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Research paper

The Policy of the Four-Year Vocational High School Program from a Stakeholder Perspective

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ABSTRACT

Background: The four-year vocational high school (SMK) program was developed to improve the quality of graduates, preparing them to compete in the modern workplace and industry. This study aims to analyze principals' perceptions of the program's objectives, strengths, challenges, and outputs.
Methods: A quantitative descriptive method with a survey approach was used. A survey was administered to 68 vocational high school principals across 18 provinces in Indonesia to collect data, and percentages were used for analysis.
Results: The program focuses on improving students' technical and non-technical competencies (26.5%), readiness to enter the business and industrial world (22.1%), and national and global competitiveness (17.6%). The program's strengths include depth of competencies (29.4%), longer duration of Field Work Practice (22.1%), and development of maturity and soft skills (17.6%). Parental and student interest is high (55.9%), while the majority of graduates work in their fields of expertise (51.5%) or continue their education (17.6%).
Conclusion: Regulatory support includes legal protection, certification, industry partnerships, and curriculum flexibility. Key challenges include industry collaboration, teacher readiness, facilities and infrastructure, regulations and curriculum, and community motivation. These findings provide strategic recommendations for the development of an effective and sustainable four-year vocational high school program.

INTRODUCTION

The transformation of global vocational education focuses on work-based learning and 21st-century job readiness (Johnson, 2024). According to Human Capital theory (Wallenborn, 2010) and Competency-Based Education (Mulder, 2017), extending the learning period can improve graduates' technical and non-technical skills. Longer learning durations provide opportunities to strengthen practical learning and soft skills (Barrera-Osorio et al., 2023). Research in Germany and South Korea shows that long-term vocational education systems can improve industrial competitiveness and workforce quality (Kim et al., 2024; Li et al., 2019). In the context of workforce globalization, vocational education systems play a strategic role in supporting sustainable economic growth. Countries such as Germany and Switzerland have implemented dual vocational education systems with four-year study periods, which have been shown to reduce youth unemployment (Wieland, 2015). This suggests that longer learning durations can produce more mature technical and professional competencies.

The four-year vocational high school program is an innovation in vocational education to improve graduates' job readiness, but it still faces various policy and implementation challenges. The curriculum has not changed significantly from the three-year program theoretical load in grade 13 conflicts with the ten-month Field Work Practice (PKL). The Final Competency Test (TKA) in grade 12 reduces the fourth year's focus on vocational skills, and Recognition of Prior Learning (RPL) is not yet fully recognized by universities. Furthermore, limited industry partners, productive teachers, and practical facilities are major obstacles. Therefore, affirmative policies are needed to strengthen collaboration with industry, revitalize learning facilities, and accelerate the recruitment of professional educators to ensure the four-year vocational high school program is effective and sustainable.

The literature review emphasizes that extending the study period must be accompanied by systemic improvements in quality. Barrera-Osorio et al. (2023) found that vocational students remain weak in soft skills despite improvements in practical skills. Nurjanah et al. (2022) highlighted the challenges posed by technology, teacher training, and industry adaptation to graduates' job readiness. Qurniawan & Jasmina (2021) emphasized that a long duration does not automatically yield positive outcomes when school quality is low. Empirical studies indicate that the four-year vocational high school model has the potential to improve graduates' competency compared with three-year programs. Soenarto et al. (2017) found that graduates of four-year programs have higher practical skills, technical competencies, and employability, including better job satisfaction and higher income. Meanwhile, Andriansyah & Kamalia (2021) emphasized that educational quality standards remain a determining factor for success, not simply duration.

Research on stakeholder perceptions in vocational education demonstrates the importance of cross-actor collaboration. Kapolo & Ndinelao (2023) found that negative perceptions of TVET in Namibia were influenced by historical stigma, while TVET students themselves positively assessed its job prospects. Pirzada et al. (2022) identified six key challenges to TVET in Pakistan, including instructor training, language, and industry engagement. Arikpo & Musta'amal (2025) in Malaysia, highlighted obstacles to industry-TVET curriculum collaboration, such as high costs and low corporate participation. Khasanah et al. (2025) in Indonesia emphasized that stakeholder synergy improves curriculum relevance and

teaching quality, while Semali (2024) emphasized the importance of global multistakeholder partnerships to address unemployment and skills gaps.

Studies of vocational education policy in Indonesia show that program duration reforms must be understood within a political, economic, and structural context (Sumantri et al., 2017). The direction of vocational policy often changes due to national political dynamics. Existing 3-4-year TVET programs still face certification issues and disparities in facilities (Khurniawan et al., 2025; Yasdin & Muksins, 2024). School quality has a greater impact on labor market outcomes than duration (Qurniawan & Jasmina, 2021). Job readiness among vocational high school graduates in the Industry 4.0 era remains uneven due to misaligned technological and policy factors (Nurjanah et al., 2022).

Various cross-country studies highlight the importance of positive perceptions and active stakeholder involvement in the success of vocational education. The involvement of industry, students, and universities is crucial for determining the quality of work-based learning (Ramli et al., 2024) . Different stakeholder perceptions influence the acceptance and utilization of vocational competencies in Romania (Bunea & Guinea, 2023). Multi-actor participation in VET policy in Azerbaijan increases implementation effectiveness (Bayramli, 2024; Semali, 2024). Based on these findings, studies on four-year vocational high schools (SMK) should consider the perspectives of all stakeholders to ensure that policies are participatory and implementable.

Although numerous studies have addressed the effectiveness of the four-year vocational high school (SMK) program, most have focused on technical competency, learning outcomes, and student job readiness. Research highlighting the perspectives of stakeholders, such as school principals, remains limited. Studies demonstrate the importance of multi-actor partnerships, but few have confirmed how these perceptions and collaborations operate within the context of national vocational education policy. Thus, a research gap remains in understanding the extent of stakeholder acceptance, readiness, and thechallenges they face in supporting the sustainability of the four-year vocational high school policy in Indonesia.

This research is urgent because discourse and several policy initiatives related to the four-year vocational high school program are ongoing in Indonesia; the decisions taken have direct implications for the quality of graduate competencies and the national skilled workforce. This research contributes theoretically by broadening the understanding of vocational education policy implementation through a stakeholder-based perspective approach, which integrates policy, social, and institutional aspects. Practically, the results of this study can serve as a reference for the Ministry of Education, local governments, and educational institutions in formulating strategies to strengthen the four-year vocational high school policy that is more adaptive to the needs of industry and society. Therefore, this study aims to analyze policy on the four-year vocational high school program from the perspective of school principals, focusing on program objectives, strengths, graduate outcomes, regulatory support, and implementation challenges.

METHODS

A quantitative descriptive method with a survey approach was used. This approach was chosen to obtain a comprehensive picture school principals' implementation and perceptions of the policy on the four-year vocational high school (SMK) program. The study respondents consisted of 68 vocational high school principals in Indonesia, distributed across 18 provinces,

covering the western, central, and eastern regions. Respondents were selected purposively, considering representation from various provinces and types of vocational high school expertise. Principals were selected because they are key stakeholders with direct knowledge and experience in implementing the four-year study policy, including planning, implementation, and program evaluation.

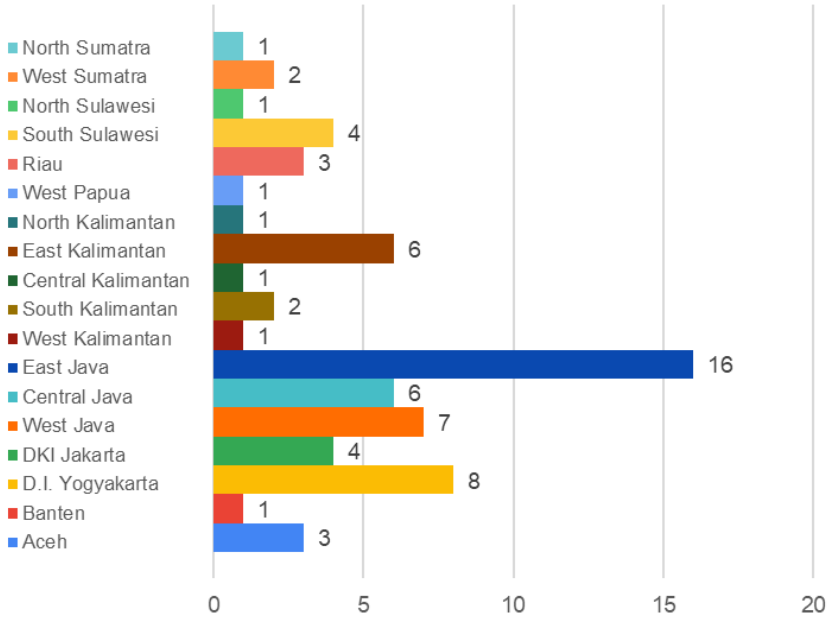

Figure 1. Number of respondents

As shown in Figure 1, 68 schools across various provinces in Indonesia completed the survey on the 4-year vocational high school program. East Java had 16 schools, followed by DI Yogyakarta with 8 schools, and West Java with 7 schools. Central Java and East Kalimantan each contributed 6 schools, while DKI Jakarta and South Sulawesi each contributed 4 schools. From other regions, such as Aceh and Riau each contributed 3 schools, West Sumatra and South Kalimantan each had 2 schools, and Banten, West Kalimantan, Central Kalimantan, North Kalimantan, West Papua, North Sulawesi, and North Sumatra each had 1 school.

The data and data sources consist of primary data obtained through a survey of vocational school principals and secondary data from the literature on vocational education policy. Primary data provides a factual picture of the principals' perceptions, experiences, and evaluations of policy implementation, while secondary data is used to strengthen the analysis and provide a broader context for the research findings. Data were collected via an online survey using a semi-open-ended questionnaire. The survey instrument was designed based on indicators of education policy implementation, such as program objectives, program strengths, parental and student enthusiasm for the program, program graduate outputs, support, and challenges. The questionnaire was distributed electronically using a digital survey platform that allows for a broad reach to various regions in Indonesia and facilitates efficient data collection and recapitulation. The use of percentages and graphical representations reflects the descriptive quantitative nature of this study and serves to illustrate patterns in principals' responses across different policy dimensions. The data obtained were then presented in diagrams to facilitate interpretation. The analysis results were supplemented with narrative

explanations to deepen understanding of the research findings. Narrative explanations were used to interpret the quantitative findings and to provide contextual understanding of the results.

RESULTS AND DISCUSSION

Results

The use of percentages and graphical representations reflects the descriptive quantitative nature of this study and illustrates patterns in principals' responses across different policy dimensions.

The aim of developing a four-year vocational school program

Based on an analysis of 68 respondents, the main objective of developing four-year Vocational High Schools (SMK) is to improve technical and non-technical competencies (25.5%), with the aim of strengthening students' skills to align with the needs of modern industry. Furthermore, readiness to face the Business World and the Industrial World (22.1%) is a key priority to ensure graduates are work-ready through industry-based learning and practice. Other objectives include increasing national and global competitiveness (17.6%), reducing unemployment and increasing graduate absorption (14.7%), developing personality and maturity (10.3%), and providing opportunities to continue education to a higher level (8.8%). The four-year SMK program is seen as a comprehensive strategy to produce competent, character-based graduates who are ready to compete at the national and global levels, while strengthening the relationship between education and the world of work.

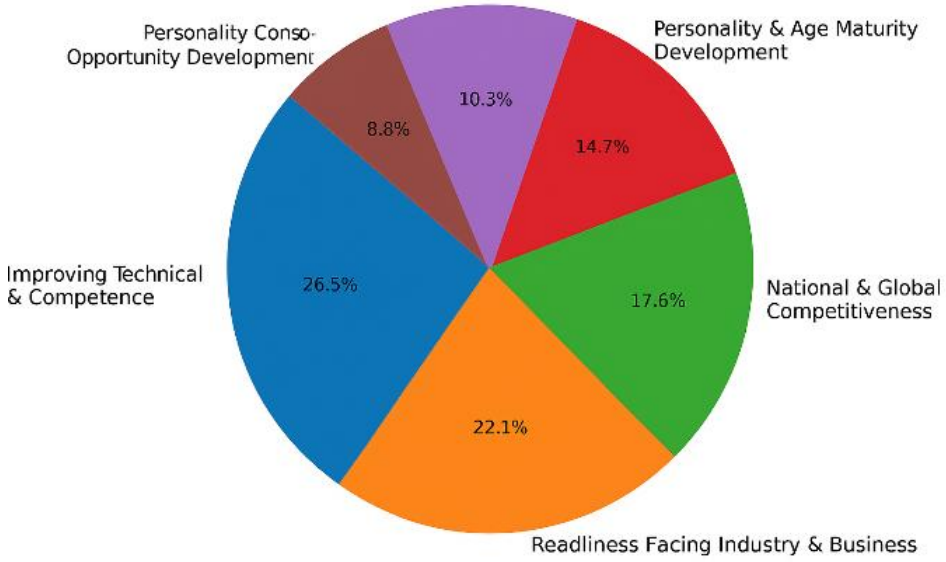

Figure 2. Perception of program objectives

The advantages of a four-year vocational school program

The analysis of the advantages of the four-year vocational high school program illustrates the distribution of respondents' perceptions across various aspects of the program. The largest portion of the diagram, at 29.4%, indicates that respondents consider students' competencies to be more in-depth after four years of study. Furthermore, 22.1% of respondents

stated that the length of the Field Work Practice (PKL) is an added value because it provides broader work experience, and another 17.6% considered age maturity and improved soft skills to be significant advantages. Furthermore, 14.7% of respondents believed that the program significantly improves students' job readiness. Meanwhile, 8.8% of respondents highlighted certification and further education as additional advantages, and another 7.4% considered that the program supports graduates' independence and global competitiveness. The majority of respondents assessed that the four-year vocational high school program has a positive impact on improving students' competencies, practical experience, and job readiness.

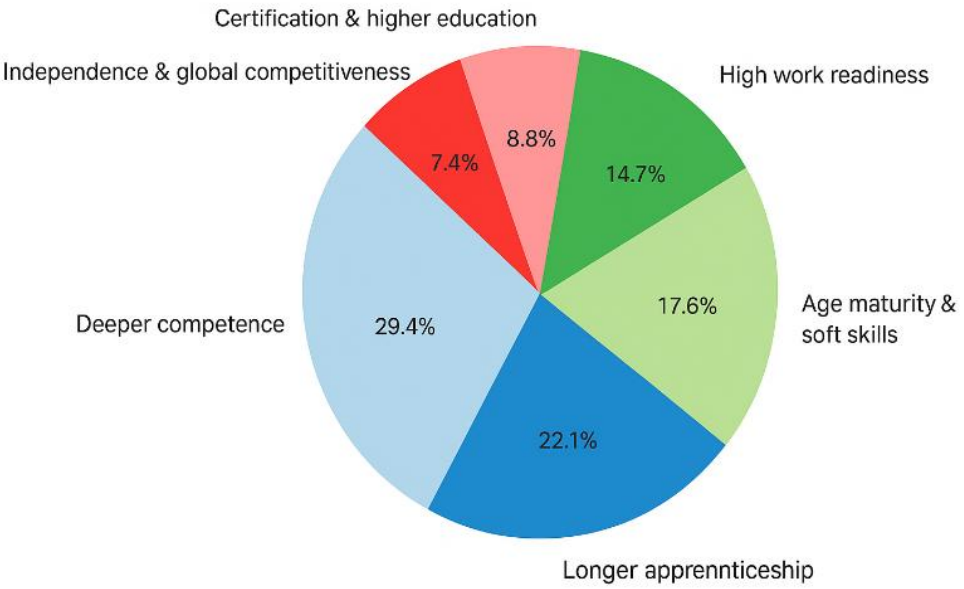

Figure 3. Perception of program advantages

Parents' and students' enthusiasm for the four-year vocational school program

This diagram is divided into three main categories: High Interest, Medium/Fair Interest, and Low Interest. The largest section of the diagram, colored green, indicates that 55.9% of respondents have a high interest in the program. This means that more than half of parents and students show a strong interest in the implementation of the four-year vocational high school program. Furthermore, the yellow section, which includes 29.4%, represents moderate or adequate interest, meaning some respondents have good interest but are not yet fully enthusiastic. Meanwhile, the smallest section, colored red, at 14.7%, represents low interest, meaning the group of respondents who are less interested in the program. The community supports and has a high interest in the continuation of the four-year vocational high school program, although a small portion still shows moderate or low interest.

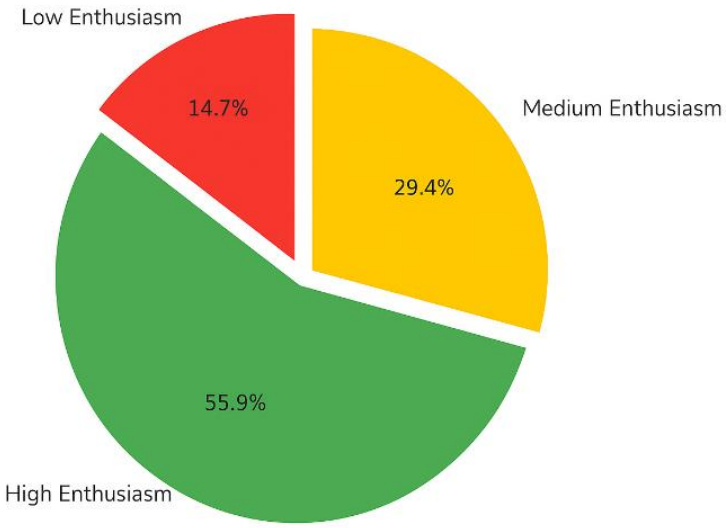

Figure 4. Perception of parent and student enthusiasm

Output of graduates of four-year vocational school programs

This diagram illustrates five main categories indicating the directions and activities of graduates upon completing their education. The majority of graduates (51.5%) were employed in the field in which they majored. This indicates that the four-year vocational high school program is quite effective in preparing graduates with relevant expertise. Furthermore, 14.7% of graduates were employed in occupations unrelated to their major, indicating that, although they had entered the workforce, there remains a mismatch between the competencies acquired in school and the needs of the job market. A total of 17.6% of graduates continued their studies, reflecting an interest in deepening their knowledge or improving their academic qualifications. Meanwhile, 8.8% of graduates chose to become entrepreneurs, indicating the emergence of a spirit of independence and entrepreneurship among graduates. Meanwhile, 7.4% of graduates were not absorbed or had not demonstrated significant outcomes, indicating that a small number were still seeking employment or had not achieved the results they expected. Graduates of four-year vocational high schools were successfully absorbed into the workforce, especially in fields relevant to their acquired skills.

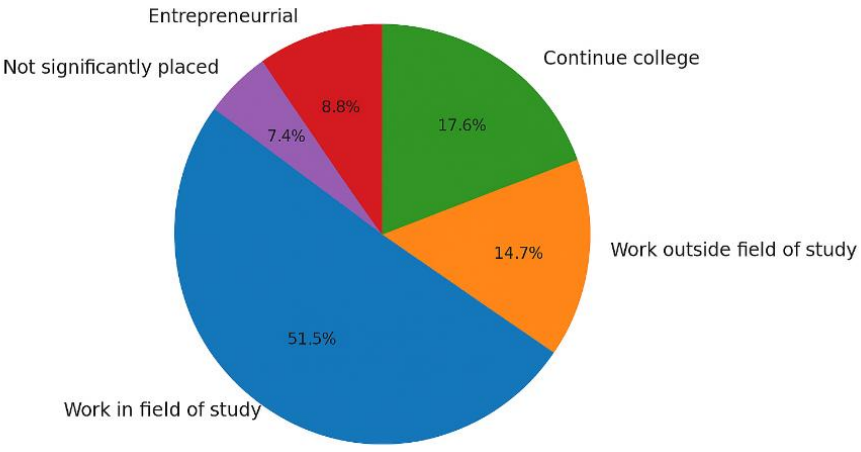

Figure 5. Perception of graduate output

Regulatory support for four-year vocational school programs

Support for the program in the figure above shows the proportion of regulatory aspects considered important for successful implementation. The aspect with the highest percentage is Legal Umbrella and Diploma Recognition (22.1%), indicating that legal certainty and graduate legitimacy are top priorities for stakeholders. Next, Curriculum Regulation and Certification (20.6%) ranked second, indicating the need for adaptive curriculum standards and competency certification relevant to industry. Partnerships with the Business World and Industry (DUDI) ranked third at 19.1%, underscoring the importance of collaboration between schools and industry in supporting real-world work-based learning. Meanwhile, Coordination across ministries and regions (14.7%) was also considered important to align policies between government agencies. On the other hand, Facilities and Infrastructure and Human Resources (13.2%) highlighted the need to improve facilities and the competency of teaching staff. Finally, Flexibility and Spectrum of Vocational High Schools (10.3%) indicated the need to adjust the structure and spectrum of skills to be more responsive to the dynamics of the labor market. The implementation of four-year vocational schools requires comprehensive regulatory support, that encompasses legal framework, curricula, partnerships, coordination, resources, and institutional flexibility.

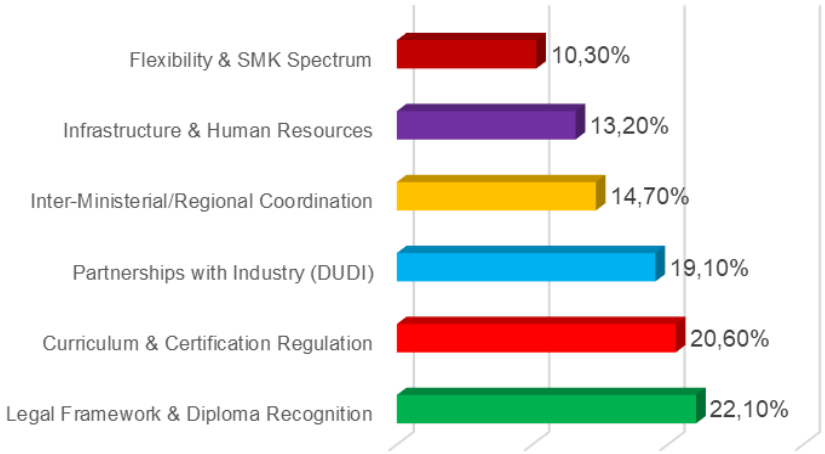

Figure 6. Perception of program support

Challenges in implementing the four-year vocational school program

The biggest challenge in implementing the four-year vocational high school program lies in collaboration (25%), which is hampered by suboptimal involvement of industry, the workplace, and educational partner institutions. Weak collaboration results in limited opportunities for internships, curriculum synchronization, and alignment of graduate competencies with job-market needs. Next comes human resources (20%), particularly related to teacher readiness and competence in implementing the four-year curriculum, which requires project and industry-based learning. Facilities and infrastructure (15%), curriculum and regulations (15%), and financial aspects (15%) are obstacles, as many schools face budget constraints, inadequate practice facilities, and policies that do not fully support the program's sustainability. Meanwhile, community motivation and perception (10%) remain low. Some communities do not yet understand the long-term benefits of the program, resulting in suboptimal support for its implementation. The success of the four-year vocational high school

program depends heavily on strengthening cross-sectoral collaboration, increasing teacher capacity, and providing sustainable regulatory and funding support.

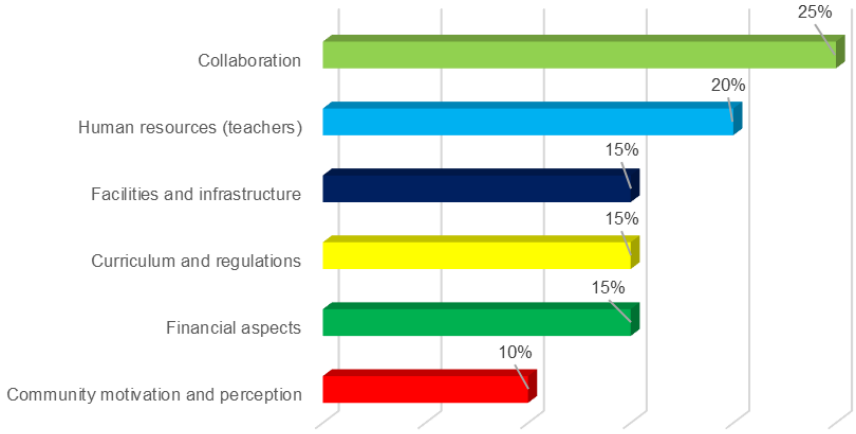

Figure 7. Perceptions of program implementation challenges

Discussion

The primary objective of developing a four-year vocational high school program is to improve students' technical and non-technical competencies and prepare them for the business and industrial world. This program is considered to have several advantages, such as deepening competencies, longer internship duration, and increased student maturity and soft skills. These findings align with the findings of a study by Martínez-Izquierdo and Torres Sánchez, which found that direct industry involvement can improve the adaptive skills and work readiness of vocational education graduates (Martínez-Izquierdo & Torres Sánchez , 2022). The success of vocational education relies heavily on multi-stakeholder collaboration between educational institutions, government, and industry (Lin & Geng, 2020). This view is reinforced by evidence that extending the study period and increasing practical experience significantly affect students' competency development (Kovalchuk et al., 2022; Mulder, 2017; Semali, 2024).

In Southeast Asia, vocational education emphasizes the development of soft skills, personal maturity, and work ethic (Nuttavuthisit, 2017). The relevance of the curriculum to industry needs is a key factor in increasing graduate employment (Schröder, 2019; Yoto et al., 2024), supporting the finding that 51.5% of four-year vocational high school graduates are employed in their majors. Furthermore, effective partnerships with industry can expand internship opportunities and improve student employability (Kashina et al., 2016; Semali, 2024).

In terms of community support, the results show that 55.9% of respondents showed high enthusiasm for this program, consistent with Rehman's findings that positive public perception of vocational education influences the sustainability of vocational education policies (Rehman et al., 2024). Meanwhile, Wallenborn (2010) emphasized the readiness of human resources and learning facilities in implementing vocational policies. Chan & Zhang (2024) conveyed regulatory support and government investment to ensure the long-term sustainability of vocational programs.

Furthermore, research findings show that teachers and educators require capacity building, particularly in mastering technology and industrial skills. This is reinforced by Grollmann (2008), who argued that the quality of vocational teachers plays a significant role in

the effectiveness of curriculum reform. According to Anisimova & Efremova (2022), the integration of digital technology into vocational learning is a necessity in the Industry 4.0 era. In the context of learning, Megayanti et al. (2020) suggest project-based learning to develop critical and adaptive thinking skills, which is also evident in program implementation. Meanwhile, Sauli et al. (2021) noted the importance of balancing school-based learning and real-world work practices to create a holistic learning experience. This aligns with research findings that suggest that four-year vocational high school programs need to optimize the integration between classroom learning and industry practices.

This study is theoretically grounded in human capital theory and competency-based vocational education, which emphasize the importance of extended learning duration and industry-oriented training in improving workforce quality (Wallenborn, 2010; Mulder, 2017). The four-year vocational high school policy is a strategic step to strengthen integration between education and industry, increase the relevance of graduate competencies, and create an adaptable and competitive workforce in the global market. The effectiveness of this policy depends heavily on regulatory support, teacher quality, learning infrastructure, and a committed collaboration among stakeholders.

CONCLUSION

The implementation of the four-year vocational high school (SMK) program policy aims to improve students' technical and non-technical competencies and prepare them for the business and industrial world. This program has proven to provide significant advantages, including deepening competencies, longer duration of field work practice, improvement of soft skills, personal maturity, and increased work readiness and employability of graduates. Public support for this program is high, as reflected in 55.9% of respondents who indicated high enthusiasm: adequate regulations are a crucial factor in its successful implementation. This study has limitations, especially in the scope of respondents, which only involved 68 vocational high school principals from 18 provinces, so the perceptions of other stakeholders, such as students, parents, and industry, are not fully represented. Recommendations provided include strengthening collaboration with the industrial world for more optimal work practices, increasing teacher capacity, especially in technology and industrial skills, improving learning facilities and infrastructure, and expanding research by involving more stakeholders and longitudinal data to assess the program's overall effectiveness.

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