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Implementation of the 8+i Link and Match Vocational School Program

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ABSTRACT

This research aims to create the 8+i link and match model as an embodiment of a healthy learning ecosystem between schools and the worlds of business and industry The research technique is a mix of quantitative and qualitative research methodologies. The qualitative technique develops a basic list of success characteristics using meta-ethnography, whereas the quantitative approach defines the link between the variables under examination by establishing or building many latent variables that explain the relationship between variables using Aiken's formula and SPSS Version 26. The study's findings demonstrate the success of the 8+i link and match model between Muhammadiyah 1 Ciputat vocational high school and industry in generating efficiency and mutual benefits for both parties, not just ordinary collaboration, but intense collaboration from the curriculum development, learning, and industrial work practices designed collaboratively. The Implication of the 8+i link and match model if correctly implemented is that the industry will profit because the training expenses is reduced, and SMKs will benefit because their graduates is absorbed by the industry. Recommendations for the SMK curriculum must include schools, and industry, also Teaching personnel must include practitioners from industry as well as instructors from schools.

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1. INTRODUCTION

As part of efforts to raise the caliber and competitiveness of Indonesia's human resources, the center for excellence school program was launched in compliance with Presidential Instruction No. 9 of 2016 [1]. One of the top priorities for the Directorate General of Vocational F20 cation (Directorate General of Vocational Education) of the Ministry of Education and Culture in 2021 is the SMK Center of Excellence (SMK Center of Excellence). This program aims to build SMKs with particular expertise to experience quality and performance improvements and establish themselves as a model for other schools [2]. The Freedom to Learn philosophy, which emphasizes devaloping human capital and bridging the gap between the academic and professional 21 orlds, is carried by the Center for Excellence Vocational School program. This program is expected to improve the quality of student learning outcomes according to the needs of the industrial world [3]. This accomplishment was made stronger by partnerships with the commercial, industrial, and employment sectors through the connect and match program, which was established in 1989 and aimed to better align the workforce with labor market demands [4]. However, statistics on the unemployment rate, the high number of open positions, the poor quality of workers, and the outcomes of Sakernas data analysis indicate that there is

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still a significant mismatch between education and the needs of the industrial world. The link and match program evaluates the skills that the future labor market will require. It is envisaged that the educational orientation paradigm will shift from supply-focused to demagnification focused (market needs) [5].

In the context of link and match or mass marriages between Vocational Schools and industry and the world of work, this is exploring the competencies neede by the job market in the future [6]. Link and match education is a vocational training approach which aims to bridge the gap between the the setical knowledge acquired in school and practical application in the professional sphere. Its primary objective is to equip students with the necessary skills and enhance their learning experience by providing opportunities to apply their knowledge in real-world work settings. The ultimate goal is to prepare these students for a smooth transition into the labor market upon their graduation from school [7]. In essence, the link and match concept is related to 14 riculum synchronization which aims to formulate a curriculum that is in accordance with national targe 14 nd in accordance with the needs of the business and industrial, so that the skills possessed by students are in accordance with the needs of igo stry, the business and industrial [8], [9]. Vocational High Schools need to collaborate synergistically with the world of professional work so that the relevance of Vocational High Schools can be increased from time to time, of course, with the working principle that Vocational High Schools must also be able to provide be sfits to the business world (win-win management model), if they are to carry out a link and match program [10]. Implementation of the link and match program began in the past preparatory phase, followed by its implementation through educational and learning procedures inside educational institutions, as well as through partnerships with industry stakeholders. Additionally, the program undergoes an assessment phase [11]. The relationship between the school and business and industrial serves as a supporting component for the link and match approach. Furthermore, there were favorable reactions from students, parents, the Department of Education and Innovation, and governmental entities [12]. While inhibiting factor for the occurrence of link and match there are 2 internal factors, namely teachers and infrastructure, curriculum, school funding and external factors, namely competition between private vocational schools in Banten Province [13].

Muhammadiyah 1 Ciputat Vocational School is one of the Private Vocational Schools under the auspices of the Muhammadiyah Central Executive on the initiative of the Muhammadiyah Leaders in the Education and Culture Sector of the Ciputat Region which is located in South Tangerang, Banten Province. In 2020, SMK Muhammadiyah 1 Ciputat, South Tangerang, Banten Province received CoE assistance in the field of institutional financial accounting. Muhammadiyah 1 Ciputat Vocational High School has four competency skills: Institutional Financial Accounting, Online Business and Marketing, Sharia Banking, and Office Management Automation.

The emphasis on SMK becoming a center of excellence this year also leads to the 8+i link and match package towards skills that SMK students must possess, not only hard skills, but soft skills are also very important in the industrial world such as: attitude, work ethic, integrity, honesty and other values that must be included in the link and match program curriculum [14]. Then the second is apprenticeship or industrial practice, this has to be prepared from the start together with the industry. Do not let SMK students not only have the provision and competence to carry out industrial practices. The third is that teachers must have at least 50 hours teaching their students at SMK. Industrial practitioners also have 50 hours per semester teaching at SMKs. Then the fourth is the commitment and absorption of graduates. With this, because the curriculum is appropriate, with internships and has been designed with teachers, it is necessary to be ready to absorb SMK graduates as well as various other possible collaborations that can be carried out with the world of work, [15] including scholarships and or service ties, donations in the form of laboratory equipment or in other form, and so on. The problem of graduate competency mismatch is not absolutely the fault of the world of education. The business and industry parties themselves are unable to anticipate the competencies that will emerge and are expected in the future. The existence of this mism 8 h is one of the things that causes unemployment, because the competencies desired by the industrial world are not in accordance with the competencies possessed by SMK graduates [16].

METHOD

The research methodology uses a qualitative research approach. The qualitative method used in this study is meta-ethnography aimed at developing a general list of success factors [17]. The quantitative approach aims to clarify the relationship between the variables under consideration by creating or forming several latent variables that explain the relationship between variables [18]. Several experts have validated a list of success criteria through the use of a questionnaire. The research aimed to ascertain the significance of the independent variable, which may consist of one or more variables, withou 24 hgaging in comparisons or establishing connections with other variables [19]. Descriptive study refers to a type of research methodology that aims to provide a comprehensive description of a particular symptom, event, or ongoing occurrence [20]. The qualitative research method is a research approach grounded in the postpositivist philosophy. It is employed to investigate natural phenomena, as opposed to experimental settings, wherein the researcher assumes a central

role as the primary instrument. Data collection techniques are executed through a triangulation approach, combining multiple methods. The analysis of data is characterized by an inductive and qualitative nature. The outcomes of qualitative research prioritize the interpretation and significance of generalizations [21], [22]. The research was conducted at the SMK Muhammadiyah 1 Ciputat Center of Excellence, South Tangerang, Banten Province. Muhammadiyah 1 Ciputat Vocational School, South Tangerang, Banten Province is an initiative of the Ciputat Muhammadiyah Branch Leaders in the Education and Culture Section. SMK Muhammadiyah 1 Ciputat has 4 competency competencies, namely Institutional Financial Accounting, Online Business and Marketing, Sharia Banking, and Office Management Automation. The research subjects were productive subject teachers and class XI-XII vocational school students.

This research started by collecting information data for students and lecturers. At this stage data collection is done through interviews, questionnaire and documentation as information from the field. The data and information obtained are used as a basis for describing, analyzing and evaluating the implementation link and match program at Muhammadiyah Vocational High School 1 Ciputat in Banten Province. Researchers used two sources, namely researchers to find relevant secondary data using the literature review method, and data from primary sources using the Forum Group Discussion (FGD) method [23]. In this study, researchers will conduct FGDs first mapping the types of related actors who understand the link and match program, namely practitioners, regulators and academics [24]. Researchers also collect various data, facts and other information needed through documentation study procedures in photographs, archives and others [22] Data collected or obtained through interviews are recorded in Interview Field Notes (CLW). The interview is intended to reveal data or information regarding the phenomenon of applying artificial intelligence-based learning models [25]. The interview results were then confirmed to the informants for verification. Conducting interviews in this research aims to complement and deepen the results of data collection obtained through observation techniques [26].

The Collected data were analy 10 using The Aiken formula describes the critical factor success (resulting of the integration process and validated to determine the importance (significance) of each critical factor success using SPPS Version 26 [27].

3. RESULTS AND DISCUSSION

The overarching goal of the Center of Excellence Vocational School Program at SMK of Muhammadiyah 1 Ciputat, located in South Tangerang, Banten Province, is to cultivate graduates who are readily emp22ed or capable of establishing their own enterprises. This objective is achieved through a meticulous and comprehensive integration of vocational education with the practical demands of the professional realm. Additionally, the program aspires to serve as a benchmark and catalyst for enhancing the caliber and efficacy of other vocational schools. It is anticipated that graduates of Vocational High Schools would possess the necessary skills and qualifications to enter the workforce. The concept of Continuing Studies refers to the ongoing pursuit of education beyond traditional academic programs. Entrepreneurship is the process of identifying and pursuing opportunities to create and manage business ventures.

The results of the researcher's interview with the school principal and productive teachers show that the Center of Excellence (CoE) program at SMK of Muhammadiyah 1 Ciputat South Tangerang is ready to become a production-based learning model (teaching factory) in four areas of expertise, namely: institutional financial accounting, Islamic Banking, Administration Automation Manage Office and Online Buttonian and Online But Marketing. With the Center of Excellence program, schools are required to adapt their curriculum to 29 et the needs of the industrial world, the business and industry. So the curriculum must be prepared jointly with the world of business and industry according to their respective fields. So that what is learned at school is aligned with what is needed by the world of business and industry. In order to achieve this goal, SMKs are encouraged to hook industry into partners. From this process it is hoped that experience from the industrial world will be internalized into learning in Vocational High Schools. Instructors from the industrial world and vocational school teachers must revive the industrial work culture. It was further explained that, the current challenge is that SMKs still find it difficult to answer the needs of world of finished work industry this condition needs to be improved, due to that 1) Opportunities to increase the competence of teachers, principals and supervisats of SMKs according to the needs of business and industry are still few; 2) Stakeholder synergy, including the world of work, in the CoE program is still lacking; 3) Not all SMKs have developed a joint curriculum for industry, business and the business and industry; 4) Not all SMKs have standard facilities; 5) School management still tends to be burdened with administrative matters. Therefore, it is impensive to devise a comprehensive solution that effectively tackles the issues faced in order to enhance the state of vocational high schools (SMK) in alignment with the demands of the business and industrial sector.

Implementation of 8+i link and match program at center of excellence at SMK of Muhammadiyah 1 Ciputat, South Tangerang, Banten Province is based on 9 link and match points, namely: curriculum, real-based learning (PBL) from business and industry, number of teachers, apprentices/ business and industry. Internship industrial training competency certification, job absorption commitment from business and

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industry, scholarships, entrepreneurship training, based on the results of Aiken's form 16 obtained from distributing questionnaires to 10 productive teachers with a Likert scale from 1-5 where score 1 (very 10), score 2 (not good), score 3 (doubtful), score 4 (good) and score 5 (very good). All 10 productive teachers filled out a questionnaire that had been distributed by the researcher. The initial step 19 volves determining the content validity coefficient for each item related to the success factors by the use of Aiken's V formula. Ac 10 ting to the standard of content validity (V), if the study employs a sample of 10 experienced instructors as raters and 7 categories measured on a Likert scale, the minimal threshold for a substantial content validity coefficient (V) is 0.50 (V>0.50) [28]. The first stage is to calculate or calculate the content validity coefficient of each success factor item using the Aiken's V formula which is given as follows:

Tabel 1 explain on the results of the successful factor of implementation link and match model in SMK of Muhammadiyah 1 Ciputat, South Tangerang, Banten Province as follows: 1) In the curriculum aspect, the research findings are that the independent learning curriculum refers to competency standards set by industry/professional associations, and contains content that supports the achievement of student competencies that have not been achieved at SMK of Muhammadiyah 1 Ciputat South Tangerang, target achieved 10.17; 2) The school curriculum that was developed with business and industry including strengthening soft skills aspects and work character to complement the hard skill 1 pect meet the needs of the world of work has not reached the target of 0.19; 3) Teachers routinely receive technology updates and training from the world of work have not been well achieved, with an achievement target of 0.063.

Table 1. The Critical Factor Success in Implementation of the Link and Match Program

Table 1. The Critical Factor Success in Implementation of the Link and Match Program				
Respondents	Description	Critical Factor		
(Teacher)		Success		
Respondent-1	The independent learning curriculum refers to competency	0.170		
	standards set by industry/professional associations, and			
	contains content that supports student competency			
	achievement			
Respondent-2	Implementation of the independent learning curriculum	0.881		
	increases the employability skills of students			
Respondent-3	The Implementation of the Vocational School Creative Camp	0.778		
	Program Activities supports students to become creative			
	entrepreneurs			
Respondent-4	The competency certification process is given to SMK	0.701		
	teachers/students by the Business and Industry			
Respondent-5	17c school curriculum is prepared with business and industry	0.197		
	including strengthening aspects of soft skills and work			
	aracter to complement existing hard skills aspects line with			
	the needs of the world of work			
Respondent-6	The World of Business and Industry (provides job training to	0.881		
	achieve student competence skills).			
Respondent-7	Learning planning, implementation of learning and	0.591		
	assessment of learning outcomes (competence test)	0.424		
Respondent-8	Project-based learning is built on learning activities and real	0.624		
	assignments, it is hoped that it will equip students with soft			
	skills and hard skills which will make graduates more			
D 1 . 0	relevant for needs business and industry world.	0.072		
Respondent-9	Educators frequently get technological upgrades and training	0.063		
Decree dest 10	from industry professionals	0.001		
Respondent-10	Additional digital marketing materials and assistance for	0.881		
D 1.1	students in entrepreneurship	0.624		
Respondent-11	The form of partnership cooperation (MoU) carried out by the	0.624		
Dannandant 10	school and business and industry	0.001		
Respondent-12	Information about the material that will be provided by	0.881		
Deependent 12	industry in the guest teacher program	0.500		
Respondent-13	Principals and teachers know and understand the school link & match with industry business and industry program	0.588		
	& materi with industry business and industry program			

Increasing the need for industrial workers with demands for professional skills is one of the important goals of the Center for Excellence Vocational School program. Therefore, SMK of Muhammadiyah 1 Ciputat, South Tangerang must be carried out properly and involve interrelated parties such as teachers and students.

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Muhammadiyah 1 Cintat Vocational High School in South Tangerang is required to carry out a link and match program, namely: 1) The curriculum is prepared jointly, including strengthening soft skills aspects and work character to complement hard skills aspects according to the needs of the world of work. Curriculum Program Arranged Together (link & Match) schools with the business and industry training materials, and industry certification into the curriculum in schools. Both parties actively collaborate in making plans, starting from synchronizing curricula with industry, industrial partners must also actively encourage and provide support to schools to providel learning. Em active industrial partners end up being testers and recruiting SMK graduates to work in their industries; (2) Project-based learning, to ensure hard skills are accompanied by soft skills and strong character. This must be prepared jointly wth the industry so that later what students will learn must be according to industrial needs; (3) Enhancement number and role of eachers/instructors from industries to a minimum of 50 hours/semester/skills program; (4) Apprenticeship or work practice in the industry/world of work for at least 1 semester. The apprenticeship/apprenticeship program is carried out in a structured and wellmanaged manner between industry and schools so that students do not have the provision and competence to practice in industry; (5) Competency certification according to standards and world of world needs for graduating students and vocational chool teachers; (6) Teachers routinely receive technological updates and training from the world of w1k; (7) Applied research supports teaching factory originating from real cases or needs in industry/society; (8) Commitment to be absorbed by the world of work. With this, because the curriculum is appropriate, with apprenticeships and it has been designed with the teachers, it is necessary to be ready to absorb graduates of SMK Muhammadiyah 1 Ciputat, South Tangerang with a record of passing the psychological test and so on, with a note that both must have the desire; and (i) various other possible collaborations with the world of work, including scholarships and or service bonds, donations in the form of laboratory equipment or other forms.

Interviews result conducted by researchers with the 3 rincipal and productive teachers as well as Class XI-XII Vocational High School st ents in implementation of the link and match program are as follows:

- 1. In the aspect of cooperation, the implementation of link and match program is 31 lt through the business and industry Collaboration. Collaboration is the starting point in building Link and Match between SMK/PTV and industry. Cooperation is built on the basis of mutual need and benefit. In establishing cooperation, it usually begins with a cooperation program that is prepared according to needs, then there is a process of communication and coordination between the two parties, after good communication occurs, a joint agreement will be built which is contained in legal standing, which can be in the form of an MoU (Memorandum of Understanding). or Cooperation Agreement. Vocational schools that carry out Mou with industry are just said to be "Link" cannot be said to have "Match". To be able to Link and Match, then an analysis of the needs for follow-up cooperation is implemented into the learning process according to the 8 + i link and match program.
- 2. On the aspect of Project-Based Learning Development from implementation of link and match 11 he teaching and learning process that is effective and in accordance with SMK/PTV, one of which is the application of a project-based learning. Project-based learning is expected to have direct involvement from industry from the planning, preparation, implementation, evaluation, to marketing stages. It is expected that the project applied to learning is real according to industry's needs and standards, so that the application of learning has also applied the attitude and character of work so that in the end it becomes a work culture.
- 3. In terms of infrastructure, Muhammadiyah 1 Ciputat Vocational School, South Tangerang already has a practice learning place; workshops/workshops/land/studios are arranged and equipped with facilities and other supporting facilities according to the standards of the industry. The school environment has nuances like those in the industry, or real workplace/business.
- The management of practical learning refers to the systems and working hours of the business and industry in the new normal period.
- The results of student practical learning are in the form of real/intact goods or services in accordance with the standards industry and the needs of society in general.
- Practical learning using devices/instruments/formats to carry out activities/activities for the production of goods and or services.

4. CONCLUSION

Based on the findings of the study conducted on Implementation of Link and Match 8+i at SMK Muhammadiyah I Ciputat Vocational School in South Tangerang, Banten Province, it can be inferred that the

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8+i link and match program was successfully executed in Muhammadiyah 1 Ciputat Vocational School, South Tangerang, through active engagement with the business and industry sector. The 8+i link and match program encompassed many stages, including planning, coordination between SMK Muhammadiyah 1 Ciputat, South Tangerang Banten Province and industry, establishment of a Cooperation Agreement (MoU), development of a Cooperation program, program implementation, and program evaluation. Link and match as the output of a policy, is the concept of interrelationship educational institutions and the world of work is a liaison between labor providers and users. With this connection, education as a supplier of labor can establish relationships with the world of business and industry. With this link and match, an institution, especially Vocational Education, can collaborate with industry so that students can do internships at the company and can find out the student competencies that are most needed by the industry.

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