



## **Collaboration Management in the Center of Excellence Program at State Vocational High School 56 Jakarta**

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### **ABSTRACT**

This study examines collaborative management in implementing the Center of Excellence Vocational High School (SMK PK) Program in the Mechatronics Engineering Expertise Program at SMKN 56 Jakarta. Using a qualitative approach, data were collected through observations, documentation, and in-depth interviews from 2023 to 2024. The findings were analyzed using the P.O.A.C. (Planning, Organizing, Actuating, Controlling) managerial framework. The planning stage reflected systematic, needs-based efforts involving all school stakeholders. Organizing involved internal and external collaboration with partners such as PT. Unggul Semesta and PT. Panca Anugerah Sakti in budgeting and curriculum development. In 2023, all main activities were implemented, while in 2024, progress continued despite one pending activity. The controlling stage emphasized transparency, accountability, and sustainability through industry-based teacher certification. The results indicate that the collaborative management model at SMKN 56 Jakarta has been implemented effectively and offers potential for long-term sustainability.

### **Keywords:**

vocational education, collaboration management, Center of Excellence, POAC, mechatronics, SMK, school-industry partnership

### **INTRODUCTION**

Education is a key driver of national development, as seen in many developed countries where strong education systems have significantly improved the quality of life (Riya et al., 2024). In Indonesia, vocational high schools (Sekolah Menengah Kejuruan or SMK) play a crucial role within the national education system by equipping students with skills that align with the dynamic needs of industries and businesses (Fauzi et al., 2018). As the country's economic center, Jakarta requires strong vocational institutions to support its industrial and technological advancement. According to the Jakarta Provincial Education Office (2023/2024), there are 552 vocational high schools in the region—12 public and 540 private—highlighting the continuing importance of government-supported public institutions.

To better align vocational education with labor market demands, the Indonesian government has introduced several initiatives, including the Center of Excellence Program for Vocational High Schools (Program Sekolah Menengah Kejuruan Pusat Keunggulan), student competency certification, industry-based learning models, and factory-based teaching programs (Kemendikbud, 2023; Nugroho et al., 2023). As part of the Merdeka Belajar policy, the Center of Excellence program was launched in 2021 to improve curriculum relevance, promote teacher training in collaboration with industry, and support student internships (Oktafiyah & Hariyati, 2020).

Although these programs have led to promising outcomes, limited research has examined how collaboration with industries is managed, especially at the level of





specific expertise programs. Most prior studies have concentrated on policy-level outcomes, overlooking the practical management of such collaborations in schools. This study addresses that gap by focusing on collaborative management in the Center of Excellence program at SMK Negeri 56 Jakarta, specifically within the Mechatronics Engineering Expertise Program. Mechatronics is a vital discipline in the Fourth Industrial Revolution due to its integration of mechanical, electrical, and automation systems, making it highly relevant to modern industries.

Since being designated a Center of Excellence in 2021, SMK Negeri 56 Jakarta has engaged in active partnerships with industry through the Matching Fund scheme, supporting the development of teaching factories, training programs, and facility upgrades. Nationally, this initiative has involved over 2,500 industrial partners and generated investments exceeding Rp 2.3 trillion (Emily, 2024). However, while outcomes such as internship programs and industrial MoUs are often reported, the underlying management practices—how vocational schools plan, organize, implement, and evaluate their collaborations—remain insufficiently explored.

This study aims to examine how collaborative management is practiced at SMK Negeri 56 Jakarta by using the P.O.A.C. framework (Planning, Organizing, Actuating, Controlling). It addresses four core questions: (1) How is planning carried out in program proposals and strategic development? (2) How are industrial collaborations structured and coordinated? (3) How are industry-integrated learning activities implemented? and (4) How are monitoring, evaluation, and sustainability ensured?

The novelty of this research lies in its specific focus on the management of industry collaboration at the expertise program level, using both institutional insights and individual experiences from teachers and students. The findings aim to enrich the theoretical understanding of collaboration in vocational education while providing practical recommendations for vocational schools, industries, and policymakers to establish more effective and sustainable partnerships.

This study aimed to examine the collaborative management practices in the implementation of the Center of Excellence Vocational High School (SMK PK) Program in the Mechatronics Engineering Expertise Program at SMK Negeri 56 Jakarta. A qualitative approach was employed, with data collected through observations, documentation, and in-depth interviews conducted from 2023 to 2024. The data were analyzed using the P.O.A.C. (Planning, Organizing, Actuating, Controlling) managerial framework. In the planning stage, the school demonstrated systematic and needs-based planning, as evidenced by the program proposal documents, a five-year action plan, and the active participation of all school stakeholders. The organizing stage was marked by collaborative strategies involving both internal and external stakeholders such as PT. Unggul Semester and PT. Panca Anugerah Sakti in the preparation of the program budget and an industry-aligned curriculum.

During the actuating stage in 2023, all major program activities were successfully implemented, while in 2024, significant progress was observed despite one planned activity not yet being carried out. The controlling aspect was reflected in transparent budgeting, accountable reporting, and sustainability efforts, such as



industry-based teacher certification. These findings suggest that the collaborative management of the SMK PK program at SMKN 56 Jakarta has been implemented effectively and demonstrates strong potential for long-term sustainability.

## METHOD

This research adopted a qualitative approach through a case study design to investigate the collaborative management strategies implemented at Vocational High School Negeri 56 Jakarta in relation to the Center of Excellence Program. The case study method was chosen for its capacity to examine complex, context-specific issues and to offer an in-depth understanding of the dynamics of school-industry collaboration within authentic educational environments.

The study took place at Vocational High School Negeri 56 Jakarta, situated in North Jakarta, from June 2 to July 11, 2025. This school was selected due to its official status as a Center of Excellence in the Mechatronics Engineering field and its established partnerships with various industry stakeholders.

Participants were selected purposively based on their significant roles and direct involvement in collaborative initiatives. The informants included the school principal, the vice principal for curriculum, the head of the Mechatronics Engineering department, vocational subject teachers, and representatives from industrial partners such as PT. Unggul Semester and PT. Panca Anugerah Sakti.

Data were gathered through three primary techniques: **Semi-structured interviews**, conducted to capture comprehensive insights into the planning, execution, and evaluation of collaborative activities. **Participant observation**, which enabled direct and real-time observation of collaborative practices between the school and its industry partners. **Document analysis**, which involved reviewing official materials such as memoranda of understanding (MoUs), curriculum documents, program reports, and partnership records. Instruments included interview guides, observation checklists, and document review templates. The researcher functioned as the main instrument in the data collection process.

The analysis was carried out using Miles and Huberman's interactive model, consisting of: **Data Reduction**: Relevant data from all sources were selected, categorized, and coded according to emerging themes such as planning, program implementation, and evaluation of partnerships. **Data Display**: The processed data were presented in descriptive formats and visual matrices to illustrate the interrelations between stakeholders, collaborative actions, and resulting outcomes. **Conclusion Drawing and Verification**: Findings were refined and validated through triangulation of sources and methods. Member checking was also employed to confirm the accuracy and credibility of the interpretations. This methodological approach provided a thorough and credible examination of the operationalization of collaborative management at Vocational High School Negeri 56 Jakarta within the context of the Center of Excellence Program. The findings offer important insights into how sustainable vocational-industry partnerships can be effectively developed and managed.

## RESULTS AND DISCUSSION





This study explores the collaborative management practices implemented in the Center of Excellence Vocational High School (CoE VHS) Program within the Mechatronics Engineering Expertise Program at SMKN 56 Jakarta, applying the P.O.A.C managerial framework – Planning, Organizing, Actuating, and Controlling.

In 2023, SMKN 56 Jakarta participated in the new regular scheme of the CoE VHS Program, having fulfilled the government's eligibility requirements. This phase marked the school's foundational effort in establishing structured collaboration with the business and industrial sectors (DUDI). The school achieved 100% realization of its proposed activities, including work-based learning and procurement of educational equipment, while maintaining budget efficiency with a remaining balance of IDR 5.6 million. Human resource development was supported through targeted training for teachers and principals, and active involvement of industry practitioners in the classroom.

In 2024, the school expanded its engagement through two government-supported schemes: the extended regular scheme and the matching fund scheme. Both offered strategic avenues to deepen collaboration, share responsibilities, and improve educational outcomes

Under the extended regular scheme, the school demonstrated steady progress. However, full implementation was hindered by a pending teacher internship at PT. Alpha Karya Mechatronic. Despite this, curriculum refinement, enhanced industry engagement, and practical exposure were achieved through collaborations with PT. Panca Anugerah Sakti and PT. Unggul Semesta, particularly in robotics and mechatronics.

Key accomplishments included: Development of a teaching factory, Preparation for international internships, Strengthening of entrepreneurship, leadership, numeracy literacy, and P5 project execution, Efficient budget use with IDR 41.1 million remaining. One planned activity, the job fair, was canceled due to over-budgeting, and funds were returned accordingly.

The matching fund scheme reached full execution, especially in the 100% procurement of equipment, with IDR 194,000 in remaining funds. School-industry collaboration was further evidenced through student internships, joint projects, and lab development. The program supported industry-relevant curriculum development and certification of teachers: five teachers certified in PLC CPX-E systems (by PT. Festo) and three in robotic welding (by PT. Unggul Semesta).

Comprehensive capacity building efforts included: Curriculum alignment workshops, Guest teaching by industry professionals, Strengthening of the Career Guidance Center (BKK), Leadership training for the school principal.

Overall, the CoE VHS Program at SMKN 56 Jakarta significantly improved institutional collaboration, curriculum relevance, teacher competencies, and student readiness for the workforce, with measurable outcomes in both academic and technical domains. The preparation of a five-year action plan reflects the school's commitment to sustaining and advancing the quality of vocational education.

## CONCLUSION



Based on field findings gathered through observations, documentation, and in-depth interviews regarding the implementation of the Center of Excellence (CoE) Program at the Vocational High School (VHS) level—specifically within the Mechatronics Engineering Expertise Program at SMKN 56 Jakarta during the years 2023 and 2024—the following conclusions were drawn:

1. **Planning:**

The planning stage of the CoE VHS Program at SMKN 56 Jakarta was conducted through a structured and needs-based proposal process. The school effectively identified development priorities, formulated a five-year strategic plan, and aligned its goals with industry demands through data analysis. This demonstrates a planning function that is both strategic and responsive to evolving external (industry) requirements.

2. **Organizing:** The organizing aspect was reflected in the strategic efforts to secure program approval and engage stakeholders. The school formed a dedicated management team comprising the principal, vocational subject teachers, and financial planning staff. Collaborative partnerships with industry, such as PT. Panca Anugerah Sakti and PT. Unggul Semester, played a vital role in curriculum development and teacher training, highlighting a well-established and sustainable framework for managing both internal and external resources.

3. **Implementation:** The 100% implementation rate achieved in 2023 indicated precise and well-targeted program execution. Activities such as teaching sessions, workshops, training, and practitioner-led instruction were carried out according to plan. Both teachers and students demonstrated measurable competency improvements, as evidenced by student achievements in provincial and national student skill competitions (LKS) and teacher certifications that aligned with industry standards. The success of the implementation phase was further supported by the collaborative engagement of teachers, school leadership, and industry partners.

4. **Monitoring and Evaluation:** Program evaluation was conducted through reviews of accomplishments and follow-ups on outstanding activities, such as teacher internships planned for 2024. The return of unutilized funds reflected the school's commitment to financial transparency and accountability. Observations also revealed the need to enhance industry mentoring and knowledge transfer for both teachers and students, highlighting the importance of continuous evaluation to support the program's long-term improvement and sustainability.

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