

Establishing Link And Match Programs To Increase Graduates' Competencies Of Vocational High School Center Of Excellent

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Abstract

The Indonesian government has managed to increase the rate of graduate absorption in industries through the implementation of the link and match programs which fostered a collaboration between Vocational High School Center of Excellence (VHS-CS) and its industrial partners. The aim of this research is to unveil the strategies adopted in the link and match program of VHS-CS in its effort to improve the absorption rate of its graduates in industries relevant to their competencies. This is a multi-case study with the qualitative approach. The research involved 24 informants from three VHS-CS in Malang Regency, East Java, Indonesia. The data collected were then analyzed by applying interactive and comparative techniques of multi-site data analysis. The research found that the strategies adopted in the link and match programs constitute one of the central government's 8+i program, which began with the VHS's planning the curriculum in collaboration with its industry partners. The program was periodically monitored by the team formed by the VHS and the associate team from higher educational institutions chosen by the Ministry of education. Eventually this strategy helped VHS develop the competencies of their graduates in accordance with the

demand of stakeholders, and the continuity of program.

Keywords: Center of Excellence, Graduates' Competencies, Link and Match, Vocational High School.

INTRODUCTION

The quality of teachers, learning activities, and the curriculum is highly necessary for the development of quality vocational high schools (VHS) in their efforts to promote professional excellence of individuals and create comfortable learning environment in the industrial era 4.0 (Lase, 2019). This means that the educational institutions are demanded to provide skilled workers competent enough to be a prerequisite for the national development by helping graduates to achieve the status as national assets and to provide professional, excellent human resources ready to be up against global competition (Heriyadi, 2021).

Efforts to increase the competencies and achievements of Indonesian vocational students have been made through spurring revitalization programs in order to foster national economic growth (Bultseva & Lebedeva, 2021). Muja et al., (2019) mentioned that the education programs need to be directly organized to prepare individuals to come into the industrial world. In this light, the provision of education should take into consideration the dynamics of technological changes which can change human cultures and ways of life, especially in the era of industrial revolution 4.0 (Suharno et al., 2020).

Indonesia has to embrace industry 4.0 of the fourth industrial revolution and take advantage of it to seize opportunities and face challenges which it presents (Dombrowski et al., 2019). Klippert et al., (2020) stated that industry 4.0 opens up opportunities for rapid acceleration in growth and poses tougher competition. Farida et al., (2020) said that the fourth industrial revolution intensifies regional, national and global competition which forces national industries to offer

products and provide service with competitive excellence. According to Xing et al., (2021), the demands in the industrial era 4.0 have no longer considered human resources to be complementary, but they instead become the greatest strength of industries in attaining more comprehensive innovation excellence.

Nowadays, Indonesian VHS are competing for being a center of excellence by spurring revitalization (Onestini, 2020). The 2020-2024 strategic planning of of the Ministry of Education and Culture of the Republic of Indonesia focuses on the improvement of the quality of vocational education by launching the program of VHS Center of Excellence, which is aimed at providing industry 4.0-based vocational education of quality officially recognized in the world of work. The Directorate General of Vocational Education (2021) launched the program of VHS-CE to expedite the process of enhancing the capacity of teachers and vocational students' learning, all of which is aimed at ensuring the relevance of graduates' competencies to the world of work. The program has been administered since 2017 (Kemendikbud, 2021). However, the program of VHS-CE focuses more on developing of human resources of VHS in a new, integrated paradigm, strengthening the administrative system of schools, and revising the curriculum to fit the need of the world of work and the use of digital platforms.

Therefore, the program of VHS-CE was designed to reduce the possibility of mismatch problems, which can lead to the decrease in graduates' competitiveness (Li et al., 2019). Moreover, according to the Ministry of Education (2021), the purpose of the program of VHS-CE can be achieved by applying the concept of 8+i. First, the curriculum is designed in accordance with the need of the world of work and the need for improving soft skills, hard skills, and work characteristics. Second, learning activities involve using real projects of the world of work to ensure the improvement of graduates' soft and hard skills and reveal their strong

characters. Third, the number of teachers and the roles of teachers, industrial instructors, and professionals in the world of work should be increased. Fourth, internship programs should be carried out for at least a semester. Fifth, the competencies of graduates, teachers, and industrial instructors should live up to the standards and requirements of the world of work. Sixth, teachers and industrial instructors should lay stress on technological innovations and improvements by giving students continuous training. Seventh, applied research should be conducted to support teaching factory learning for particular subjects. The eighth is the commitment for graduate absorption in the world of work. This last “i” factor may take a form of partnerships with industries.

The observation which was made in some VHSs in Malang regency, Indonesia, found out that learning activities at those VHS were still focused on routine and incidental activities, which were performed only to complete the programs administered by the regional and central government. The link and match activities performed in collaboration between the schools and their industry partners has not yet managed to encourage sustainable development and to make innovation related to the standardization of resources, performance indicators, and management. Taking into consideration the fact that since 2019 the program of VHS-CE has been implemented at vocational high schools which are expected to be the role models for other vocational high schools which have not implemented it, this research aims to explore the strategies for increasing graduates' competencies employed in the link and match program at VHS-CE.

METHOD

This is a multi-case study that employed the qualitative method of research. It was conducted at three vocational high schools in Malang, Indonesia, that achieved the status

as VHS-CE in 2019: Private VHS Graha Madina Singosari, Private VHS Mutu Gondanglegi, and Private VHS NU Miftahul Huda. The source of data included the Vice Principals of the curriculum, heads of expertise departements, teachers, students, and industries.

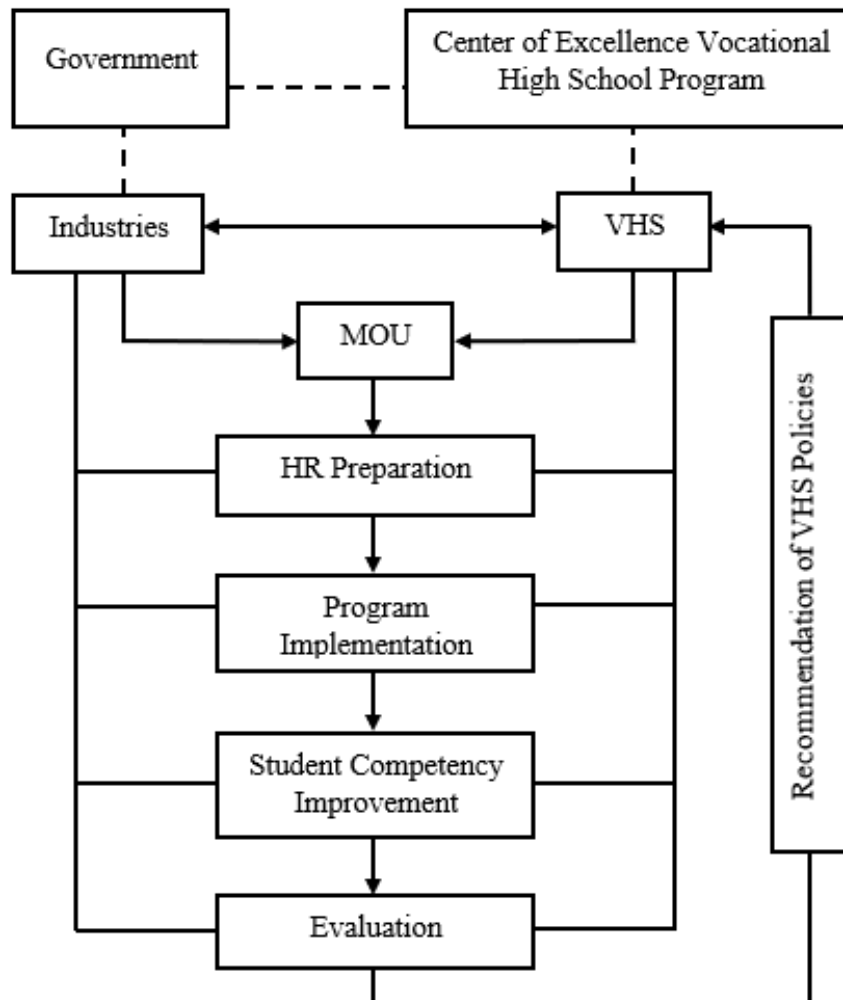
The data of the research were collected by employing such techniques as observation and interviews. Observation was performed by directly visiting the vocational high school to know the implementation of the link and match program. In-depth interviews were held to gather extensive data from selected informants. The interviews were focused on the questions about the strategies for increasing graduates' competencies in the link and match program at the three VHS-CE. The collected data were then analyzed by using the interactive and multi-site analyses to outline the strategies for increasing graduates' competencies in the link and match program.

RESULTS AND DISCUSSION

Based on the resul of the analysis of the research data, the strategy for increasing graduates' competencies employed in the link and match program of the VHS-CE fall into the same pattern. The strategy can be illustrated in the Figure 1.

Figure 1. The Strategy Employed in the Link and Match Program in VHS-CE

Figure 1 shows that the link and match program at VHS-CE applied the concept of triple helix performed by three sides: government, VHS, and industries (Hartanto et al., 2019). The strategy began with the signing of MOU involving VHSs and industries.



The next step was to prepare human resources to design the curriculum. This step involved the curriculum design teams of the VHS in order that they could enhance their knowledge and skills. This was then followed by the implementation of the program which was begun with dissemination and workshop designed to synchronize the curriculum of VHS with the needs of their industry partners. The document of the link and match curriculum was the proof of the process of the curriculum synchronization. The link and match

curriculum consists of elements, the achievement standard of learning at VHS, suggestions from industries, the achievement standard of learning synchronized with the needs of industry, and learning time allocation.

Subsequently, VHS provided facilities and infrastructure in accordance with the standard set by industry partners for the implementation of the curriculum redesigned for learning processes by involving guest teachers from industry, namely industrial instructors. In this process, industrial instructors visited the schools and in another circumstance, students were invited to visit industries. Besides, VHS also carried out such activities as competency tests and certification, both of which involved experts from industry. To maintain the standard of the process, VHS need to do routine monitoring according to the arranged schedule.

Eventually, this strategy is expected to lead to the increasing level of vocational graduates' competencies and their absorption of in industry in their respective fields. The step of evaluation was taken to formulate some policies to be implemented to make further improvement in the stages of the process, thus optimizing the program.

The Provision of Human Resources

The step which can be taken to have professional workers is to provide for vocational graduates with good skills in their respective fields, professional conduct, and great self-confidence. In other words, only through the provision of excellent human resources is employing good, skilled workers possible (Gawrycka et al., 2021).

Based on the research result, the strategy for providing good human resources at the three sites on which this research on the link and match curriculum of VHS-CE was conducted was begun with forming a curriculum design team highly competent in their respective fields. The team consists of representatives of industry and those of VHS including the vice principals of the curriculum, heads of heads of expertise

departements, and productive teachers.

As for their competencies and expertise, members of the curriculum design team at the three VHS could be said to be perfectly ready, which was proven by the involvement of external sides who are relevant to the expertise departments of VHS. This helped make it possible for students to gain competencies in the field of their academic expertise. In addition, this also allowed teachers to achieve more comprehensive understanding about the curriculum and updated competencies in their respective fields. Finally, the purpose of increasing vocational graduates' competencies which can accommodate the demand of industry was successfully accomplished.

Makate et al., (2021) stated that the success of a program relies much on relevant and appropriate expertise. Furthermore, this means that the relevance of teachers' expertise significantly contributes to the indicators of academic achievement and the quality of teaching and learning processes (Skarpaas et al., 2021). Therefore, the linear relationship between teachers' competencies and the academic field in which they teach is highly important in the learning process at VHS (Ali et al., 2020).

Subsequently, the process of providing good human resources through training programs worked well at all the three VHS. All members of the curriculum design team had to attend training sessions in industry or participate in a practical workshop in accordance with the need of expertise departments to ensure the implementation of the planned program of VHS-CE. This was corroborated by the following statements of the vice principals of the curriculum of VHS:

"...The provision of human resources begins with providing training for teachers, especially those involved in the curriculum design team of VHS Center of Excellence, thereby necessitating those teachers' attending training in industry. School leaders always encourage teachers to

participate in workshops so that they can attain the advanced level of their competencies. With this, the program of VHS Center of Excellence can be implemented to the maximum just as the school expects ..." (Informant 1).

"...Teachers at Private VHS NU Miftahul Huda are equipped well by enrolling them in internship programs in our industry partners. This is aimed at making their competencies relevant to the ones demanded by industry, and in this light, learning processes and the curriculum are designed in accordance with the competencies needed in industries ..." (Informant 2).

Based on those statements, the determining factor in the enhancement of the quality of human resources is hands-on experience in industry. Such experience can be gained by their participation in training, internship, and other activities conducted in collaboration with industry. Besides, the quality of a program is also affected by the quality of teachers (Tikkinen et al., 2020. Likewise, Liu (2020) mentioned that the quality of a program is always related to the quality of teachers. For this reason, it is important for teachers to increase their competencies in their effort to enhance the quality of vocational graduates as demands drive.

The Implementation of the Link and Match Program

All the three VHS implemented the link and match program and began it with selecting any industry which they consider relevant to the expertise and competencies they offer and suitable for being their industry partners. Subsequently, they signed a MoU and drew up rules and regulations. It was the agreement with industry partners that made the implementation of the program at those VHS may differ from each other. This was supported by the statements of the informants:

"...Basically, the implementation of the link and match curriculum in different industries may last differently, some

lasting for 6 months, some others for 2 years. During the implementation of the program, evaluation is made constantly. Meanwhile, the implementation MoU lasts forever ..." (Informant 4).

"...The term of the partnership also varies. As long as there is no change or breach of agreement on it, the partnership will be continued in the next period. It is in this way that the partnership has been commonly developed..." (Informant 3).

Furthermore, the monitoring of the link and match program at VHS-CE was performed periodically by the school principals along with the team. This process was performed both to watch any progress and to encounter any obstacle during the implementation. In the event of an obstacle, the school principals together with the team will overcome it. This is in line with the statement of Kim et al., (2021) that a program will not successfully accomplish its objective without the process of monitoring.

Meanwhile, to help reach external targets, the government administered mentoring programs conducted by a university lecturer meeting particular criteria and designated by the Directorate General of Vocational Education (Kemendikbud, 2021). The duties of the mentors include performing activities in accordance with the objectives of VHS-CE, analyzing the strengths and weaknesses of all community members at the VHS and developing their potentials, providing mentoring for schools in their efforts to reach their set external targets, reviewing the plan for equipment provision and nodding an agreement on it, providing training for teachers and headmasters, and monitoring the set external targets and conducting supervision learnig achievements and the link and match program at VHS.

Eventually, the mission of VHS is to teach students solid fundamentals of the mastery of knowledge and skills (Oke & Fernandes, 2020). VHS implement the educational program that focuses on preparing individuals to work in the field of

their expertise and take part in economic and industrial activities of their country (Choi, 2021).

The Evaluation of the Link and Match Program

Some internal contributing factors helped run the implementation of the program of VHS-CE well. Those factors included the quality of human resources, facilities, and the support from the management of VHS. External contributory factors included industry, supervisors, and Education Board supporting this program.

On the other hand, the implementation of the program was limited by other internal factors, namely some teachers' lack of understanding about the program. Therefore, their understanding should be advanced so that they can be more professional. Guo and Wang (2020) mentioned that the problem of teachers' lack of understanding of the program will cause the quality of graduates' competencies to go down in such a way that they have difficulty satisfying the competency standard set by industries, thus increasing the number of unemployed youths in the country. Besides, external factors also limiting the implementation of the program was the difficulty in facilitating effective coordination between VHS and their industrial partners.

The evaluation of the program was carried out in accordance with the formulated plans. The evaluation was carried out to know whether the program run well or it needs further improvements. It was VHS that took on the responsibility for performing the evaluation. The result of the evaluation was then discussed with industry. This was supported by the statement of this informant stating that:

"...The evaluation of this program was carried out well. It was performed by discussing problems and seek solutions to them. It was the principal of Private VHS NU Miftahul Huda who performed the evaluation. The result of the evaluation was then discussed with industries to find improvements over ongoing problems ..." (Informant 7).

“...Those who took on the responsibility for performing the evaluation included the team from industry, the document supervisor, and the principal of the schools together with his staff. We will see the progress of the program, so there must be a report of activities ...” (Informant 6)

The principals of VHS are the one who facilitate the coordination of the program evaluation with the team of the program to write up its findings, and afterwards they will discuss the findings with their industry partners. However, they have not made a detailed evaluation, which caused them to fail to give an in-depth analysis of the findings. Consequently, in such a case, the ability and skill of individuals are highly needed to present the finding that can help enhance the quality of this program.

The result of the program evaluation suggests that hard and soft skills of graduates can make their absorption in the world of work increase. The absorption rate of the graduates of Private VHS Graha Madina shows that 75% of them were absorbed in the school's industry partner, 15% of them continued on to higher education and were absorbed in other industries, and the rest 10% started their own entrepreneurial venture. At Private VHS Muhammadiyah 7 of Gondanglegi, 60% of the graduates worked in industry relevant to their field of expertise, 30% of them went on to universities and were absorbed in other industries, and 10% of them became entrepreneurs. Meanwhile, the absorption rate of graduates of Private VHS NU Miftahul Huda in the school's industry partner reached 75%, which shows that the strategy employed in the link and match program succeeded in increasing the competencies of vocational education, and this made them highly competitive in the labor market.

CONCLUSION

The provision of human resources in the link and match program at VHS-CE is the factor determining the quality of this program. The improvement of graduates' competencies

was achieved by providing students with training and internship programs or sending them to attend workshops on particular competencies and skills needed in accordance with their fields of expertise. Furthermore, those students were encouraged to continue their study on to higher education to sharpen their knowledge and skills. The implementation of the program has yielded a significant improvement to graduates' competencies, which in turn leads to the increasing rate of their absorption in industries and improves their competitiveness in the labor market. Given the fact that the involvement of industry, the government, and higher educational institutions really help improve the quality of the program and ensure its continuity, their role as an integrated system in the implementation of the program is highly important.

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