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Innovation in Teaching Management under the Deep Integration of Colleges and Enterprises

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Abstract

In order to meet the demand of the national information industry for network engineering talents, teachers in the IoT Application Technology actively integrate into local industrial upgrading and development. . In response to issues in the practical teaching system, this article proposes a college enterprise deep cooperation strategy to deepen the integration of industry and education, and a new vocational education model that achieves mutual benefit and win-win situation among universities, enterprises, and society, as well as the integration of industry and education. Furthermore, we proposed a "mixed system" of innovative talent cultivation and practical teaching system,refine education and teaching management based on the college enterprise cooperation model as the norm, so as to ensure the timeliness of college enterprise cooperation and strengthen the teaching management of vocational colleges.

Keywords

Teaching Management,Deep Integration of Colleges and Enterprises,Deep Integration of Colleges and Enterprises, teaching form of "practical training+internship.

1. Research background

In recent years, local vocational colleges have increasingly attached importance to and strengthened innovation and entrepreneurship education for college students[1]. Through years of research on employers and subsequent surveys of graduates in the IoT Application Technology program at Zhongshan Polytechnic College, it has been found that network engineering graduates trained using traditional education models lack engineering practical and innovative abilities, thereby limiting their employment scope. In order to meet the demand of the national information industry for network engineering talents, teachers actively integrate into local industrial upgrading and development. The Internet of Things Application Technology major has launched a college enterprise joint training model with multiple well-known enterprises in Guangdong Province, and has conducted in-depth cooperation at different levels, focusing on cultivating students' engineering and innovative practical abilities. Although certain achievements have been made, efforts have been made to implement the concept of entrepreneurship and innovation education, develop talent training plans for entrepreneurship and innovation, establish practical training models for entrepreneurship and innovation, and build a team of entrepreneurship and innovation guidance teachers.

2. Main issue

Currently, there are four main issues in the practical teaching system of IoT major. In response to these issues, this article proposes a college enterprise deep cooperation strategy to deepen the integration of industry and education, and a new vocational education model that achieves mutual benefit and win-win situation among universities, enterprises, and society, as well as the integration of industry and education.

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（1）The cultivation of innovative and entrepreneurial talents is disconnected from the needs of the enterprise industry

With the development of the Internet, the demand for employment in enterprises continues to increase, requiring graduates to possess engineering practical skills[2]. However, there is a disconnect between the talents cultivated by colleges and the needs of enterprises. The talents cultivated by colleges lack innovative awareness and operational experience, and their practical hands-on abilities are relatively weak, making them unable to work directly. They require about a year of pre-job training to truly carry out their work.

（2）The practical teaching system for cultivating innovative and entrepreneurial talents is not developed enough

Many colleges lack systematic planning for the cultivation of innovative and entrepreneurial talents, and in the process of developing curriculum and practical teaching systems, they place too much emphasis on theoretical teaching and insufficient emphasis on practical teaching[3,4,5]. Especially in some professional practical teaching, there are relatively few practical courses, mainly taught by teachers, and students have relatively few practical operations, which makes it difficult to cultivate students' practical abilities.

(3)The construction of the guidance teacher team for innovative and entrepreneurial talents needs to be improved

College teachers have a high theoretical level and teaching research and development capabilities, but due to their lack of work experience in enterprises[6], there are relatively few opportunities to participate in enterprise training and learning, resulting in a lack of practical engineering experience, which affects the effectiveness of practical teaching and cannot provide professional and effective guidance to college students with innovation and entrepreneurship needs.

（4）Unclear educational philosophy for innovative and entrepreneurial talents

Most local vocational colleges are in a transitional period towards application-oriented transformation[7], and there are many contradictions and problems in the process of talent cultivation. The education concept of innovative and entrepreneurial talents mostly remains at the theoretical level and has not been integrated into specific professional education . Therefore, there has been no substantial breakthrough in its talent cultivation goals and positioning, and the education philosophy of colleges that has always been employment oriented has not been updated.

3. Research methods

(1) Constructing a "mixed system" of innovative talent cultivation and practical teaching system

The "mixed system" innovative talent cultivation practice teaching system is to build a talent ecosystem that closely connects education with industries. It adopts the form of "converting projects into teaching cases", the teaching form of "practical training+internship", and the teaching method of "learning by doing".

Enterprises, in accordance with the demand for development oriented, compound oriented, and innovative talents in the industry chain and the requirements for national vocational qualifications, will organically integrate university resources and industries, adhere to the education and training concept of "industry leading education, education promoting industry", promote the "three combinations" of professional settings and industry needs, curriculum content and professional standards, teaching process and production process, with schools as the main body, enterprises as the lead, and teachers actively participating, By complementing advantages and integrating resources, introducing international manufacturers' technical standards and resources, we can jointly develop real industrial training projects.

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The practical teaching system has four levels, including skill reserve, simulation training, job training, and employment internship levels. Each level offers different types and levels of real practical projects (jointly developed by the enterprise education research team and teacher team), accumulates different levels of real project experience, masters the required skills and business experience, and experiences the working atmosphere and norms of the enterprise, Establish correct career planning and values, and complete the complete transformation of the role of a social person into a professional.

Teaching evaluation should integrate the assessment and evaluation mechanism of enterprises, reflecting the main role of enterprises. Each level has an assessment mechanism, consisting of "performance", "speaking", "answering" and other forms of assessment. Students are required to complete projects, write instructions, complete reports, and emergency responses within the specified time frame. Enterprises, industry experts, and teachers jointly assess whether they are qualified. If they fail the assessment, they still stay at this level and continue to work on projects of the same difficulty. Students who fail multiple assessments will enter the "college enterprise" practice and exercise; If the appraisal is qualified, corresponding qualification certificates will be issued and the next step will be taken to carry out deeper projects. The standards of enterprises and industries are important criteria for evaluating students. Through project provision, student assessment, and other methods, enterprises participate in practical teaching evaluation, practice the integration of industry and education, and carry out innovative exploration of college enterprise cooperation.

(2) Further refining education and teaching management based on the college enterprise cooperation model as the norm

In the process of college enterprise cooperation in education, the teaching management of vocational colleges should be integrated into the management content of electronic information related enterprises, such as enterprise production management, enterprise production standards, enterprise production technology, enterprise product types, etc. These knowledge points should be integrated into the teaching system of vocational education. Whether these knowledge points can be scientifically and reasonably integrated into the education and teaching system of vocational colleges is directly related to the cooperation status and cycle between enterprises and colleges. At the same time, this education and teaching management is also a key factor in ensuring the orderly development of education and teaching activities in vocational colleges.

In practical teaching work, vocational colleges can adopt a combination of practical work with electronic enterprises to develop effective internships and achieve goals, continuously deepening and improving internship content and models. In the internship work, assessment indicators such as attendance rate, service quality, work summary, and work summary are set based on the actual work in the electronics industry, which facilitates the internship guidance teachers to fully grasp the gains and achievements of students in the internship work of electronic enterprises, effectively communicate with problems, and promote the achievement of teaching goals and the improvement of students' professional skills.

(3)Ensure the timeliness of college enterprise cooperation and strengthen the teaching management of vocational colleges

In the process of talent cultivation in vocational colleges, attention should be paid to the timeliness of college enterprise cooperation in running colleges, and the efforts of education and teaching management should be continuously strengthened. Firstly, vocational colleges should communicate with enterprises, choose majors that are in line with the development of the enterprise for joint education, and select professionals from within the enterprise and the teaching team to form an education guidance committee. They should formulate a rigorous professional development plan, education and teaching system, and teaching evaluation

feedback mechanism to ensure the feasibility and timeliness of college enterprise cooperation in running colleges; Secondly, select teachers with strong professional ability and enterprise content management personnel to establish an education and teaching department. The main task is to develop professional talent training programs, post practice standards, talent skill level standards, etc. according to the needs of enterprises. To further deepen the theoretical and practical results in the teaching process of vocational colleges, and achieve a win-win situation between vocational colleges and enterprises.

4. Summary

The adoption of college enterprise cooperation in vocational colleges has become a new trend in the development of college education. The cooperative education model in vocational colleges can put forward dual requirements for students. While conveying theoretical knowledge to students, it also shapes their professional abilities, skill levels, and personality qualities. There are still many shortcomings in this study, but the advantages of joint education between colleges and enterprises are obvious. With the deep integration of colleges and enterprises, the teaching management work of vocational colleges can be effectively improved, laying a foundation for the quality of education and teaching in vocational colleges.

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