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Implementation Of Link and Match in Enhancing Graduate Competencies at SMK Negeri 7 Semarang

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Keywords

Link and Match, Graduate Competencies, Vocational Education, SMK Negeri 7 Semarang, Industry Collaboration

Abstract

This study aims to describe the planning, implementation, and evaluation of the *link and match* program in enhancing graduate competencies at SMK Negeri 7 Semarang. A descriptive qualitative approach with a case study method was employed. The research subjects include the principal, vice principals, productive teachers, heads of skill concentrations, guidance counselors, BKK staff, students, and industry partners. The implementation of the *link and match* program is based on the decree of the Directorate General of Vocational Education (No. 37/D/DM/2021) and the 8+I concept, which encompasses curriculum synchronization, project-based learning, guest teachers, fieldwork practice, competency certification, teacher internships, teaching factories, graduate absorption commitments, and industry involvement in educational activities. The findings indicate that the *link and match* approach effectively improves the alignment between vocational education and industry needs through well-planned collaborative strategies and continuous evaluation.

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INTRODUCTION

Vocational High Schools (SMK) are formal educational institutions aimed at preparing students to enter the workforce and contribute to the business and industrial sectors. According to Law No. 20 of 2003, the primary goal of SMK is to equip students with the knowledge and skills necessary to meet the demands of the job market. The existence of SMK is crucial in providing skilled labor, enabling graduates to master technical skills and demonstrate professional attitudes in their respective fields of expertise.

The advancement of science and technology has made the role of SMK increasingly vital in producing competent and adaptable graduates. Appendix I of Ministerial Regulation No. 34 of 2018 outlines the Competency Standards for Graduates of SMK/MAK, emphasizing the importance of equipping students with relevant abilities and skills. Graduates are expected not only to apply the competencies acquired during their education but also to continuously enhance their capabilities to contribute to the development of the industrial sector and national economy.

However, a significant challenge within the vocational education system is the mismatch between education and employment, known as job-education mismatch. Factors such as inadequate workshop facilities and suboptimal collaboration between SMK and the workforce have led many SMK graduates to rank among the highest in unemployment statistics. Although this trend has shown a decline, it remains a pressing issue that needs to be addressed.

Three main aspects contributing to the lack of realization of link and match are quality, quantity, and income. The quality of graduates often falls below the standards required by the job market, while the number of graduates frequently exceeds available job opportunities. Additionally, there is a discrepancy between offered salaries and workload expectations. To address these issues, vocational educational institutions must ensure that graduate competencies align with industry needs through link and match programs.

The government has established policies to support link and match programs, such as Regulation No. 03/M-IND/PER/1/2017 from the Ministry of Industry of the Republic of Indonesia. This policy outlines the role of SMK in delivering competency-based education connected to industry, as well as the role of companies in supporting SMK development. Furthermore, Presidential Instruction No. 9 of 2016 on Revitalization of SMK aims to enhance the quality and competitiveness of SMK graduates.

The School-Based Center of Excellence (SMK PK) program was launched to improve SMK quality by strengthening partnerships with industry. The Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) also provides Performance-Based Operational Assistance (BOSP Kinerja) to improve facilities and enhance learning quality. These programs aim to strengthen link and match implementation so that SMK graduates are ready to compete in the job market.

Previous research has provided insights into the implementation of link and match programs in SMK. Evaluations of program execution highlight the importance of effective management and supporting factors for success. With appropriate policy support and synergy between education and industry, it is hoped that SMK graduates will be able to compete globally and make tangible contributions to the national economy.

SMK Negeri 7 Semarang has been designated as one of the Revitalization Vocational Schools in Technology and Engineering since 2018. In 2021, this school was entrusted with developing the SMK PK program aimed at producing high-quality graduates who are ready for employment in business and industry. To achieve this goal, SMK Negeri 7 Semarang has developed a ten-year roadmap for development.

Initial observations indicate that SMK Negeri 7 Semarang has implemented link and match programs through various activities focused on strengthening learning processes based on industry needs. These programs are designed to address challenges in the industrial sector and include development socialization, implementation of an independent curriculum, as well as character strengthening for students.

The focus of this research is to explore the success of link and match implementation at SMK Negeri 7 Semarang while also identifying best practices from these activities. Given that no similar research has been conducted at this school previously, this study aims to contribute significantly to the development of link and match initiatives within vocational education more broadly.

RESEARCH

This study employs a descriptive qualitative approach aimed at understanding the object in its natural condition, with the researcher serving as the primary instrument (Abdussamad, 2021: 80). Data collection techniques are conducted through triangulation, while data analysis is inductive. In this method, data is presented in the form of words or images to provide a deeper understanding rather than merely relying on numbers (Sugiyono, 2020: 7).

A case study approach is applied in this research to conduct an in-depth analysis of a specific phenomenon, whether at the individual, group, organizational, or program level (Abdussamad, 2021: 90-91). Case studies enable researchers to collect relevant data and analyze it intensively to generate findings that contribute to the development of theories or a broader understanding of the studied phenomenon.

Qualitative research has several key characteristics, such as being natural without manipulation, emphasizing the process over the final results, and utilizing humans as the primary instrument in data collection (Moleong in Abdussamad, 2021: 82–87). Additionally, theories are developed based on empirical data, data analysis is conducted inductively, and research design remains flexible and can change according to field conditions.

In qualitative research, study findings must be discussed with informants to ensure accurate data interpretation. Data analysis is carried out continuously from the beginning of the research process, including data reduction, data presentation, and interpretation (Moleong in Abdussamad, 2021: 82–87). This approach aims to maintain data validity and ensure that the conclusions drawn truly reflect the reality being studied.

This study is expected to provide a comprehensive understanding of the implementation of link and match in enhancing the competence of graduates at SMK Negeri 7 Semarang. Through collaboration between schools and the workforce, graduates are expected to be better prepared to compete in the labor market. Furthermore, the research findings can serve as strategic recommendations for policymakers in optimizing vocational education programs at the secondary school level. Data collection techniques include interviews, observations, and document studies. The primary instrument in qualitative research is the researcher themselves, supported by an interview guide. Data validity is tested using triangulation (technical triangulation and source triangulation) and extended observations. Qualitative data analysis follows the Miles and Huberman model, which includes data collection, data reduction, data presentation, and conclusion drawing.

RESULTS AND DISCUSSION

Planning is a crucial initial step in any program, as it determines the objectives, necessary steps, and resources required to ensure effective and efficient implementation. As a Center of Excellence Vocational High School (SMK Pusat Keunggulan), SMK Negeri 7 Semarang designs a structured vocational education alignment program with businesses, industries, and the workforce to ensure graduates possess relevant competencies, secure employment, or pursue higher education. This program also aims to establish the school as a center of excellence, quality enhancement, and a reference model for other vocational schools.

1. Link and Match Planning at SMK Negeri 7 Semarang

SMK Negeri 7 Semarang implements the link and match program to enhance graduates' competencies in line with labor market demands. This program follows SK Dirjen Pendidikan Vokasi Kemdikbud No. 37/D/DM/2021 and aims to position the school as a center of excellence.

a) Formation of a Work Team

To execute this program, the school established a work team consisting of the principal as the head, along with vice principals in curriculum, industry partnerships, and quality assurance. This team is responsible for ensuring the smooth implementation of the link and match program.

b) Establishment of the Link and Match Program

The program is based on the 8+i link and match concept, covering various aspects, including curriculum, learning process, guest lecturers, industrial internships, competency certification, teacher training, teaching factories, job placement commitments, and scholarships or industrial-sponsored education agreements.

c) Mapping and Selection of Industrial Partners

The school conducts industry mapping to identify relevant sectors aligned with its expertise. This mapping helps understand the local industrial landscape and potential partnerships to tailor graduates' skills to industry needs.

d) Initial Communication with Industry

Following the mapping process, the school establishes initial communication with identified companies. This approach seeks to understand their vision, mission, and workforce requirements, while also evaluating their suitability for collaboration under the link and match program.

e) Signing of MoU with Industry

If the industry agrees to collaborate, a Memorandum of Understanding (MoU) is signed as a legal foundation for the partnership. The MoU outlines the rights and responsibilities of both parties, including the duration of cooperation, program types, evaluation mechanisms, and reporting procedures.

f) Joint Curriculum Development

The school and industry partners collaboratively design a curriculum that aligns with industry standards. This ensures that the learning materials remain relevant to labor market demands, equipping graduates with industry-ready skills.

g) Implementation of Industry-Based Classes

The school introduces specialized industry-based classes, such as PLN Class or Samsung Class, to provide focused and in-depth training. This model directly connects students with the industry, improving both technical expertise and soft skills.

h) Application of Teaching Factory

Through the teaching factory model, students gain hands-on industry experience under the guidance of professional technicians or instructors. This ensures that students understand industry quality standards and are ready to compete in the workforce.

i) Socialization of the Link and Match Program

The link and match program is introduced through staff meetings, teacher training, and student and parent orientation sessions. This process ensures that all stakeholders understand the program's significance and support its implementation.

j) Regular Curriculum Synchronization

Each academic year, SMK Negeri 7 Semarang conducts curriculum synchronization with industry partners. This involves alumni engagement and company visits to gather direct feedback on industry-required competencies.

This program not only enhances the quality of education but also ensures that graduates are job-ready and aligned with market demands. The close collaboration between the school and industry aims to create an effective and competitive vocational education ecosystem.

Planning is a crucial initial stage in management before implementing policies and programs. At SMK Negeri 7 Semarang, the Link and Match program planning is carried out through the establishment of a task force appointed by the school principal. This team consists of various school management elements, including vice principals and heads of skill concentrations. The planning process includes program determination based on the 8+i concept, mapping of industrial partners, joint curriculum development, and signing of a Memorandum of Understanding (MoU) with the business and industrial

sectors (DUDI). These steps aim to ensure alignment between the school curriculum and industry needs, so that graduates possess competencies relevant to the labor market.

2. Implementation of Link and Match in Enhancing Graduates' Competencies at SMK Negeri 7 Semarang

The implementation of the Link and Match program is a strategic initiative designed by the Ministry of Education and Culture of the Republic of Indonesia to ensure that education, particularly in vocational high schools (SMK), aligns with the needs of the workforce, businesses, and industries. This policy aims to produce graduates with competencies that meet labor market demands, enabling them to contribute directly to the industrial sector. The alignment is achieved through various approaches, such as developing an industry-based curriculum, implementing fieldwork practices, and fostering collaboration between educational institutions and industry sectors.

The execution of the Link and Match program goes beyond merely providing technical skills to students; it also involves optimizing school management functions, which include:

a) Developing and aligning the curriculum with industry and labor market needs,
b) Implementing project-based learning involving real-world products or services from industry,
c) Engaging guest lecturers from industry,
d) Organizing internship programs (Praktik Kerja Lapangan/PKL),
e) Providing industryrecognized competency certifications for graduates,
f) Conducting teacher training through industry internships,
g) Establishing teaching factories,
h) Ensuring job placement commitments for graduates,
i) Encouraging industry involvement in all aspects of vocational education management as an integral part of the Link and Match program.

Through this approach, it is expected that students' competencies will improve, the employment absorption rate of SMK graduates will significantly increase, and the long-term relationship between educational institutions and the industrial sector will be further strengthened.

In its implementation, the Link and Match program at SMK Negeri 7 Semarang is applied through various strategies, such as curriculum synchronization, Project-Based Learning (PJBL), guest teacher programs, industrial internships (PKL), competency certification, teacher internships in industry, teaching factories, graduate recruitment commitments, and industry involvement in education delivery. One of the main advantages of this program is its real project-based learning approach, where students work on actual industry projects under teacher supervision. Additionally, the teaching factory at the school enables students to practice directly in a workshop managed in collaboration with industry experts. The guest teacher program also benefits both students and teachers, as industry professionals not only impart technical skills but also update educators on the latest industry trends.

3. Evaluation of the Link and Match Program in Enhancing Graduate Competencies at SMK Negeri 7 Semarang

The evaluation of the Link and Match program at SMK Negeri 7 Semarang has demonstrated success in improving graduate competencies to align with industrial needs. This program involves collaborative curriculum development with industry partners to ensure the integration of soft skills and hard skills. Additionally, teacher competencies have been enhanced through training programs and the involvement of industry practitioners as guest lecturers. Internships and workplace training play a crucial role in this program, providing students with hands-on industry experience. Furthermore, industry-recognized competency certification has been implemented to increase the competitiveness of graduates.

SMK Negeri 7 Semarang has established partnerships with 208 industry partners, contributing to the provision of facilities, equipment donations, and the establishment of internationally standardized industrial classes. Moreover, industries share new technologies and the latest products to enrich the knowledge of both students and teachers. This program not only enhances the relevance of vocational education to market demands but also strengthens the relationship between the school and the industrial sector, ensuring that graduates are better prepared for the workforce.

Despite some challenges in implementation, the evaluation results indicate that this program is effective in improving graduates' employability. The evaluation process of the Link and Match program at SMK Negeri 7 Semarang involves several key steps aimed at assessing the alignment between the educational curriculum and industry requirements. The following is a summary of the evaluation process:

1. Assessment of Initial Plans

The evaluation begins with a review of plans developed in collaboration with industry partners. It is acknowledged that not all plans can be executed perfectly, often due to high industry expectations or limitations in resources and implementation.

2. Annual Program Evaluation

   Each year, the program undergoes an annual evaluation to assess whether the target objectives have been achieved. If the targets are not met, the head of the specialization program is required to analyze the causes and propose alternative solutions.

3. Discussion and Follow-up Actions

Evaluation results are discussed in forums with relevant teachers, where feedback is provided on achievements and areas needing improvement. This process aims to enhance and refine the program for the following year.

4. Financial Considerations

If additional funding is required for program follow-up actions, the request is submitted for budget approval by the school treasurer and principal. If funding is not feasible, the focus is shifted toward activities that can be carried out without financial constraints.

5. Program Benefits and Sustainability

The evaluation also includes an assessment of the benefits of the program. If the program is found to be beneficial and sustainable, efforts will be made to expand partnerships with more companies to increase industry engagement and diversity.

The evaluation stage is conducted to ensure the sustainability and effectiveness of the program. This process includes an assessment of the initial plan, annual program evaluation, discussion and follow-up actions, financial aspects, and program benefits and sustainability. A key strength of the evaluation process lies in industry involvement, particularly in assessing the effectiveness of industrial internships and teacher training programs. The evaluation aims to identify successes and challenges faced, providing a foundation for improving and developing future programs. Through this structured approach, SMK Negeri 7 Semarang enhances the relevance of vocational education and strengthens its partnership with the industrial sector, ensuring that its graduates are well-prepared to face the challenges of the workforce.

Overall, this evaluation process focuses on enhancing the quality of vocational education, ensuring that graduates meet the demands of the workforce and industrial sectors. Additionally, the evaluation fosters a mutually beneficial relationship between educational institutions and the job market, creating a more effective and competitive vocational education ecosystem.

CONCLUSION

Based on the discussion and research findings, several conclusions can be drawn regarding the implementation of the Link and Match program in improving graduate competencies at SMK Negeri 7 Semarang. The planning process begins with the formation of a task force, which includes the principal, vice principals, their staff, and the heads of skill concentrations. The subsequent planning stages involve establishing the Link and Match program, mapping and selecting industrial partners, signing a Memorandum of Understanding (MoU), developing a joint curriculum, and conducting socialization activities to introduce the program.

The implementation of the Link and Match program at SMK Negeri 7 Semarang encompasses various strategies, including curriculum synchronization, Project-Based Learning (PJBL), the Guest Teacher Program, industrial internships (PKL), competency certification, teacher internships in industry,

the teaching factory model, graduate recruitment commitments, and industry involvement in education implementation. The program offers several key advantages, particularly in real project-based learning, teaching factories, and guest teacher programs from the industry. In real project-based learning, students actively participate in actual industry projects conducted at school under the guidance of teachers, helping them develop a sense of responsibility in meeting specific targets. The teaching factory model is regularly implemented, especially in the automotive engineering concentration, where the school has a dedicated workshop managed by invited industry professionals. Students take turns participating in practical learning sessions based on a predetermined schedule. Another significant advantage is the guest teacher program, in which industry professionals teach at the school. This initiative benefits both students and teachers, as educators also gain updated industry knowledge and skills, ensuring alignment with current industry developments.

The final stage in the implementation of the Link and Match program is evaluation, which ensures the program's sustainability and effectiveness. The evaluation process at SMK Negeri 7 Semarang consists of several stages, including the assessment of the initial plan, annual program evaluation, discussions and follow-up actions, financial aspects, and an analysis of benefits and sustainability. Industry representatives play a vital role in this evaluation by providing feedback on the program's execution. A key strength of this evaluation process is external participation, particularly in assessing the effectiveness of industrial internships (PKL) and teacher training programs. By involving industry professionals, the school can establish and measure educational standards, ensuring that the evaluation process not only offers additional perspectives but also contributes to improving the quality of the program.

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