

Application of Computer Application Technology in Practical Teaching

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Abstract:

In response to the demand for computer application technology professionals in the information age, this paper discusses teaching system reform strategies under the background of new engineering education. Through constructing a practice-oriented curriculum system, integrating the latest technical cases, implementing diversified practical teaching methods - including deepening case teaching, online and offline hybrid learning, and building a "dual-qualified" teaching team - the study aims to enhance students' practical abilities and innovative capabilities. The establishment of a comprehensive evaluation system and feedback mechanism ensures teaching quality and continuous optimization. This research provides strategic support for cultivating high-quality talents adapted to computer technology development.

Keywords — **New Engineering Education, Computer Application Technology, Practical Teaching.**

I. INTRODUCTION

As an innovative force in response to technological revolution and industrial transformation[1], new engineering education emphasizes the close integration of interdisciplinary fusion, technological innovation, and practical application in the new era[2]. It focuses on cultivating innovative thinking, practical abilities, and cross-border cooperation spirit needed in the information age[3]. Particularly in the frontier field of computer application technology, educational models face innovation demands, requiring practical teaching to enable students to master core technologies and management concepts in real situations while imparting theoretical knowledge. Although computer application technology education in Chinese universities has developed rapidly, it still faces challenges such as disconnection between curriculum and industry, insufficient practical resources, and shortcomings in innovative ability training[4].

II. IMPORTANCE OF COMPUTER APPLICATION TECHNOLOGY TEACHING SYSTEM REFORM UNDER NEW ENGINEERING BACKGROUND

Computer application technology under the new engineering background is reshaping various industries, with information technology, big data, and AI becoming key drivers of industrial upgrading. This requires students in the field to master cutting-edge technology and apply it to digital transformation. The complex application environment demands computer application technology professionals to possess cross-domain integration and innovative practical abilities. Through industry-university cooperation and project training measures, traditional teaching constraints are broken, learning initiative and innovative thinking are promoted, which has far-reaching strategic significance for establishing an educational ecosystem that keeps pace with the industry and cultivating high-skilled talents leading technological development.

III. PROBLEMS FACED BY COMPUTER APPLICATION TECHNOLOGY TEACHING SYSTEM UNDER NEW ENGINEERING BACKGROUND

A. *Problems Faced by Computer Application Technology Teaching System under New Engineering Background*

Computer application technology teaching should emphasize operational practice and technical application. However, the current weight of practical teaching in overall teaching is insufficient, practical links are relatively weak, and experimental content tends to be verificational rather than design-oriented and innovative, limiting students' active exploration and innovation ability cultivation. Meanwhile, practical course content is often isolated, failing to form a systematic practical ability training path, making it difficult to cultivate students' comprehensive practical application ability from a global perspective.

B. *Shortcomings in Teachers' Practical Guidance Ability*

Computer application technology specialization emphasizes applied skills training, requiring teachers to have both solid theoretical foundations and rich industry practical experience. However, many institutions' professional teachers transition directly from academic research to teaching positions, lacking actual work experience and deep understanding of enterprise operations and technical applications. This makes it difficult to provide practical case teaching and effective guidance, leading to disconnection between teaching and actual needs, affecting students' practical ability improvement.

C. *Defects in Practical Teaching Quality Evaluation Mechanism*

The evaluation system of computer application technology education relies too heavily on traditional written examinations, neglecting comprehensive evaluation of students' practical ability, innovative consciousness, and team cooperation ability. Single assessment methods cannot fully reflect students' actual operational skills and comprehensive qualities, easily causing students to cope with examinations while neglecting ability cultivation, which is unfavorable for encouraging students' all-round development.

IV. REFORM STRATEGIES FOR COMPUTER APPLICATION TECHNOLOGY PROFESSIONAL PRACTICAL TEACHING SYSTEM UNDER NEW ENGINEERING BACKGROUND

D. *Construction of Practical Teaching Curriculum System*

Select curriculum resources with strong practicality and meeting industry demands to construct a consistent computer application technology practical teaching system from basic to advanced levels, covering laboratory training, enterprise internships, project development, and graduation design. This ensures students receive progressive practical ability training at each stage. Optimize and integrate course content based on key computer application technologies such as software development, data analysis, and artificial intelligence to design series of training projects. Meanwhile, detail teaching plans, integrate innovation and entrepreneurship projects into courses, and enhance students' comprehensive abilities through solving real enterprise projects.

E. *Diversified Practical Teaching Strategies*

This strategy promotes the effectiveness of computer application technology professional education through deepening case teaching and innovative practice models. Specifically, it includes: selecting the latest technical and management practice cases, incorporating them into teaching content, clarifying teaching objectives, strengthening case analysis and discussion, improving complex problem-solving abilities; meanwhile, utilizing online databases and offline seminars to stimulate students' active learning and critical thinking. Additionally, implementing online and offline hybrid teaching, combining virtual simulation and remote experiments, providing theoretical learning resources online while focusing on practical operation and team cooperation offline, constructing an interactive and flexible teaching system to comprehensively improve students' practical abilities.

F. *Construction of "Dual-Qualified" Practical Teaching Team*

Build a "dual-qualified" teacher team with both solid theoretical foundation and rich practical experience. Enhance teachers' practical teaching

abilities through various methods such as enterprise attachment, technical training, domestic and international academic visits, while establishing an industry-university joint training mechanism, encouraging teachers and enterprise engineers to jointly guide students, achieving two-way flow of knowledge and skills.

G. Comprehensive Evaluation System and Practical Teaching Feedback Mechanism

Establish a comprehensive assessment system including process evaluation and outcome evaluation, focusing not only on final results but also on students' learning attitudes, team cooperation, and problem-solving processes during practice. Through establishing a feedback mechanism involving students, teachers, and enterprises, timely adjust teaching content and methods to ensure continuous improvement and optimization of practical teaching, effectively enhancing teaching quality and students' employment competitiveness.

V. CONCLUSIONS

With the rapid development of information technology, the flourishing computer application technology industry poses new requirements for higher education, and professional talent cultivation faces tremendous opportunities and challenges. Under this background, the innovation of practical teaching systems for computer application

technology in universities is imperative, needing to adhere to new engineering concepts, closely connect with actual industry demands, and construct an efficient and innovative practical education ecosystem. Through reshaping the practical teaching curriculum system, ensuring deep integration of theory and practice, while implementing diversified teaching methods, strengthening case teaching and online-offline hybrid learning, to enhance students' practical application and innovative abilities.

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