

The Experimental Reform of College Computer Basic Courses Integrating Ideological and Political Courses

Shi Yunqiu^{1,a,*}, Wu Chuansheng^{1,b}

¹University of Science and Technology Liaoning, Anshan, China

^a2214604543@qq.com, ^bgykwcs@163.com

*Corresponding author

Abstract: The basic course of college computer is a general required course for non computer majors in colleges and universities, with a wide range of students' participation and a wide range of teaching effects. This paper analyzes the ideological and political curriculum and the relationship between ideological and political curriculum, as well as the ideological and political goals and characteristics of college computer basic curriculum; Excavate the ideological and political resources contained in the curriculum, and elaborate teaching case teaching; Construct implementation strategies such as ideological and political resources utilization "fragmented way" learning.

Keywords: ideological and political course; Curriculum ideological and political; College Computer Foundation; Teaching case

1. Project research significance and status analysis

College Computer Foundation is a basic course for non computer majors in our university, including theoretical class hours and experimental class hours. Experimental teaching is an important link in the whole process of experimental teaching ^[1]. It plays a connecting role in theoretical learning and practical application and plays an important role in cultivating students' practical operation ability, thinking ability to analyze and solve complex problems and rigorous scientific attitude. In the situation of "ideological and political education in all courses, and education by all teachers", the traditional experimental teaching mode cannot fully arouse students' interest in learning, the experimental topics are single, and can not reflect the "gender equality ^[2]". It is difficult to cultivate students' ability to analyze and solve complex problems, and even more difficult to promote knowledge and seek knowledge by doing, and can not meet the new requirements of education. At the same time, it is difficult to realize the cultivation of innovative talents. Therefore, we should dig deeply into the ideological and political elements, reform from the aspects of experimental content, experimental teaching methods, evaluation methods, etc., form a new educational model of curriculum and ideological and political integration, and then realize the new concept of "ideological and political integration of curriculum, curriculum integration of ideological and political" ^[3].

2. Purpose of project research

General Secretary 's important statement on education emphasized that education should take root in China, deepen the reform of educational experiment teaching, make all reforms conform to China's national conditions, and cultivate and bring up a large number of patriotic and innovative socialist builders and successors.

Taking root in China to run education and cultivate socialist builders and successors with all-round development of morality, intelligence, physique, beauty and labor, we need an educational experimental teaching model that is suitable for China's national conditions as a starting point. However, the traditional educational experimental teaching mode is difficult to meet the training needs of talents required by the country at this stage. The educational experimental teaching mode simply introduced from abroad cannot perfectly match the national conditions of China ^[4].

3. Basic contents of the project

In the traditional experimental teaching, most of them are confirmatory experiments, and the difficulty of the questions is low. Each experiment is "independent", which can not achieve the integration of knowledge^[5]. Under the new experimental teaching mode, the experimental content is redesigned to make the experimental content more realistic, and the ideological and political elements are embedded in it. Case experiment teaching is adopted, focusing on design and comprehensive experiments. Each experiment is related to each other, and ultimately forms a complete case with practical value, fully reflecting the high order, innovation, challenge and application. People oriented, teaching students in accordance with their aptitude. The project setting reflects the basic, open, challenging and gradient nature. Each experiment design has two goals, one basic goal, which all students should achieve; A high goal, which is prepared for students who have spare power, dare to challenge and dare to innovate. Taking the comprehensive experimental WORD typesetting "deeds of celebrities" as an example, the basic goal is to use relevant plug-ins to complete the layout design, which can realize the basic functions of normal typesetting of articles. The goal is to optimize the interface and insert celebrities' stories on the basis of realizing basic functions, so as to improve the convenience of operation; It can realize super connection with deeds, and can add, delete, modify and check data in the database^[6].

Through the reform of the experimental content, students' enthusiasm for learning was fully mobilized, their enthusiasm for learning was stimulated, their interest in learning was stimulated, their will and character were tempered, and their patriotism was strengthened^[7].

4. Key problems and innovations to be solved

By innovating the experimental content, introducing and improving the experimental teaching mode in divided classes^[8], perfecting the assessment method, the ideological and political education is organically integrated into the whole process of experimental teaching. Adhere to the teacher-led, and realize the transformation of teachers from "teaching" to "teaching-learning" to "teaching-education-learning"; Adhere to the student-centered, and realize the growth process of students who want to learn, really learn^[9], learn and use; Adhering to the combination of explicit education and implicit education has realized the improvement of students' ability and the cultivation of their quality. Only by persisting in deepening the reform of education can we cultivate new people of the times who can shoulder great responsibilities and be of great use^[10].

Experimental teaching is an important part of experimental teaching of basic computer courses in universities. In the course of experimental teaching, we should improve the experimental content, adopt and improve the experimental teaching mode of divided classes proposed by Professor Zhang Xuexin of Fudan University, and fully embody the OBE concept by carefully designing the intensive lectures in divided classes, leaving blank, internalizing independent learning, discussing and dispelling doubts, integrating knowledge with practice, reporting and summarizing, and organically integrate ideological and political education into the whole teaching process, which will not only help students master knowledge, but also cultivate students to analyze and solve problems.

4.1 bisection experiment classroom

This experimental teaching mode organically combines three experimental teaching processes, namely, intensive teaching, internalization of independent learning and discussion to dispel doubts. The rights and responsibilities of teaching and learning are clear, which can greatly enhance students' enthusiasm and initiative in learning, improve the experimental teaching effect, and cultivate students' thinking ability and innovative consciousness in analyzing and solving problems.

4.2 Design of experimental teaching in bisection classroom

Concentrate on the lecture, leaving blank: In the experimental teaching mode of divided class, the teacher's lecture is essential and very important, but this lecture is not another lecture, but an outline lecture, which is the finishing touch. We should grasp the key and find the key point accurately. Under the divided classroom experimental teaching mode, teachers should "talk" about what to do, how to do it and what to do with each experiment. When explaining the above three points, don't be too detailed. Pay attention to leaving blank space for students to think for themselves.

Internalization of independent study: In the experimental course, a lot of knowledge in theoretical

courses is needed. In the internalization of independent study, on the one hand, students should consolidate and absorb the known knowledge used in this experiment, and at the same time, they should learn and digest the unknown knowledge used in the experiment. The most critical content is that students design ideas, steps and algorithms to realize this experimental project. This session is completed by students alone, combing the knowledge points in depth, and at the same time concise the problems so as to solve them in the next session.

Discussion and explanation: In this session, the students will discuss and solve the problems found in the internalization of independent learning in groups, and then the teachers will explain the unfinished problems and give in-depth explanations. In this session, according to the situation, we can comment on the novel ideas designed by students. On the one hand, we can provide ideas for students with a little poor foundation, on the other hand, we can stimulate "good" students to further think and innovate.

Unity of knowledge and practice: learning is the only way to learn. Theoretical study is the foundation, and the integration of knowledge and practice is the key. In this link, students independently complete the experimental project. This link, on the one hand, exercises students' practical ability, on the other hand, verifies whether students' algorithms are correct and the results are perfect, which is a test of the practical application of theoretical knowledge.

Summary report: After the experiment, students should complete the writing of the experiment report, report and summarize the problems encountered in the experiment and their solutions, learn from each other and gain wisdom, and finally make comments by teachers. According to the different experimental contents and experimental hours, the five links in the classroom can be divided into classes or classes. For experiments with simple experimental content and less class hours, the classroom is divided into two parts, and each link must be closely connected and the time allocation is reasonable. For experiments with difficult experimental contents and many experimental hours, we adopt the method of dividing the points in different classes. However, regardless of dividing the points in different classes or in the same class, the methods of reporting and summarizing and discussing and dispelling doubts in different classes are adopted, leaving enough time for students to practice and promoting the integration of knowledge and practice.

4.3 Integration of Ideological and Political Education in Curriculum

The improvement of teachers' ideological and political ability: the preacher himself should first have Ming Dow and Taoism. College teachers should insist that educators receive education first. The change of teachers' ideological concept is the first condition to realize curriculum ideological and political education. Only when teachers agree with it ideologically can teaching and educating people be organically unified. Only when teachers realize the importance and necessity of curriculum ideological and political education can they form the internal driving force to carry out curriculum ideological and political education, actively improve their ideological and political literacy and ideological and political education ability, and integrate ideological and political education into the experimental teaching of specialized courses, so as to achieve the effect of moistening things quietly.

Training and learning: Actively participate in online and offline training organized by schools and related organizations, enhance the awareness of ideological and political education in courses through professional training, and improve the ability and level of implementing ideological and political education in courses.

Self improvement: In today's information age, learning methods and channels are diverse, and teachers can use their spare time to learn anytime, anywhere. Expand the scope of knowledge, integrate new ideological and political ideas learned through news hot examples into professional experimental teaching, and help students establish correct values, outlook on life, and patriotism through professional guidance.

Team building: One person's efforts are additive, while a team's efforts are multiplication. Establish a professional course team, carry out collective lesson preparation, and form a collaborative force for education.

4.4 The excavation of ideological and political elements in the curriculum

Combining the characteristics of the course and the orientation of the course objectives, we dig deep into the ideological and political elements, and design a concentric circle of "seven rings and centripetal" for educating people, as shown in the figure. The concentric circle of "seven-ring centripetal" education

is not only suitable for the experimental teaching of this course, but also can provide useful reference for other courses to implement curriculum ideological and political education.

Pay attention to details: In view of the fact that many students are too arrogant and careless, through some tragedies caused by details in the history of science and technology, such as the explosion of Ariane5 rocket due to data overflow, cultivate students' down-to-earth spirit, understand the truth that "great things in the world must be done in detail", and start from the details and the little things.

Comparison: Through the analysis and comparison of the algorithms designed by students, and through the different ways and means of solving problems in the reporting and summarizing session, the different attitudes of countries towards the epidemic during the epidemic period and the China efficiency and China speed reflected by the China government in responding to the epidemic are introduced to cultivate students' patriotic feelings and cultivate road confidence and institutional confidence. Guide students to deeply understand the "China strength" behind "China speed" and "China efficiency", highlight the spirit of national struggle and show what is the national soul.

Emphasis on process: After project-based case experiment teaching, involve students in project investigation and argumentation, form abstract thinking logic through project design and implementation, and cultivate a rigorous scientific attitude and innovative spirit.

Talking about current affairs: In the course of the experiment, introduce hot events that students are interested in, and train students at different levels according to different events. For example, through the calculation of the world record of super hybrid rice transplanting in Yuan Longping, the transplanting and transplanting work is carried out as scheduled, and the estimated yield per mu is 1200 kg, which will impact the world record of rice yield per mu. In this way, we can cultivate students' ideal and responsibility of serving the country through science and technology. Let students deeply understand the strength of the motherland. At the same time, let the students consult the materials related to Yuan Longping, and guide them to strengthen Socialism with Chinese characteristics's ideals and beliefs. By searching for the success of the green, safe and simple Beijing Winter Olympics, students can deeply understand the strength of the motherland and guide them to deeply understand the national spirit and the spirit of the times behind the strength. Ideological and political education for students through real-time events requires teachers to have high political acumen and accurate grasp of hot events.

Talking about celebrities: By analyzing the self-realization process of outstanding scientists such as Jin Yilian, Xia Peisu and Wang Xuan, we can cultivate students' correct three views, carry forward the great patriotic spirit and anti-epidemic spirit, and let students understand the relationship between personal value and social value.

Learn from example: the power of example is infinite. Through the super-computing team in our college, we can break the world record of example power and cultivate students' spirit of unity, cooperation and innovation.

Talking about history: if you want to know the road, you must first make history. Combining with the history of China's scientific and technological development, we should cultivate students' development concept and the spirit of not being afraid of difficulties and being brave in innovation, and guide students to look at problems with dialectical materialism.

4.5 The implementation of the ideological and political path of the curriculum

Curriculum ideological and political education is not to set aside a part of time to talk about ideological and political content in the process of knowledge transfer, but to dig deep and refine ideological and political elements, and to moisten things at the right time and in the right way to silently integrate ability training and value shaping into the process of knowledge transfer. Classroom is the carrier, teachers are the implementers and students are the foothold. Divided classes provide a powerful starting point for the implementation of curriculum ideological and political education. A new teacher-student relationship with mutual respect, equal dialogue, consultation and exchange, and experimental teaching is constructed based on the concept of dividing responsibilities and responsibilities in different classes. In this new relationship between teachers and students, we can add more educational elements, teach and educate people in a targeted way, and truly realize the educational goal of cultivating people in Lide.

In order to stimulate students' interest in learning, teachers can integrate ideological and political elements into the introduction. In the process of discussing and resolving doubts, integrating knowledge with practice, and reporting and summarizing, teachers can choose one or several contents of the "seven-

ring centripetal" educational model as needed to integrate ideological and political education into the course experimental teaching like salt water. Under the divided classroom mode, the educational concept of dividing responsibilities and responsibilities has improved students' ability and cultivated students' emotions in a subtle way. Independent learning is internalized to cultivate students' understanding, ability to practice problems and ability to solve problems independently; Discuss and dispel doubts, cultivate students' sense of teamwork and collectivism; The integration of knowledge and practice can not only cultivate students' ability to apply theory to practice, but also cultivate students' ability to find and solve problems. At the same time, it can cultivate students' excellent psychological quality, improve their ability to resist setbacks and form a tenacious will. It is necessary to summarize the report, cultivate students' logical thinking of words during the writing process, deeply understand the principle of "there are people outside, there are days outside", learn from each other, and be good, adhere to the combination of explicit education and implicit education to achieve "cultural and moral education".

5. Conclusion

The important value and far-reaching significance of the construction of ideological and political courses are self-evident. It is required that the courses should be ideological and political, and all teachers should focus on educating people. Every teacher should actively participate in it, spread positive energy and improve the effectiveness of moral education. In the implementation of the ideological and political course of computer basics in universities, the outstanding students' works in the past are displayed in a multimedia way and shared in the local server. Students can download and watch, and teachers can guide and organize discussions. In the discussion, patriotism, dedication, network security and positive attitude towards life are quietly passed on to students, especially the works made by previous students have resonated with students. It has played a good ideological and political effect, but both the ideological and political resources and the evaluation system need to be further improved. There are still some problems in the ideological and political construction methods of college computer basic courses, such as incomplete content and low integration. It is necessary to build more perfect ideological and political resources and evaluation system and enrich teaching models.

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References

- [1] Xiong Shizhen, Zhang Dengyin, Chen Mengting, Li Yangqun. *On-class-off-class ideological and political teaching based on computer network [J]. Software Guide, 2022(09), 66-67*
- [2] Yang Fengying, Lu Chun, Chen Faxiu, Wu Taisong. *Specific measures of ideological and political practice of computer basic courses in private universities [J]. Electronic Components and Information Technology, 2022(09), 1214*
- [3] Li Yanling, Wang Wenpu. *On the ideological and political construction of "University Computer" course in local undergraduate colleges [J]. Journal of xinzhou teachers university, 2022(05), 121-122*
- [4] Xu Yong. *Information and computing professionals in the ideological and political construction of courses [J]. Industry and Technology Forum, 2022(22), 232-233*
- [5] Zhang Hongye. *Exploration on the overall construction of ideological and political education for computer majors [J]. Computer Education, 2023(01), 45-46*
- [6] Xie Minghui. *"Computer Information Technology Foundation" in the course of ideological and political teaching exploration and practice [J]. Science and Education Cultural Exchange (last issue), 2021(10), 9-10*
- [7] Zhang Qiang, Sun Xueying, Qi Liang, Zhang Yongyun. *Design and research of integrating ideological and political education into the teaching of microcomputer principle and interface technology [J]. Literature of Science and Education (Mid-Xunkan), 2021(29), 201-202*
- [8] Shang Zhihui, Xiao Xuemei, Yang Kerong, Liu Changjiang. *Ideological and political exploration and practice of basic computer courses in medical colleges [J]. Computer and Information Technology, 2023(01), 45-, 46*
- [9] Yang Fengying, Wu taisong, Chen faxiu, Yan Hongyi. *The construction of computer-based ideological and political case base [J]. Journal of Hubei Open Vocational College, 2023(02), 33-38*

[10] Wang Chunrong, Xia Erdong, Zhang Wenjuan, Gao Hao. *The implementation and exploration of ideological and political course in the course of single chip microcomputer principle and application [J]. China plant engineering, 2023(03), 99-101*