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Research on Diversified Teaching Mode of Computer Composition Principles in the Context of New Engineering

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Abstract: In the context of the new engineering discipline, the curriculum teaching of computer science also needs to be reformed and innovated simultaneously. On the one hand, this is to achieve better course teaching results, and on the other hand, it is also to explore more diverse teaching organization methods, so as to promote the teaching of courses in computer science to achieve better practical results at all stages. The principle of computer composition belongs to the basic course content of computer science. Although computer systems and platforms have been widely used at this stage, the teaching of this course needs to start from the basic links, emphasizing the systematic and diverse nature to adapt to the current trend of continuous development and innovation of computer science. The diversified teaching model is a model that comprehensively considers the factors of both students and teachers and combines reality to flexibly grasp the teaching organization form and teaching promotion methods. In practical application, it is necessary to start with the enrichment of teaching content, the diversified application of teaching methods, and the innovation of teaching evaluation methods to provide guarantee for the construction of the diversified teaching model.

Keywords: Computer; Principles of Computer Composition; Teaching Methods; Diversification

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1. Introduction

The principle of computer composition is a basic content in the curriculum teaching system of this major, but only if it is solid and standardized in the basic teaching can it lay the foundation for further expanding innovative teaching. For students, diverse teaching methods can not only stimulate their subjective interest in learning related courses, but also promote students' learning of this basic course to generate new understanding and cognition in the context of new engineering teaching. When students' sense of value recognition for the course "principles of computer composition" changes, the actual teaching effect of relevant courses can also be improved and optimized.

2. Basic teaching requirements for principles of computer composition

2.1 Requiring students to fully grasp the theoretical knowledge of the course

Although the development of computer systems and related platforms has been in a state of gradual maturity and further improvement, the history of computer development and basic knowledge content are still important prerequisites to support students to enter a higher level and more difficult learning stage. If students have limitations or weak foundations in their ability to master basic knowledge during course learning, students will also experience greater difficulty in learning more difficult course content. Therefore, in the study of the principles of computer composition, teachers should attach importance to guiding students in courses related to the development trend of some theoretical knowledge concepts, basic principles, and other aspects, strengthen education and guidance, and try to encourage students to have a solid and clear grasp of this basic knowledge through diversified methods. This is an important link to provide assistance for the infiltration of subsequent series of courses or teaching content.

2.2 Requiring students to have a certain degree of autonomous thinking ability

Although the content system of related courses is relatively fixed, and their own content is relatively stronger in logic and abstraction, since this part of basic courses is an important prerequisite for guiding students to learn subsequent knowledge content, students also need to develop their independent thinking ability to a certain extent when accepting this part of course teaching, Have a deeper understanding of the significance and value of curriculum learning through independent thinking. In addition, the process of independent thinking is also an important link for students to generate a desire for further learning. Therefore, in the process of teaching guidance, teachers should, on the one hand, we can use diverse ideas and methods to achieve relatively fixed and abstract theoretical knowledge, with a more efficient teaching effect, and on the other hand, we can actively guide and inspire students after the completion of the basic content of theoretical courses, and encourage students to form autonomous thinking and subjective exploration abilities at the learning stage of basic courses to lay a certain foundation for subsequent knowledge learning. For students themselves, the ability to think and think independently is also a very important ability they need to possess when learning computer science courses. Therefore, it is also necessary to integrate this ability into specific curriculum teaching during the basic education stage.

3. Main problems in teaching principles of computer composition in the context of new engineering

3.1 The total amount of course teaching is large, and the efficiency of a single teaching method needs to be improved

The course content of computer composition principles is relatively larger in terms of total theoretical knowledge. In addition, in the specific education and teaching of this course, the theoretical knowledge itself is relatively difficult and abstract. In this case, if a teacher applies traditional educational and teaching methods alone, although it can ensure that fixed theoretical knowledge is advanced according to predetermined procedures and content logic, the actual course learning effect of students will be affected. This not only prevents students from receiving a good curriculum teaching experience, but also leads to a sense of boredom or boredom during the long process of learning theoretical knowledge. However, from the current practical situation, most teachers have certain limitations in their ability to utilize new teaching methods because their teaching methods for this course are dominated by traditional teaching models and procedures during the long-term teaching process.

3.2 The objective resource conditions of practical courses are limited

Although there are not many practical courses in the teaching of the principle of computer composition, observation and analysis based on the internal structure and operating principles of computers still need to be completed through the provision of a part of practical courses. Judging from the current practical situation, the practical courses on the principles of computer composition not only have a lack of curriculum proportion, but also have certain limitations on the objective practical course platform and conditions. Some experimental instruments and components are gradually aging, while school management departments and teachers lack awareness of the learning value and significance of this course, and they lack the initiative to enrich and improve relevant practical instruments and materials. This has led to many problems and obstacles in the implementation of the practical teaching part of this course, ultimately affecting the actual effect of the course teaching. The organization of practical courses is also a teacher led demonstration teaching model, and there are also certain shortcomings in the introduction and application of new teaching material resources and methods.

4. Application path of diversified teaching mode of computer composition principle

4.1 Enriching basic course teaching content and introducing diversified auxiliary guidance materials

Although objectively speaking, the theoretical knowledge content of this course is relatively fixed. Moreover, the content level of theoretical knowledge itself has a strong logic. In the context of high requirements for mastering theoretical knowledge in curriculum teaching, teachers should start from the perspective of the organization and implementation of teaching content and help students understand relevant theoretical knowledge faster and better by introducing various types of auxiliary guidance materials. For modern college students, appropriately reflecting the flexibility and divergence of curriculum teaching content can also effectively stimulate their subjective interests. When organizing students to learn this part of theoretical knowledge, teachers should recognize the importance of flexible guidance and diverse teaching materials, and introduce corresponding materials for joint application in combination with specific course teaching content.

4.2 Introducing diversified teaching methods to improve the overall teaching quality of the curriculum

The application of diversified teaching methods can not only adapt to the subjective learning needs of different students, but also effectively stimulate the flexibility of teaching ideas formed under the fixed teaching content background for teachers. Specifically, applicable teaching guidance methods include heuristic teaching methods, case teaching methods, and phased summary teaching methods. In practical applications, teachers can fully understand students' basic learning abilities and key difficulties in learning through early communication and communication with students, so as to flexibly transform and adjust the application stages of teaching methods in specific teaching guidance based on the actual situation of different students, thereby fully exerting the positive role of collaborative application of various teaching methods. In order to promote a large amount of theoretical knowledge to reach a higher level of learning and understanding, teachers should also focus on summarizing in the process of teaching guidance, combining established curriculum teaching objectives and tasks, conducting timely summarization at different teaching difficulties and key points of the education guidance stage, and applying group discussions to explore teaching models during the summary, in order to encourage students to summarize and analyze the key points of phased learning based on their feelings and ideas of autonomous learning, which is also conducive to helping students consolidate the knowledge they have learned and ultimately achieve higher teaching quality.

5. Conclusion

Based on the analysis of this article, it can be seen that the principle of computer composition plays a very important role in practical teaching in the course teaching of computer science. Teachers need to introduce diverse methods and materials to lay a good foundation for optimizing the teaching quality of these basic courses, and use diverse teaching organization models to inspire teachers to achieve thinking innovation based on the original curriculum teaching.

References:

[1]Liu Y, He J. Application of virtual reality in the teaching of "principles of computer composition" [J]. Science and technology perspective 2020;298(4):55-57.

[2]Yang W, Cui B, Han L, etc. Exploration and practice of self-made computer experimental equipment in the context of new engineering [J]. University laboratory science and technology 2019;(3):125-128.