

Research on the Application of Mobile Devices and Mind Map in Curriculum Ideological and Political Education

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Abstract: The integration of ideological and political elements into professional courses has become an important part of college teaching. This paper studies the application of mobile devices and mind map in the curriculum ideological and political education implementation ideas' design, the mapping of ideological and political elements, and the practice of curriculum ideological and political education, taking the software engineering curriculum ideological and political education as an example. The research shows that the appropriate application of mobile devices and mind map in the curriculum ideological and political education can make the ideological and political elements more naturally integrate into the curriculum teaching, increase the appeal to students, and achieve better educational effects.

1. Introduction

In recent years, the integration of curriculum ideological and political education into curriculum teaching has become the consensus of all kinds of schools at all levels. Especially in colleges and universities, the integration of ideological and political elements into professional courses has become an important part of teaching. At present, a considerable part of the research on curriculum ideological and political education is to design the mapping of ideological and political elements according to the teaching content of the curriculum and integrate curriculum ideological and political education into the classroom teaching.

Mobile devices and mind map have been widely used in teaching. Some scholars have realized the importance of applying technology in curriculum ideological and political education, and conducted relevant research. Miao et al. studied the case of realizing curriculum ideological and political education with mobile devices, but did not discuss it in combination with specific courses [1]. Shen discussed the advantages of physical education teachers in using mind map to tap ideological and political elements, and proposed that in the process of applying mind map, we should avoid falling into a single thinking mode [2]. Du et al. introduced the specific application of mind map in the curriculum ideological and political education by taking the teaching of "kinetic

energy theorem" as an example in college physics teaching [3]. Yang et al. took the course of "project bidding and contract management" as an example to introduce the case of applying mind map in curriculum ideological and political education of engineering construction management courses [4]. The above research shows that mobile devices and mind map have been applied in curriculum ideological and political education, but most of them are limited to one aspect. At present, the special research on the application of mobile devices and mind map in curriculum ideological and political education is relatively scarce, and the special research on the application of both mobile devices and mind map in curriculum ideological and political education is even rarer. Taking the software engineering course as an example, this paper studies and discusses the application of mobile devices and mind map in the curriculum ideological and political education implementation ideas' design, the mapping of ideological and political elements and the practice of curriculum ideological and political education.

2. Application of Mobile Devices and Mind Map in the Implementation Ideas of Curriculum Ideological and Political Education

In order to achieve better results, the implementation ideas of curriculum ideological and political education should be carefully designed. The implementation ideas of curriculum ideological and political education will guide the curriculum ideological and political education. At present, most scholars have not conducted in-depth research on the implementation ideas of curriculum ideological and political education when they are studying curriculum ideological and political education for specific courses. Taking the curriculum ideological and political education of software engineering course as an example, although some scholars discussed the implementation of curriculum ideological and political education of software engineering course [5-7], most of them focused on cases and ideological and political mapping, and the research on implementation ideas was relatively weak. Combined with the teaching practice of the software engineering course undertaken by the author, the implementation ideas of curriculum ideological and political education can be represented by the mind map shown in Figure 1.

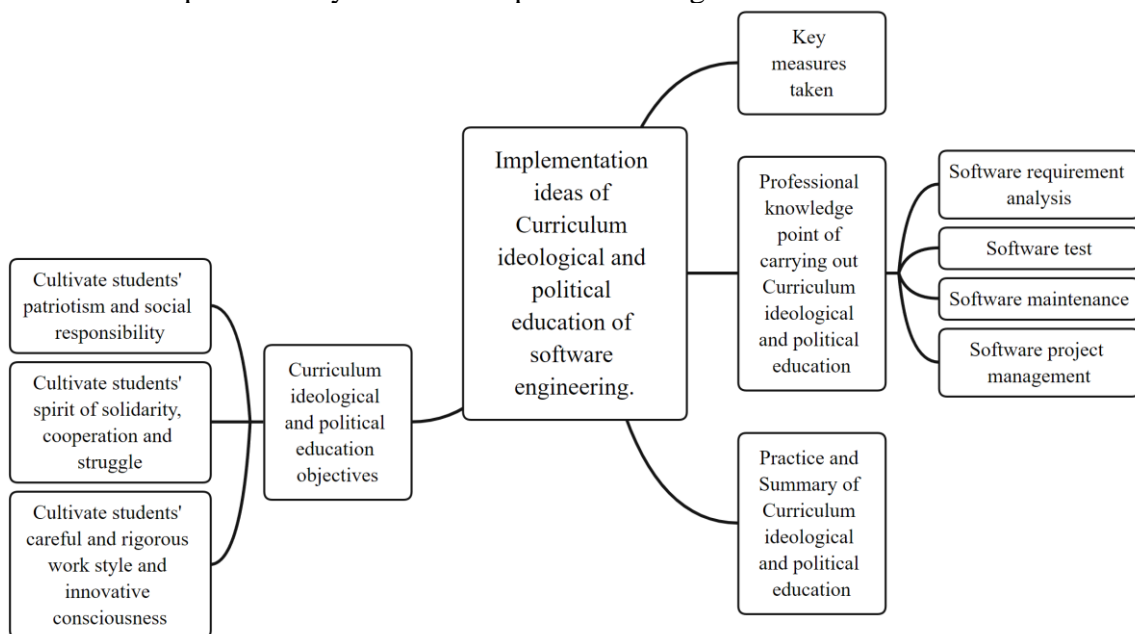


Figure 1: Implementation ideas of curriculum ideological and political education of software engineering

The implementation ideas of curriculum ideological and political education include four parts, curriculum ideological and political education objectives, professional knowledge point of carrying out curriculum ideological and political education, the key measures taken, and the practice and summary of curriculum ideological and political education. The following describes and explains the application of mobile devices and mind map respectively.

2.1. Curriculum Ideological and Political Education Objectives

Curriculum ideological and political education objectives is to achieve the goal of integrating professional courses into ideological and political education and the effect of cultivating students. It varies according to the situation of each course. Curriculum ideological and political education objectives of software engineering course mainly include three points.

- Cultivate students' patriotism and social responsibility. Software engineering teaches students the methods and tools to develop software. At present, the software industry has become one of the pillar industries of the national economy. The development of a country's software industry reflects the strength of a country. Through mobile devices, students can be pushed with information and videos about the current situation, policies and leading software application projects of the national software industry development to stimulate their patriotism and cultivate their social responsibility.

- Cultivate students' spirit of solidarity, cooperation and struggle. At present, all kinds of mainstream software are developed by teams. The success of software largely depends on the sincere cooperation of team members. Through mobile devices, students can be pushed information and videos about how large-scale software projects are developed by team cooperation, so as to cultivate their spirit of solidarity, cooperation and struggle.

- Cultivate students' careful and rigorous work style and innovative consciousness. The software development process of formal software companies has certain specifications. Only by developing software according to the standard process, can the quality of software be guaranteed. Students can be promoted with cases and videos of standardized software development process through mobile devices to cultivate their careful and rigorous work style. At the same time, the software industry is also an innovative industry. Software developed through a new idea can be quickly spread through the Internet, creating one software myth after another. Students can be promoted with relevant cases of software innovation through mobile devices to cultivate their innovation consciousness.

When designing the curriculum ideological and political education objectives, we can further use the mind map to associate and relate, making the curriculum ideological and political education objectives clearer.

2.2. Professional Knowledge Point of Carrying Out Curriculum Ideological and Political Education

Carrying out curriculum ideological and political education should avoid being large and comprehensive. It does not require that every chapter in the textbook must have knowledge points integrated into the curriculum ideological and political education. Teachers need to carefully analyse the professional knowledge of the curriculum. They can use the mind map to clarify the main knowledge points required by the syllabus, make full use of divergent thinking, and carefully select the professional knowledge point for the implementation of curriculum ideological and political education. Teachers can choose appropriate knowledge points according to their own understanding of the curriculum. Taking the software engineering curriculum as an example, professional knowledge points that can effectively carrying out curriculum ideological and political education may focus on the following aspects.

- Software requirement analysis. The software requirement analysis contains a lot of ideological

and political elements. A good software creativity can be fully expressed through requirement analysis, which can cultivate students' innovative consciousness. Some domestic software applications in China, such as e-commerce, mobile payment, social software, etc., have been in the forefront of the world. The success of these software applications cannot be separated from the early requirement analysis. Introducing these successful software applications to students can stimulate their patriotism and cultivate their social responsibility.

- Software test. Full and effective software testing is an important factor in software quality assurance. Software testing is also a tedious work, which requires testers to be patient and careful enough. In this part, ideological and political education can cultivate students' careful and rigorous work style.

- Software maintenance. After the software is put into use, it enters the maintenance stage. Software maintenance is an important means to ensure the normal operation of the software. Some software companies do not pay attention to software maintenance after delivering software products to customers, which brings various problems to customers in the process of using the software. This can be used as a negative case of curriculum ideological and political education to cultivate students' conscientious and responsible work style and their social responsibility.

- Software project management. Software engineering believes that software projects should be managed as engineering projects. The management of engineering projects has strict standards. Only by following the corresponding standards can software projects be developed successfully. Integrating ideological and political education in this part can cultivate students' careful and rigorous work style. At the same time, the smooth progress of projects depends on the sincere cooperation of teams, which can cultivate students' spirit of solidarity and cooperation.

2.3. Key Measures Taken for Curriculum Ideological and Political Education

Some key measures that can be taken should also be considered when designing the ideological and political implementation of the curriculum. The following key measures can be taken for the curriculum ideological and political education of software engineering.

- Carefully understand the above-mentioned curriculum ideological and political education objectives and professional knowledge point of carrying out curriculum ideological and political education.

- Carefully analyse and study the mapping and integration points of ideological and political education, carefully collect and design the teaching cases of curriculum ideological and political education.

- Pay attention to the application of information technology, especially mobile devices, intelligent teaching tools and mind map, which are widely used in teaching.

- Constantly sum up the experience of the implementation of curriculum ideological and political education, and constantly improve and perfect with the teaching.

2.4. Practice and Summary of Curriculum Ideological and Political Education

The complete implementation ideas of curriculum ideological and political education include the practice and summary, which are described in the following special sections.

3. Application of Mobile Devices and Mind Map in the Mapping of Ideological and Political Elements

The mapping of ideological and political elements is the corresponding relationship between the specific knowledge points of the course and the corresponding ideological and political elements. It

needs to be carefully considered and designed when carrying out the curriculum ideological and political education. In the process of designing the mapping of ideological and political elements, mobile devices and mind map can be adequately used.

3.1. Application of Mobile Devices in the Mapping of Ideological and Political Elements

At present, in the course teaching, teachers widely use a variety of smart teaching tools, such as Rain Classroom, Learning Pass, Mu Classroom, and personalized smart teaching tools customized by schools at all levels. Most of these smart teaching tools support mobile device applications and are mainly used in the form of mobile app, WeChat Mini Program, WeChat public number, etc. In the process of designing the mapping of ideological and political elements, teachers can sort out the relevant cases of corresponding knowledge points and the mapping of ideological and political elements into courseware or video suitable for viewing in mobile devices, so as to make full preparations for the push of cases in the implementation of curriculum ideological and political education.

3.2. Application of Mind map in the Mapping of Ideological and Political Elements

In the process of mapping design of ideological and political elements, we can make full use of mind map to organize relevant knowledge points, teaching methods, relevant cases and expected effects in the form of mind map, which can obtain more intuitive effects. Take the mapping of ideological and political elements of two knowledge points in the software requirements analysis as an example, it can be organized into a mind map in the form of brackets as shown in Figure 2.

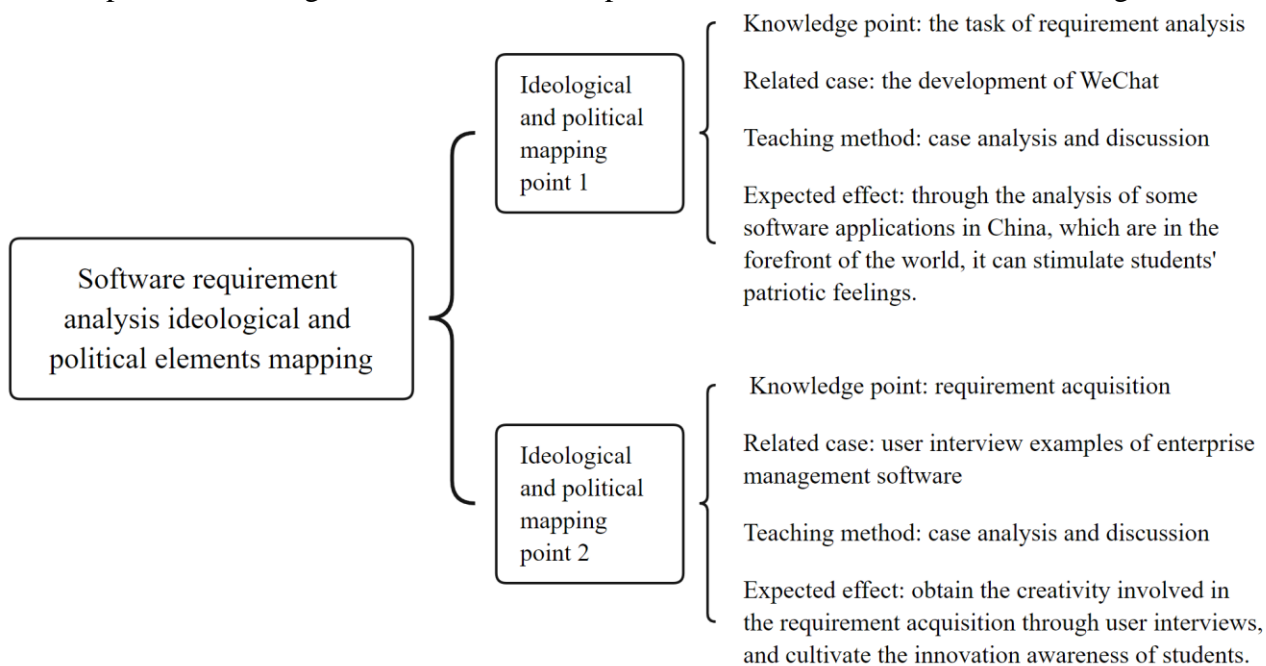


Figure 2: Software requirement analysis ideological and political elements mapping

4. Application of Mobile Devices and Mind Map in Practice of Curriculum Ideological and Political Education

The practice of curriculum ideological and political education should be quietly integrated into the teaching of the course, so that students can receive ideological and political education while

learning and mastering professional knowledge, which requires teachers to carefully design the practice process of curriculum ideological and political education. In the practice of curriculum ideological and political education, the appropriate application of mobile devices and mind map can obtain better teaching effect.

Teachers release pre-class learning tasks through smart teaching tools before class. In addition to preview content, key points of class content, pre-class test questions, etc. Pre-class learning tasks can also appropriately push some cases and videos related to ideological and political elements corresponding to class knowledge points, and arrange corresponding discussion questions. Students can watch videos on mobile devices such as smartphones or tablets, learn relevant cases, and discuss in the discussion area.

Teachers can publish test questions and discussion questions related to ideological and political elements through smart teaching tools in class. Students can answer questions and participate in discussions through mobile devices such as smartphones or tablets. Teachers can also turn on the bullet curtain function of smart teaching tools. Students can answer questions or participate in discussions through the bullet curtain, which can activate the classroom atmosphere to a certain extent. Teachers can properly use mind map to help students understand relevant knowledge points in the teaching process.

After class, teachers can arrange the homework of sorting out the knowledge points in class into mind map. Through mind map, students can sort out the context of knowledge points and mark the ideological and political elements appropriately at the corresponding knowledge points of mind map, so that the ideological and political elements can be naturally reflected. At the same time, the mind map is drawn by students themselves, which is bound to be more impressive, and is also conducive to the course review at the end of the term.

5. Conclusion

Curriculum ideological and political education has been paid more and more attention by all kinds of schools at all levels, especially in the teaching of professional courses in Colleges and universities, almost every professional course contains a large number of ideological and political elements, which is of great significance to cultivate students' feelings of home and country, social responsibility, scientific spirit and good professional ethics. At present, the research on curriculum ideological and political education has been further deepened. Exploring the application of information technology in curriculum ideological and political education can further improve the effect of curriculum ideological and political education. In this paper, the application of mobile devices and mind map in curriculum ideological and political education has been studied. In the future, further research and discussion will be carried out to further improve teaching and obtain better effect of curriculum ideological and political education.

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