

Research on the Craftsman Spirit and Cultural Education in the Context of "Machine Replacing Humans"

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Abstract. In recent years, the craftsman spirit has received extensive attention and discussion in various fields. As a spiritual quality that pursues excellence, pays attention to details, and has a serious attitude, the craftsman spirit plays an important role in cultural education. This paper studies the integration of the craftsman spirit and cultural education and its implementation in education and social practice under the background of "machine replacing humans". Through curriculum design, innovation in teaching methods, teacher training, and support from enterprises and the social environment, the aim is to cultivate well-rounded talents with professional skills and cultural literacy. In the face of challenges, strategies such as resource integration and teacher training are proposed to promote the in-depth implementation of educational concepts and contribute to national development and cultural heritage.

Keywords: machine replacing humans; craftsman spirit; talent cultivation model; practical ability

1 Introduction

In the rapidly evolving landscape of modern society, the cultivation of talents equipped with both professional skills and cultural literacy has become increasingly crucial [1-3]. The craftsman spirit, characterized by its emphasis on focus, excellence, innovation, and cultural education, offers a profound approach to nurturing individuals who can contribute significantly to societal advancement and cultural prosperity [4-6]. This paper endeavors to explore the intricate interplay between the craftsman spirit and cultural education in the contemporary era, shedding light on their combined potential to foster holistic personal development.

By dissecting the core components of the craftsman spirit and cultural education, this study aims to unveil the intrinsic values that underpin these concepts [7]. Furthermore, it delves into the practical implications of integrating these principles within educational frameworks and societal practices, proposing strategic measures to address the multifaceted challenges that arise in this endeavor.

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Ultimately, this research seeks to advocate for a synergistic approach to education that harmonizes technical expertise with cultural sophistication, thereby equipping individuals with the competencies required to navigate the complexities of the globalized world [8-9]. Through a meticulous examination of successful case studies and continuous refinement of implementation strategies, this paper aspires to contribute to the ongoing discourse on talent cultivation and societal development.

2 The Connotation and Value of Craftsman Spirit

2.1 The Connotation of Craftsman Spirit

The connotation of craftsman spirit generally includes the following aspects: (1) Focus and Persistence: Craftsman spirit is first manifested in the focus on work and the persistent pursuit of skills. Craftsmen are usually passionate about their work and willing to invest a lot of time and energy in improving their skills. (2) Pursuit of Excellence: Craftsman spirit emphasizes the ultimate pursuit of product quality, constantly improving and refining, striving to achieve the highest standards. This attitude of pursuing excellence is the core of craftsman spirit. (3) Innovation and Exploration: Although craftsman spirit is related to inheritance, it also encourages innovation and exploration. While inheriting traditional skills, craftsmen also continuously explore new technologies and methods to adapt to the development of the times. (4) Patience and Attention to Detail: Craftsman spirit is also reflected in the patience in the work process and attention to details. Craftsmen pay attention to every detail in the production process and strive for perfection. (5) Inheritance and Education: Craftsman spirit emphasizes the inheritance of skills and education of future generations. Craftsmen are willing to pass on their knowledge and skills to younger generations to ensure the continuation and development of skills.

2.2 The Value of Craftsman Spirit

Meanwhile, craftsman spirit should have the following values: (1) Improve Product Quality: The practice of craftsman spirit helps improve the quality of products and services, meeting consumers' pursuit of high-quality life. (2) Promote Technological Innovation: Craftsman spirit encourages innovative thinking, promotes technological progress and product innovation, helping enterprises maintain advantages in market competition. (3) Cultivate Professional Talents: Through the cultivation of craftsman spirit, a group of talents with high skills and professional spirit can be cultivated, providing support for social and economic development. (4) Promote Traditional Culture: Craftsman spirit is closely linked to traditional culture. By inheriting and promoting craftsman spirit, it helps protect and promote national culture. (5) Shape Social Values: The promotion of craftsman spirit helps form a social value that respects labor and pursues excellence, promoting social harmony and progress. (6) Enhance National Soft Power: The international spread of craftsman spirit can enhance the country's cultural soft power and influence on the international stage. (7) Promote Sustainable Development:

The craftsmanship spirit advocated by excellence and respect for the environment contributes to the sustainable development of economy, society, and the environment.

3 Cultural Education: Theory and Practice

Cultural education is an educational concept that integrates cultural elements into the educational process to cultivate well-rounded talents with profound cultural heritage, good moral qualities, and innovative abilities.

3.1 Theoretical Foundations

Culture is usually defined as the lifestyle of a society or group, including its values, beliefs, customs, arts, scientific knowledge, etc. The goal of cultural education is to cultivate students' cultural identity, aesthetic ability, moral literacy, and innovative thinking through cultural education. The relationship between culture and education is usually that education is an important way to inherit and develop culture. Cultural education emphasizes that education should be closely connected with culture, reflecting and promoting national culture.

3.2 Educational Practices

To integrate culture into teaching, curriculum design is required, which means integrating cultural elements such as history, literature, art, philosophy, etc., into the curriculum design so that students can come into contact with and understand rich cultural heritage during the learning process. At the same time, diversified teaching methods, such as discussions, role-playing, case analysis, etc., should be adopted to stimulate students' interest in and reflection on culture. Through campus cultural activities, such as cultural festivals, art exhibitions, academic lectures, etc., a strong cultural atmosphere should be created so that students can learn and experience in participation. For vocational college students, they should be encouraged to participate in social practice, such as volunteer services, cultural exchanges, field investigations, etc., to experience and spread culture through practical actions. At the same time, cross-cultural communication should be carried out. Through international exchange programs, students can be exposed to different cultures and cultivate their ability to communicate and understand across cultures.

4 The Integration of Craftsman Spirit and Cultural Education in the New Era

The integration of craftsman spirit and cultural education in the new era is a multidimensional and interdisciplinary topic involving education, economy, society, and other levels.

4.1 Conceptual Integration

First, there should be common values. Both the craftsman spirit of the new era and cultural education emphasize the pursuit of quality, respect for tradition, and encouragement of innovation. This provides an ideological basis for their combination. At the same time, they share the same educational goals. Integrating craftsman spirit into cultural education aims to cultivate students' professional skills, innovative abilities, and cultural literacy to meet the development needs of the new era.

4.2 Educational Practices

In educational practices, curriculum settings need to be made, incorporating elements of craftsman spirit into educational courses, such as craftsmanship production, technical practice, vocational experience, etc., allowing students to experience the craftsman spirit in practice. In terms of teaching methods, project-based learning, master-apprentice teaching methods, etc., should be adopted so that students can learn and experience the craftsman spirit in actual operations. In terms of teacher training, strengthen teachers' training in craftsman spirit, improve their professional skills and teaching abilities, and make them role models for students to learn the craftsman spirit.

5 How to Combine Craftsman Spirit and Cultural Education in Practice

Implementing craftsman spirit and cultural education in practice is a systematic project that requires joint efforts from the education system, corporate culture, social environment, policy support, and other aspects.

5.1 Implementation in the Education System

Integrate elements of craftsman spirit into curriculum design, such as technical education, vocational education, art education, etc., allowing students to experience and understand craftsman spirit in the learning process. Strengthen practical teaching links, such as laboratory operations, craftsmanship production, internships, etc., so that students can cultivate professional skills and craftsman spirit in actual operations. Strengthen the cultivation of teachers' professional skills and craftsman spirit, improve teachers' teaching abilities and exemplary roles. Establish an evaluation system oriented towards craftsman spirit, evaluating not only students' knowledge and skills but also their innovative abilities, professional spirit, and cultural literacy. Create a campus cultural atmosphere through activities such as cultural festivals, craft exhibitions, academic lectures, etc., so that students can learn and experience craftsman spirit in participation.

5.2 Implementation in Corporate Culture

Include craftsman spirit in the employee training system, cultivate employees' professional spirit and innovative abilities through skill training, career development planning, etc. Establish an innovation incentive mechanism to encourage employees to propose innovative ideas and participate in product improvement and technological research and development. Pay attention to the inheritance and development of corporate culture, understand and inherit corporate culture through the establishment of corporate museums, holding cultural activities, etc. Create a working environment that respects professionalism and encourages innovation, allowing employees to experience and practice the craftsman spirit in daily work.

6 Conclusions

This article conducts an in-depth analysis of the connotation and value of the craftsman spirit and cultural education in the new era and explores their effective integration in educational and social practices. The focus, pursuit of excellence, innovation, and exploration of the craftsman spirit, as well as the profound cultural heritage and innovation ability cultivation of cultural education, together constitute the core concept of talent cultivation in the new era.

Through the curriculum design, teaching method innovation, and strengthening of teacher training in the education system, as well as the coordinated development of corporate culture, social environment, and policy support, we can provide students with a comprehensive development platform. At the same time, in the face of challenges such as information overload, cultural diversity, and technological development, the strategies proposed in this article, such as resource integration, teacher training, and home-school cooperation, provide feasible solutions for educational practices.

The combination of the craftsman spirit and cultural education in the new era not only promotes the integration of professional skills and cultural literacy but also lays the foundation for cultivating talents with an international perspective and social responsibility. Through continuous monitoring and improvement, we can ensure the indepth implementation of this educational concept and make positive contributions to promoting social progress and cultural prosperity.

Acknowledgment

This work was supported by the General Research Project under the Beijing Education Science "14th Five-Year Plan" for the Year 2023 [grant numbers CDDB23231].

References

1. Jung, Jin Hwa, Lim, Dong-Geon. (2020). Industrial robots, employment growth, and labor cost: A simultaneous equation analysis, Technological Forecasting and Social Change, 159,

120202...

- Frey, Carl Benedikt, Osborne, Michael A. (2017). The future of employment: How susceptible are jobs to computerization? Technological Forecasting and Social Change, 114: 254-280.
- 3. Ji, C. Y. (2019). Research on talent cultivation mechanism in vocational colleges based on craftsman spirit. Education and Career, (23), 51-54. https://doi.org/10.13615/j.cnki.1004-3985.2019.23.009.
- Yam, K.C., Eng, Alexander, Gray, Kurt. (2024). Machine Replacement: A Mind-Role Fit Perspective. Annual Review of Organizational Psychology and Organizational Behavior, 12.
- Zhang, C. F. (2022). Exploration of the integration practice path of excellent traditional Chinese culture and cultural education in higher vocational colleges. Education and Career, (12), 108-111. https://doi.org/10.13615/j.cnki.1004-3985.2022.12.007.
- 6. Lee, Yong Suk, Kim, Taekyun, Choi, Sukwoong, Kim, Wonjoon. (2022). When does AI pay off? AI-adoption intensity, complementary investments, and R&D strategy, Technovation, 118, 102590.
- Liu, C. Q. (2022). Connotation analysis, logical orientation, and system construction of the cultivation culture in vocational bachelor's education. Education and Career, (07), 55-60. https://doi.org/10.13615/j.cnki.1004-3985.2022.07.002.
- 8. Wang, Z. Q. (2022). Logic, methods, and realization mechanism of integrating craftsman spirit into ideological and political education in higher vocational colleges. Journal of Vocational Education Forum, 38(08), 123-128.
- 9. Dekle, Robert. (2020). Robots and industrial labor: Evidence from Japan. Journal of the Japanese and International Economies, 58, 101108.

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