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Exploration of Computer Talent Cultivation Mode in Higher Vocational Colleges Based on Industry-Education Integration

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Abstract: Under the background of the deepening reform of vocational education in the new era, school-enterprise cooperation and the integration of production and education are important ways for higher vocational colleges to train high-level and high quality applied computer talents. Based on this, this paper focuses on how to improve the training quality of computer talents, based on the actual needs of current social development in our country, combined with the current situation of the demand for talents in the computer field, by elaborating the practical problems encountered by higher vocational colleges in the field of school-enterprise cooperation and integration of production and education. In order to lead the students of computer majors to improve their specific ability to solve complex engineering problems in practice and innovation, and become technical talents in line with the needs of the new era.

Keywords: Integration of production and education; Higher vocational colleges; Computer talents

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1. Introduction

The vigorous development of the information industry in the era of artificial intelligence puts forward new requirements for cultivating computer talents. However, at present, the supply of talents in higher vocational colleges is difficult to effectively meet the social demand, and the engineering practical ability of some computer students is difficult to meet the actual demand for talents in the information industry and the computer industry. Therefore, in the era of actively promoting the construction of modern industrial colleges, relying on school-enterprise cooperation and the integration of industry and education to promote the precise connection between the supply and demand of computer talent training can be guided by improving students' employment and entrepreneurship ability, and promote the deepening reform of computer education in higher vocational colleges, to effectively realize the deep integration of education chain and industrial chain.

2. Analysis of the current situation of demand for talents in the field of computer science in China

In recent years, with the ability of modern information technology, combined with the research and forecast of China's demand for computer talents in recent years, it is not difficult to find that the demand for high-end talents is still in the stage of continuous growth. The so-called high-end talents refer to both theoretical knowledge and practical experience, and can communicate and cooperate well with others in the work, as well as have the spirit of pursuing excellence and striving for innovation. This is the core force to promote enterprises to achieve high-quality development and connotative construction [1]. However, it is difficult for higher vocational colleges to deliver high-end computer talents that meet the above requirements to the market, and cannot effectively meet the realistic needs of enterprise transformation and upgrading. At the same time, the number of computer graduates in China is about 400,000 each year, and these graduates often need to participate in a long training period to adapt to the changes from campus to the workplace, and gradually form job competence. It can be seen that at this stage, the mismatch between talent training and demand in the computer field not only leads to the need for enterprises to invest large human costs, but also seriously affects the sustainable development of the computer industry.

3. The current vocational college computer talent training is facing practical problems

3.1. The training of computer talents is difficult to meet the needs of the industry

Vocational education has the characteristics of serving regional economic development, therefore, vocational colleges should combine their school-running positioning, regional economic characteristics and industry needs as the guidance, to formulate precise computer talent training goals and education and teaching content. However, taking the program design department as an example, at this stage, it is still difficult for some vocational colleges to break through the pattern of traditional education and teaching framework. In personnel training, they pay too much attention to the introduction of professional knowledge and theoretical skills, while ignoring the training of engineering ability and computational thinking of professional students according to local conditions. As a result, it is difficult to achieve a close connection between computer talent training and regional economic characteristics and industry needs. In addition, although most courses of computer majors in higher vocational colleges are taught in computer rooms and attach importance to guiding students to computer operation, due to the impact of education lag, it is difficult for some higher vocational colleges to integrate the latest project cases in the computer industry into the talent training program, which aggravates the disconnect between talent training and the real needs of enterprises [2].

3.2. The depth and breadth of school-enterprise cooperation are limited

The limitation of the depth and breadth of school-enterprise cooperation is an important factor affecting the quality of computer talents training in higher vocational colleges. For example, at present, most of the school-enterprise cooperation projects set up by colleges and universities are limited to practice and training, and fail to further develop the cooperation projects with practical influence. That is, computer enterprises often only provide basic internship positions for professional students in a specific period, and they do not participate in the deep fields of computer talent training, such as scientific research innovation, teaching reform, etc. As a result, it is difficult for higher vocational colleges to effectively train technical talent that meets the needs of the computer industry [3]. For another example, at present, the cooperation scope of computer majors in higher vocational colleges is relatively limited, which is often a few fixed enterprises. As a result, it is difficult for the cutting-edge

technology and business needs in the computer industry to be fully integrated into the personnel training. This not only limits the career development vision of computer majors, but also seriously restricts the development and improvement of their innovative spirit and practical ability [4].

3.3. Weak teaching staff

The actual needs of high-level computer talents training in the new era have put forward higher requirements and challenges for teacher training in higher vocational colleges. Under this background, higher vocational colleges urgently need to build a group of "engineer + teacher" composed of double-qualified teachers. However, at the present stage, the training situation of computer teachers in most higher vocational colleges is not optimistic. Computer teachers tend to traditional theoretical teaching and knowledge imparting, and they lack experience in practical engineering projects. Therefore, it is difficult to train students' engineering practice ability in a targeted way in personnel training [5]. Moreover, due to the limitations of education, degree and other factors, it is difficult for technical personnel with rich experience in engineering practice to enter higher vocational colleges as lecturers. In addition, the current personnel recruitment system and welfare security mechanism used by higher vocational colleges lack an effective attraction, so that it is difficult to absorb fresh blood in the ranks of computer professional teachers.

4. Based on the integration of production and education of computer talents training strategy in higher vocational colleges

4.1. Define the objectives of personnel training

Training objectives are the direction of the implementation of the computer talents training program in higher vocational colleges, which has an important role of leadership and guidance. However, at present, the training objectives of computer professionals in some higher vocational colleges are more vague and difficult to effectively achieve the same frequency resonance with the needs of enterprises. In this regard, higher vocational colleges can combine the internal recruitment standards of computer enterprises to reconstruct the current talent training objectives to promote the combination of talent supply and demand on this basis. To be specific, higher vocational colleges can start from the following aspects to further clarify the training objectives of computer talents [6].

4.1.1. Basic knowledge

In the practice of talent selection and recruitment, enterprises require computer majors to have solid professional knowledge. This is the basic principle of enterprise recruitment. Therefore, in the teaching of computer majors, higher vocational colleges should pay attention to cultivating students' knowledge quality and guiding them to master professional knowledge deeply to create good conditions for the follow-up professional practice [7].

4.1.2. Hot technology

The emergence of front-end development, big data analysis, artificial intelligence and other hot technologies has further accelerated the digital construction process of computer enterprises. Therefore, enterprises expect professional students to be familiar with and master the current hot technologies, and be able to quickly integrate into engineering projects to create value for the development of the company. Combined with the actual needs of enterprises, higher vocational colleges should actively adjust the current curriculum system, set up professional courses and elective courses related to modern digital technology to meet the diversified and personalized needs of students. At the same time, higher vocational colleges should also strengthen the cooperative education of computer enterprises, and actively introduce the frontier technology in the industry into the personnel training.

For example, in cooperation with China Soft International and other enterprises to organize regular technical lectures, seminars and other exchange activities to lead students to in-depth understanding of the current hot technology. This will not only help to broaden the technical vision of computer majors, but also effectively enrich their practical experience and improve their technical level [8].

4.1.3. Project experience

Project experience is an important criterion for enterprises to recruit and select talents, and it is an important reference for testing students' engineering practice ability, coping ability and problem-solving ability. Therefore, in the training of computer talents, higher vocational colleges should pay attention to increasing the proportion of practical teaching, relying on school-enterprise cooperation, integration of industry and education and other ways, to provide students with a variety of practical training projects. For example, both colleges and enterprises can create practical course projects and organize diversified professional discipline competitions and vocational skills competitions. This will not only help train students' practical ability, but also effectively improve their innovation, entrepreneurship and employability [9].

4.1.4. Professional quality

High quality computer talents have a solid professional foundation, strong practical ability, and good professional quality. Therefore, in professional teaching and curriculum practice, higher vocational colleges should pay attention to cultivating students' teamwork ability, dedication and sense of responsibility and other professional ethics. At the same time, higher vocational colleges can also set material rewards, honor awards and other ways to commend students who have excellent performance in the project practice, so as to create a good education and teaching environment by playing the role of example and imitation [10].

4.2. Expand the depth and breadth of university-enterprise cooperation

Deepening and expanding the depth and breadth of school-enterprise cooperation is an important way for higher vocational colleges to improve the quality of computer talent cultivation. At the same time, this measure also helps to deepen the relationship between higher vocational colleges and computer enterprises and industries to realize the close connection between talent training and industry market demand, promote the precise docking of industrial chain and education chain, and further improve the innovation and entrepreneurship ability of computer students. It is the key task and primary task for higher vocational colleges to deepen cooperation between universities and enterprises to jointly develop training programs for computer professionals. For example, combined with the technical needs of computer enterprises and industry needs for talents, colleges and universities can invite cooperative enterprises to participate in the formulation of talent training objectives, course content, practice links, etc. to integrate frontier technologies into computer education and teaching, and promote the cultivation of computer talents to keep forward-looking [11].

At the same time, it is also crucial to broaden the depth and breadth of school-enterprise cooperation. Actively introduce computer enterprises into the talent training of higher vocational colleges, and introduce rich education and teaching resources for the students of computer majors, which is of great help and role in improving their engineering practice ability [12]. Moreover, technology co-creation is carried out with the help of scientific research innovation and project R&D. This is also an important way to deepen school-enterprise cooperation and promote mutual benefit and win-win results. In the practice of developing new technologies and new software, students majoring in computer science can participate in real project research and development

under the leadership of teachers and enterprise engineers, to make them become high-quality talents who meet the needs of the computer field based on constantly enriching their own project experience. In short, relying on the platform of integration of industry and education and promoting the deepening of school-enterprise cooperation, students' practical ability, innovation ability and employability can be better improved [13].

4.3. Introduction of industry standards and certification systems

Vocational colleges actively introduce industry standards and certification systems in the training of computer professionals, which is an effective guarantee to promote the deep integration of education chain, talent chain, industrial chain and innovation chain. In this regard, higher vocational colleges can reconstruct the teaching system according to the industry standards. Industry standards are the core basis for higher vocational colleges to train high-quality and high-level computer talents. Therefore, integrating industry standards into the teaching system of computer majors can not only enable higher vocational colleges to more accurately grasp the latest technological development trend and market demand in the computer industry, but also significantly improve the professional quality and practical ability of professional students [14].

At the same time, higher vocational colleges should establish a sound computer professional certification system to conduct a comprehensive evaluation and comprehensive evaluation of the technical skills of professional students. The core of the computer professional certification system is the integration of post-course competition and the certificate. This can fully stimulate students' strengths and potential in the training of computer talents. Moreover, the docking of computer professional course teaching, talent training and industry certification can test students' technical skills and create good conditions for their future career development. It should be noted that the introduction of industry standards and certification system can not only stay at the level of goal setting and theoretical teaching. Vocational colleges should also rely on school-enterprise practical training projects to lead students to understand the specific operating process and technology application in a real environment to promote the close connection between the teaching process and the production process, which can effectively realize the deepening of the quality of talent training. At the same time, this will also help reduce the cost of talent training for enterprises, help computer graduates successfully complete the transition from campus to the workplace, and better adapt to the changes of the working environment [15].

5. Conclusion

To sum up, higher vocational colleges undertake the important task of cultivating high-quality and high-level technical talents. Therefore, actively promoting the reform and innovation of personnel training mode from the perspective of the integration of production and education can not only help meet the individual needs of computer majors from multiple channels and angles, but also effectively improve their career adaptability. This paper discusses the methods to improve the training quality of computer talents from the aspects of talent training objectives, school-enterprise cooperation, the introduction of industry standards and certification system, which can help students gain rich engineering practice experience in professional learning and curriculum practice, form good innovative thinking and problem thinking to effectively promote their all-round development.

Disclosure statement

The author declares no conflict of interest.

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