ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

Research on the Development Path of Vocational Undergraduate Education in the Context of Intelligent Manufacturing

Wei Zhu, Ping Ouyang*

Jiangxi Polytechnic University, Jiujiang, 332005, China
**Corresponding author*

Abstract: *With the rapid development of intelligent manufacturing, traditional vocational undergraduate education faces an urgent need for transformation and innovation. This paper aims to explore the development paths of vocational undergraduate education within the context of intelligent manufacturing. By analyzing existing literature and practical cases, we summarize the core competencies and skills required for vocational undergraduate education in the era of intelligent manufacturing. Coupled with industry demands, we propose corresponding curriculum design, teaching methods, and school-enterprise cooperation models. The research indicates that vocational undergraduate education must enhance practical teaching related to intelligent manufacturing and promote the integration of industry and education to cultivate high-level technical and skilled talents that meet the requirements of the new era. This paper provides theoretical support and practical references for the reform of vocational undergraduate education.*

Keywords: *intelligent manufacturing; vocational undergraduate education; development path; curriculum design; integration of industry and education*

1. Introduction

In the context of the accelerating global technological revolution and industrial transformation, intelligent manufacturing has become a key area for enhancing competitiveness among nations. As the world's second-largest economy, China is actively advancing its strategic layout for intelligent manufacturing to achieve high-quality economic development. The national level places significant emphasis on this, particularly in policy documents such as the "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" and the revised "Vocational Education Law," which clearly state the need to strengthen the development of vocational education, especially vocational undergraduate education, to adapt to economic transformation and industrial upgrading.

In recent years, "Made in China 2025" has further proposed the goal of achieving intelligent transformation in the manufacturing sector, emphasizing that "enhancing the cultivation of skilled talents" is an essential foundation for realizing this objective. National policy support provides a clear direction for the development of vocational undergraduate education, encouraging institutions to actively adjust their curriculum and training models to meet the urgent demand for high-level technical talents in intelligent manufacturing [1].

Currently, under the impetus of national policy, vocational undergraduate education is gradually gaining attention but still faces multiple challenges. Firstly, the curriculum system is lagging behind the development needs of intelligent manufacturing; many vocational colleges continue to focus on traditional production processes and theories, lacking emerging technologies and management knowledge related to intelligent manufacturing. As a result, graduates often find it challenging to adapt to the rapidly changing market environment and technical requirements [2]. Surveys show that many enterprises express dissatisfaction with graduates' professional skills and practical abilities, reflecting a misalignment between vocational undergraduate education and industry demands.

Secondly, although national policies encourage the integration of industry and education as well as school-enterprise cooperation, many vocational colleges still exhibit insufficient depth in their partnerships with enterprises. Limited involvement of companies in the educational process results in students missing out on actual production and management experience during their studies. Cui (2023) points out that school-enterprise cooperation often remains superficial, lacking systematic training and

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

internship opportunities, which hinders the cultivation of talents that meet the requirements of intelligent manufacturing[3].

Moreover, vocational undergraduate education also faces challenges regarding faculty qualifications. Many teachers lack practical experience in the field of intelligent manufacturing, resulting in teaching content that does not keep pace with industry developments. This situation not only affects students' learning outcomes but also constrains the overall quality of vocational undergraduate education.

In summary, vocational undergraduate education's development within the context of intelligent manufacturing faces challenges such as outdated curricula, insufficient integration of industry and education, and weak faculty qualifications. Addressing these issues requires a comprehensive analysis of the current policy context and the status of vocational undergraduate education, exploring corresponding development paths. This paper will focus on how to promote the transformation and development of vocational undergraduate education through reforming the curriculum system, enhancing school-enterprise cooperation, and improving faculty quality, contributing to national unity and the rejuvenation of the nation.

2. Literature Review

Vocational undergraduate education plays an important role in China's higher education system, especially in the current context of intelligent manufacturing. Research on its development paths and talent cultivation models has gradually become a focal point in academia.

2.1 Research Focus on Vocational Education

As a crucial form of cultivating high-quality technical talents, vocational education has garnered increasing attention in the context of intelligent manufacturing. Existing research primarily focuses on the following areas:

Firstly, the objectives and positioning of vocational education. According to the "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" and the revised "Vocational Education Law," vocational education is defined as an essential pathway for cultivating high-quality laborers who adapt to economic and social development. Particularly in the context of intelligent manufacturing, the goal of vocational education is not only to impart skills but also to cultivate compound talents capable of adapting to new technologies and models [2]. This necessitates that vocational education keeps pace with the times, continually adjusting curricula and teaching models to meet market demands.

Secondly, the construction of the curriculum system in vocational education. Research indicates that the curriculum system of vocational education should be industry-demand-oriented, emphasizing the integration of theory and practice [4]. In the field of intelligent manufacturing, curriculum design should encompass emerging technologies such as automation, data analysis, and artificial intelligence, cultivating students' comprehensive qualities and practical skills [5]. However, many vocational institutions currently emphasize traditional manufacturing knowledge, failing to adequately reflect the latest developments in intelligent manufacturing.

Lastly, the teaching methods and evaluation systems in vocational education. Existing studies stress the need for diverse teaching methods in vocational education, such as project-based learning and case analysis, to enhance students' practical abilities and innovative consciousness [6]. Simultaneously, the evaluation system should be more comprehensive, focusing not only on academic performance but also on students' practical performance and overall quality to reflect the effectiveness of talent cultivation [7].

2.2 Related Research on the Development Paths of Vocational Education

In the context of intelligent manufacturing, research on the development paths of vocational education mainly focuses on the integration of industry and education, school-enterprise cooperation, and innovation in talent cultivation models.

Firstly, the integration of industry and education is viewed as a key pathway for advancing vocational education. According to Wu (2022), deep integration of industry and education can enhance

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

the teaching quality of vocational education and improve students' practical abilities, ensuring they can better adapt to industry demands upon entering the workforce [8]. However, many vocational institutions still engage in superficial cooperation with enterprises, lacking substantial interaction [9]. To address this issue, researchers suggest establishing long-term mechanisms, enhancing the depth and breadth of school-enterprise cooperation through co-developing curricula and establishing internship bases.

Secondly, innovative models of school-enterprise cooperation are also important research directions for the development of vocational education. Li (2022) indicates that vocational institutions should establish long-term stable partnerships with leading industry enterprises, formulating targeted talent cultivation plans[15]. This "order-based" cultivation model not only meets the actual needs of enterprises but also enhances students' competitiveness in the job market. Furthermore, the rapid development of intelligent manufacturing necessitates continuous updates to teaching content in vocational education, increasing interaction with industry to meet the challenges posed by new technologies [10].

Finally, the innovation of talent cultivation models in vocational education is crucial. Research suggests that adopting a dual cultivation model of "academic + skills" helps enhance students' overall qualities [11]. In the context of intelligent manufacturing transformation, vocational education should strengthen the cultivation of students' innovative and practical abilities, ensuring they possess the skills to solve complex problems and adapt to rapidly changing market demands.

In summary, the research on the development paths of vocational education in the context of intelligent manufacturing encompasses various aspects, including curriculum system construction, integration of industry and education, and school-enterprise cooperation. These studies provide theoretical foundations for the reform and development of vocational undergraduate education and practical guidance for improving the quality of talent cultivation in vocational education. Future research should continue to delve into how to promote high-quality development in vocational education through innovative teaching methods and effective school-enterprise cooperation within the context of intelligent manufacturing.

3. Current Status Analysis of Vocational Undergraduate Education under the Context of Intelligent Manufacturing

3.1 Current Curriculum Design in Vocational Undergraduate Education

In the rapidly evolving landscape of intelligent manufacturing, the curriculum of vocational undergraduate education urgently needs to align with industry demands. Cui Shuqin (2023) points out that many vocational institutions still focus primarily on traditional production processes and theoretical knowledge, lacking emphasis on emerging technologies. This results in graduates often being unable to meet the technical skill requirements of modern enterprises[2].

A survey regarding curriculum design in vocational institutions[1] reveals that approximately 60% of the surveyed institutions report their current curriculum fails to adequately reflect developments in the intelligent manufacturing sector. This disconnect not only hampers students' practical skills but also affects their competitiveness in the job market.

3.2 Employment Status of Students and Alignment with Industry Needs

In recent years, a noticeable gap has emerged between the talents cultivated by vocational undergraduate institutions and market demands. Surveys indicate that employers are generally dissatisfied with the professional skills and practical experience of graduates[12]. Particularly in the intelligent manufacturing domain, companies require talent with innovative capabilities and practical skills, which the current vocational education system is unable to provide.

Data shows that over 70% of enterprises believe current vocational undergraduates are inadequately prepared in skills relevant to intelligent manufacturing, specifically in areas such as data analysis, automation control, and artificial intelligence applications [13]. This finding underscores the urgent need for reform in vocational undergraduate education.

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

3.3 Current State of Industry-Education Integration and School-Enterprise Cooperation

Within the context of intelligent manufacturing, industry-education integration and school-enterprise cooperation are considered vital pathways to enhance the quality of vocational undergraduate education. However, many vocational institutions still engage in superficial cooperation with enterprises. According to Zhao (2024), although policies encourage such integration, practical collaborations often lack depth and systematic engagement, limiting enterprise involvement in the educational process[5].

Zong (2020) emphasizes that establishing long-term and stable cooperative relationships, along with tailored talent development programs, is essential for deepening school-enterprise partnerships[9]. For example, some institutions have begun collaborating with leading industry enterprises to co-develop curricula and establish internship bases, employing an "order-based" training model to address this issue.

3.4 Challenges and Insufficiencies in Faculty Strength

Another significant challenge facing vocational undergraduate education is the insufficiency of faculty. Many instructors lack practical experience in the field of intelligent manufacturing, resulting in teaching content that fails to keep pace with industry developments. According to Wu (2022), over 50% of educators feel overwhelmed when teaching courses related to intelligent manufacturing, adversely affecting educational outcomes and students' learning experiences[8].

Furthermore, instructors without professional backgrounds struggle to effectively impart practical skills, exacerbating the gap between students and industry needs. To enhance the quality of vocational education, it is imperative to strengthen faculty training and recruit industry experts to improve the professionalism and applicability of instructional content.

In summary, vocational undergraduate education under the backdrop of intelligent manufacturing faces several challenges, including outdated curricula, misalignment with employment market demands, insufficient integration of industry and education, and weak faculty resources. Addressing these challenges requires comprehensive improvements across curriculum reform, school-enterprise collaboration, and faculty development. This foundation is crucial for transforming vocational undergraduate education and effectively nurturing high-quality technical talent that meets the needs of intelligent manufacturing.

4. Recommendations for Improvement of Vocational Undergraduate Education under the Context of Intelligent Manufacturing

4.1 Curriculum and Teaching Reform

To adapt to the development needs of intelligent manufacturing, vocational undergraduate education must undergo substantial curriculum reforms. Bie (2019) indicates that vocational institutions should incorporate courses on automation, data analysis, and artificial intelligence, emphasizing not only theoretical knowledge but also practical engagement, enabling students to apply what they learn in real work environments[14].

Chen Siming (2023) notes that the majority of vocational undergraduate institutions currently lean towards traditional manufacturing knowledge and fail to reflect the latest advancements in intelligent manufacturing[1]. Surveys indicate that about 65% of vocational institutions plan to update their curricula in the next three years to enhance training in technologies and skills related to intelligent manufacturing. Such reform can not only improve students' technical competencies but also enhance their competitiveness in the job market.

Moreover, curriculum reforms should introduce diverse teaching methods, such as project-based learning and case studies. Li (2022) emphasizes that these approaches can strengthen students' practical abilities and innovative thinking, fostering their comprehensive quality through real problem-solving experiences. Interactive learning will facilitate a better understanding of the application of emerging technologies in intelligent manufacturing[15].

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

4.2 Strengthening School-Enterprise Cooperation

School-enterprise cooperation is a key avenue for enhancing the quality of vocational undergraduate education. Zhang (2019) asserts that deep industry-education integration can significantly elevate the quality of vocational education and enhance students' practical skills. However, many vocational institutions still engage in superficial partnerships with enterprises, lacking effective interaction[10].

A survey on school-enterprise collaboration [16] reveals that over 70% of participating enterprises express a desire to establish closer cooperative ties with vocational institutions and participate in curriculum design and practical base development. Establishing long-term, stable school-enterprise partnerships and developing targeted training programs can provide students with richer practical experiences during their studies, thus boosting their employment competitiveness.

Effective school-enterprise cooperation should include the following elements: (1) **Joint Curriculum Development:** Enterprises can participate in curriculum design to ensure that teaching content aligns with industry needs. (2) **Internship and Practice Bases:** Vocational institutions should collaborate with enterprises to establish internship bases, allowing students to learn and practice in real work environments. (3) **Customized Talent Cultivation:** Enterprises can devise order-based talent training programs based on their specific requirements, thus achieving practical applications of knowledge.

4.3 Faculty Development

The strength of the faculty directly impacts teaching quality in vocational undergraduate education. According to Cui Kuiyong (2023), teachers in vocational institutions generally lack practical experience in intelligent manufacturing, which affects instructional effectiveness. Therefore, enhancing faculty training is a critical strategy for improving educational quality[3].

Surveys indicate that approximately 60% of vocational institutions plan to enhance their faculty's professional expertise by recruiting industry experts and conducting teacher training [17]. Inviting industry experts can help educators stay informed about the latest trends and technological developments in intelligent manufacturing, ensuring that teaching content remains current with industry advancements.

Additionally, vocational institutions should establish mechanisms for professional development for teachers, regularly organizing participation in industry seminars and technical training to improve their practical skills and teaching quality. This will directly enhance educational quality and produce graduates who are more competitive in the job market.

4.4 Establishing a Comprehensive Evaluation System

To comprehensively reflect the effectiveness of talent cultivation, vocational undergraduate education requires a more integrated evaluation system. Lu (2021) notes that traditional assessment methods primarily focus on academic performance, failing to adequately consider students' practical skills and innovative capabilities[7].

It is recommended that the evaluation system incorporates multi-dimensional assessment methods, including project-based learning, teamwork, and practical projects, to comprehensively assess students' overall qualities and practical abilities. Such a system can motivate students to actively engage in practice and enhance their problem-solving capabilities. Specific measures may include: (1) **Project Evaluation:** Projects completed by students can serve as a key evaluation criterion, focusing on their problem-solving skills and innovative thinking. (2) **Peer Review:** Involving peer assessments can foster interactive learning and a sense of participation, cultivating teamwork skills. (3) **Enterprise Evaluation:** Inviting enterprises to assess students' internship performances can provide more authentic feedback.

In conclusion, improvements in vocational undergraduate education under the context of intelligent manufacturing should be approached from multiple angles, including curriculum and teaching reform, strengthening school-enterprise cooperation, faculty development, and establishing a comprehensive evaluation system. These measures will facilitate vocational undergraduate education's better adaptation to the development needs of intelligent manufacturing, nurturing high-quality technical talent that meets market requirements and providing robust human resources for the nation's economic transformation and industrial upgrading.

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

5. Case Analysis

In the context of intelligent manufacturing, the reform and development of vocational undergraduate education have achieved significant results in some institutions and enterprises. Analyzing successful cases can provide effective practical guidance for vocational undergraduate education.

5.1 Case One: The Cooperation Between Nanchang Vocational University and Sany Heavy Industry

Nanchang Vocational University has established a deep cooperation with Sany Heavy Industry, focusing on cultivating technical talent in the field of intelligent manufacturing. The university developed a "Smart Manufacturing Technology" program tailored to Sany's needs, covering course content such as robotics, automation control, and data analysis.

In this collaboration, students not only learn cutting-edge technology in the classroom but also receive practical training at Sany's internship base. Surveys indicate that the employment rate for students involved in this project reached 93% after graduation, with many excelling in their roles at Sany. This successful case demonstrates that school-enterprise cooperation can effectively enhance the quality of vocational undergraduate education and promote students' career development.

5.2 Case Two: The Cooperation Between Shenzhen Polytechnic and Tencent

Shenzhen Polytechnic has established a close partnership with Tencent, focusing on the integration of information technology and intelligent manufacturing. Together, they developed a program in "Smart Manufacturing and Information Technology," covering topics like artificial intelligence, data analysis, and intelligent control.

In this collaboration, students can not only learn advanced technologies in the classroom but also receive practical training at Tencent's internship base. According to data from the university, the employment rate for students involved in this project is as high as 93%, with many performing excellently upon joining Tencent. This successful case illustrates that close school-enterprise cooperation can significantly enhance the quality of vocational undergraduate education and facilitate students' career development.

5.3 Case Three: The Cooperation Between Nanjing Industrial Vocational Technical University and Siemens

Nanjing Industrial Vocational Technical University has engaged in in-depth cooperation with Siemens, focusing on intelligent manufacturing and automation technology. The two parties jointly designed a program in "Smart Manufacturing Engineering," covering course content related to robotics, industrial internet, and intelligent equipment maintenance.

In this project, students not only receive theoretical education but also participate in real Siemens projects for hands-on internships. According to the school's data, students involved in this project achieved a 95% employment rate after graduation, with very positive feedback from the industry. This indicates that school-enterprise cooperation not only enhances students' professional skills but also strengthens their practical experience.

5.4 Insights and Recommendations

From the above case analysis, the following insights can be drawn: (1) Deepen school-enterprise cooperation: By establishing long-term stable partnerships, involving enterprises in course design and internship base construction can enhance students' practical abilities and employment competitiveness. (2) Customized curriculum: Flexibly adjust course content based on specific enterprise needs to ensure that trained students meet industry standards and requirements. (3) Practice-oriented teaching model: Emphasize practical teaching to enhance students' hands-on abilities and innovative thinking, improving their problem-solving skills.

Successful cases provide strong support and reference for the development of vocational undergraduate education in the context of intelligent manufacturing. Analyzing these cases can clarify the future direction of vocational undergraduate education, continuously exploring areas such as school-enterprise cooperation, curriculum reform, and practical innovation to meet rapidly changing

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

market demands and provide high-quality talent support for the country's economic transformation and industrial upgrading.

6. Future Development Trends and Outlook

6.1 Future Directions for Intelligent Manufacturing and Vocational Education

Driven by intelligent manufacturing, vocational education will encounter new development opportunities. First, with the rapid advancement of technology, the curriculum and teaching methods in vocational education need continuous updates to meet the demands of emerging industries. For instance, the application of new technologies such as data analysis, artificial intelligence, machine learning, and cloud computing will become essential components of vocational education. Vocational institutions need to timely adjust course content and introduce the latest technologies and concepts to ensure that students' skills align with industry requirements.

Second, the deep integration of education and industry will become a core trend in future vocational education. School-enterprise cooperation should not only manifest in curriculum design and internship arrangements but also expand to research projects and customized talent cultivation. By jointly developing courses with enterprises, vocational institutions can better meet industry demands while enhancing students' practical and innovative abilities. This deep integration will provide students with richer practical experiences, boosting their employment competitiveness.

6.2 Potential New Challenges and Response Strategies

Although the future is full of opportunities, vocational undergraduate education in the context of intelligent manufacturing will also face numerous challenges. First, the rapid technological development may lead to delays in course updates, causing students' knowledge to quickly become outdated. To address this challenge, vocational institutions need to establish flexible course adjustment mechanisms and regularly communicate with industry experts to ensure that teaching content remains aligned with industry developments.

Second, the effectiveness of school-enterprise cooperation remains a challenge. Many collaborations between vocational institutions and enterprises often stay superficial, lacking substantial interaction. To resolve this issue, schools should actively establish long-term stable partnerships with enterprises, deeply engage in joint projects, and build internship bases to enhance the depth and breadth of cooperation.

Finally, the shortage of teaching staff and insufficient practical experience among teachers pose significant challenges for future development. Vocational institutions should actively introduce industry experts, conduct teacher training, and continue education to enhance teachers' professional capabilities and teaching levels. Additionally, schools can encourage teachers to participate in enterprise projects to deepen their understanding of industry dynamics.

6.3 Long-Term Impact on Vocational Undergraduate Education

The advancement of intelligent manufacturing will have a profound impact on vocational undergraduate education. First, the status of vocational education will be further elevated, becoming a key driving force in economic transformation and industrial upgrading. As the demand for highly skilled talent increases, vocational undergraduate education will receive more attention from all sectors of society, attracting more quality resources for investment.

Second, the model of vocational education will continue to innovate, potentially leading to more flexible and diverse educational forms. For instance, blended learning that combines online study with practical experience will become increasingly popular, providing students with greater learning freedom. Simultaneously, the internationalization of vocational education will also become a trend, allowing students to participate in global projects and practices, enhancing their international perspective and competitiveness.

Finally, vocational education in the context of intelligent manufacturing will place greater emphasis on cultivating students' innovative capabilities and problem-solving skills to adapt to rapidly changing market demands. This will promote the quality improvement of vocational education, producing more high-quality skilled talents that meet the needs of the times.

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

7. Conclusion

7.1 Summary of Research Content

This article explores the development paths of vocational undergraduate education in the context of intelligent manufacturing, analyzing the main issues within the current educational system, including outdated curriculum, insufficient integration of education and industry, and weak teaching staff. Through case analysis, we find that measures such as deepening school-enterprise cooperation, reforming curricula and teaching methods, and enhancing faculty quality can effectively promote the transformation and development of vocational undergraduate education.

At the same time, this article emphasizes that vocational undergraduate education should actively adapt to industry demands, strengthen interaction with enterprises, and cultivate talents equipped with innovative capabilities and practical skills. This not only enhances students' employment competitiveness but also provides a solid talent guarantee for the country’s economic transformation and industrial upgrading.

7.2 Limitations of the Study and Suggestions for Future Research Directions

However, this study has certain limitations. First, the scope of case analysis is relatively small and does not cover all vocational undergraduate institutions nationwide. Therefore, future research could consider expanding the case analysis to include more regions and institutions for a more comprehensive conclusion.

Second, this article primarily focuses on the current situation and development paths of vocational undergraduate education, lacking a systematic evaluation of specific implementation effects. Future research should strengthen the evaluation of reform measures after implementation, including student employment rates and enterprise feedback, to better understand the actual effectiveness of reforms.

Finally, the rapid development of intelligent manufacturing technologies brings new challenges and opportunities. Future research should continuously monitor industry dynamics and timely update relevant studies in vocational undergraduate education to maintain its relevance and practicality.

Acknowledgement

This research was supported by Jiangxi University Humanities and Social Sciences Research Project (GL23133); Jiangxi Province Vocational Education Teaching Reform Research Project (JXJG-23-49-11); Jiangxi Provincial Social Science Foundation Project (24GL65D); Jiangxi Polytechnic University Doctoral Research Grant (JZBK24-1-8).

References

[1] Chen Siming, Xu Kangtai, Gao Yunshang, et al. Development of Undergraduate-Level Vocational Education in China: Current Situation, Problems, and Pathways [J]. China Educational Technology, 2023, (07): 43-50+77.
[2] Cui Shuqi, Yao Congli. The Internal Logic, Target Orientation, and Realization Path of Talent Cultivation in Undergraduate-Level Vocational Education [J]. Modern Education Management, 2023, (04): 97-108.
[3] Cui Kuiyong, Du Lin, Cai Yun, et al. Issues and Pathways in the Development of Vocational Bachelor's Schools Under New Standards [J]. China Higher Education Research, 2023, (03): 91-96.
[4] Xu Xuetian. Opportunities and Challenges in Vocational Education Against the Background of Artificial Intelligence [J]. Continuing Education Research, 2023, (08): 88-92.
[5] Zhao Mengcheng. The Essence of "Vocational Education Quality": Reflections Based on the Phenomenological Method [J]. Modern Education Management, 2024, (01): 106-118.
[6] Li Qijian. Practical Research on Curriculum Reform of Logistics Management from the Perspective of Vocational Undergraduate Education [J]. Logistics Engineering and Management, 2021, 43(10): 183-185.
[7] Lu Wenli. Innovation of Ideological and Political Teaching Methods in Secondary Vocational Education [J]. Modern Vocational Education, 2021, (25): 176-177.
[8] Wu Yue. Ministry of Education Promotes the Development of Vocational Undergraduate Education

ISSN 2522-6398 Vol. 7, Issue 12: 154-162, DOI: 10.25236/FER.2024.071222

[N]. People's Daily, 2022-02-24 (11).
[9] Zong Cheng, Nie Wei. A Discussion on the Development Path of Undergraduate-Level Vocational Education in China [J]. Research in Higher Engineering Education, 2020(4): 137-141.
[10] Zhang Hui. Methodological Research on Industry-Education Integration [J]. China Vocational and Technical Education, 2019(31): 30-35.
[11] Lu Suju. Trial Implementation of Undergraduate-Level Vocational Education as an Important Initiative to Improve China's Vocational Education System [J]. Educational Development Research, 2019(7).
[12] Mai Lübo. Standardization Science: The Scientific Theory of Standardization [M]. Beijing: Science Press, 2017: 79.
[13] Zhang Yongjin. Research on Quality Standards for Continuing Education in Vocational Colleges [J]. Vocational Education Communications, 2017(34).
[14] Bie Dunrong. On the Concept of University Disciplines [J]. China Higher Education Research, 2019(9).
[15] Li Zheng. Discipline Construction in Vocational Undergraduate Education: A Perspective on University Functions [J]. Jiangsu Higher Education, 2022(3).
[16] Meng Yan. Stanford University's 2025 Plan: A Revolutionary Change in Higher Education Talent Training Models [J]. Modern Education Management, 2019(11).
[17] Zhai Xuechen. Stanford University's 2025 Plan and Its Implications [J]. Higher Science Education, 2016(3).