand the concept of computer content, and then on the basis of innovation, forming a series of thinking activities. The shadow of the basic computer course in colleges and universities introduces the teaching of this thinking, and integrates the study of the

basic computer knowledge into people's daily life and study, so that students can have more contact with the computer, and can use the computer to complete the daily learning content, such as using the office software excel to calculate, using the PPT to complete the production of the class, and so on, so as to enhance the students' cognition of the computer, help the students to establish the thinking prototype of the computer in their minds, and according to the students' follow-up study of the basic knowledge of the computer can effectively solve the problems encountered in their subjects, so as to improve their ability to apply to the computer.

4. Conclusion

With the development of information technology, the basic computer courses in colleges and universities should keep pace with the times, link computer teaching knowledge with practical application, and improve students' comprehensive application ability of computer. Even if this course is a non-professional public compulsory course, its importance is self-evident. It is necessary not only to reform the curriculum, but also to deepen the curriculum content setting and enhance the students' practical ability. It is also necessary to link the teaching content with the students' majors study, to shape the cultivation of students' computer thinking ability, to enable students to have the ability to control the computer, to enhance the close connection between the basic computer curriculum and the subject content, and to continuously transfer comprehensive talents to the society.

References

- [1] Li, Rong., Zhou, Weibai. The construction and teaching reform of college computer basic curriculum system with application as the core under the model of results-oriented education. *Computer Age*, no. 12, pp. 98, 2019.
- [2] Chen, Xue. Analysis of the reform of computer basic courses in colleges and universities based on the construction of "multiple" teaching resources. *Tech Wind*, no. 16, pp. 48, 2019.
- [3] Lu, Sichen., Chen, Zhuoran., Yang, Jiuting., Hua, Zhenxing. Discussion on the Construction and Teaching Reform of Basic Computer Curriculum System in Colleges and Universities. *China New Communications*, vol. 21, no. 01, pp. 154, 2019.
- [4] Chen, Yao., Zhang, Qiaohui. An Analysis of Experimental Teaching Reform of Computer Basic Courses in Private Colleges and Universities. *Education and Teaching Forum*, no. 38, pp. 279, 2018.
- [5] Zhao, Fei., Qin, Min., Liu, Ning. A probe into the reform of computer basic courses in colleges and universities based on the construction of "multiple" teaching resources. *Intelligence*, no. 17, pp. 117, 2016.