Teaching Research and Practice of Ideological and Political Empowerment of the Fundamentals of University Information Technology in the Era of "Internet plus"

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Abstract. With the rapid development of the Internet and the new generation of information technology, computer general education courses for non computer majors in colleges and universities in China are also constantly carrying out teaching research and exploration. No matter from the curriculum settings, curriculum teaching models, teaching methods, teaching systems, etc., they follow the changes of teaching reform policies for computer general education courses in colleges and universities. The teaching of "Fundamentals of Information Technology in Universities" has been improved and elevated from the original "Fundamentals of Computer Science in Universities". It is a "1+X" model in the general education of non computer majors in many universities, which is a "1" compulsory course. It can not only expand students' knowledge horizons, but also help them fully understand the current information technology foundation, comprehensively master the basic applications and practices of computers. In the process of the new curriculum reform, ideological and political education has emerged, which not only provides comprehensive education to students in ideology, but also helps them develop the ability to judge right and wrong decisively in actual teaching cases or real situations, and establish the correct socialist core values. This paper expounds the significance of ideological and political curriculum in the teaching of basic information technology courses in universities in the era of Internet plus, how ideological and political curriculum integrates with the teaching content, syllabus, and curriculum assessment, and further explores the curriculum ideological and political empowerment of basic information technology courses teaching and practice strategies in universities to improve teaching quality, while also bringing some teaching reference and use value to the teaching of related computer public general courses in other universities.

Keywords: Internet plus; Ideological and political courses; Basic teaching of university information technology; Practical strategies

1   INTRODUCTION

The education system of the new era requires teachers to cultivate students' core competencies while teaching theoretical knowledge, and help students establish correct values and outlooks on life. In 2020, the Ministry of Education issued the "Guidelines for the Construction of Ideological and Political Education in Higher Education Curriculum" [1], which provides a guideline for comprehensively promoting the construction of ideological and political education in higher education curriculum. With the development of practice, research on the excavation and application of ideological and political elements in curriculum, exploration of teaching methods for ideological and political education in curriculum, and the construction of ideological and political education systems in curriculum has emerged [2]. As a traditional general education course for non computer majors, the majority of teachers tend to focus on imparting theoretical knowledge while neglecting the stimulation of students' learning interest and enthusiasm, resulting in students gradually becoming tired of the dull and boring teaching environment. The teaching of "Fundamentals of University Information Technology" plays a crucial role in determining future computer learning. Teachers should actively integrate the teaching resources of ideological and political courses, so that students can gradually develop the ability to judge right from wrong and establish correct values. In the midst of various information changes and trends, one can always adhere to their original intention and professional concept, use their own learning and professional skills to help the development of society [3,4], and with the help of scientific and reasonable teaching forms, enrich teaching resources, implement graded and personalized teaching for students [5], stimulate students' enthusiasm and learning interest in teaching activities, and also help teachers reduce teaching pressure, create a relaxed and pleasant teaching atmosphere for students, explore scientific and effective teaching practice strategies, fully exert the empowering role of curriculum ideology and politics, and continuously improve the teaching quality and student learning effect of the course.

2   WAYS TO INTEGRATE IDEOLOGICAL AND POLITICAL EDUCATION INTO CURRICULUM TEACHING

2.1   Integration with Teaching Syllabus and Content

The teaching syllabus will provide a systematic plan for the overall content of the course "Fundamentals of University Information Technology". In order to cultivate professional talents with correct values and professional qualities, the curriculum should integrate the teaching content of ideological and political education, guide and cultivate students' values, continuously revise and update the teaching syllabus, and make the practical path of ideological and political education more effective; The teaching syllabus follows the development of the times, constantly revised and updated, and effectively combines with the online platform of the curriculum [6,7].

Through different teaching methods, teaching tools, and teaching approaches, it silently integrates ideological and educational elements into the teaching process, allowing students to feel the educational elements contained in gratitude education, the application of new generation information technology in the era of big data, independent exploration, research spirit, teamwork and responsibility; Learn to be a good person and do things, use modern office tools to improve learning and work efficiency, and achieve twice the result with half the effort. The design of teaching content modules in the curriculum should be based on the teaching characteristics of different majors, so that teachers can have clear thinking, standardized practice, and comprehensive teaching practices.

The course focuses on the thinking of students in the new era, with the fundamental task of cultivating morality and nurturing talents. It emphasizes the organic unity of "knowledge imparting" and "value guidance", and the arrangement and real-time adjustment of teaching content are the key points of the entire "University Information Technology Foundation" teaching. The course fully penetrates and integrates ideological and political education, and combines the modular setting of course teaching content. In the "online+offline" hybrid teaching process, the elements of educating students are seamlessly integrated with the teaching content modules. The specific integration of ideological and political education elements with the teaching content modules can be seen in Figure 1. Follow different teaching modules to make the course ideological and political practice process more specific and practical.
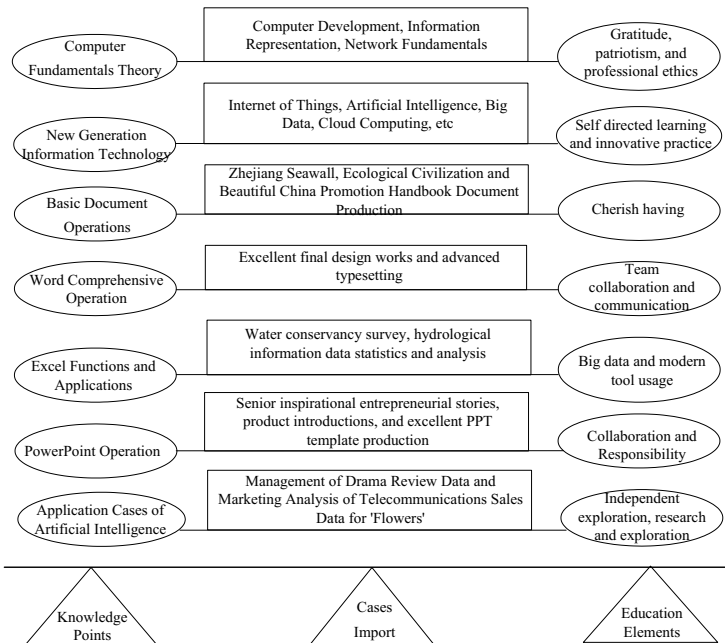

Fig. 1. Integration of Teaching Content and Course Ideology and Politicse curriculum

2.2   Integration with Course Assessment and Evaluation

Teaching evaluation can comprehensively assess students' learning situation, but traditional teaching evaluation based solely on grades can limit students' personalized development and create obstacles to their cognition. Integrating ideological and political education with teaching evaluation can reflect the dynamic and comprehensive nature of evaluation [8-9]. The basic content of assessment and evaluation includes students' learning attitude, values cultivation, innovation ability, etc. Propose a course assessment and evaluation method based on the trinity of "knowledge+skills+quality", with three items accounting for 50%, 30%, and 20% respectively. The process evaluation of students is strengthened to facilitate the evaluation, verification, and feedback optimization of the effectiveness of course ideological and political practice. This evaluation mechanism makes course ideological and political practice more effective and feasible, and combines with the output results of student learning to grasp students' learning dynamics in real time, comprehensively demonstrating students' initiative.

As shown in Table 1, data comparison and analysis were conducted on the practical teaching of ideological and political empowerment courses in the electronic automation major taught in our school in the past three different semesters. The 2021 level shows the final assessment of courses without ideological and political empowerment, while the 2022 and 2023 levels show the final assessment paper data of courses with ideological and political empowerment. The class size is 40.

Table 1. Comparison of exam statistics results from 2021 students to 2023 students

Statistics	2021		2022		2023	
	Number	Ratio	Number	Ratio	Number	Ratio
>=90	4	10.0%	10	25.0%	12	30.0%
>=80	8	20.0%	13	32.5%	15	37.5%
>=70	10	25.0%	9	22.5%	8	20.0%
>=60	12	30.0%	5	12.5%	4	10.0%
<60	6	15.0%	3	7.5%	1	2.5%

According to the statistical results in Table 1, the excellent rate, good rate, and pass rate of the final exam papers of the three classes of students all showed good performance. From Figure 2, it can also be seen that the scores of the highest, lowest, and average final exams for students in the same major in these three grades have been increasing year by year. After the end of the course, a questionnaire survey was conducted on each class of students, and data analysis from different batches showed that the proportion of students' gains and sense of achievement, continuing education learning ability, and changes in students' values after completing their studies has also greatly improved.
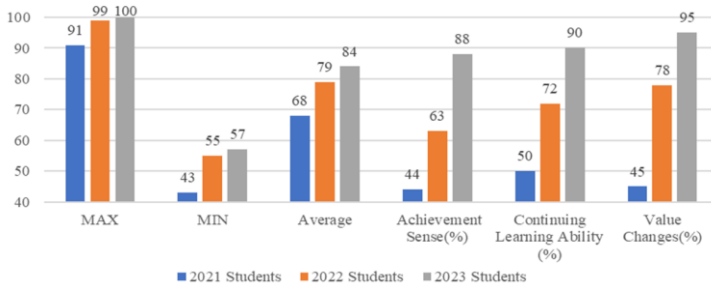
Fig. 2. Comparison of course ideological and political empowerment learning and assessment scores

3   PRACTICAL STRATEGIES FOR EMPOWERING IDEOLOGICAL AND POLITICAL EDUCATION IN COURSES

3.1   Use Flexible and Diversified Teaching Methods

The existing problems in the teaching of "Fundamentals of University Information Technology" mainly include low students' learning enthusiasm and gradual decline in learning interest. When integrating ideological and political education into the course, teachers can use diverse teaching forms to find students' interests and carry out teaching in a free, relaxed and stress free teaching environment. First of all, based on the Internet+online and offline hybrid teaching mode, students are the main body, and teachers play a leading role in the ideological and political practice of the "online platform" and "flipped classroom" courses of the "University Information Technology Foundation", and the education elements are quietly integrated into each teaching link. The specific teaching implementation strategy can be divided into four teaching stages.

The first stage mainly involves preliminary preparation work, completing the analysis of learning situation, construction of teaching environment, and online platform construction. The second stage is the teaching design phase, which mainly involves revising the teaching syllabus, designing teaching cases, and arranging different teaching activities such as in class tests, homework reviews, simulated workplaces, debates, etc. during the practical process based on talent cultivation objectives. The teaching design phase of this stage is an important stage of the blended learning of online and offline in this course, which reflects the student-centered approach and the teacher's leading role in conducting six teaching practice stages, including "scenario introduction, case demonstration, student imitation, operation induction, online flipped classroom, and knowledge summary". In different teaching practice stages, the ideological and political education elements of the course are introduced, making the teacher's thinking clearer, practice more standardized, and comprehensive in the teaching practice process. The third stage of teaching organization mainly consists of online guidance, interaction, Q&A through online platforms and offline teaching,

communication, and guidance through traditional classroom teaching, achieving "flipped" learning of course knowledge. The teaching organization of offline classrooms follows the overall idea of "project introduction - achievement display - teacher case demonstration - student practice - assessment and evaluation feedback"; At the same time, emphasis is placed on personalized guidance for both online and offline students, ensuring their mastery of key content and advanced learning of knowledge. The last stage is the evaluation and assessment of the course process, which mainly completes feedback and evaluation of students' learning situation.

In addition, teachers can also combine the online platform of the course to arrange diverse teaching activities such as online or offline student practical work demonstrations, group competitions, online debates, etc. from time to time to stimulate students' interest in learning. In different types of teaching activities, students' comprehensive abilities can be cultivated, and the educational value of ideological and political education in the course can be fully demonstrated, so that the learning of skills and knowledge, ability cultivation, and value shaping of the course can be organically unified, expanding the depth and breadth of learning, and continuously amplifying and radiating educational elements.

3.2   Layered and Graded Teaching

Under the traditional teaching mode, teachers adopt a large class unified teaching mode, ignoring the differences of students themselves, which directly hinders the smooth implementation of teaching activities. During teaching, teachers can divide students into three levels, A and B, based on their learning situation and basic abilities. In actual teaching, teachers can assign teaching tasks at different levels [8-9]. A-class students have a solid foundation in computer knowledge, strong ability to absorb knowledge, are assigned exploratory tasks, and focus on cultivating students' innovative ability and divergent thinking; B-class students have moderate learning abilities and are assigned skill based tasks, mainly to cultivate their practical skills; C-class students have poor foundation and learning ability, mainly teaching basic knowledge to help students establish correct values. In hierarchical teaching, teachers can integrate different ideological and political teaching resources based on the differences in difficulty of teaching tasks, and cultivate students' abilities in different aspects. Graded teaching, on the other hand, focuses on personalized training for students in categories A, B, and C. Students at each level seek excellent students for teaching assistant style training methods, completing teaching and tutoring for students with weaker foundations at the same level; At the same time, students of different levels can also receive teaching assistance to stimulate their active learning ability and team cooperation for innovative development.

The members of the teaching team will teach two parallel classes in the new energy major for the 2023 class at our school. Class 1 of New Energy will receive regular teaching management, while Class 2 of New Energy will receive graded teaching management. Before enrollment, students in Class 2 of New Energy will be assessed and divided into three different levels: A, B, and C. Table 2 presents four project tasks assigned to students in these two classes, and finally collects data on students' answer

accuracy and rationality, innovation ability and self-learning ability, personalized guidance, and teaching assistant training performance. The four project cases are: basic operation of Zhejiang seawall document, advanced layout of graduation thesis, data processing of water conservancy engineering survey, and practical application of artificial intelligence: telecommunications marketing data analysis.

Table 2. Layered and graded teaching practice data for two parallel classes

Class	Numbers	Zhejiang seawall			Paper layout			Water conservancy facilities			Telecommunications marketing		
		Accuracy rate	Innovation	Assistant	Accuracy rate	Innovation	Assistant	Accuracy rate	Innovation	Assistant	Accuracy rate	Innovation	Assistant
Class 1	--	84	65	59	72	70	61	76	75	68	59	80	73
Class 2:A	15	100	95	90	94	96	95	100	95	94	90	99	96
Class 2:B	15	95	87	81	83	88	85	87	89	88	78	86	92
Class 2:C	10	86	69	58	67	72	63	66	70	70	62	70	82

From the analysis of the data statistics in Table 2, it can be concluded that as teaching deepens, the innovation and self-directed learning ability of those who have not implemented hierarchical teaching show an upward trend, while the performance of levels A, B, and C in implementing hierarchical teaching also varies greatly from high to low. In addition, the personalized guidance and teaching assistant style performance of students who have not implemented hierarchical teaching are significantly weaker than those who have implemented hierarchical teaching, and the performance of students from different levels A, B, and C in helping other students is also from high to low, with obvious differences. As shown in Figure 3, the teaching assistant style performance of students in Class 2: A level is much higher than that of students in Class 2: C level. In each teaching case, the teaching assistant style performance of students in Class 2: A level is much higher than that of students in Class 2: C level. Under the influence of hierarchical teaching, the performance of students in Class 2: C level is also better than that of non hierarchical class (Class 1), and it also indicates that the positive linkage of hierarchical teaching brings great radiation effects to students..
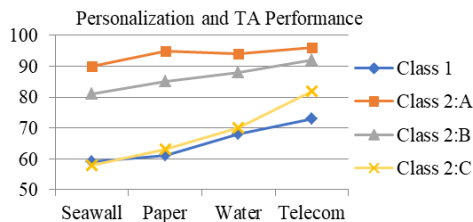

Fig. 3. Comparison of Performance of Student Teaching Assistants

3.3   Enhancing Teachers' Ability in Curriculum Ideology and Politics

Teachers are guides and facilitators in teaching activities, and the most direct way to integrate curriculum ideology with the teaching of "Fundamentals of University Information Technology" is to enhance teachers' ability in curriculum ideology [9,10].

Firstly, schools can strengthen communication between teachers and hire professional and experienced curriculum ideological and political teachers to provide on-site training and guidance, and promptly correct existing problems. Secondly, teachers can learn the guiding ideology of education in the new era and update and improve their teaching concepts through different online platforms, offline training and other channels. Based on the actual learning situation of students, update teaching ideas in real time, and make cultivating students' values and comprehensive abilities the primary task of education and teaching. Finally, the ideological and political education curriculum requires high theoretical knowledge from teachers, and schools should strengthen supervision and constraints on teachers. Develop targeted assessment plans based on the teaching tasks and levels of teachers, and use the assessment results as the direct basis for awarding and promoting teachers. In short, the development of ideological and political education in curriculum mainly relies on teachers. Teachers should be able to establish awareness of ideological and political education in curriculum and deeply understand the educational value of ideological and political education in curriculum, and flexibly use teaching resources of ideological and political education in teaching activities.

4   CONCLUSION

Under the new requirements of the education system in the era of Internet plus, in order to fundamentally improve the quality and effect of teaching, the teaching of College Information Technology Foundation should fully combine the teaching resources of ideological and political courses, and fully reflect the enabling value of ideological and political courses in the actual teaching practice. Undergraduate students in universities face the problem of employment directly after graduation. In order to improve their employment rate and alleviate the pressure of employment, teachers should actively explore efficient teaching methods in daily teaching, continuously improve the quality of curriculum teaching, and enable students to apply what they have learned. With the support of ideological and political education in the curriculum, students should be cultivated into "four new" talents that meet social requirements, ensuring that they have lofty career ideals and beliefs, and promoting the positive development of students' physical, mental, and moral qualities.

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