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Strategy for development link and match based on TVET in Supporting Merdeka Belajar Kampus Merdeka (MBKM) Program

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ABSTRACT
The concept of Link and Match has long been applied in Indonesia, but there are concepts that must be updated according to the needs of the industry. To get the TVET-based link and match concept as expected, a strategy is needed to make it happen. Therefore it is necessary to 1) describe the implementation of the link and match program with the industrial world for SMK graduates. 2) describe the supporting and inhibiting factors for link and match with the industrial world in SMK graduates; 3) describe the solutions made to overcome the problems that occur.
This research is qualitative research with a case study approach. The data sources used are words and actions as well as written sources. The technique of collecting research subjects used purposive sampling and snowball sampling. The selected data collection techniques are observation, interviews, documentation, and triangulation. Data validity testing technique is in the form of triangulation of technical sources. Data analysis techniques used interactive analysis techniques in the form of data reduction, data presentation, and drawing conclusions/verification.
Based on the results of the research, strategies are obtained in realizing TVET-based link and match in the implementation of the independent curriculum: 1) TVET curriculum development perspective approach; 2) Approach to the world of industry; 3) Independent learning curriculum approach
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Keywords: *Link and Match, Tvet, curriculum*

1. INTRODUCTION

The Merdeka Learning Campus Merdeka Program (MBKM) is an initiative launched by the Indonesian government to encourage lifelong learning among students, encourage entrepreneurship, and improve the quality of higher education in the country. One of the main objectives of this program is to align the skills and competencies of graduates with the needs of industry and the labor market.

To achieve this goal, the MBKM program offers several activities such as cross-college lectures, internships, competency certification, and entrepreneurship development. In addition, this program also gives freedom to students to choose and determine the educational path that suits their interests, talents and needs [1].

In the context of increasing TVET-based link and match, the MBKM program can help strengthen relations between universities and the world of industry and the job market [2]. This program provides opportunities for students to develop the skills and competencies needed by the industry, so that university graduates can meet the needs of a quality workforce that is in line with the demands of the times.

In addition, the MBKM program also encourages universities to establish partnerships with TVET institutions and industry to improve the quality and relevance of education [3]. That way, universities can adjust their curriculum and teaching to industry developments and the job market, so that university graduates can be ready to enter the world of work with the appropriate competencies.

Overall, the MBKM program has great potential to increase TVET-based link and match and improve the quality of higher education in Indonesia. With support from various parties, this program can help prepare students to become a generation that is more competent, innovative, and ready to face future challenges.

To achieve this goal, it is important to build strong relationships and partnerships between the Technical and Vocational Education and Training (TVET) system and industry. TVET institutions can provide students with relevant and practical training in areas such as technical skills, digital literacy and entrepreneurship, which are very important for the industry. In addition, TVET

agencies can work with industry to identify current and future skills needs and develop training programs to meet these needs.

Partnerships between TVET institutions and industry are essential to ensure that graduates have the skills and competencies required by the labor market. In addition, TVET institutions can strengthen their curricula by incorporating inputs and perspectives from industry in the development of training programmes. This will also help ensure that graduates have a better understanding of the challenges and opportunities in the job market and are prepared to deal with them after graduation [4].

Building partnerships with quality and leading TVET institutions in Indonesia can be an effective strategy in supporting the Merdeka Learning Kampus Merdeka (MBKM) program with a focus on increasing TVET-based links and matches. Through this partnership, higher education institutions can optimize their facilities and resources, so that they can organize skills training and competency certification that are of higher quality and relevant to industry needs [5].

Some steps that can be taken in building partnerships with TVET institutions in Indonesia include:

1. Identification of quality and leading TVET institutions in Indonesia, as well as areas of expertise that are appropriate to the study programs being carried out in tertiary institutions.
2. Contact and present the programs and advantages of the tertiary institution to the intended TVET institution. Establish good communication and cooperation with the TVET institution.
3. Discuss the skills training program and competency certification that will be held, including the curriculum, learning methods, and facilities that will be used.
4. Convey the benefits that students get from participating in the skills training and competency certification programs, such as skills improvement, job opportunities, and increased competitiveness in the world of work.
5. Establish cooperation in the implementation of skills training programs and competency certification, including the sharing of costs and facilities used.
6. Evaluate the results of the skills training and competency certification programs held, and make improvements and improvements for the next program.

Efforts to build partnerships with quality and leading TVET institutions in Indonesia, universities can improve the quality of education and student skills, and help prepare graduates who are ready to enter the world of work. In addition, this partnership can also strengthen the link and match between the world of education and industry, so as to create more and more quality jobs in Indonesia.

2. RESEARCH METHODS

This study uses a qualitative approach with a focus on several cases of TVET implementation in Indonesia. A qualitative approach is used to gain an in-depth understanding of TVET implementation in Indonesia, so that this research not only provides an overview of the TVET situation in Indonesia, but also provides an understanding of the factors influencing TVET implementation.

Sources of data processed in this research are opinions and actions from several written sources, such as policy documents, research reports, and scientific publications [6]. Data collection techniques used are observation, interviews, documentation, and triangulation. Observations were used to directly observe the situation of TVET implementation in the field, while interviews were used to obtain information from experts and stakeholders related to TVET in Indonesia. Documentation is used to collect data from documents related to TVET, such as policies, strategic plans, and research reports. Triangulation techniques are used to verify the validity of data by comparing data from different sources.

The data analysis technique used in this study is interactive analysis, which consists of data reduction, data presentation, and conclusion/verification. Data reduction is used to organize the data that has been collected and identify certain patterns or themes. Data presentation is used to communicate the results of the analysis visually, while drawing conclusions/verification is used to validate the findings and conclusions drawn from the data analysis.

In terms of testing the validity of the data, this study uses a technical source triangulation technique. This technique is carried out by comparing data from several different technical sources, such as policy documents, research reports, and scientific publications, to ensure the validity of the data. Thus, the data collection and analysis techniques used in this study were designed to ensure the accuracy and validity of the data, so as to provide credible and useful research results.

3. RESULTS AND DISCUSSION

The Link and Match program with the industrial world for SMK graduates is one of the programs that aims to improve the skills and competencies of SMK students so they can be better prepared to face the world of work. Its implementation is usually carried out through cooperation between SMK and industry in several stages, namely:

1. Identification of industry needs: The industry will provide information about the skills and competency requirements required by the industry. This information will be used to develop curricula and training programs that suit industry needs.
2. Curriculum development: After knowing the needs of the industry, the SMK will develop a curriculum and training program that can meet these needs. This curriculum will cover subjects relevant to specific

industry areas, as well as training in practical skills required by the industry.

3. Student training: Once the curriculum and training program have been developed, students will begin attending training organized by SMKs and industry. This training usually includes technical skills training, entrepreneurship training, and digital literacy training.
4. Work placement: After completing the training, SMK students will be placed for internships or work in companies that have collaborated with SMK. This will give students the opportunity to experience the work environment first-hand and enhance their skills in the relevant areas.

In its implementation, the Link and Match program must be carried out carefully and based on mutually beneficial cooperation between SMKs and industry. This will help SMK students become better prepared to face the world of work and can help meet the needs of industrial workers [7].

Factors supporting and inhibiting the occurrence of link and match between SMK graduates and the industrial world can influence the success of implementing the program. The following are several factors that can support and hinder the formation of links and matches between Vocational High Schools and the industrial world:

Supporting factors:

1. Active cooperation between SMKs and industry: Good cooperation between SMKs and industry is a major factor in building effective link and match. Close collaboration and mutual understanding between the two parties will enable the development of curricula and training programs that are relevant to industry needs.
2. Curriculum renewal: Flexibility in renewing the SMK curriculum is an important factor. Vocational schools need to keep up with the latest technological developments and industry trends so that graduates can have skills that match the needs of the job market.
3. Adequate practice facilities and facilities: Availability of adequate facilities and practice facilities in Vocational Schools can improve students' ability to apply practical skills needed in the industrial world. Modern and relevant facilities will provide a better learning experience.
4. Government support and enabling policies: Government support through policies that support collaboration between SMKs and industry is very important. Government initiatives to facilitate link and match programs by providing incentives, financial assistance, and recognition of existing cooperation can strengthen this relationship.

Inhibitor factors:

1. Lack of understanding and poor communication: Lack of understanding and good communication between SMK and industry can hinder the formation of effective link and match. Unclearness about industry needs, irrelevant curricula, and gaps between industry expectations and SMK graduates can become obstacles.
2. Rapid changes in industry requirements: Rapid changes in technology and industrial requirements can be a challenge for SMKs. If SMKs cannot keep up with these changes by updating curricula and training programs, then effective link and match may be difficult to materialize.
3. Limited practical facilities and infrastructure: Limited practical facilities and infrastructure at SMK may limit students' ability to develop practical skills required by industry. The incompatibility of facilities with industrial needs can also be a barrier.
4. Lack of incentives and recognition: Lack of incentives and adequate recognition for SMKs and industries that collaborate can reduce motivation and commitment to build effective link and match.

For overcome the inhibiting factors, there needs to be a strong commitment from SMK, industry and government in strengthening cooperation, improving communication, and allocating adequate resources to support the successful implementation of link and match.

Solutions are made to overcome the problems that occur in the formation of links and matches between SMK graduates and the industrial world, some of the solutions that can be done include:

1. Improving communication and cooperation: Vocational schools and industry need to increase intensive communication and close cooperation. By holding regular meetings, discussions and dialogue forums between the two parties, they can understand each other's needs, hopes and challenges. This will assist in the development of relevant curricula and training programs that suit industry needs.
2. Development of a responsive curriculum: SMKs need to update and develop a curriculum that is responsive to industrial developments and the needs of the labor market. Involving industry in the curriculum development process can ensure the accuracy and relevance of the skills being taught.
3. Provision of adequate facilities and practice facilities: SMKs need to ensure the availability of adequate facilities and practice facilities according to industry needs. In case of limited resources, SMKs can establish partnerships with industry to utilize their facilities or seek additional resources through collaboration with related parties.
4. Enhance the role of industry in learning: Engaging industry representatives in learning activities, such as guest teaching or mentoring, can provide students with practical insights and hands-on experience. Industry may also organize industry visits, internships, or other co-op programs to give students real-world experience in the work environment.

5. Establishment of a quality assurance agency: The government can establish a quality assurance agency whose job is to supervise and evaluate the implementation of the link and match between SMKs and industry. This institution can ensure the suitability of the curriculum with industry needs, monitor the quality of training, and provide competency certification to graduates who meet industry standards.
6. Incentives and policy support: The government can provide incentives, such as financial support or tax exemptions, to SMKs and industries that collaborate in link and match programs. Clear and structured policy support will encourage active participation from SMKs and industry in running this program.

With these solutions, it is hoped that there will be a significant increase in the formation of effective links and matches between SMK graduates and the industrial world. Good collaboration, relevant curricula, adequate facilities, and the active role of industry will ensure that SMK graduates are ready to face the challenges of the world of work and meet industry needs.

Finch & Crunkilton (1984) illustrates that participation in formal and informal education has an important role in the two main goals of education, consist is:

1. Education for life: This goal includes holistic personal development and prepares the individual to live life as a whole. Through participation in education, individuals have the opportunity to acquire the knowledge, skills and values necessary to develop themselves personally and socially. Education for life aims to form individuals who are knowledgeable, critical, creative, and have the ability to think independently and problem solve.
2. Education for a living: This goal emphasizes the preparation of individuals to enter the world of work and achieve economic success. Participation in formal and informal education provides individuals with skills, knowledge, and competencies relevant to the job market. This helps them prepare themselves to face challenges and competition in the world of work, as well as increase their chances of getting a job that matches their interests, talents and expertise.

Participation in formal education such as schools and colleges provides opportunities to earn officially recognized academic degrees and qualifications. Meanwhile, informal education such as training, courses, workshops, or independent learning experiences provide opportunities to develop specific skills or deepen knowledge in certain fields.

With active participation in formal and informal education, individuals have greater opportunities to optimize their potential, broaden their horizons, improve their skills, and better prepare themselves to face life's challenges.

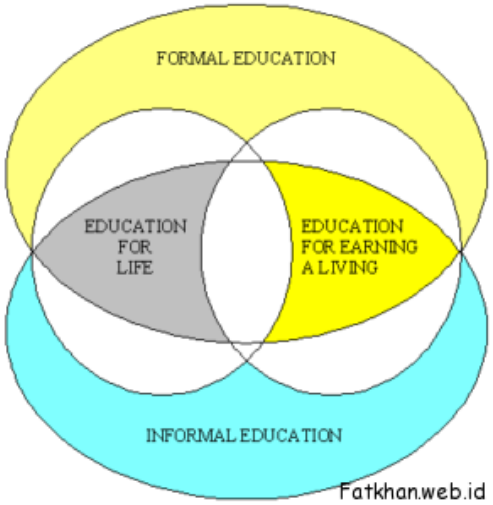

Figure 1. TVET curriculum development perspective [7]

AUTHORS' CONTRIBUTIONS

Based on the analysis of the discussion above, the contributors that the author provides are three approaches in the form of strategies in realizing TVET-based link and match in the implementation of the independent curriculum.

1. **Curriculum development perspective approach TVET**

   The TVET (Technical and Vocational Education and Training) curriculum development perspective approach aims to ensure that the TVET curriculum is in accordance with the needs of the industrial world and the labor market. Following are some of the elements associated with this approach:

   a. Industry needs analysis: This approach starts with conducting an in-depth analysis of the needs of the industry and the labor market. Through collaboration with companies and related industrial institutions, the skills, knowledge, and competencies needed by workers in the sector are identified. This analysis involves understanding industry trends, technological developments, and changes in job demands.
   b. Competency mapping: Based on the results of the industry needs analysis, a competency mapping is carried out that must be possessed by TVET graduates. This competency includes technical skills, theoretical knowledge, generic skills (such as communication skills, teamwork, and problem solving), as well as professional attitudes required in the world of work.
   c. Competency-based curriculum development: TVET's curriculum development approach focuses on competency-based curriculum development. This curriculum is designed by considering the competencies that must be mastered by students during the training program. Selection of relevant teaching methods, practical activities, and appropriate assessments are carried

out to ensure students develop and acquire the expected competencies.

d. Industry involvement: It is important to involve industry in the TVET curriculum development process. This can be done through cooperation, consultation, and the active participation of industry representatives in the decision-making process related to the curriculum. This engagement ensures that the curriculum takes into account the actual needs of the world of work, industry best practices, and the latest developments in technology and industry.
e. Flexibility and adaptability: The TVET curriculum needs to have flexibility and adaptability to keep up with changes in the industry and labor market. The curriculum must be able to adapt to changes in technology, changing market needs, and new developments in the industry. This can be done through periodic updating of curricula, ongoing collaboration with industry, and constant monitoring of the latest trends and developments.

The TVET curriculum development perspective approach ensures that TVET graduates have skills and competencies that are relevant to the world of work. By involving industry in the curriculum development process, students can receive relevant education and training, increase their chances of entering the world of work, and make a valuable contribution to economic development [8].

2. The world approach industry

The industrial world approach is an approach in education that involves active involvement and collaboration between schools or educational institutions and the industrial world or work sector. This approach aims to ensure that students gain a sound understanding of the world of work and relevant preparation for entering the labor market [9,10].

The following are some elements related to the industrial world approach:

a. Cooperation with industry: Schools or educational institutions work closely with companies, organizations or related industrial sectors to integrate industrial perspectives in the curriculum and learning experience of students. This collaboration can include industry visits, internships, project partnerships, guest speakers from industry, or the development of joint training programs.
b. Preparation of relevant curricula: Schools or educational institutions work closely with industry to identify the skills, knowledge and competencies needed by the world of work. Based on this understanding, curricula can be structured and updated to be more relevant to current and future industry needs. This ensures that students acquire skills appropriate to the demands and latest developments in the world of work.
c. Practical skills training: The industrial approach emphasizes developing the practical skills needed in the world of work. In addition to learning theory, students are also involved in practical skills training relevant to specific industrial fields. This can include training in equipment use, work techniques, problem solving, communication and team collaboration.
d. Mentoring and guidance: In the industrial world approach, mentors from industry can be involved in providing guidance and direction to students. These mentors can provide students with insight and hands-on experience, help them understand the world of work, and provide advice and support in their career development.
e. Program updates and adaptation: The industry continues to evolve rapidly, and the industrial world approach requires education programs to remain relevant and adaptive to these changes. Through collaboration with industry, programs can be updated regularly to reflect the latest developments in technology, work practices and industry demands.

With an industrial world approach, students can have learning experiences that are more real and relevant to the world of work. They can develop the skills they need, build a professional network, and set themselves up for success in the labor market. On the other hand, industry can also contribute by providing input, training students, and identifying potential talent that fits their needs.

3. Independent learning curriculum approach

The Free Learning Curriculum Approach is an approach adopted in the Free Learning Program launched by the Indonesian government. This approach emphasizes freedom of learning and provides flexibility to students in choosing courses, learning methods, and educational pathways that suit their interests, needs, and goals.

The following are some of the elements associated with the Independent Learning Curriculum approach:

a. Flexibility in choosing courses: Students are given the freedom to choose courses according to their interests and learning goals. They can choose cross-disciplinary courses or specific courses according to their interests. This flexibility allows students to explore their interests and develop knowledge and skills relevant to their career goals.
b. Innovative learning methods: This approach encourages the use of innovative and diverse learning methods. In addition to traditional learning methods such as lectures, discussions, and written assignments, the Independent Learning Curriculum approach also encourages the use of digital technology, collaborative

projects, practical experiments, internships, or off-campus learning experiences. This provides a more interactive, engaged, and relevant learning experience for students.

c. Lifelong learning: This approach recognizes the importance of lifelong learning and supports competency development during study and after graduation. Students are encouraged to continue learning and developing new skills in line with developments in technology and the needs of the job market. The Merdeka Learning curriculum provides space for continuous self-development, including opportunities to take part in certification programs, additional training or short courses.
d. Diverse assessment: This approach also encourages the use of diverse and inclusive assessment methods. In addition to written examinations, assessments can be made through projects, presentations, portfolios, practical assignments or skills-based assessments. This provides opportunities for students to demonstrate their abilities holistically and in accordance with real work contexts.
e. Partnerships with industry and community: The Free Learning Curriculum Approach also involves close partnerships between universities with industry and the community. Through these partnerships, students can get involved in real-life projects, internships or work experiences that provide practical understanding of the world of work and enrich their learning experience.

The Independent Learning Curriculum Approach provides opportunities for students to take control of their learning process and develop competencies that are relevant to their interests and talents.

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