Engineering Management Research; Vol. 5, No. 2; 2016
ISSN 1927-7318 E-ISSN 1927-7326
Published by Canadian Center of Science and Education

Model of Integrated Vocational School (SMK) Products in Gresik Regency

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Received: April 5, 2015 Accepted: May 30, 2016 Online Published: June 30, 2016

doi:10.5539/emr.v5n2p8 URL: http://dx.doi.org/10.5539/emr.v5n2p8

Abstract

The main goal of this study is to do needs and potential analysis of products in each vocational school in Gresik regency that is expected to create products integration based on the excellence of vocational secondary schools, thus it is necessary to sustain ably design an identification concept of potency and integration model. By using the design of Research and Development some necessary steps taken into account: a) identification of vocational high schools (SMK), b) SWOT analysis, c) cluster analysis, d) mapping of vocational high schools (SMK). The second stage (consolidation and integration), consists of the following activities: a) vocational high schools (SMK) grouping, b) designing a model of integration, c) conducting consolidation among related parties, d) implementing synergistic product integration. The results of the identification of Vocational High School (SMK) potency in Gresik based on the clusters that are formed in the effort of realizing a model design of integration products in Vocational High School (SMK) which refers to the spectrum of field, program and science package, hence two kinds of alternative product integration, namely 1) The product integration of Technology and Engineering field spectrum, Automotive Engineering program and Light Vehicle Engineering science package. 2) Product integration of the spectrum of Information and Communication Technology science field, Computer Engineering and Informatics science program and Computer Engineering and Network science package, so that the integration model of product which is formed needs synergetic a pattern of integration by the (3) related parties in order to produce excellent local product of Gresik regency, the synergetic integration model pattern will run optimally when each party has a high commitment to the creation of local superior products generated by Vocational High School in Gresik regency in order to face the era of global markets which can be realized through the integration of Vocational High School products.

Keywords: potency, model, integration, vocational high school product

1. Introduction

The development of education nowadays is entering a global era marked by the rise of technological innovation, so it requires an adjustment of education system which is aligned with the demands of the working world. Such effort can be done through formal educational institutions that prepare graduates to have superiority in the working world; one of the ways is through vocational education.

Vocational education developed in Indonesia includes vocational high schools (SMK) which is designed to prepare students or graduates to be ready to enter the world of work and to be able to develop a professional attitude in the field of vocational. The graduates of vocational education are expected to become productive individuals who are able to work in the medium labor level and to be ready to face the competition of work who have qualification as a (potential) worker with specific vocational skills which are relevant to their expertise.

Secondary education in Gresik regency consists of 128 institutions/schools consisting of 23 vocational, 106 SMA (senior high school) and MA (Islamic high school), so that the number of senior high schools is higher than the number of vocational high schools which is the ratio of SMA (senior high school): SMK (vocational high school) is equal to 82%: 18%, while the ratio of senior high school students and vocational high school students is 78%: 22%. The ratio of SMA: SMK is still very far from the target set by the Department of National Education (the

ratio of SMA: SMK=40: 60). Based on the policy of the Department of National Education on expanding of the access to vocational education which is appropriate to the local needs and excellence, so based on these conditions, then it is needed to do needs analysis and potential analysis of products in each vocational school in Gresik regency which are expected to create product integration based on the excellence of vocational secondary schools , thus it is necessary to sustainably design an identification concept of potency and integration.

The first stage (identification of potency), which consists of the following activities: a) identification of vocational high schools (SMK), b) SWOT analysis, c) cluster analysis, d) mapping of vocational high schools (SMK). The second stage (consolidation and integration), which consists of the following activities: a) SMK grouping, b) designing a model of integration, consolidation among related parties, c) implementing synergistic integration of products. The third stage (development), which consists of the following activities: a) Consultation of Vocational High School products, b) Institutional Consultation of Vocational High School products, c) Network and capital consultation, d) Monitoring and evaluation, e) the integration model design strengthening.

Vocational High School is one of the secondary educations with a specialty to prepare graduates to be ready to work. Vocational education has various meanings but can it be seen from its common thread. Evans in Djojonegoro (1999) defined that vocational education was part of the educational system that prepared a person to be more capable of working at a job or a group of occupations than other fields of work. That means that every field of study is a field of vocational education as long as the subject is learnt in depth and the depth is intended as a preparation to enter the working world.

Vocational education is an education that prepares students to be able to work in a particular field. This understanding contains a message that every institution that organizes vocational education must have a commitment make its graduates to be able to work in a particular field (Department of Education, 1995).

Based on some of the definitions above, so vocational high school is a sub-system of national education which should prioritize and prepare their students to be able to choose a career, enter employment, compete, and develop their selves successfully in employment field that rapidly changes and evolves. The accomplishment or not accomplishment of the objectives above depends on the input and some variables in the educational process. One of the variables in the educational process that determines the achievement of the objectives is the cooperation among vocational high schools with the business world and the educational world (Department of Education, 1995). Logically, the closer relationship between vocational high school with the higher education, the better quality of its graduates, which means that the quality of graduates can be improved because in the world of higher education, science and technology will evolve.

The Benchmark of success of a vocational education program based on Lesgold (1996) must consider: (1) The product target must be defined properly, accurately, and clearly that is an intense interaction between school and community, (2) equipment (facilities and infrastructure) which is required to achieve what is set should be sufficient, so that it is an element of guarantor that the targets can be achieved well, (3) specification of supporting team or executive team of the program that will be responsible for the success of the target must be complete and clear, (4) continuous and sustainable research or assessment is needed to know the improvement steps which can be applied immediately.

Basically, according to Indrajati Sidi, vocational education (2003) was based on the real needs of the market of work. To realize this program, the roles of business and industry are needed. In fact, they need to be put in prominent positions, so that the vocational courses offered are completely in accordance with the needs. Further, it is explained that the vocational education system gives basic national competency standards. Competency standard, curriculum standard and testing standard which are intended to ensure that the vocational education system really gives competencies required by industry. Therefore, the measurement of the graduates' quality of vocational education is not only seen from the results of National Examination, but also from what competence that is achieved. The achievement of competence is seen from skills. Every skill reached is awarded through certificates giving by the competent institution such as national vocational education assembly (MPKN).

In order to develop regional autonomy, regulation number 22 of 1999 about regional autonomy provides educational management authority to local governments. Local governments with autonomous power should know exactly what the excellence of their region is, then human resource competence is then built.

Through the decentralization of education, a region can develop the potency of its territory in accordance with local situation and condition. One of the policies that can be developed is an education which is based on local excellence. Local excellence-based education refers to the process of education that exploit local advantages in the aspects of economy, arts and culture, human resources, languages, information and communication

technology, ecology, and others that are beneficial to the development of competence of learners that can be used for the local, national and global competition.

Local excellence-based educational unit is a new paradigm of education to accelerate development in the region based on the potency of the local community. Thus the region or school has enough authority to design and determine the things that will be taught. Each region has the potential advantages of the area that needs to be developed better.

By this diversity of region potency, the development of potency and advantages of regions need to get special attention from local government so that younger generations of the regions do not feel strange to their own regions and understand very well about the potency and the values and culture of their regions, so that they can develop and strengthen the regions' potency in accordance with the demands of the economy and employment. In addition, the success of local excellence-based school will be able to overcome the problem of urbanization, jobless and backwardness in science and technology. One of educational or local excellence-based school developments is the educational curriculum. Preferably, educational curriculum is the composition of national curriculum and regions values, such as cultural values, natural resources, potency, and thought which is possible to preserve through formal education.

Local excellence-based schools will get the communities' support since the graduates are able to work directly in their regions. But, this concept of school development will face problems if the economy in the related region does not develop, so that the number of working place is not adequate for the graduates. This paradigm implies that vocational education plays an important role in the development of local excellence-based school. Therefore, in the development of local excellence-based school, it is needed to do a study by involving all stakeholders to formulate the local excellence, so that this excellence is integrated within the instructional material prepared in accordance with the level of education.

In the Excellent Products Exhibition of Vocational School of Indonesia (SMK Expo, 2012), on 17-20 May, 2012, The exhibition was attended by around 70 vocational schools from all over Indonesia, which displayed a variety of products various excellent product from the students start from engineering technology, information and communication technology, health care, art and handicraft, agribusiness and agro-technology. The work such as automobile, laptop, or even airplanes were shown in the Vocational High School Expo and there were some school displayed applied products, such as farming equipment and so on. All this time until now, most students are tend to be directed to become skilled labor and only able to fulfill the needs of industry, even though they also have big potency to be developed become young entrepreneurs in the future for the nation.

By various products created by the students, they have proven themselves as individuals who have high and innovative skills. This exhibition was geared to give new nuance for the graduates of vocational high school, which it can make them as entrepreneurs. Because of that, in this series of activity was also been held a training to become entrepreneur and was participated by the students of vocational high school students who join the vocational high school expo in 2012 and also workshop which was participated by teacher assistant of vocational high school (Source: Gatra.com). Vocational High School Education Department, Education and Cultural Department has the data that there are 9,160 vocational high school which consist of 2,464 state schools and 6,696 private schools. From that amount, there are 335 vocational high schools have applied international curriculum, and have ISO 9000 certificate.

After seeing the above considerations, clear and exact identifications of all potencies of vocational schools are higly important to be investigated. Therefore, the goals of this research, especially on the specified objectives of the need to do Potency Identification for Product Integration Model of Vocational High School (SMK) are:

1) Conducting identification to obtain an overview of the condition and potency of vocational high schools (SMK) in Gresik.

2) Designing a product integration model of vocational high school (SMK) in order to create a superior product that at the end will contribute to the growth of Industry in Gresik Regency.

2. Research Methods

This is a Research and Development (R&D) which covers identification stage of potencies, integration and consolidation process, and development process (Anwar & Husniah, 2016) by which the detail explanations are decribed at Figure 1 below:

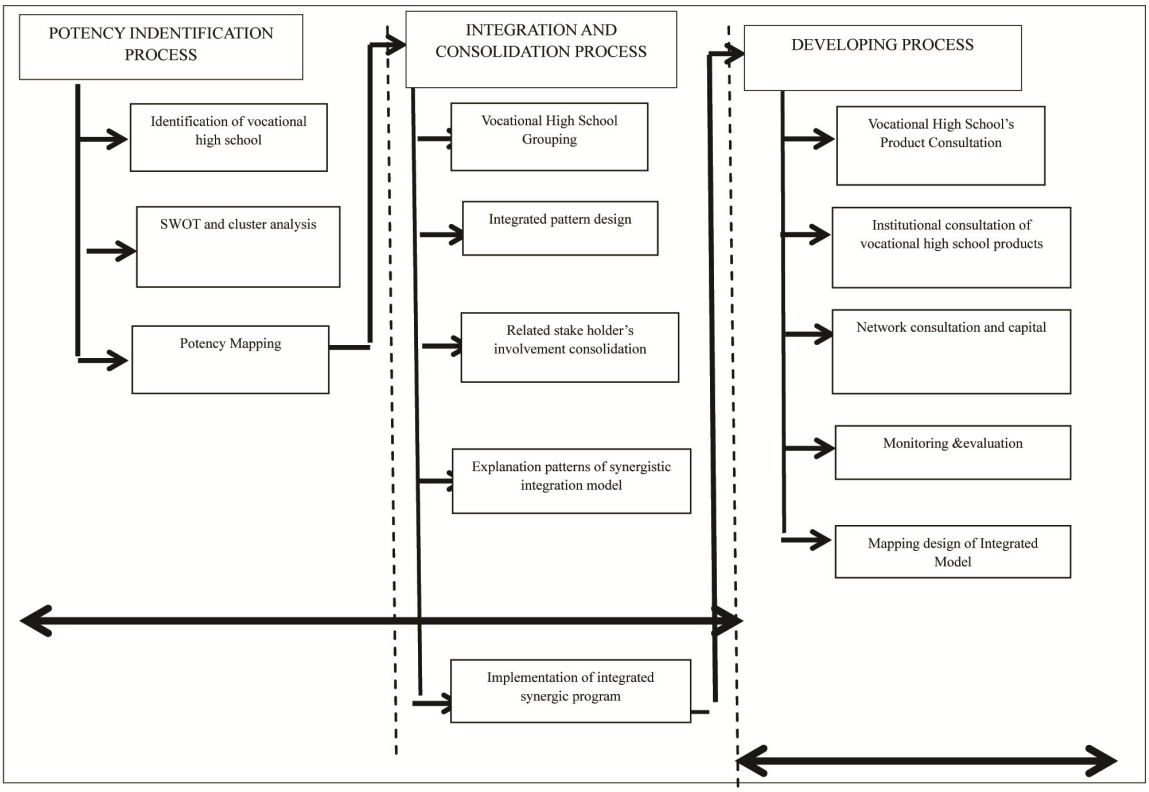

Figure 1. The research steps

2.1 Potencies Identification Stage

Description of research stage is given in the following explanation:

1) Potencies identification of vocational high school

This stage is used to identify all the vocational high school's potency in Gresik Regency.

2) SWOT and cluster analysis

This stage is used to analyze deeply the entering data to be studied (Focus Group Discussion) towards its strength, weakness, opportunity and threats that exist in vocational high school in Gresik Regency. The result of SWOT analysis will be processed further for strategy of priority making in certain period of time. SWOT is the acronym of strength, weakness, opportunity and threats. SWOT analysis is the systematic identification from those factors and strategy which will result the best combination (Pierce, 1997). SWOT analysis is considered as an important thing because through SWOT analysis there are data and information about strategic alternatives that will be used in the decision making process.

3) Mapping of the potency

Based on the grouping result of cluster analysis simulation, then there will be done the mapping of potency from vocational high school group.

2.2 Consolidation and Integration Stage

1) Grouping of vocational high school

With the existence of grouping it will be easier to integrate and actualizing it among groups and cover the weaknesses which are possessed by the school, also it can manage the opportunity in order to create vocational high school products.

2) Integrated pattern design

If the groups are formed, then it will be easier to plan the integrated pattern of vocational high school products.

3) Related stakeholders' involvement consolidation

From the consolidation, it is expected that there will be composed written guidance about integrated model pattern, technical guidance which is needed by the vocational high schools.

a) The implementation of Integrated Synergic Pattern

b) In this activity, the integrated model pattern is done in synergy by some related stake holders to their participation, function and responsibility according to the results of consolidation.

3. Results and Discussions

3.1 Potencies Identification Stage

This stage identifies the potencies by distributing a quesionare that covers general information of vocational school, potential products, human resources, financial resources, and common problems at school. The data shows that Gresik Regency is consisting of 18 sub-districts where the 17 sub-districts have vocational high school, but there is 1 sub-district which does not have a vocational high school in the area which is *Tambak* sub-district, Bawean-Gresik. This causes a problem because the population of the study is from all vocational high schools which are under the supervision of Education Department of Gresik. The amount of vocational high schools under the supervision of Education Department of Gresik is presented at Table 1.

Table 1. Data of vocational high school (SMK) in Gresik

year	StateVocational School	Private Vocational School	Amount of Vocational School
2014	4	42	46
2015	4	46	50

Source: Educational Department of Gresik.

The data from Table 1 will be identified and sorted according to each department, skill competence, as well as the products from each vocational high school, also the cooperation among vocational high schools or industries, it is known that there are 2 different statuses, namely private vocational high schools with the amount of 46 and state vocational schools with the amount of 4, it shows the image that private vocational high schools are dominating the groups.

Based on the results of the questionnaire from the vocational schools' respondent (80 respondents) in Gresik Regency, we can get the mapping of vocational high school potency briefly, as well as the profile of vocational high schools in Gresik according to the condition of the object of the study, including the location, status, accreditation, business unit, infrastructures, technology, supervising institution, vocational high schools, product, industries participation, participation in the exhibitions, trade mark, cooperation between school-company-government, supervision from State-Owned Enterprise or Private-Owned Enterprise, human resources, financial condition, and obstacles.

Grouping or clustering is done by referencing the Acts of Vocational Secondary Education Department which is written in the regulation of Indonesian Educational Department No. 7013/D/KP/2013 that explains about 9 fields of skill, 43 skill programs and 124 skill packages. The grouping of vocational high schools is needed to be done (except in Bawean Island which has 2 sub-districts, Sangkapura and Tambak). Every sub-district is sorted according to the fields of skill, skill programs and skill package, so that the data result of Clusters are grouped into I, II, and III. The details of the weighing/groups/clusters percentage are as at Table 2, 3, and 4 below.

Table 2. Detail results of Cluster I

No.	item of skill field spectrum	Results of Group/Cluster I	Weigh/Percentage
1	Information and communication technology	28	35 %
2	Engineering Technology	23	29 %
3	Business and Management	15	19 %
4	Tourism	5	6 %
5	Agribusiness and Agro-technology	4	5 %
6	Health	3	4 %
7	Electronics engineering	2	2 %
Total amount		**80**	**100 %**

The data shows that engineering and technology, information and communication technology, business and management are the two most dominant departments that are highly offered by most vocational school at the district of Gresik. Other detail results of the Cluster I can also be noted at Figure 2.

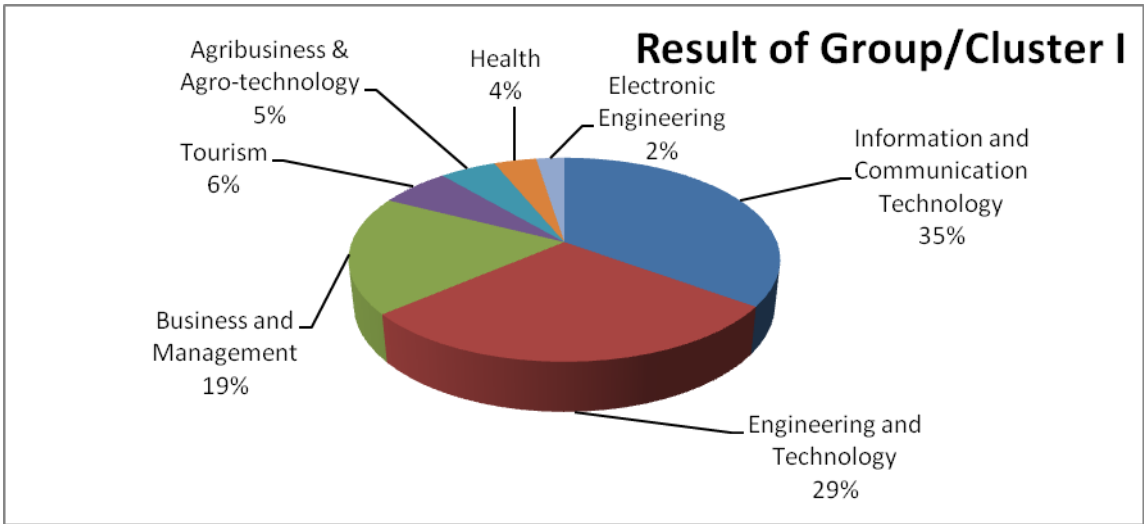

Figure 2. Graphic of Group/Cluster I result

Results of Group/Cluster-II is described at Table 3 which shows that computer information engineering, automative engineering, and mechanical engineering are quite dominant. This data also indicates that the needs of society really reflect the department offered by the vocational schools in the districts.

Table 3. The details of the weighing/percentage of Group/Cluster II

No.	item of Skill field spectrum	Results of Group/Cluster I	Weigh/Percentage	No.
1	Information and communication technology	1. Computers engineering & Informatics	29	34 %
2	Technology and Engineering	2. Mechanical Engineering	10	12 %
		1. Automotive Engineering	20	23%
		2. Construction Engineering	1	1%
		3. Electricity Engineering	4	5%
		4. Electronics Engineering	3	4%
3	Business and Management	5. finance	8	9%
		6. Commerce	6	7%
		7. Administration	4	5%
	amount		85	100%

Other departments in the Cluster II that are not quite dominant, are shown at Figure 3 below which cover commerce, finance, electrical engineering, administration, and construction engineering.

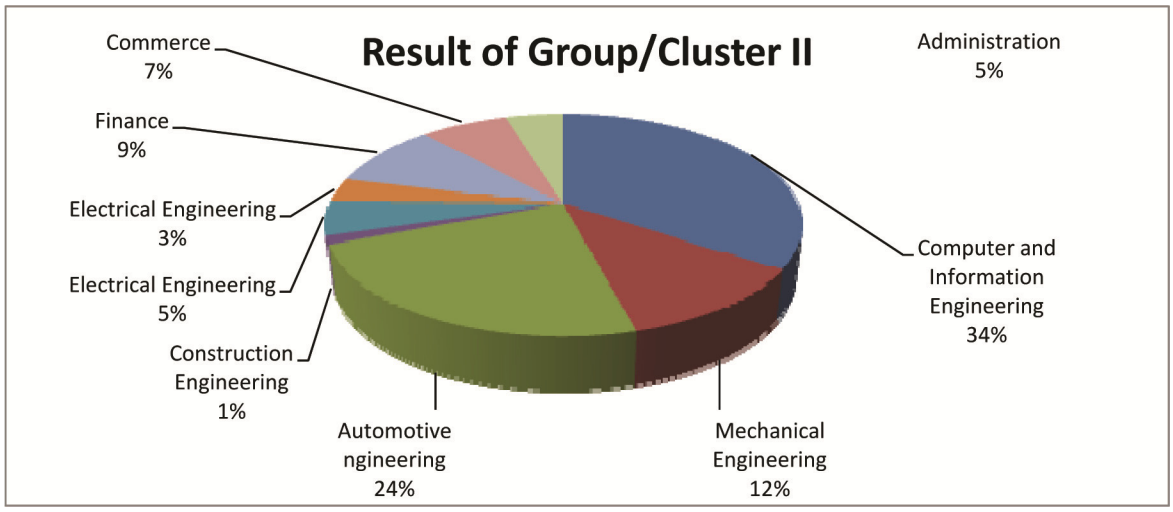

Figure 3. Graphic results of Group/Cluster-II

Results of Group/Cluster-III is presented at Table 4 below in which the areas of departments are far different with the above two groups. In this data, all department are almost equally distributed in the districts which cover light automobile engineering, mechanical engineering, multimedia, computer and network engineering, and network engineering.

Table 4. The details of the weighing/percentage of Groups/Clusters III

No.	Item of Spectrum Expertise	Item of Spectrum Skills Program	Item of Spectrum Skill Package	Results Group/Cluster III	Weights/Percentage
1	Information and communication technology	1. Computers & Informatics Engineering	1. Software Engineering	5	8 %
			2. Computer and Network Engineering	16	26 %
			3.Multimedia	10	17 %
2	Technology and Engineering	2. Mechanical Engineering	4. Mechanical Engineering	10	17 %
			5. Welding Engineering	1	1 %
		3. Automotive Engineering	6, Light automotive engineering	19	31%
	amount			60	100 %

Only one department in Cluster III is considered rare that is welding engineering as shown at Figure 4 below.

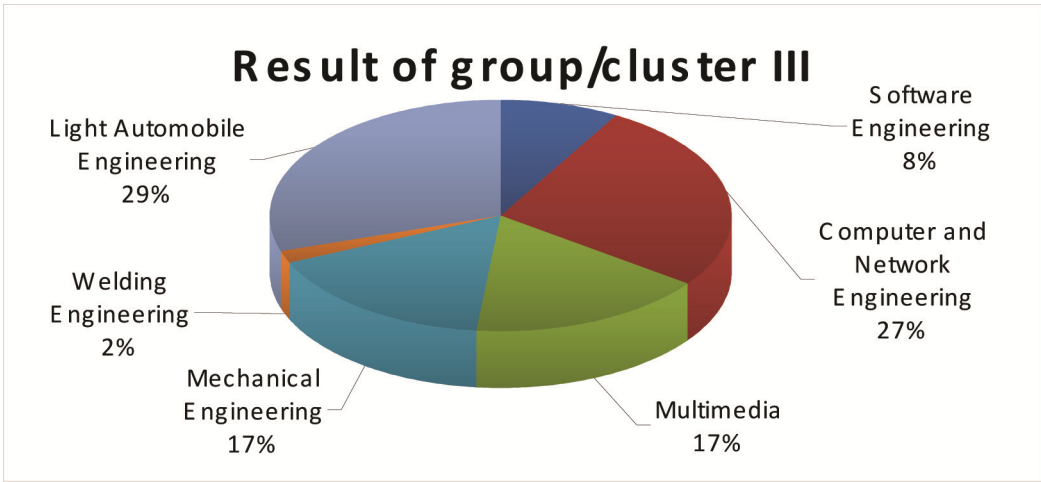

Figure 4. Graphic results Group/Cluster III

The overall results of the grouping/clustering phase-1, phase-2 and phase-3 of the vocational high school (SMK) in Gresik regency are based on Spectrum Expertise, Skill program, and package skill with each spectrum of weigh/percentage which then contribute to the final results shown at Table 5 below.

Table 5. Results of Group/Cluster

No.	Item of Spectrum Expertise	Item of Spectrum Skills Program	Item of Spectrum Skill Package	Results Group/Cluster III	Weights/Percentage
1	Technology and Engineering	Automotive Engineering	Light Automotive Engineering	19	54%
2	Information and communication technology	Computer and Informatics engineering	Computer and Network Engineering	17	46 %

The final results of all Groups/Cluster that can be used as base design potency/draft of integrated vocational high school product are at Table 6 follow.

Table 6. Vocational high school clustering result

No.	Item of Spectrum Expertise	Item of Spectrum Skills Program	Item of Spectrum Skill Package	Vocational High School Clustering Result
1	Technology and Engineering	Automotive Engineering	Light vehicle engineering/Motorcycle Engineering	1. SMK PGRI 1 Gresik 2. SMK Semen Gresik 3. SMK Karya Bhakti Gresik 4. SMK Maarif NU Wringin Anom 5. SMK Maarif NU Sunan Giri Wringin Anom 6. SMK Maarif NU Driyorejo 7. SMK PGRI 2 Gresik Kedamean 8. SMK YPI Darusalam 1 Cerme 9. SMK YPI Darusalam 2 Cerme 10. SMK Maarif NU Benjeng 11. SMK Al Azhar Menganti 12. SMK Sunan Ampel Menganti 13. SMK Sunan Giri Menganti 14. SMKN 1 Sedayu 15. SMK Assaadah Bungah 16 SMK Muh 1 Gresik, Bungah 17. SMK Hidayatul Ummah Balongpanggang 18. SMK Ihyaul Ulum, Dukun 19. SMK Maskumambang 1 Dukun
2	Information and communication technology	Computer & Informatics Engineering	Computer and Network Engineering	SMK NU Gresik SMK Maarif NU Wringin Anom SMK Raden Paku Wringin Anom SMK Maarif NU Driyorejo SMK Sunan Giri Driyorejo SMK YPI Darusalam 2 Cerme SMK Al Azhar Menganti

	SMK Sunan Ampel Menganti SMK Sunan Giri Menganti ● SMKN 1 Sedayu Gresik ● SMK Roudlotul Hikmah Ujung pangkah ● SMK Yasmu Manyar ● SMK Nurul Hidayah Melirang Bungah ● SMK Ihyaul Ulum , Dukun ● SMK Maskumambang 1 Dukun ● SMK Sunan Drajat Dukun ● SMK Al Ikhlas Panceng

3.2 SWOT Analysis of Vocational High School (SMK)

Based on the results of questionnaires, identification and mapping of potential profile of vocational schools (SMK) in Gresik then the SWOT metric of Vocational High School is shown at Table 7 below.

Tbale 7. SWOT analysis

INTERNAL FACTOR	**STRENGTH (S)**	**WEAKNESS (W)**
EXTERNAL FACTORS	1) School facilities and autonomous facilities for students 2) The expert teacher for every field 3) Adequate students' practical facilities 4) Students' corresponding product to their skill program 5) Establishment of cooperation partners with other agencies.	1) Inadequate teacher and staff resources in corresponding to each department. 2) Less cooperation wih State-Owned Enterprise/Private-Owned Enterprise. 3) Lack of participation in vocational *school* Products Exhibition. 4) Lack of operational costs for the development of the school. 5) The ability of creativity/innovation of students who are still lacking.
OPPORTUNITIES (O)	**STRATEGY (S-O)**	**STRATEGY (W-O)**
1) The appreciation of the government. 2) The existence of government agencies and businesses which are located near the Vocational High School, which require vocational graduates. 3) University that has the same major as the vocational high school. 4) The high public demand for vocational school	1) There is a good cooperation among vocational high school, government and the industry. 2) The increase of skills and equipments for the students that suit the need of schools excellent product. 3) The fulfillment of teachers of vocational skills for the field of science. 4) The government's policy that is more focused on local potential through appreciation of	1) Fulfillment of teachers and mechanics by the department of vocational education according to the field of expertise. 2) Collaboration colleges and vocational schools in accordance with their fields. 3) Participation of vocational high school in the exhibition or competition of schools excellent product as a promotion to the society. 4) Government/education

products. 5) There are many work opportunity for vocational graduates.	vocational school products. 5) Absorption of vocational graduates for the business / local business in the scope of the Gresik Regency.	department in facilitating program of State-Owned Enterprise/Private-Owned Enterprise cooperation program with vocational school. 5) Increasing fund riser for the development of vocational high school by the central government.
CHALLENGE (T1)	**STRATEGY (S-T)**	**STRATEGY (W-T)**
1. The location of vocational high schools is close to each other. 2) Operational funds from the government are not sufficient. 3) Competition among vocational schools graduates. 4) Lack of cooperation with the business world. 5) Competition of the institutions quality to the other institutions.	1) Improving the quality of the curriculum to match the needs of expertise in the field of employment. 2) Increasing the cooperation between vocational school with real industry. 3) Optimization of business units/vocational school business for the existence and development of vocational school's products. 4) Utilization of bank funding sources to accelerate the procurement/equipments repairation/machines for excellent product of vocational high school. 5) Acceleration of skill expertise' quality for teacher in anticipation for AFTA 2015.	1) Fulfillment of skill fields needed by the industry by the vocational high school. 2) Projection of excellent product through linier vocational high schools programs. 3) Governments action to held exhibition or competition of vocational high schools excellent product as promotion to the society. 4) Participation of government/regional education department in facilitating partnership program. 5) Increasing of operational support for the development of vocational high school through CRS industries near the school.

3.3 Design/Model of Integrated Patterns of Vocational Schools' Products

Design patterns of vocational high schools' products are made with reference to the spectrum of expertise, spectrum of program expertise and spectrum of expertise packages of grouping/clustering analysis that have been done on vocational schools (SMK) in Gresik regency are becoming object in this study, based on the SWOT analysis of vocational high school, then the Pattern Design of vocational high schools' integrated products have two kinds of alternative design of integrated products, which are described at Figure 5 below.

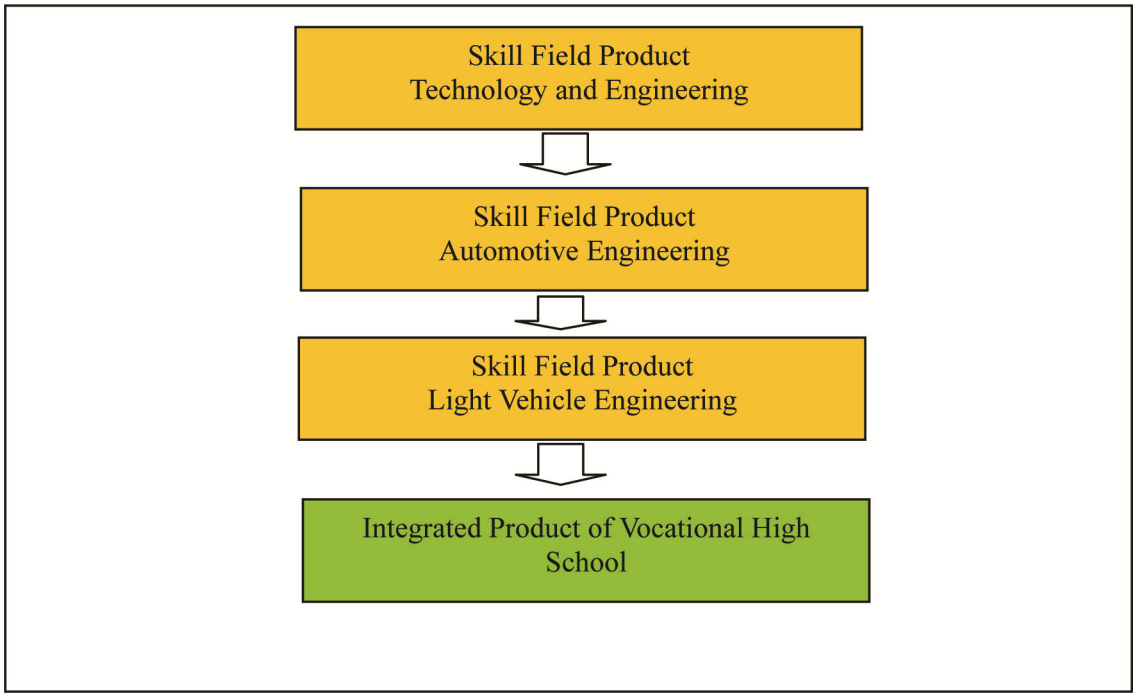

Figure 5. Design model 1: Integrated product of vocational high school in Gresik Regency

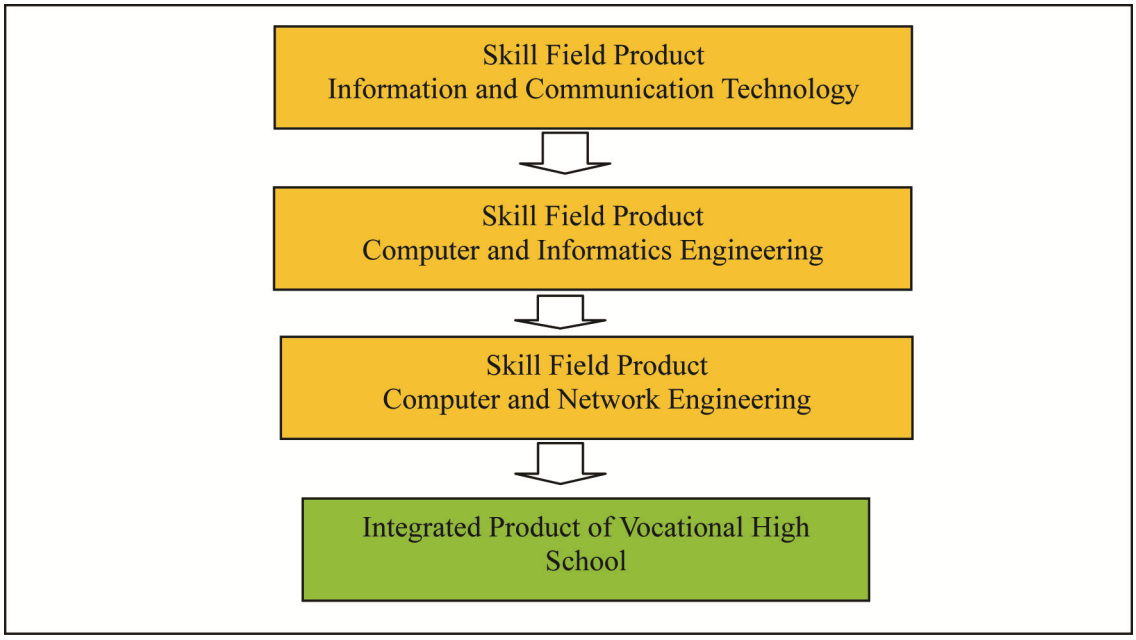

Figure 6. Design model II: Integrated product of vocational high school in Gresik Regency

The Figure shows that the integrated product is divided into two mainstreams that is; Figure 7 which consists of; skill field product of technology and engineering, automative engineering, and computer and network engineering; Figure 7 which covers the skill field product of information and communication technology, computer and informatics engineering, and computer and network engineering.

The image below shows the draft of integrated vocational high school products. It is hoped that the draft can pull out the excellent schools' products.

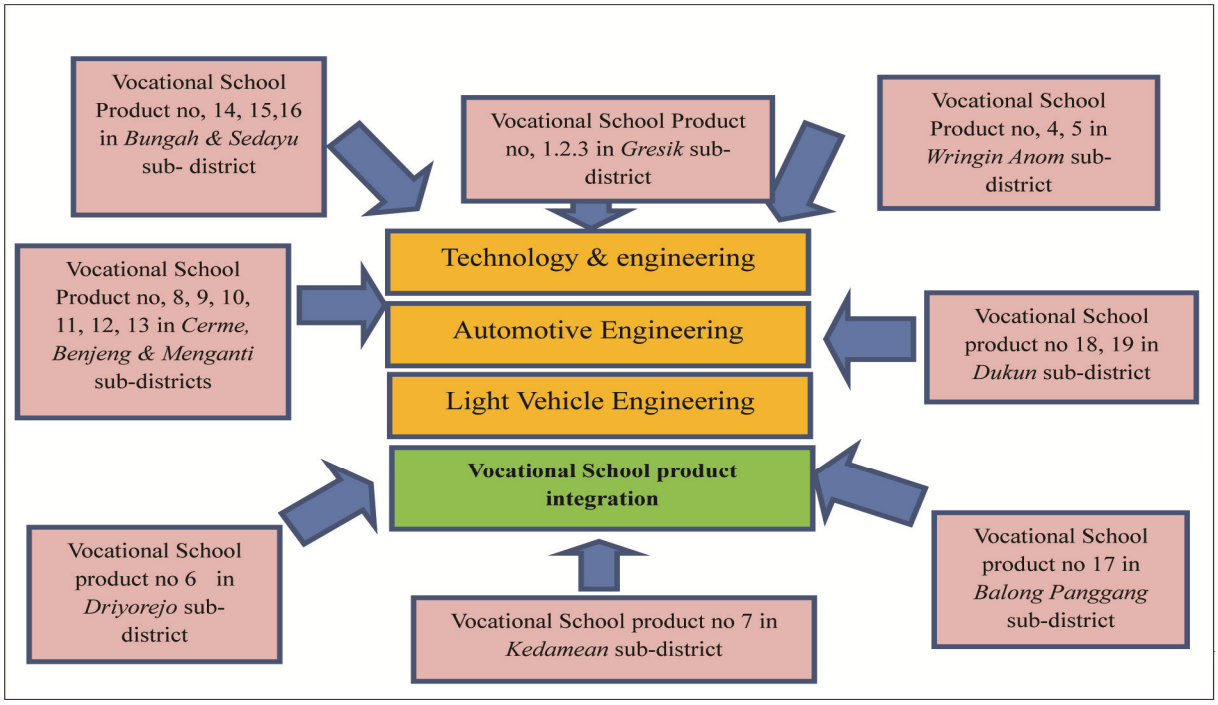

Figure 7. Vocational high school integrated product I

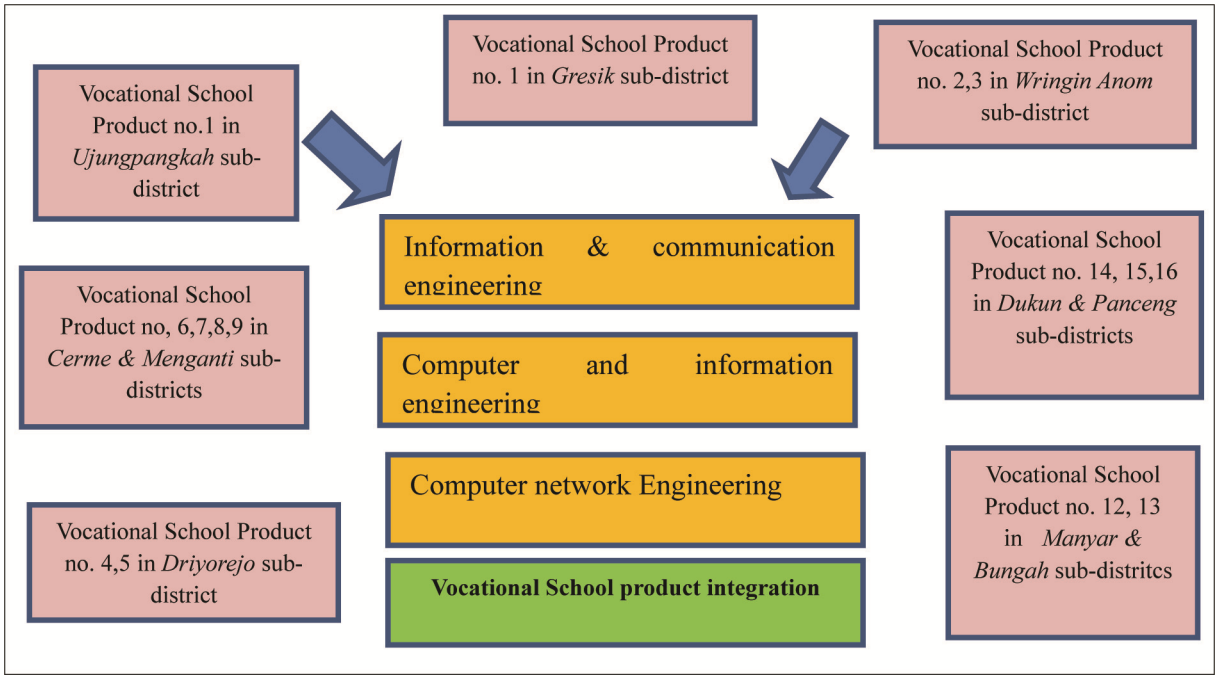

Figure 8. Vocational high school integrated product II

3.4 Consolidation Stage of Related Stakeholders

The first step of consolidation that is done by the vocational high school from the results of clustering in reference to field spectrum, skill program and package skill that is gained from this study object is later will be used to consolidate related excellent of vocational high school, where the similarity of field spectrum from vocational high school can be clustered in each sub-district in Gresik Regency.

The second step is to gain government participation through Vocational Education Department in Gresik Regency, and of course it will become the responsibility of Vocational Education Department in the effort of developing, supervising and strengthen the local product's potency with the existence of Vocational High School in each sub-district.

The third step is gaining the support from the industries to create consolidation related to vocational high school product or other aspects which support the production process, marketing aspect, product quality aspect, etc are supporting the sustainability of local excellent product from vocational high school which is hoped to achieve sociaties' want in using vocational high school products, which are the excellent products of Gresik, and also become Company Social Responsibility from the industry that can be distributed as development for vocational high schools around industry area, especially because Gresik is an industrial town.

From the consolidation of related stakeholders we hope that the written guidance about integrated model pattern can be composed, as technical operational guidance for vocational high schools in the development of their products.

In the implementation of integrated model pattern is done by using synergic integrated model pattern from the three stakeholders related to the participation, function and responsibility according to those three directions (Figure 9), this activity is an effort to create integrated product of vocational high school in order to make excellent local product of Gresik Regency. To implement it, then the integrated pattern from the related parties is shown in the image below.

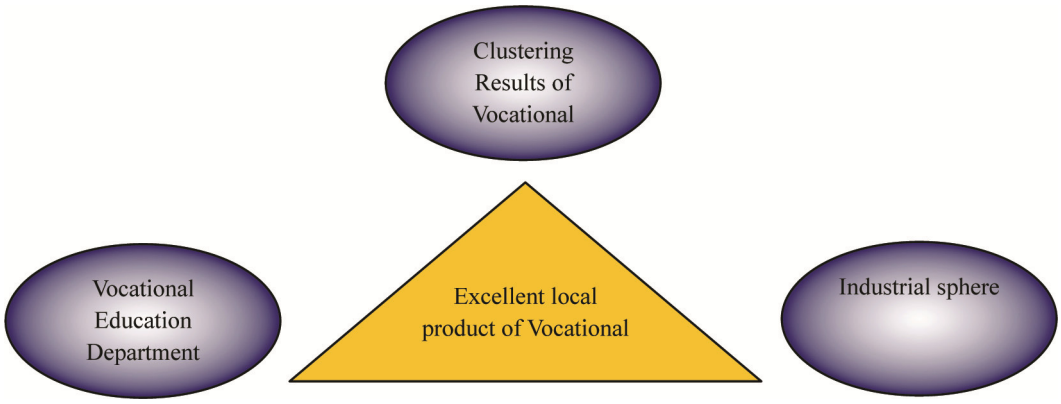

Figure 9. Synergic integrated model pattern

Synergic integrated model pattern from the related stakeholders will go along optimally if each part has a high commitment to create excellent local products of vocational high school in all sub-districts of Gresik Regency, which has already formed from the clustering in this tudy, so the development of vocational high schools in Gresik in order to face the global market can be formed through integrated products of vocational high school.

This study has already pointed that the synergic integrated model of high vocational school offer better integration among the existing departments and industrial sphere to acheive excellent product of vocational. This is in line with the goals of learning in vocational school that is to give all graduates to get shorter time in job. This study convincingly introduces not only quantity but also the quality of all graduates of vocational school to be collaborated to industrial sectors even though Sutikno (2014) identifies that the waiting time of the graduates at higher vocational school is three month which means that almost 100% of the graduates are recruited at industries.

This integration therefore can be an alternative solution to cover some present weaknesses such as:

1) The minimum relation and collaboration model of high vocational school and industry which are still not managed well (Subijanto, 2012).

2) The unbalance budget used in high vocational school in Indonesia, especially public high vocational schools get higher than those of private ones (Sumaryanto, Sunyoto, & Margunani, 2014).

3) Unequal distribution on analysis of calculating demand of teachers at high vocational school in Indonesia which is not distributed equally. Therefore, to find standardized qualification of vocational teachers are difficult to acheive (Purnomo, 2013).

4) Limited facilities that must be enhanced further, one example, based on Suwahono, Budiyono, and Prodjosantoso (2015), facilities to support teaching and learning for chemical studies at high vocational schools are not quite complete yet. Therefore, these may influence opportunities for students to have more practices at laboratory.

5) The mismatch on the needs of students at high vocational school and the sylabus provided by government of Indonesia that still implement equal national examination as in common high schools (Dewi, 2015).

In short, this study gives two promising advantages that is to support high opportunities for all high vocational school management to integrate the needs of students and industries, and finally to have better ways of cutting the gaps (weaknesses) that recently hurdle the educational process at high vocational school in Indonesia.

4. Conclusion and Recommendation

4.1 Conclusion

1) Potency Identification of Vocational High School in Gresik Regency is gained from the profile description and dominant problems they face which need solution to be solved, the answer is the partnership and their products' development, and the other solution is to solve the problem of human resources, information technology and also financial support. From this data is it hoped that the government will give alternative strategy in taking development decision in the Gresik Regency so that the breakthrough of partnership and product development can be done and in implementing their excellent local product, the students can collaborate with the industrial company in Gresik.

2) In general, potency identification of vocational high school in Gresik Regency is based on the cluster which is formed in order to actualize integrated model of vocational high school product in the reference of their field spectrum, skill program and skill package, then there are 2 kinds of alternative of integrated products, namely are:

a) Integrated products from the field spectrum of technology and engineering, automotive engineering, light vehicle engineering.

b) Integrated products from the field spectrum of information and communication technology, computer and informatics engineering, computer and network engineering.

3) Draft of integrated vocational high school products which are formed by the synergic integrated pattern from the related stakeholders, in order to produce excellent local product of Gresik, it is hoped that it can run optimally with the commitments of each party to create excellent local products from all vocational high schools in every sub-districts in Gresik which have been formed by the result of clustering in this study, so the development of vocational high school in Gresik Regency is enough to face the global market era through the integrated products of vocational high school.

4.2 Recommendation

1) Based on the vocational high school potency in Gresik Regency, also based on the formed clustering result which is formed in order to actualized the draft of integrated vocational high school products according to their field spectrum, skill program and skill package, then there are 2 alternatives of integrated product that can be actualized, so that the policymakers in the Gresik Regency, colleges, SOE/POE in Gresik have to be able to give guidance to vocational high schools in order to develop the industrial area in Gresik Regency.

2) Local Government of Gresik and the industrial company should help vocational high school students which is incorporated in formal institution to actualize integrated products of vocational high school students, which later can be the icon of Gresik's excellent products.

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