Innovation and practice of classroom teaching model with moral education orientation in computer courses

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Abstract. This paper centers on the moral education orientation within computer courses and introduces a novel classroom teaching model - the "Situation - based Moral Education - Task - driven - Reflection and Sublimation (SDR)" teaching model. It elaborates on the connotation and implementation procedures of this model, and validates its efficacy in attaining moral education objectives in computer course instruction through specific teaching instances, thereby providing a reference for integrating moral education into computer education. Relevant references are also enumerated.

1 Introduction

In the realm of computer education within vocational schools, the cultivation of students' professional skills must be accompanied by an emphasis on moral education. Computer courses, serving as a vital conduit for students to obtain information and technology, are replete with moral education resources[1]. However, the traditional teaching paradigm frequently neglects this aspect, thereby resulting in a disjunction between moral education and professional instruction. Consequently, the exploration of a teaching model that can effectively integrate moral education into computer courses holds substantial significance.

2 The significance of moral education in computer courses

The pervasive application of computer technology has exerted a profound influence on society and individuals. Incorporating moral education within computer courses can direct students towards the establishment of correct information values, the cultivation of sound network ethics and professional ethics, and the augmentation of their sense of social responsibility and innovative spirit. For example, in the current era of information explosion, students are required to learn to discern the authenticity of information, respect intellectual property rights, and adhere to network rules. These are all tangible manifestations of moral education within computer courses.

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3 "Situation - based Moral Education - Task - driven - Reflection and Sublimation (SDR)" teaching model

3.1 Model connotation

3.1.1 Situation - based moral education

Teachers construct morally - laden situations in accordance with the teaching content, thereby seamlessly integrating moral education elements into the learning of computer knowledge. These situations can manifest as actual cases, narratives, or simulated scenarios. By eliciting emotional resonance among students, moral education is subtly imparted.

3.1.2 Task - driven

Tasks that are both relevant to the situation and computer - related are designed. During the process of task completion, students apply the knowledge and skills they have acquired. These tasks should be challenging and open - ended, thereby stimulating students' interest in learning and innovative thinking. Concurrently[2], this process nurtures students' comprehensive qualities, such as teamwork and problem - solving abilities.

3.1.3 Reflection and sublimation

Students are guided to engage in reflection regarding the process of task completion and the moral education content within the situation. This facilitates the transformation of their perceptual understanding into rational cognition, further enhancing the effect of moral education. Encouraging students to share their experiences and insights promotes the exchange of ideas among them, thereby achieving the sublimation of moral education.

3.2 Implementation steps

3.2.1 Situation creation and introduction

In the context of a computer programming course, the teacher can introduce a scenario associated with an open - source software project. By recounting the tales of selfless open - source software developers who forsake personal interests for the sake of technology sharing and social development[3], and by showcasing the vibrant open - source community, students can perceive the grandeur of the sharing spirit. Simultaneously, questions such as "How can we derive benefits from the open - source culture during the process of programming learning?" are posed to stimulate students' thinking.

3.2.2 Task design and assignment

Based on the aforementioned situation, programming tasks are designed. For instance, students are required to participate in small - scale open - source projects in groups. They are tasked with developing a simple application program, such as a student grade management system, and making the code open - source on the school's internal code - sharing platform. During the task execution, students need to complete a series of processes including

requirements analysis, design, coding, and testing, thereby emulating the actual process of an open - source project.

3.2.3 Task Implementation and guidance

Students conduct the tasks in groups under the supervision of the teacher. During this process, the teacher guides students to focus on code standardization and readability, as per the requirements of open - source projects, to facilitate the understanding and participation of others. At the same time, teamwork is encouraged. When problems arise, students are guided to resolve them by drawing on the cooperation models in open - source projects through communication and code review.

3.2.4 Reflection and sublimation

Upon the completion of the task, students are organized to participate in reflective discussions. The teacher may pose questions such as "What novel understandings have you acquired regarding sharing and cooperation during the open - source project?" and "How should we respect the intellectual property of others in the network environment?" Students then share their experiences and gains from the task. Through this reflection, students gain a profound understanding of the moral connotations within the open - source culture, such as the spirit of sharing and cooperation and respect for intellectual property rights, and internalize these understandings as their values.

4 Teaching case analysis

4.1 Case background

In the teaching of computer network courses, the cultivation of students' network ethics and security awareness constitutes a crucial element of moral education.

4.2 Situation - based moral education

The teacher constructs a scenario of a network security incident. For example, a situation where a company's network was hacked and corporate data was leaked due to employee negligence, resulting in substantial losses to the company and its customers. Relevant news reports, details of the losses, and the modus operandi of the network attack are presented. This enables students to keenly recognize the gravity of network security issues and the consequences of improper network behavior, thereby arousing their attention to network ethics and security.

4.3 Task - driven

A task of formulating a network security protection plan is designed. Students are grouped and assigned roles such as network administrators and security engineers. They are required to formulate security protection strategies for a simulated enterprise network, including firewall configuration, intrusion detection system setup, and the formulation of employee network behavior norms. During the task execution, students need to apply their learned network knowledge, such as network protocols, IP address allocation, and network topology, while also considering how to regulate network behavior from moral and legal perspectives.

4.4 Reflection and sublimation

After the completion of the task, students are organized to engage in discussions. The teacher guides them to consider questions such as "What moral and legal principles should we adhere to when formulating a network security protection plan?" and "How can we achieve self - discipline and protect others in the network environment?" Students share their thoughts during the task, such as realizing the significance of refraining from exploiting network vulnerabilities to attack other networks and safeguarding the privacy of enterprises and users. Through this reflection, students effectively integrate network security knowledge with network moral education, thereby enhancing their network moral quality and security awareness.

5 Conclusion

The "Situation - based Moral Education - Task - driven - Reflection and Sublimation (SDR)" teaching model offers an effective approach for moral education within computer courses. Through the organic combination of situation creation, task - driven learning, and reflection - sublimation activities, moral education content is naturally integrated into the computer teaching process. This enables students to develop excellent moral qualities and a sense of social responsibility while mastering professional knowledge and skills. This teaching model contributes to the achievement of the educational goals of computer courses and lays the foundation for cultivating computer professionals with both competence and integrity. In future computer education, this teaching model can be further promoted and refined.

References

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