SOCIAL PARTNERSHIP FOR VOCATIONAL EDUCATION DEVELOPMENT IN DIGITAL ERA OF VOCATIONAL COLLEGES UNDER ZHEJIANG PROVINCE

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ABSTRACT

The objectives of this research were: (1) to propose the framework of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province; and (2) to develop the future wheels of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province.

A qualitative approach utilizing the Delphi technique was employed, involving 20 key informants from diverse vocational education backgrounds. Their insights critically informed the suggested social partnership framework. Data were collected and then encoded and categorized using both the Delphi technique and the future wheels study. Instruments used for data collection included an open-ended interview form and a five-point rating scale questionnaire. Data analysis methods incorporated mode, median, Inter Quartile Range, and content analysis.

The research revealed that: (1) a framework that accentuates dynamic interactions across micro, meso, and macro levels of social partnerships was proposed. Four dimensions were pinpointed at the micro level, five dimensions at the meso level, and three dimensions at the macro level. These dimensions not only reflect broader socio-political and economic influences but also underscore the significance of inclusive vocational education policies; and (2) future wheels for vocational education development in the digital era, tailored for

vocational colleges in Zhejiang Province, were derived from expert evaluations of emerging trends.

Keywords: Social Partnership, Vocational Education Development, Digital Era

1. Introduction

Vocational education played a pivotal role in economic development, especially in rapidly industrializing and digitally advanced regions like Zhejiang Province, which was renowned as China's manufacturing hub and the epicenter of digital techniques. As digital technology merged with traditional manufacturing, vocational education faced both new opportunities and challenges. High transaction costs and information imbalances led to a "supply-demand imbalance", emphasizing the need for solid collaborations between vocational colleges and industries. Social partnerships helped vocational education align with labor market demands, enhancing job opportunities and driving economic growth. However, in areas like Zhejiang, the adoption of such partnerships was still in its early stages. While much existing research focused on theoretical aspects, the practical implications, especially the influence of digital innovations, often got less attention. This research examined the social partnership approach in Zhejiang's vocational education landscape, highlighting the importance of digitalization. Drawing insights from global models and considering China's unique situation, this research offered a vocational education approach that fit current needs. It pointed out the essential factors for successful vocational education partnerships and offered suggestions for aligning education with economic goals.

While the main focus of this research was on Zhejiang, its findings were also relevant for other regions globally seeking to establish similar vocational education collaborations. The research represented a shift in vocational education research from qualitative methods to a more detailed, data-focused exploration. At its core, this article explored the relationship between vocational education, social partnerships, and digital transformation in the context of Zhejiang Province. The results were important for shaping education policies and preparing the workforce for the challenges of the digital age.

2. Research Questions

(1) What are the frameworks of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province?

(2) What are the future wheels of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province?

3. Research Objectives

(1) To propose the frameworks of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province.

(2) To develop the future wheels of social partnership for vocational education development in digital era of Vocational Colleges under Zhejiang Province.

4. Research Method

(1) Research Design

This research adopted a qualitative approach to unpack the intricacies of social partnership in vocational education during Zhejiang Province's digital transformation. Initially, an exhaustive literature review identified critical theories and concepts in the field, laying the foundation for a developmental evaluation indicator system. Building on this, the Delphi technique was employed, engaging experts from diverse sectors, including academia, industry, and government. Their insights, captured through semi-structured interviews and subsequent analysis methods like Mode, Median, and IQR, crafted a province-specific framework. Finally, future wheels were harnessed through focus group discussions to visualize the evolving landscape of vocational education's social partnerships. This holistic design, encapsulating literature insights, expert consensus, and future projections, ensured a robust exploration of Zhejiang's vocational education in the digital era.

(2) Population and Sample

The research enlisted twenty key informants to probe the diversity dimensions and variables of social partnership in vocational education during Zhejiang Province's digital era. These participants spanned roles from academic researchers and governmental policy makers to college leaders, students, and industry executives. Eight key informants, including policy makers, educators, and business leaders, were chosen to rigorously examine the future wheels. Their diverse perspectives underpinned a comprehensive understanding, while upholding the utmost confidentiality and participant autonomy.

(3) Research Instruments

Using a literature review, open-ended interviews form, a questionnaire, Delphi techniques, and future wheels, this research adopted a comprehensive methodology. The

literature review laid the foundation, guiding the questionnaire creation to capture key dimensions of the digital era's vocational partnership. Initial interviews, based on social partnership characteristics, provided deep insights. In the subsequent rounds, a five-point rating scale measured informant agreement with partnership model aspects. The final phase featured a researcher-led focus group discussion with a clear guide to encourage in-depth conversation, ensuring a thorough and informed exploration.

(4) Data Collection

To deeply probed Zhejiang's vocational education partnerships in the digital era, this research kicked off with an intensive literature review, laying the foundation for a subsequent questionnaire. Key insights emerged from in-depth interviews with 20 informants, which were transcribed for accuracy. Further phases utilized questionnaires to solicit wider perspectives. The process peaked with a focus group, using future wheels to envision Zhejiang's vocational future. This systematic approach yielded rich insights into the digital transformation of vocational education.

(5) Data Analysis

To understand the relationship between digital-era social partnerships and vocational education in Zhejiang, an exhaustive analysis unfolded. Beginning with content analysis, insights from literature and questionnaires pinpointed core variables like digital technology's role in vocational education. Successive rounds employed qualitative methods: interviews were thematically coded, and data from Likert scale questionnaires were mined using Mode, Median, and Inter Quartile Range, revealing expert consensus intricacies. Post focus group, content analysis synthesized these insights into a forward-looking framework. This structure was recurrently validated with informants to ensure pertinence and precision.

5. Research Results

(1) Content Analysis of social partnership for vocational education development in the digital era of vocational colleges under Zhejiang Province from related literature and related research

Micro Level: Integration and Collaboration

At the micro level, the research uncovered the detailed dynamics of integration and collaboration between industry and vocational education. Four dimensions were identified: (1) Integration and Collaboration of Industry and Vocational Education, (2) Administration and

Governance of Vocational Education, (3) Development of Digital Literacy Skills, and (4) Stakeholder Involvement in Decision-Making Processes.

Meso Level: Stakeholder Collaboration and Resource Allocation

The meso level illuminated the interactions among stakeholders and how resources were allocated. Five dimensions emerged: (1) Collaboration and Interactions between Stakeholders, (2) Shared Resources and Infrastructure, (3) Formation and Governance of Vocational Education Social Partnerships, (4) Strategic Collaboration in the Digital Era, and (5) Integration of Digital Skills and Infrastructure in Vocational Education.

Macro Level: Policy and Broader Societal Factors

On the macro level, the research explored overarching societal and policy frameworks that shaped the vocational education landscape. Three key dimensions were discerned: (1) Government Policies and Regulations for Social Partnerships, (2) Integration of Digital Technology in Vocational Education, and (3) Role of Multi-stakeholders in Digital Transformation.

(2) Frameworks of Social Partnership for Vocational Education Development in the Digital Era in Zhejiang Province

In the examination of the "Social Partnership for Vocational Education Development in the Digital Era in Vocational Colleges under Zhejiang Province", a tri-level framework - encompassing micro, meso, and macro scales - was developed. At the micro level, the focus was on individual and group interactions, highlighting the significance of competencies like industry-education collaboration and digital literacy. The meso level shifted to institutional dimensions, emphasizing the importance of proficient leadership, efficient resource sharing, and digital skills integration. Lastly, at the macro scale, the role of government policies and digital technology integration took precedence, shaping the overarching structure and potential of vocational education in the digital age. Key results from a questionnaire based on this framework, utilizing the Likert scale, revealed high levels of satisfaction in digital skill integration and vocational outcomes, especially at the micro level. This satisfaction extended to the meso and macro levels with strong consensuses on aspects such as leadership strategy and the impact of digital transformation policies. Conclusively, this research presented a comprehensive model underscoring the dynamic nature of vocational education in the digital era, suggesting both its past strengths and areas that were ripe for innovation.

(3) Developing Future Wheels of Social Partnership for Vocational Education Development in Digital Era of Vocational Colleges under Zhejiang Province
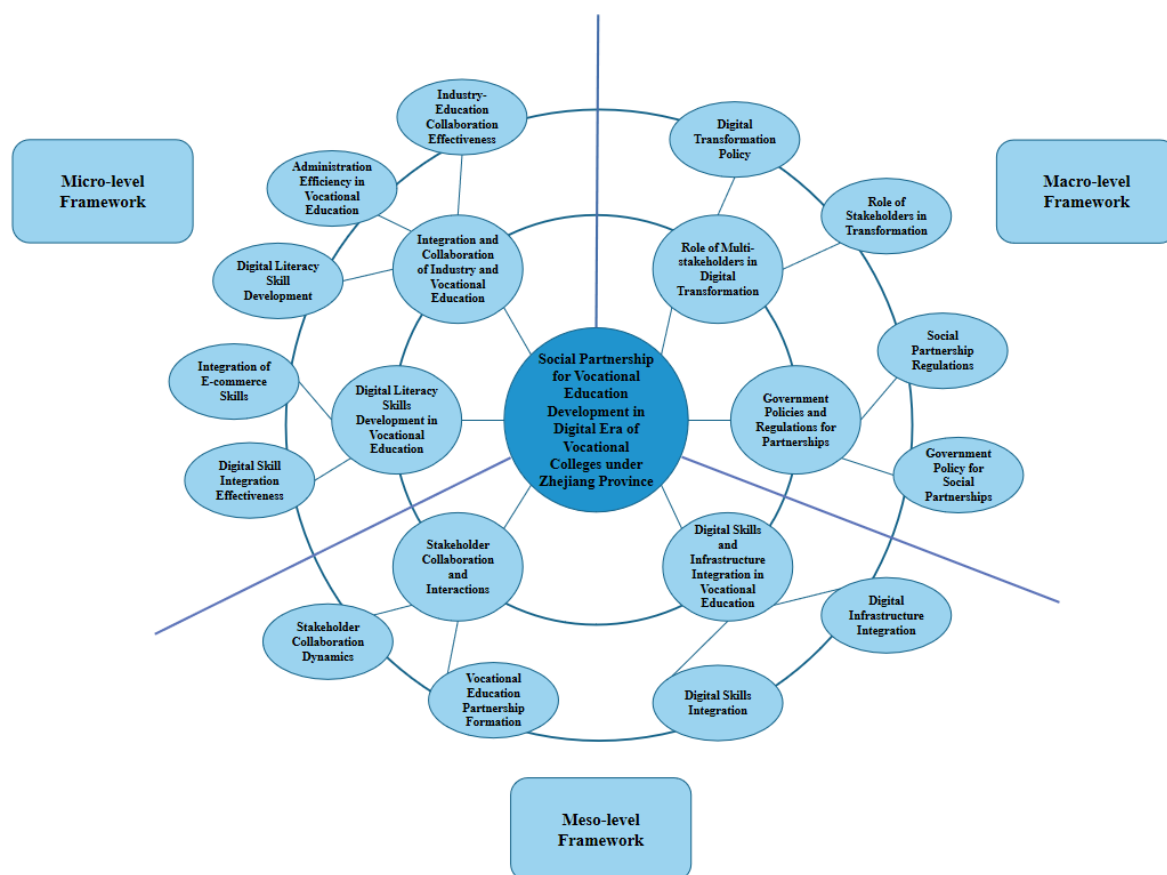
The primary objectives of this research were to propose a framework for social partnership and to address the various challenges and opportunities present within vocational colleges in Zhejiang Province. Through rigorous investigation, key findings emerged, highlighting the need to align vocational education programs with industry demands, incorporate digital technologies effectively, and promote an atmosphere of innovation and entrepreneurship. Additionally, the research underscored the importance of routine evaluations and feedback mechanisms to continually refine and improve social partnership endeavors.

Employing the 'future wheel' methodology, this research offered a holistic perspective on the prospective dynamics of Social Partnership in Vocational Education Development in the Digital Era within Zhejiang's Vocational Colleges. The methodology forecasted trends across three pivotal partnership levels:

Diagram 1-Micro Level: Focusing on individual competencies, enhancing collaborative efficiencies, and identifying skills development requisites tailored for the digital age.

Diagram 2-Meso Level: Offering insights into institutional dynamics, strategies for resource sharing, and digital integration techniques.

Diagram 3-Macro Level: Shedding light on potential policy transitions and the anticipated assimilation of digital technology.

Diagrams 1 to 3 visually encapsulated these levels, accentuating the interplay of individual capabilities, institutional frameworks, societal impacts, and evolving policies. This research's findings have significantly advanced our comprehension of social partnerships in vocational education in Zhejiang Province. It presented a valuable blueprint for stakeholders, furnishing actionable insights to bolster collaboration, harness digital innovations, and champion innovation. With an emphasis on nurturing and bolstering social partnerships and endorsing holistic educational strategies, the findings and ensuing recommendations held considerable ramifications for the region's socio-economic trajectory. Vocational education was now better equipped to address the challenges of the digital era, highlighting the need for further research into the broader impacts of social partnership in this evolving context.

6. Discussion

(1) Frameworks of Social Partnership in Vocational Education Development

In Zhejiang Province's digital era, the growth of vocational education is based on three main levels: micro, meso, and macro. These levels not only show the connection among stakeholders but also represent wider social and political changes. A key point in this discussion is the active involvement of all stakeholders within this complex network of interactions, which agrees with findings from earlier studies like Yang (2016) and Fai & Tunzelmann (2011). By linking these findings to the present situation, the research points out the importance of these levels in Zhejiang's digital age, emphasizing the need for close cooperation to shape a better vocational education future.

(2) Future wheels of Social Partnership in Vocational Education Development

The potential of social partnerships in Zhejiang's vocational education within the digital setting is promising. Using the Delphi technique, this study revealed trends emphasizing essential skills across all partnership tiers. Yuan & Gao (2017) emphasized the importance of equipping students with practical skills and a business-focused approach. This research identifies a path that stresses the combined benefits of technology adoption, skill enhancement, and teamwork. To stay relevant, vocational colleges in Zhejiang need to align with industry demands, refresh their courses and techniques, and reinforce collaborations. As the shift towards a more digital future intensifies, the significance of these insights rises, painting a bright outlook for vocational education in the province. This study provides insights beneficial for both Zhejiang's colleges and policymakers, ensuring education keeps pace with the digital era's evolving needs.

7. Recommendations

(1) Recommendation for Policy Formulation:

Based on the research's findings, there is an imperative need to augment the policy formulation in vocational education. A pivotal element is integrating a competency management framework, ensuring that education aligns with labor market demands and equips students with the necessary skills. Additionally, the establishment of a public service platform can enhance the efficacy of social partnerships. Furthermore, the development and adoption of national professional standards are vital to ensure consistency and elevate the quality of education.

(2) Recommendation for Practical Application:

The research insights extend beyond just vocational education, offering value to domains like digital education platforms, community development, and more. By tailoring the competency insights to each domain's unique requirements, stakeholders can drive transformation. Emphasizing collaboration, innovation, and the integration of digital tools across educational contexts can stimulate sustainable growth and create inclusive learning environments tailored to diverse learner needs.

(3) Recommendation for Further Research:

Future research should emphasize broadening the research's scope to encompass varied cultural and socioeconomic contexts, refining the competency model as suggested. An interdisciplinary approach can lead to fresh research avenues within competency-based education. There's also a strong need to focus on developing national industry standards, which can greatly bolster the systematic management of competency-based education and enhance its overall quality.

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