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The Realistic Dilemma and Optimisation Path of Enterprise Digital Management Professional Construction in Vocational Undergraduate Education

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Abstract: ***In the era of digital economy, enterprise digital transformation puts forward new requirements for management talents, and the construction of vocational undergraduate speciality of enterprise digital management faces many challenges. At present, the professional positioning of this major is vague, lack of accurate training standards, curriculum system is out of touch with industrial demand, and interdisciplinary integration is insufficient; the faculty generally lacks digital literacy and industrial practice experience; school-enterprise cooperation is superficial, and lack of in-depth synergistic mechanism and other problems. Aiming at the above realistic dilemmas, this paper puts forward the optimisation paths of adjusting professional orientation, curriculum system, strengthening practical teaching, enhancing the level of teachers and deepening the cooperation between schools and enterprises, with a view to providing references for the professional construction of vocational undergraduate universities.***

Keywords: Vocational undergraduate, Enterprise digital management, Professional construction, Realistic dilemmas, Optimisation paths**.**

1. Introduction

In recent years, China has issued the 'National Vocational Education Reform Implementation Plan', 'Opinions on Promoting the High-Quality Development of Modern Vocational Education' and other programmatic documents, which clearly put forward the strategic deployment of 'accelerating the construction of new professions in the field of the digital economy' [1]. 2021, the new version of the 'Catalogue of Vocational Education Professions' of the Ministry of Education, single Vocational Undergraduate 'enterprise digital management', into the 'new generation of information technology and manufacturing integration' key construction areas. The special cultivation plan for field engineers in vocational education further stresses that efforts should be made to cultivate composite digital artisans who are 'proficient in operation, know craftsmanship, and know how to manage', which provides top-level design guidelines for the professional construction of vocational undergraduate universities [2]. Under the background of 'Digital China' strategy, enterprise digital management has become a key hub linking the education chain, talent chain and industrial chain, and shoulders the mission of cultivating data-driven management talents [3].

The current enterprise digital management professional construction in vocational undergraduate universities is still in the pilot exploration stage, facing multidimensional practice dilemmas [4]. However, existing research lacks systematic research on key aspects such as curriculum reconstruction, teacher training, platform co-construction, etc. in specific professional construction [5][6]. Based on the reform practice of vocational undergraduate education, this paper provides an in-depth analysis of the realistic bottlenecks of the enterprise digital management profession in the aspects of talent cultivation standards, teaching resources supply, and industry-teaching synergy mechanism, and puts forward optimisation paths to provide solutions for cracking the problems of ambiguous positioning and weak faculty in the construction of the emerging profession.

2. Development Background and Positioning of the Enterprise Digital Management Profession

2.1 New Requirements for Management Talents in the Era of Digital Economy

In the era of digital economy, information technology and data have become new production factors, and the digital transformation of enterprises has also promoted profound changes in the enterprise digital management mode. In the past, the traditional management mode relied on experience to make decisions, while at this stage, more efficient and accurate management is achieved through big data analysis and artificial intelligence-assisted decision-making. At the same time, enterprises are increasingly in need of management personnel with digital thinking and data analysis capabilities to adapt to the needs of digital operations [7].

The wide application of digital technologies and tools in enterprise digital management, such as supply chain management, customer management, marketing management and other areas, are accompanied by the deep embedding of digital technologies. Enterprise digital management managers are no longer limited to traditional management capabilities, but are more likely to need to have an interdisciplinary body of knowledge, as well as being able to understand the application of digital tools and integrate them into their enterprise strategy.

Currently, the industry is generally facing a shortage of composite digital management talents, and many enterprises have difficulty in finding talents who understand both management and are familiar with digital technology in the process of digital transformation, which has prompted the

emergence of the vocational undergraduate major in enterprise digital management [8]. The core objective of enterprise digital management is to cultivate composite talents with management thinking and mastery of digital technology, emphasising the combination of 'management + data + technology', and cultivating students' ability to analyse data, apply digital tools and manage enterprise information technology, so that they can play a role in various fields such as enterprise operation, strategic planning, marketing, supply chain management and other fields.

2.2 Applied Talent Cultivation Objectives of Vocational Undergraduate Education

Vocational undergraduate education takes the cultivation of high-quality applied talents as its core objective, which is different from academic undergraduate education in that the curriculum is more closely aligned with the needs of the industry and emphasises the cultivation of practical ability [9]. The practical and applied nature of the enterprise digital management major is particularly important, and the construction of the major must be closely aligned with the needs of the industry to ensure that students have a strong practical ability.

On the one hand, the enterprise digital management profession cultivates students' digital skills, data analysis ability and information technology management and other aspects of the ability of students not only to master the basic technology of data acquisition, processing, visualisation and other basic technologies, but also in-depth study of cloud computing, artificial intelligence and other cutting-edge technologies applied to various aspects of the enterprise's actual production, management, operation and so on. The curriculum system is closely centred on the core theories of enterprise digital management, allowing students to skillfully apply digital tools to actual management scenarios.

On the other hand, the vocational undergraduate enterprise digital management major will fully reflect the differentiated characteristics from the higher vocational speciality majors and management majors in universities, which focus more on the training of skilled talents, while the management majors in general undergraduate universities tend to be biased towards theoretical research, and the vocational undergraduate degree is between the two, which emphasises theoretical foundations and highlights the practical application [10]. The enterprise digital management speciality builds a characteristic talent cultivation system, and through the dual-track teaching mode of 'theory + practice', the students can really have the ability of digital management to meet the actual needs of enterprises.

3. Realistic Dilemmas in the Construction of Enterprise Digital Management Major

Under the current vocational undergraduate education system, the enterprise digital management major is also faced with many challenges, and despite the fact that the setup of the major is in line with the trend of digital transformation and matches the social demand, there are still many realistic dilemmas in the actual implementation process. These dilemmas not only affect the direction of the development of the profession, but also put forward a serious test of the quality of personnel training.

3.1 Ambiguous Professional Positioning, Lack of Precise Training Standards

The core objective of enterprise digital management professional is to cultivate compound talents who have both management knowledge and digital technology. However, the professional establishment of a short period of time, the development of the industry is not yet fully mature, the professional positioning still exists a certain degree of ambiguity, universities in the curriculum has not yet formed a unified standard, resulting in the cultivation of the direction of the institutions there are large differences.

First of all, the enterprise digital management talent demand is diversified, and different enterprises have different expectations of students graduating from this major. Some enterprises will pay attention to the data analysis ability, while some enterprises are more concerned about the management ability of information system, which makes it difficult for universities to accurately define the training objectives in the process of talent cultivation. Secondly, the professional curriculum system is not yet perfect, and some vocational undergraduate universities favour theoretical teaching, while the practical aspects are relatively weak. Since enterprise digital management involves the intersection of several disciplines, how to scientifically integrate the knowledge of management, information technology and data analysis and other fields to form a systematic curriculum system is an important issue currently facing. Thirdly, the lack of a unified certification standard for the profession has led to the uneven competitiveness of graduates in the job market, and the recognition of digital management graduates by enterprises is still to be improved compared with traditional management or information technology majors.

3.2 Curriculum System Lags Behind and Fails to Match Industry Demand

The curriculum system of enterprise digital management majors is still dominated by traditional management subjects, with insufficient coverage of digital technology-related content, making it difficult to meet industry demand. Currently, enterprises hope that graduates have both management thinking and the ability to apply digital technology, but many courses still remain in the traditional management mode, failing to fully integrate data analysis, artificial intelligence, blockchain and other emerging technologies, resulting in students being difficult to be competent for digital management positions after graduation.

In addition, the curriculum is lagging behind in updating, and the new technologies and modes of enterprise digital transformation have not been integrated into teaching in a timely manner. For example, big data-driven precision marketing and intelligent decision support systems have been widely used, but the related courses are less involved, resulting in a lack of practical experience for students, which affects their employment competitiveness. At the same time, the theoretical courses are out of touch with the practical application, and some courses focus on traditional management theories and lack case analysis and practical

training based on real enterprise scenarios. For example, key technologies such as enterprise digital management system and intelligent supply chain management are less involved in the teaching, which are important parts of modern enterprise management, and this disconnect makes students still need a longer period of adaptation after employment. At the same time, due to the lack of timely updated teaching materials and cutting-edge practice cases, the course content appears to be even more lagging behind, which restricts the overall improvement of students' ability.

3.3 Insufficient Teaching Staff and Weak Digital Teaching Capability

The shortage of 'dual-teacher' teachers also restricts the quality of teaching. Most teachers of enterprise digital management in most vocational undergraduate universities have traditional management backgrounds, and have a limited grasp of technologies such as artificial intelligence, the Internet of Things, and blockchain, which makes it difficult for them to be capable of teaching high-quality digital management. As the major involves multiple disciplines, teachers need not only management knowledge but also mastery of digital technology, but at present, the knowledge system of most teachers is still biased towards traditional management, and their understanding of new technologies is shallow, which affects the quality of teaching, while teachers' lack of practical experience in the enterprise makes it difficult to combine theory with practice, making it difficult for students to understand the application of technology in management.

Some institutions try to introduce enterprise tutors or industry experts, but the participation of external teachers is low due to factors such as salary and curriculum arrangement, making it difficult to form a stable teaching team. At the same time, institutions lack a systematic teacher training mechanism, the digital teaching ability of existing teachers is slow to improve, and some teachers are not interested enough in learning new technologies and fail to take the initiative to follow up the industry development trend. The structural problems of the relevant teaching staff also further hinder the modernisation of teaching methods and contents, and the overall teaching level is obviously lagging behind the frontier of the industry.

3.4 Insufficient Depth of School-enterprise Cooperation and Limited Practical Teaching Resources

School-enterprise cooperation is an important way to improve the quality of practical teaching of vocational undergraduate enterprise digital management, but the depth of the current cooperation is still insufficient. Many of the cooperation only stays in enterprise visits, expert lectures and other shallow exchanges, the lack of in-depth curriculum co-construction and project practice, the school is difficult to obtain the real business data of the enterprise, the practical training projects are mostly used to simulate the data, and there is a large gap with the actual needs of the enterprise.

The hardware equipment and software platform required for practical teaching are updated slowly, which is difficult to support the teaching application of new technologies. Meanwhile, some practical training bases have insufficient investment in construction and outdated equipments, which are difficult to meet the demand for high-quality practical teaching. The participation of enterprises in curriculum development is low, and the number of school-enterprise co-constructed courses is limited, which leads to the disconnection between teaching content and industry reality, the match between internship positions and professional training objectives is not high, and it is difficult for students to really exercise their digital management ability during internships, and there is also a lack of in-depth co-operation mechanism, which makes it difficult to give full play to the effect of school-enterprise collaborative cultivation. At present, schools and enterprises lack long-term cooperation mechanisms and information sharing platforms, enterprises have limited support for actual projects in schools, and there are obvious faults between the two sides in resource integration and technology research and development, which seriously affects the relevance and effectiveness of practical teaching.

3.5 Uneven Digital Literacy of Students and Insufficient Employment Docking

The difference in students' digital basic ability has become an important factor affecting the effectiveness of teaching and learning, as some new students lack computer and information technology basics, while others already have certain digital skills, which leads to the difficulty of a unified teaching schedule to take care of all students, making it easy for those with a weak foundation to be intimidated when learning digital tools, which This affects the learning effect, while the lack of tiered teaching design and personalised training measures for students with different foundations in the current teaching programmes further aggravates the problem.

At the same time, there is a gap between the practical ability of graduates in data analysis, system operation and other core skills and the needs of enterprises, resulting in a long adaptation period after employment, and feedback from enterprises shows that some students still need a long time of training to be able to perform their jobs after joining the company, reflecting that the interface between talent training and job requirements is not close enough, especially in the data-driven decision-making, application of enterprise information systems and cross-sectoral collaboration, students' practical ability is not enough to meet the needs of the job. In particular, the practical ability of students in data-driven decision-making, enterprise information system application and cross-departmental collaboration still needs to be improved. Due to the lack of real-life project training and practical experience in enterprises, some graduates appear to be inadequate in solving complex business problems, and find it difficult to adapt quickly to the high-intensity, data-driven management environment.

4. The Optimisation path of Enterprise Digital Management

In order to cope with the above dilemma, it is necessary to systematically optimise the talent cultivation system of enterprise digital management vocational undergraduate majors, and the optimisation path covers the aspects of

curriculum setting, university-enterprise cooperation, practical teaching quality improvement and talent cultivation standard improvement.

4.1 Construct Accurate Talent Cultivation Standards

The accuracy of talent cultivation standards is the core of improving the quality of education for enterprise digital management majors. Universities should clearly define talent cultivation objectives, refine different directions such as data analysis and intelligent decision-making, enterprise information system management, digital marketing and operation, etc., so as to make the cultivation system clearer, and jointly formulate cultivation programmes with industry enterprises, professional associations and governmental agencies, so as to ensure that the curriculum meets the market demand, and at the same time, the curricula of the courses can be improved. At the same time, the curriculum structure adopts the mode of 'theory + practice' and increases the practical courses related to enterprise digital management in order to improve the practical ability of students. Universities should also pay attention to the close connection with the needs of enterprises, and constantly adjust their training programmes through regular research and market feedback, so as to ensure that the training of talents develops in tandem with the frontiers of the industry.

In addition, vocational undergraduate universities can learn from international advanced experience and launch industry-recognised vocational skills certification, such as data analyst certification and enterprise information management certification, to enhance the competitiveness of graduates in the job market, and implement the 'apprenticeship' mode of cultivation through co-operation with leading enterprises in the industry, so that students can come into contact with real projects of enterprises and improve their practical ability during their school years. Through cooperation with leading enterprises in the industry, the 'apprenticeship' training mode is implemented so that students can be exposed to real projects of enterprises and improve their practical ability during their school years, thus building up accurate talent training standards, better adapting the enterprise digital management major to the market demand, and cultivating high-calibre digital management talents to further promote the development of the industry and industrial upgrading.

4.2 Construct a Talent Training System Adapted to the Digital Era

Vocational undergraduate universities should reconstruct the talent training system for enterprise digital management majors, establish a curriculum structure that matches the needs of the digital economy era, focus on strengthening the content of cutting-edge technologies such as data analytics, AI, and blockchain in terms of the curriculum, and deeply integrate these digital technologies with management knowledge, and suggest the introduction of 'intelligent decision-making system', 'blockchain enterprise management application' and other core courses, to ensure that the proportion of technical courses is no less than 40%. At the same time, the proportion of practical training hours for digital management should be greatly increased, and students can practice their digital management ability in the virtual business environment by introducing real cases and simulation projects of enterprises, such as the development of 'sand table simulation of enterprise digital transformation' practical training course, so that students can experience the complete digital management process in the simulation environment, thus improving their practical ability. In addition, the dynamic adjustment mechanism of the curriculum is established. In addition, a dynamic adjustment mechanism for the curriculum is established, and industry experts are regularly invited to participate in the evaluation of the curriculum to ensure that the teaching content is always in sync with the development of the industry, so as to make the cultivation system of the enterprise digital management major more scientific, flexible and in line with the market demand. In order to meet the rapidly changing requirements of the digital economy, universities also need to constantly update teaching methods and experimental platforms, broaden the depth of interdisciplinary integration, enhance the interactive effect of theory and practice, so that the training system can truly achieve seamless docking with cutting-edge technology and industrial demand.

4.3 Enhance the Digital Teaching Ability of Teachers

Teacher construction is the key to improving the quality of professional teaching. Institutions should formulate a systematic plan to enhance the digital ability of teachers, and organise regular training on topics such as 'Integration of digital technology and management' and 'Application of big data analysis tools' to help teachers update their knowledge. Institutions should formulate a systematic plan to improve teachers' digital competence, organise regular training on topics such as 'integration of digital technology and management' and 'application of big data analysis tools' to help teachers update their knowledge structure, and suggest that they should arrange for teachers to go to cooperative enterprises for 1-2 months of practice every semester to take part in real digital projects in the enterprises and accumulate practical experience. At the same time, we should vigorously promote the 'dual-teacher' teaching mode, hire technical experts from leading enterprises to serve as part-time teachers, establish a stable team of enterprise tutors, and set up 'enterprise tutor studios', in which enterprise experts are responsible for guiding the practical courses and graduation design, in order to enhance the practical orientation of teaching. In order to enhance the practical orientation of teaching. In addition, institutions should also improve the evaluation mechanism for teachers, and incorporate digital teaching ability and enterprise practice experience into the assessment indicators, so as to motivate teachers to take the initiative to improve their professionalism and ensure that the teaching content is in sync with the development of the industry. At the same time, the university should promote the 'double enhancement' of teachers' teaching ability and scientific research ability, and encourage teachers to participate in research projects and industry-university-research co-operation projects in the field of digital management, so as to enhance their understanding of the industry's technological trends and the updating ability of teaching content, and to provide continuous intellectual support for the development of the profession.

4.4 Deepen School-enterprise Cooperation and Build a Practical Teaching Platform

Deepening the integration of production and education requires the establishment of a multi-level school-enterprise cooperation mechanism. Institutions should build 'joint laboratories for digital management' and 'intelligent manufacturing training bases' with leading enterprises in the industry, introduce the real working environment and project cases of enterprises, and implement the 'enterprise project embedded' teaching mode. Institutions should establish 'digital management joint laboratories' and 'intelligent manufacturing training bases' with leading enterprises in the industry, introduce the real working environment and project cases of enterprises, and implement the 'enterprise project embedded' teaching mode, so that the actual business problems of the cooperative enterprises can be transformed into teaching cases, and the students can improve their practical ability in the real project process. At the same time, school-enterprise collaborative education committees are set up, with senior executives and technical backbones of enterprises participating in the formulation of talent cultivation programmes, curriculum development and quality evaluation, so as to ensure that the teaching content closely meets the needs of the industry. In addition, we can explore the mode of 'factory in the school', build a digital management centre with real business functions on campus, and provide technical support and business guidance by enterprises, so as to realize the seamless connection between teaching and production, and further strengthen the practical ability and employment competitiveness of students. Institutions can also encourage teachers to carry out joint research with enterprises, transform research results into teaching resources, promote the continuous updating of teaching content, and enhance the depth and effectiveness of industry-teaching collaboration.

4.5 Strengthen the Multi-dimensional Evaluation System to Enhance the Competitiveness of Students in Employment

Establishing a scientific and perfect evaluation system is an important link to guarantee the quality of talent training. Institutions should reform the traditional examination methods, build a multi-dimensional evaluation system with practical ability at the core, and focus on the technical application of students' ability through the comprehensive assessment method of 'process evaluation + project result evaluation + enterprise evaluation'. Through the comprehensive assessment of 'process evaluation, project achievement evaluation and enterprise evaluation', we focus on students' technical application ability and problem solving ability, and cooperate with authoritative industry certification bodies to integrate professional qualification certification standards such as 'digital manager' and 'data analyst' into the curriculum system, so as to ensure that students have professional abilities in line with industry demand. Professional competence. In terms of employment guidance, we have established a perfect internship and employment service system, built 'Talent Customised Training Classes' with high-quality enterprises, locked employment positions in advance, and regularly held 'Digital Talent Dual-selection Fair', inviting leading enterprises in the industry to come to school for recruitment to provide students with The 'digital talent double-selection fair' is held regularly, and leading enterprises in the industry are invited to recruit in the school, so as to provide students with precise employment opportunities. In addition, we can also strengthen the training of workplace adaptability and provide supporting courses such as 'vocational quality' and 'workplace communication' to enhance the comprehensive employment competitiveness of students, so as to ensure that they can quickly adapt to the workplace environment and achieve high-quality employment.

5. Conclusion

The professional construction of enterprise digital management is a key breakthrough point in the reform of vocational undergraduate education and an important initiative to serve the strategy of the digital economy. In the face of digital transformation needs, vocational colleges and universities must break through the traditional management education model and focus on cultivating composite talents. The optimization path proposed in this paper mainly focuses on a number of aspects: accurately formulating talent cultivation standards, ensuring that the course content is closely aligned with industry demand; optimizing the curriculum system, strengthening the integration of 'management + data + technology'; improving the digital teaching ability of the faculty and promoting the 'dual teacher' teaching mode; deepening the school's teaching mode; and promoting the 'dual teacher' teaching mode. "Deepen the cooperation between schools and enterprises, build a practice teaching platform, and achieve a seamless connection between teaching and industry. This change is not only a teaching innovation, but also a reshaping of the value of vocational education. By accurately matching the needs of the industry and cultivating high-quality talents with data thinking and technology application capabilities, vocational education will achieve the leap from 'adapting to demand' to 'leading development'. With the in-depth application of digital technology, the programme is expected to become a model area for vocational undergraduate education, and to continuously deliver composite management talents who are 'business-savvy, technology-savvy and good at decision-making' for the construction of Digital China.

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