



Research on Ideological and Political Practice Teaching of Script Language Course in Local Applied Universities

Xiaojiao Zhang, Tao Jin^(✉), Ren Na, and Li Ma

Department of Mathematics and Computer Engineering, Ordos Institute of Technology, Ordos, Inner Mongolia, China
50204040@qq.com

Abstract. [Objective] Taking the scripting language programming technology course as an example, the essay tries to analyze and solve the problems existing in the curriculum reform of local application-oriented colleges and universities. It provides references for the subsequent training of application-oriented talents, the combination of learning and thinking, the unity of knowledge and action. [Methods] The concept of student-centered cultivation is expounded, the ideological and political line of practical education about the course is improved. Practical teaching requirements with ideological and political elements, competency-based teaching model, evaluation system and teaching feedback are adopted. [Conclusion] The essay aims to infiltrate the concept of ideological and political education into practical teaching, to realize the integration of practical education and moral education. What's more, it tries to improve the students' abilities of ideological thinking, algorithm analysis, problem solving, code writing and so on.

Keywords: Curriculum Ideology and Politics · Scripting Language Programming Technology · Application-Oriented Universities · Practice Education

1 Introduction

In September 2018, General Secretary Xi Jinping called on the National Education Conference to integrate moral education, cultural knowledge education and social practice education into all aspects of basic education, vocational education and higher education [6]. Script language programming technology, as the basic programming language courses for all majors in application-oriented universities, is the basis for students' subsequent learning of data visualization analysis, deep learning, knowledge graph, data mining and other courses. In the practical teaching of script language programming technology course, a series of questions are asked---how to implement the ideological and political ideas of the curriculum? How to combine practice education with value guidance? How to reflect the effectiveness of Moral education? It is an urgent problem for application-oriented personnel training to regard the cultivation of intellectuals and morality as the fundamental task of education and teaching.

© The Author(s) 2023

C. F. Peng et al. (Eds.): EIMT 2022, AHSSEH 3, pp. 421–431, 2023.

https://doi.org/10.2991/978-94-6463-012-1_47

2 The Importance of Practical Education and Moral Education in Scripting Language Courses

2.1 Practical Learning Helps to Improve the Quality of Applied Talents

For local application-oriented universities, in the practice teaching of computer scripting language programming technology course, further strengthen practical education, implement quality-oriented education, adhere to the unity of computational thinking training and practical learning, unity of moral cultivation and practical skills, We should strengthen students' sense of social responsibility in serving the country and the people, cultivate their innovative spirit of exploration and practical ability to solve problems [5]. It is of great significance to deepen the education and teaching reform of local application-oriented universities and improve the quality of talent training.

2.2 Practice Education Helps to Improve the Combination of Learning and Thinking and the Unity of Knowledge and Practice

In the current syllabus of computer scripting language programming techniques, although it has clearly cultivated students' ability standard practice ability. But in the whole process of teaching practice, practical teaching is still a weak link. We should change the current teaching situation, pay attention to promote practice with competition and promote learning with competition. We devoted ourselves to fuse learning and competition, enhance practical skills, achieve the unity of knowledge and action, and at the same time, strengthen the importance of practical teaching in the course implementation process. Thus, it is possible to truly achieve bright morality, public morality, strict private morality [1] and form a joint force of practice and education.

3 The Cultivation Approach of Practical Education in Curriculum Teaching

In the scripting language programming techniques course, it is vital important to make overall arrangements for the teaching staff and experimental and training sites, the practical education work into the daily education work, pay close attention to the implementation. The specific approach is as follows:

3.1 The Concept of Practical Education is Integrated into the Course Teaching

In the process of deepening education and teaching reform in local application-oriented colleges and universities, we advocate college teachers to "go out" to enrich practical experience, improve practical education level and participate in cooperative enterprise projects. We will strengthen the development of laboratories, practice and training bases, and sharing platforms for practical teaching in local application-oriented colleges and universities. Focusing on strengthening practical teaching, the practice teaching takes roots in close cooperation between schools and enterprises; Integrates the concept of

“strengthen moral education and cultivate people” into the course teaching, while advocates the integration of theory and practice in classroom practice teaching. The number of practical training hours should be increased, the practical education should be included in the teaching syllabus, teaching plan and classroom teaching design.

3.2 Deepen the Practice Teaching Method of Strengthen Moral Education and Cultivate People

The reform of teaching methods is the key to the reform of talents training mode in applied universities. In the scripting language programming techniques course, it is feasible to adopt the teaching method of task and project training based on problem solving and competency-improved. We will strengthen comprehensive practical training and application, strengthen innovation and entrepreneurship education for college students, encourage students to combine confirmatory experimental learning with comprehensive practical learning, and expand innovative experiments. In practice teaching, it is necessary to promote teamwork spirit, to improve the ability of collecting and searching relevant knowledge on the Internet, to train students to improve the awareness of network security, to combine professional learning with social practice. Finally, students can be asked to write a social practice or research report related to the course before the end of the course.

3.3 Improve the Ideological and Political Course of Practical Education

Teachers guide students to complete the competency-based problem solving tasks, practical training projects and comprehensive practice tasks. Besides, the teachers integrate core socialist values into the curriculum, guide students to establish a correct outlook on the world, life, values, honor and disgrace. What’s more, the teachers also integrate strengthen moral education and cultivate people into the whole teaching process [3], as shown in Fig. 1.

Under the guidance of a comprehensive education concept that regards “strengthen moral education and cultivate people” as the fundamental task of education, according to the professional ability of college students of various majors in standard application-oriented colleges, the essay analyzes and determines the comprehensive ability of the script language programming technology course, and defines the training objectives and evaluation standards of the course; Using modular problem solving tasks, arranging practical teaching and learning plans from being easy to being difficult, the teachers emphasize students’ autonomous learning and self-evaluation Based on the practical abilities that students can achieve. In the social practice outreach program, it is necessary to reflect the individual differences through the completion of practical tasks, so that every child can become a useful talent.

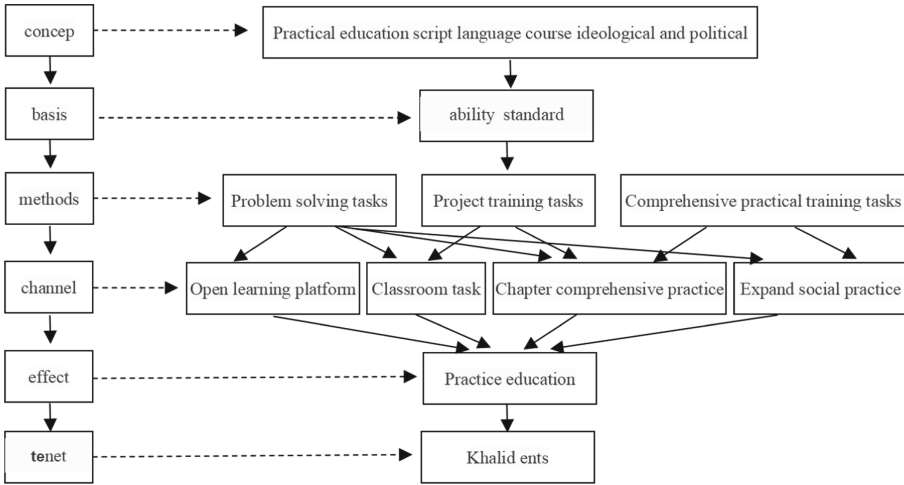


Fig. 1. Course ideological and political route

4 Practical Teaching of Script Language Programming Technology Course

4.1 Integrate Ideological and Political Elements into Practical Teaching Requirements

First of all, make the idea and quality objectives of the course of scripting language programming technology, namely, the goal of moral education clear. The goal of moral education, is the first step. The goal of moral education, knowledge and ability should be equally important. The teaching requirements of this course are to enable students to master scripting language programming and current mainstream technology through learning this course. Enabling students try their best to do more beneficial things to the society and others is important. They are expected to have the overall situation concept, respect the social order good customs, strictly control their own conduct and behavior and improve their ability of computational thinking, innovation, problem discovery, analysis and problem solving. In this way, it is possible to lay the foundation of program design for the following course study [4]. The teaching objectives and language of this course are shown in Table 1.

According to the teaching objectives and requirements of the course, combined with the ideological and quality goals (moral education goals), knowledge goals and ability goals are achieved in teaching. Six indicators are selected for the ability requirements of the course. Implementing the ability indicators, ideological and political elements into the teaching and training path, script language programming technology course teaching requirements, ability indicators, ideological and political elements into teaching points and training paths are shown in Table 2.

Table 1. Teaching objectives and language

Teaching objectives	Emotional class				cognitive				Skills class			
	inspire	love	cultivate	erect	understand	master	skilled	application	imitation	operation	design	Learn
Moral education goal	1. Establish correct concept of practical skills, cultivate students' craftsman spirit, cultivate socialist core values silently in the process of programming and code debugging, improve comprehensive professional quality, and establish socialist professional spirit. 2. Through interesting and practical ancient classic interesting teaching cases, inspire students to be proactive, pay attention to the development of science and technology, establish firm faith, learn from scientists, and train students' patriotic enthusiasm and research spirit bit by bit [2].											
knowledge objective	1. Understand basic script language, flow control, sequence and dictionary, functions, etc., can correctly apply and solve problems. 2. Apply interesting and practical teaching cases, and introduce practical training and knowledge learning.											
capability goal	1. Be able to complete classroom tasks and practical training tasks with the knowledge of different practical problems, guide students to be careful and rigorous in style and habit, gradually cultivate students' ability of careful analysis and problem solving, inspire students to explore the world, and arrange their study and life scientifically and rationally. 2. Master the development methods and technologies of practical programs, can analyze and abstract practical problems, and gradually decompose them, establish problem solving models, cultivate students' character of perseverance and never give up easily, and improve practical skills and innovation consciousness.											

Table 2. Competency index and training path

Teaching objectives	ability indicator	Incorporate ideological and political elements	Cultivating path
Moral education goal	Occupational skill view	Socialist core values of identity	The new era and the latest developments in the software industry and other development prospects
	craftsmanship spirit	Chip monopoly, Huawei and other enterprises were pulled into the blacklist, national identity	National conditions and IT related enterprises in the world
knowledge objective	Basic knowledge of scripting languages	Work to standard, behavior to be reasonable	Pre-class preview, classroom communication and discussion, the completion of practical tasks
capability goal	Computational thinking	Use scientific thinking method to analyze problems, solve problems, develop good habits	Practice projects to guide students to think and analyze actively and train their computational thinking

(continued)

Table 2. (continued)

Teaching objectives	ability indicator	Incorporate ideological and political elements	Cultivating path
	Problem solving	Respect the facts, work as a team, break down complex problems, overcome difficulties and follow through	Guide students to think carefully and complete practical tasks through project tasks and comprehensive practice
	Utility development and technology	Practical project analysis ability, scientific organization and management ability	Case reading and analysis, practice, improve program coding, operation and evaluation

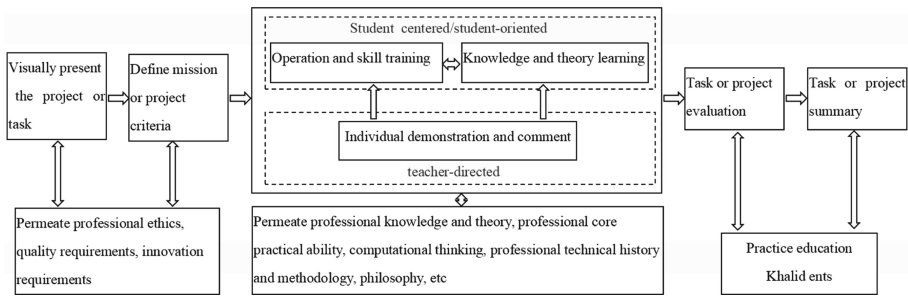


Fig. 2. Course ideological and political practice teaching mode

4.2 The Practical Teaching Mode of Curriculum Ideology and Politics Based on Ability Cultivation

The student-centered curriculum ideological and political practice teaching mode are in class assignments or projects. First of all, we should pay equal attention to moral cultivation and practical ability. Secondly, we need to carefully design the sequence of tasks from simple to complex and from being shallow to being deep. Taking tasks and projects as vehicles, through trial and error and self-correction, or through individual demonstration and timely comments by teachers, students learn from the initial imitation to the independent completion of practical tasks or comprehensive projects and truly learn by “doing”, understand by “doing”, achieve knowledge internalization by “doing”, as shown in Fig. 2.

4.3 Construct the Practical Education Evaluation System of Ideological and Political Line

Educational evaluation is one of the core elements of educational and teaching transformation. Construct a student-centered curriculum, a ideological and political practice education evaluation system through comprehensive analysis, the essay focus on process and development. Presenting tasks and project achievements. The subject is diversified and interactive, enabling students to learn, understand, dialectically think and develop and innovate in practice. Give full play to the important value of practical education in lide and Cultivating people how to let the student really “live”, “do” come out [7], with the help of procedural evaluation and summative evaluation, the teachers judge whether the students have completed the assessment items and content. Therefore, the multiple evaluation system of scripting language programming technology courses is effectively divided, including MOOC, learning power video, classroom tasks, rain classroom assignment and completion, chapter practice projects, shared practice platform provisions, social practice projects and final assessment, etc. Through repeated demonstration of course content and students’ graduation requirements, the assessment content and grading standards are clarified. The diversified evaluation system of practical education is shown in Table 3. Thus, it is clear to evaluate the students’ enthusiasm for participating in practice, the pride of the country and society, the passion for teamwork, the love for continuous learning, and the passion for self-transcendence.

Table 3. Multivariate evaluation system of practical education

valuation of classification	evaluation item	Grade ratio/%	Evaluation content and evaluation method	Effect
Diagnostic evaluation	First class begins		Rain class before class voting, through the results to find out the details of students in order to arrange learning	Identify learning readiness and disadvantages
Formative evaluation	MOOC, learning power and other sharing platforms	10	The progress of the learning video was randomly selected to check the learning situation of the group. Each group was randomly selected 5 times in each semester, with 2 points for each time.	Determine the learning effect
	Classroom experiment task	10	Basic knowledge understanding, algorithm in experiment task, result presentation, each group/person 2 marks.	

(continued)

Table 3. (continued)

valuation of classification	evaluation item	Grade ratio/%	Evaluation content and evaluation method	Effect
	Rain Classroom Task	10	Rain classroom tests, voting, review and other content, according to the comprehensive score of the average homework.	
	Chapter Practice Project (Experiment Report)	10	According to the chapter learning points to complete the practice project, with the learning group as the unit, after the completion of the specified time “in the sun”, the group unanimously recognized each time 2 points/person, generally recognized each time 1 points/person.	
	Social Practice Project (Large assignment)	10	According to their own actual situation, you can choose to refer to the topic, or you can find their own data to complete the big homework 1/10 points.	
Summation evaluation	end of term test	50	At the end of the semester, all classes with the same course number will set questions and have a closed-book exam	Assess academic achievement

4.4 Pay Attention to Practice Education and Teaching Feedback

Practice teaching feedback is an essential measure to realize the purposeful control of practice tasks or projects, to improve the quality and efficiency of learning, and to ensure the virtuous circle of practice teaching activities. Through practical teaching feedback and subsequent continuous improvement, students can timely correct the deficiencies in learning and update the algorithm. According to the practical requirements and learning task standards provided by teachers, timely self-evaluation and self-adjustment, the students can actively cooperate with teachers to achieve the predetermined practical teaching goals as soon as possible. Through the classroom task, chapter project practice, rain class exercises, homework, tests, sharing platform practice feedback, the teachers compare the students' actual state and predetermine a gap between learning goals, real-time adjustment of the next step of practice teaching tasks. The practice of student-centered teaching feedback and values are shown in Table 4.

Table 4. Teaching feedback and values

Teaching link	Feedback form	values
First class begins	Graphic proportional feedback	Through rain classroom, questionnaire and other tools, to investigate students' existing knowledge, learning, etc. Trigger students' visions for their future careers.
MOOC, learning power and other sharing platforms	Video progress feedback	The group leader responsibility system is adopted to urge students to complete online learning. Teachers conduct regular spot checks and publish the results of spot checks to encourage them to work hard and not to fall behind.
Classroom experiment task	Real-time feedback	Correct students' algorithms, codes, etc., develop students' computational thinking, practical skills, rigorous scientific style.
Rain Classroom Task	Graphical feedback	Timely feedback of students' score distribution, test analysis, test completion rate, etc., comprehensive professional quality, socialist professional spirit.
Chapter Practice Project (Experiment Report)	Positive feedback	Study group "bask in", take the strong points of others to complement their own shortcomings, let the students have the enthusiasm to participate in practice, develop the craftsman spirit.
Social Practice Project (Large assignment)	Macro feedback	Excellent projects are selected to display, so that students have the spirit of continuous learning, have the passion of self-transcendence.
end of term test	Scores of feedback	Summarize the learning results of the semester, think positively, make full use of the knowledge and skills to show intelligence.

5 Conclusion

The ideological and political education of script language curriculum is a teaching idea that penetrates ideological and political education into script language programming

technology, so as to realize the integration of curriculum practice teaching and moral education. The essay tries to develop targeted practical teaching plans and syllabuses around the training objectives of application-oriented talents and to achieve the high unity of classroom teaching tasks and practice projects in teaching content and training objectives. With the help of the development of software industry, chip monopoly, software craftsman spirit and so on, ideological and political elements in scripting language programming technology courses and the socialist core values of students are cultivated subtly. And the fun and enthusiasm of programming are stimulated, as well as the innovative and creative consciousness and computational thinking ability are stimulated. Setting up a study group, guiding students to find problems, solve problems, positive thinking, brave to practice, careful and rigorous work, keep improving, based on the professional, the teachers encourage the students to serve the society, enhance the effectiveness of practice and education. In the course of ideological and political teaching reform of exploring practical education, it not only improves students' thoughts and quality, but also enhances their interest in learning script language programming technology courses. Students' abilities in algorithm analysis, problem solving and code writing have been improved through practice-based training tasks and project recognition. It promotes the achievement of moral education goals, knowledge goals and ability goals, and at the same time creates an atmosphere of practical education based on practical training projects, and effectively improves the training quality of applied talents.

Acknowledgements. 1. Ordos Institute of Technology 2022 Natural Science General project "Research on Congestion Control Mechanism of Relief Materials Dispatching Based on Banker Algorithm" (NO. KYYB2022002).

2. Higher Education Reform Project of Ordos Institute of Technology "Research on Intelligent Question Answering System Based on Knowledge Graph" (No. KYYB2019007);

3. Inner Mongolia Higher Education Research Project "Intelligent Question Answering System Based on Knowledge Graph" (No. NJZY21153);

4. Ordos Science and Technology Planning Project "Research and Design of Electric Power Intelligent Customer Service System" (No.2021YYI 18-46).

References

1. General Secretary Xi Jinping's Important Treatise on Education handouts. 2020. Lecture notes of General Secretary Xi Jinping's Important Treatise on Education. Beijing: Higher Education Press, 2020, p 3.
2. Jiang, Hong, Qing-song Yu. 2019. *Basic Textbook of Python Programming and Algorithm (Micro-course Edition)*, no 07, pp 19–112. Beijing: Tsinghua University Press.
3. People's Daily online - People's Daily (2012). Moral education is the fundamental "run education to the satisfaction of the people" series [EB/OL], 30 November 2012. <http://cpc.people.com.cn/pinglun/n/2012/1130/c78779-19747071.html>.
4. Shao, Tingting, Shao Zhuyan, Lufeng Gu. 2021. Construction and practice of curriculum ideology and politics of discrete mathematics. *Computer Education* (11): 115–119.
5. The Ministry of Education (2012). Opinions of Ministry of Education and other departments on further strengthening the work of practical education in Colleges and universities [EB/OL]. 01–10. http://www.moe.gov.cn/srcsite/A12/moe_1407/s6870/201201/t20120110_142870.html.

6. The Ministry of Education (2018). The national education conference. [EB/OL]. 09.10–11. http://www.moe.gov.cn/jyb_xwfb/xw_zt/moe_357/jyzt_2018n/2018_zt18/.
7. Wu Shaofen. 2019. Practice education: Let students “Live”, “do” out. *China Teacher News* 08–28(12).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

