Research on Ideological and Political Demonstration Course of Programming Course Based on OBE Concept

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Abstract— *OBE is a model of outcome-based education. It takes graduation requirements as the starting point to formulate teaching objectives and teaching content, which has a strong reference significance for the ideological and political teaching of the course. Based on the OBE teaching concept, C language programming integrates the ideological and political elements into the programming teaching and using professional theoretical knowledge teaching as the main line, taking graduation requirements as the goal to guide the whole teaching process. It attaches great importance to teacher-student interaction and emphasizes students' independent learning.*

Keywords— *OBE concept, curriculum ideology, C language programming, independent learning.*

I. INTRODUCTION

In 2016, at the National Conference on Ideological and Political Work in Colleges and Universities, General Secretary Xi Jin-ping proposed that we should insist on establishing morality and fostering people as the central link, integrating ideological and political work throughout the entire process of teaching, realising full and all-round education, and striving to create our country a new situation in the development of higher education [1]. Curriculum teaching that applies OBE's educational philosophy is an outcome-driven model. In this model, it takes the learning results that students should obtain when completing the course as a starting point. First, set up corresponding course according to students' graduation requirements; Second, formulate course teaching goals, determine teaching content, implement personalised teaching processes and evaluate learning results; finally, introducing a feedback mechanism can continuously improve the quality of course teaching to realise the "student-centred" teaching model[2]. "C Language Programming" is a basic course for computer majors. Based on the OBE teaching philosophy, we must first understand the effectiveness of student learning and teacher teaching, then organically combine ideological and political content with curriculum knowledge, and finally combine teaching content with social needs [3,4].

II. CURRENT PROBLEMS IN C LANGUAGE PROGRAMMING COURSES IN OUR SCHOOL

"C Language Programming" is a process-oriented programming language. Our school generally offers this course in the freshman year. At present, there exist the following problems: First of all, students have just moved from the middle school stage to the higher education stage, and most of the students have not been exposed to programming. As a result, their programming thinking is not perfect, and they have not established the thinking of using programming methods to solve practical problems. Secondly, the course content is more, and some knowledge is more abstract, so it is difficult for first-year students. Finally,

programming is a practical course, which focuses on the cultivation of students' hands-on ability, but most students are reluctant to write code.

III. C LANGUAGE PROGRAMMING CURRICULUM FRAMEWORK BASED ON OBE AND CURRICULUM IDEOLOGY

The structure of this ideological and political demonstration course is as follows: based on the OBE teaching philosophy, the ideological and political elements and programming expertise are organically combined throughout the entire teaching process. Then an effective evaluation mechanism is developed to test teachers' teaching and student learning effects. In the end, a feedback mechanism is introduced to adjust the teaching process. The specific structure is shown in the figure below:
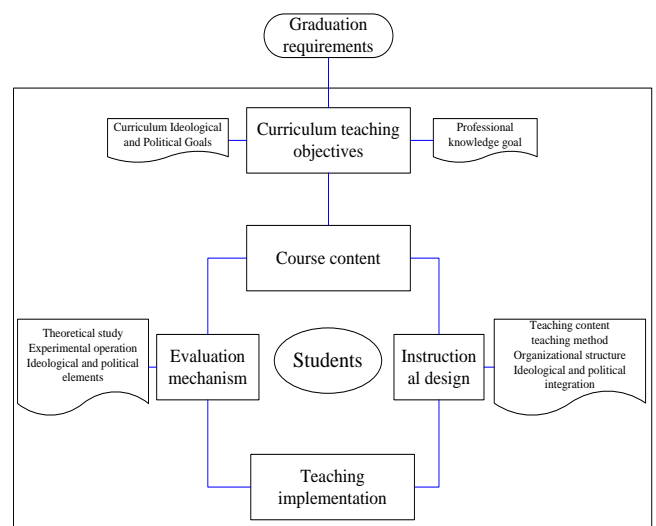

Fig. 1. C language programming curriculum structure based on OBE concept.

A. Clarify teaching objectives, determine teaching content and formulate teaching plans

The main goal of C language programming is to enable students to master the basic grammar of the C language, the basic framework of the program, and the three basic control

structures, and then understand process-oriented programming ideas, and ultimately enable students to use C language programming to solve practical problems. The specific content and class schedule are revealed in TABLE I:

TABLE I. C language programming content and class schedule

Course content	Ideological and Political Content	Number of lessons
C language overview	From the gap between our country's computer technology and the developed countries in the West, students are inspired to work hard to build walls.	3
Basic data type	The introduction of basic grammar guides students to abide by regulations in their study, life and future work.	6
Input output functions		3
Choosing structure	Infiltrating students facing a variety of choices must make careful choices, bear the consequences of the choice, and do not worry about gains and losses.	6
Cyclic structure	The seemingly ordinary life is to accumulate energy for our better life, look for bright spots in the ordinary, and face every day positively and optimistically.	6
Function	The case of the function chapter incorporates the idea of divide and conquer and recursion to enhance students' responsibility and collective team consciousness.	6
Array	Arrays are integrated into the idea of dividing people into groups and gathering things together, and make more friends with positive energy.	6
Pointer	The debugging of complex programs such as pointers can exercise students' patience and willpower to overcome difficulties.	6
String	Through the method of string quoting, students should be guided to have team spirit and sense of conformity.	3
Complex data type	A group needs each member to abide by the corresponding rules; cultivate students' meticulous study style, and the character of seeking truth and being pragmatic.	3
Bit operation, file	Bit operation is to save memory space and guide students to save and protect the ecological environment.	3

B. According to the characteristics of the course, select teaching methods and incorporate ideological and political elements

According to the characteristics of the course, the content is formulated by incorporating the corresponding ideological and political elements. In the teaching implementation, we use OBE education concept as guidance, adhere to the student-centred, design heuristic teaching methods, strengthen teacher-student interaction, and guide students to study independently. The specific contents are demonstrated in TABLE I.

C. Formulate assessment standards and form effectiveness evaluation

The assessment is mainly divided into theory course assessment, experimental course assessment and ideological and political assessment. The specific contents are shown in TABLE II:

TABLE II. C language program design assessment and standards

Assessment items	Items		Proportion
Theory course assessment	Attendance	Random roll call 5 times, 2 points each time	10%
	Classroom performance	Evaluation based on the interaction between the class and the teacher	10%
	unit test	After the unit, closed-book test	20%
	Final exam	closed-book test	60%
Experimental course assessment	Attendance	Random roll call 5 times, 2 points each time	10%
	Classroom performance	Evaluation based on the interaction between the class and the teacher	20%
	experiment report	Evaluation based on student's experiment report	70%
Ideological and political assessment	Usual performance	Based on the student's usual performance	

D. Feedback of teaching effect, perfecting the teaching process

Teachers obtain feedback on teaching effects through regular assessments and adjust the teaching process and requirements. The predictability of teaching goals, the rationality of teaching content, and the suitability of teaching methods all require regular feedback. Then, they are adjusted to meet the needs of graduation by the result of feedback.

IV. CONCLUSION

Based on the OBE teaching philosophy, the C language professional theoretical knowledge teaching is the main line, at the same time, the corresponding ideological and political elements are integrated, with graduation requirements as the ultimate goal, to guide the entire teaching and learning process, and to attach importance to students' autonomous learning, which has practical guiding significance.

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