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Practical Exploration of Computer Teaching Mode in Higher Vocational Education from the Perspective of Industry Education Integration

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Abstract: *With the rapid development of information technology, computer education has played a crucial role in higher vocational education. Vocational computer education not only aims to cultivate students' professional knowledge and skills, but also emphasizes the cultivation of their practical abilities and innovative spirit, in order to meet the needs of the industry and society for high-quality technical talents. However, traditional computer teaching models often place too much emphasis on theoretical teaching and overlook the close integration with practice, making it difficult for students to apply the knowledge they have learned to practical work.Based on this, the article explores the practice of computer teaching mode in vocational colleges from the perspective of industry education integration, aiming to promote effective integration between education and industry, and cultivate professional talents that meet social needs.*

Keywords: *Integration of industry and education; Vocational computer science; teaching model*

1. Introduction

The traditional computer teaching mode in higher vocational education is inadequate in the face of rapid technological updates and changes in industrial demand. Relying solely on classroom teaching and traditional practical training is difficult to meet the needs of students for practical ability and innovative thinking. The integration of industry and education, as a new type of education model, is gradually receiving attention and recognition from people. It combines education with industry, and through school enterprise cooperation, project practice, and other methods, enables students to better gain practical experience in the learning process and enhance their competitiveness in employment. In the field of vocational computer education, how to introduce the concept of integrating industry and education into teaching practice and build a teaching model that meets the requirements of the times has become an urgent problem that needs to be solved[1].

2. The problems and challenges of computer teaching mode in higher vocational education

2.1 Teaching mode disconnected from market demand

Firstly, with the rapid development of information technology, the demand for talent in the computer industry is also constantly changing. However, some vocational computer teaching models still remain at the traditional level and fail to keep up with the pace of industry development in a timely manner. This makes it difficult for students to adapt to market demand and face employment difficulties after graduation. Secondly, the requirements of enterprises for computer talents are not only to master basic theoretical knowledge, but also to value their practical operation ability and problem-solving ability. However, the current teaching model often lacks effective cultivation of students' practical abilities, resulting in a lack of practical experience and difficulty in meeting the work needs of enterprises. Thirdly, the disconnect between vocational computer teaching mode and market demand is also reflected in the curriculum design. The curriculum of computer majors in some vocational colleges is too outdated and fails to timely introduce new technologies and knowledge, resulting in a significant deviation between the knowledge learned by students and market demand. This not only affects the employment prospects of students, but also restricts the development of computer education in vocational colleges[2].

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2.2 Insufficient practical teaching resources

Firstly, the experimental equipment is outdated and the quantity is insufficient. The updating of computer laboratory equipment in some vocational colleges is lagging behind, making it difficult to meet the teaching needs of new technologies. Meanwhile, due to limitations in funding and other conditions, the number of experimental equipment cannot meet the actual needs of students. This leads to students being unable to conduct sufficient experimental operations, making it difficult to consolidate and apply the knowledge they have learned. Secondly, the lack of practical training venues is also an important factor restricting practical teaching. The practical teaching of computer majors often requires spacious training venues to support, but some vocational colleges find it difficult to provide sufficient training space due to limited venues. This limits the practical training activities of students and prevents them from fully engaging. Thirdly, the lack of practical projects is also an aspect of insufficient practical teaching resources. Practical projects are an important carrier for students to carry out practical operations. However, due to limited project sources and poor management, vocational colleges often find it difficult to provide sufficient practical projects for students to choose from. This leads to students not being able to have sufficient practical opportunities, which affects the improvement of their practical abilities.

2.3 The construction of teaching staff lags behind

Firstly, the structure of the computer major teaching staff in some vocational colleges is unreasonable, lacking teachers with rich practical experience and industry background. This makes it difficult for teachers to combine theory with practice in the teaching process, and cannot provide effective practical guidance for students. Meanwhile, due to significant differences in the age, education level, and professional title of the teaching staff, the teaching level and effectiveness are uneven[3]. Secondly, vocational colleges do not attach enough importance to the cultivation and training of computer science teachers. Some teachers lack opportunities for further education and learning for a long time, and are unable to update their knowledge and skills in a timely manner, making it difficult to adapt to the development of new technologies and applications. This leads to teachers lagging behind in teaching content, teaching methods, and other aspects, which cannot meet the actual needs of students. Thirdly, vocational colleges also face certain difficulties in introducing outstanding talents. Due to limitations in terms of treatment and development opportunities, some teachers with high-level professional competence and practical experience are often unwilling to teach in vocational colleges. This makes it difficult for vocational colleges to attract and retain excellent computer professionals, further exacerbating the problem of lagging teacher team construction.

3. The Construction Strategy of Computer Teaching Mode in Higher Vocational Education from the Perspective of Industry Education Integration

3.1 Deepen school enterprise cooperation and achieve sharing of teaching resources

Through school enterprise cooperation, schools and enterprises can jointly build a mutually beneficial and win-win cooperative relationship, promote resource sharing and complementary advantages, and thus promote the innovative development of vocational computer education. Firstly, deepening school enterprise cooperation requires both parties to establish a close cooperative relationship. Schools should actively communicate with enterprises, understand their actual needs and development directions, and provide technical support and talent training services for enterprises. At the same time, enterprises should actively participate in school teaching activities, provide practical bases and internship positions, and provide students with a real career environment and practical opportunities. This close cooperative relationship helps both parties to deeply understand each other's needs and advantages, laying a solid foundation for the sharing of teaching resources. Secondly, achieving the sharing of teaching resources requires fully leveraging the advantages of both parties. Schools have abundant teaching resources and teaching staff, while enterprises have advanced technological equipment and rich practical experience. Through school enterprise cooperation, schools can introduce advanced technology and equipment from enterprises and incorporate them into the teaching system, allowing students to be exposed to the latest technological achievements and industry trends. At the same time, enterprises can also utilize the school's faculty and teaching resources to carry out activities such as employee training and skill enhancement, improving the technical level and competitiveness of the enterprise[4].

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Once again, pay attention to communication and collaboration between both parties. Schools and enterprises should hold regular exchange meetings to deeply discuss and negotiate the sharing of teaching resources. At the same time, both sides should strengthen personnel exchange and interaction, promoting mutual understanding and trust. This close communication and collaboration helps to timely solve problems and difficulties that arise during the cooperation process, and promotes the development of school enterprise cooperation to a deeper level. Finally, deepening school enterprise cooperation is not just a simple collaboration between schools and enterprises, but also a deep integration based on common goals and visions. In this process, both parties need to jointly bear responsibilities and risks, share achievements and benefits, so as to truly achieve the sharing of teaching resources and complementary advantages, and promote the innovative development of vocational computer education.

3.2 Optimize course offerings and align with industry demands

In the perspective of integration of industry and education, the construction of computer teaching mode in higher vocational education must closely align with industry needs, optimize curriculum settings, ensure that the knowledge learned by students is closely aligned with market demands, and improve their employment competitiveness and career adaptability. Firstly, the curriculum should closely revolve around industry development trends and market demands. Vocational computer education should closely monitor the latest developments and technological changes in the computer industry, and timely incorporate new technologies, processes, and applications into the curriculum system. By conducting in-depth research on the talent needs of industry enterprises, we can understand the specific requirements of the industry for computer professionals, and adjust course offerings accordingly to ensure that course content matches industry needs. Secondly, strengthen the establishment and implementation of practical courses. Practical courses are an important component of vocational computer education, which is of great significance in improving students' practical abilities and innovative spirit. Therefore, when optimizing the curriculum, the proportion of practical courses should be increased, and attention should be paid to the design and implementation of practical courses. Through cooperation with enterprises, practical courses should be jointly developed, and real projects from enterprises should be introduced to enable students to learn and grow in practice[5].

Once again, focus on updating and upgrading the course content. With the rapid development of computer technology, the curriculum content of vocational computer education also needs to be constantly updated and upgraded. When optimizing the curriculum, it is necessary to regularly evaluate the timeliness and applicability of existing curriculum content, timely eliminate outdated and outdated content, and introduce new knowledge points and technologies. At the same time, it is necessary to strengthen the integration and optimization of course content, and form a computer course system with vocational characteristics. Finally, establish a course feedback and adjustment mechanism. Curriculum design is a dynamic process that requires continuous adjustment and optimization based on market demand and student feedback. When optimizing curriculum design, an effective mechanism for curriculum feedback and adjustment should be established. By collecting feedback from students and employers, timely understanding the problems and shortcomings in curriculum design, and making targeted improvements and optimizations.

3.3 Strengthening practical teaching and improving students' skill levels

Practical teaching is an important way to cultivate students' practical operation ability and problem-solving ability. Through systematic practical training, it can help students apply the theoretical knowledge they have learned to practical work, enhance their practical work ability and competitiveness. Firstly, establish diverse practical teaching platforms. Schools can utilize campus resources to build multifunctional laboratories and training bases, equipped with advanced computer equipment and software tools, to provide students with a real and diverse practical environment. They can also cooperate with enterprises to establish internship or practical training bases, allowing students to have the opportunity to interact with real work scenarios, participate in actual project development, and solve practical problems, So as to better enhance their practical ability and skill level. Secondly, adopt a project driven teaching method. Schools can organize students to participate in the development and implementation of various practical projects, such as software development projects, system integration projects, etc., allowing students to participate in the entire process of project requirements analysis, design implementation, testing and debugging, and improve their skills and problem-solving abilities through practical operations. At the same time, schools can also invite technical experts from

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enterprises to participate in project teaching, provide professional guidance and technical support, and provide more help and support for students' project practice. Finally, establish a student-oriented practical teaching model. Schools should design personalized practical teaching plans based on students' interests and strengths, providing them with more choices and opportunities to stimulate their enthusiasm and initiative in learning. At the same time, schools should also focus on cultivating students' spirit of teamwork and innovation consciousness. Through team project cooperation and innovative practice, students should exercise their teamwork and innovation abilities, and cultivate them to become excellent talents who can adapt to the needs of future social development.

3.4 Strengthening the construction of teaching staff and enhancing the integration ability of industry and education among teachers

In the perspective of industry education integration, the construction of computer teaching mode in higher vocational education cannot be separated from a teaching staff with high-level industry education integration capabilities. Strengthening the construction of the teaching staff and enhancing their industry education integration capabilities is of great significance for promoting the innovative development of computer education in higher vocational education. Firstly, strengthen teachers' industry awareness and practical experience. Vocational computer education should closely integrate with the development needs of the industry. Teachers must have a deep understanding and practical experience in the industry. Schools can regularly organize teachers to participate in industry seminars, technical exchange meetings, and other activities to understand the latest trends and technological developments in the industry. At the same time, encourage teachers to deepen their practical experience in enterprises, participate in technological research and project implementation, and accumulate rich practical experience. Secondly, enhance the educational and teaching abilities of teachers. Education and teaching ability is the core competitiveness of teachers, and it is also the key to improving the integration of industry and education. Schools should strengthen the education and teaching training of teachers, guide them to update their educational concepts, master advanced education and teaching methods and means, and encourage teachers to conduct teaching research, explore teaching models and methods suitable for vocational computer education, and improve teaching effectiveness and quality.

Once again, build a teacher team that integrates industry and education. The integration of industry and education requires close cooperation between schools and enterprises. Therefore, it is crucial to build a teacher team with the ability to integrate industry and education. Schools can cooperate with enterprises to jointly form a teacher team and carry out activities such as joint teaching, scientific research, and technical services. Through teamwork, teachers can learn from each other, exchange experiences, and jointly enhance their ability to integrate industry and education. Finally, improve the incentive and assessment mechanisms for teachers. The incentive and assessment mechanism is an important means to stimulate the enthusiasm of teachers and improve their ability to integrate industry and education. Schools should establish a sound incentive and assessment mechanism to commend and reward teachers who have shown outstanding performance in the integration of industry and education. At the same time, regular assessments and evaluations of teachers' ability to integrate industry and education should be conducted to motivate them to continuously improve their own abilities.

3.5 Improve evaluation and feedback mechanisms, optimize teaching modes

In the perspective of integration of industry and education, the construction of computer teaching mode in higher vocational education not only requires the advancement of teaching content and the strengthening of practical teaching, but also requires the improvement of evaluation and feedback mechanisms to continuously optimize the teaching mode and ensure that it meets the needs of the industry and the development of students. Firstly, focus on the pertinence and effectiveness of evaluation. Evaluation is not just about giving students a score or level, but more importantly, it is about identifying problems and improving teaching. Therefore, when evaluating, teachers should pay attention to the pertinence and effectiveness of the evaluation. Targeted evaluation refers to the specific teaching content, teaching methods, and student characteristics of the evaluation, avoiding generalization; Effectiveness refers to the evaluation that can truly reflect the learning situation and teaching effectiveness of students, providing effective feedback for the optimization of teaching modes. Secondly, establish a timely and effective feedback mechanism. Feedback is the purpose of evaluation and a key link in optimizing teaching modes. Teachers need to establish a timely and effective feedback mechanism to ensure that the evaluation results can be timely fed back to teachers and students, so that they can adjust teaching strategies and learning methods in a timely manner. At the same time, attention

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should also be paid to the pertinence and operability of feedback, providing specific improvement suggestions and directions for teachers and students. Finally, focus on continuous improvement of evaluation and feedback mechanisms. The evaluation and feedback mechanism itself also needs to be continuously improved and optimized. Teachers need to regularly evaluate and adjust the evaluation and feedback mechanism to ensure that it can adapt to changes in teaching modes and the needs of student development. At the same time, it is necessary to strengthen communication and cooperation with other universities, draw on advanced evaluation and feedback experiences and methods, and continuously improve the quality and level of evaluation and feedback mechanisms.

4. Conclusion

In the perspective of industry education integration, the practical exploration of computer teaching models in higher vocational education is not only an important issue in the field of education, but also a key link in promoting industry development. Through in-depth exploration of strategies such as optimizing curriculum design, strengthening practical teaching, strengthening faculty construction, and improving evaluation and feedback mechanisms, the aim is to build a teaching model that meets industry needs and enhances student skill levels. Practice is the only criterion for testing truth. In the future, teachers will continue to deepen the integration of industry and education, constantly explore and innovate teaching models, and contribute wisdom and strength to cultivate more high-quality computer talents and promote industry development.

References

[1] Wang Xia. Exploration of the Teaching Model of "School Enterprise Cooperation and Industry Education Integration" in the Computer Application Technology Major of Higher Vocational Education [J]. Education Informatization Forum, 2023, (12): 111-113.

[2] Liu Chuan. Practical exploration of computer teaching mode in vocational colleges from the perspective of industry education integration [J]. Journal of Jiamusi Vocational College, 2023,39 (10): 214-216.

[3] Song Junsu. Practical Research on the Talent Training Model of Computer Application Majors in the Integration of Industry and Education in Vocational and Secondary Schools [J]. Modern Vocational Education, 2020, (28): 50-51.

[4] Feng Zengzhuo. Research on New Teaching Models for Computer Majors in Higher Vocational Education under the Background of Industry Education Integration [J]. Contemporary Teaching and Research Series, 2022, 8 (11): 67-69.

[5] Yang Shundi. Reform and Practice of Computer Application Basic Teaching Mode in Higher Vocational Education Based on the Perspective of "Integration of Industry and Education" [J]. China Management Informatization, 2021, 24 (13): 224-225.