Conformity Between The Choices Of Entering Majors With Employment After Graduation At Non-Technology And Industrial Vocational Schools In Indonesia

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Abstract. The high open unemployment rate of vocational graduates in the two semesters of August 2018 and February 2019 is an anomaly, Indonesia government through presidential instruction No. 9 of 2016 concerning vocational revitalization which imposes four national development priorities on vocational education, they are Agriculture, maritime, tourism, and creative industries. Indonesia Ministry of Education also targets vocational graduates in Indonesia absorbed by industry. Non-technology and industrial vocational schools are an inseparable part of the four priorities of Indonesia's national development mentioned earlier. This research tries to describe the problems that suffer from vocational schools, more specifically the relationship and appropriateness of the majors they choose with their work after graduation. This research with a sample of 1398 non-technology and industrial vocational high school, 629 alumni and 769 students. This research found 938 respondent who choose to study at non-technology and industrial vocational schools for reasons of interest, and only 283 alumni work according to their chosen majors, or only 45 percent. A more sad number was found in the overall sample, where only 55 percent of alumni were employed in accordance with their chosen majors. For this reason, revitalization of non-technology and industrial vocational schools in Indonesia is required.

1. Introduction

“Lulusan Banyak yang Menganggur, Apa Salah SMK Kita?”}, that is the title of a news from Kompas, January 25, 2019[1]. According to the news, from Central Bureau of Statistics (BPS) Indonesia noted that of the 7 million open unemployment as of August 2018, 11.24 percent were vocational graduates. This figure is higher than the open unemployment rate of 7.95 percent high school graduates, 4.8 percent junior high school graduates, and 2.43 percent elementary school graduates. On the February 2019 by the data BPS, again the highest open unemployment rate is occupied by vocational graduates, which is 8.63 percent [2-3]. This fact certainly becomes an irony, where the initial plan of the Ministry of Education and Culture of the Republic of Indonesia who wanted to make vocational graduates in Indonesia as graduates absorbed by industries directly.

Vocational Education as the first rank of open unemployment producer, is not the only problem that befalls SMK. According to Garnesia[4], Vocational Schools in Indonesia are still overshadowed by the stigma that the quality of Vocational Schools is below high school, has stubborn students, and lacks support for the learning environment, making Vocational Schools underestimated and often used as the second choice. This is certainly a big homework for vocational which are educational institutions whose job is to organize activities and experiences that lead to understanding or skills relevant to work[5]. Relevant in question is the existence of an identification effort undertaken by SMKs for the needs of the workforce. The results of this identification will be very influential on the absorption ability of vocational graduates in the world of work, because the world of work will only employ someone who suits the needs of the world of work itself[6]. For that it is needed a vocational
revitalization that emphasizes link and match. Link and match implies insight into human resource development, the future, quality and excellence, professionalism, added value and efficiency. Link and match involves an interactive process with appropriate results[7]. Theoretically, link and match refers to the link and link competency of graduates from the world of education in order to be accepted and match the needs of the world of work [8-9].

This revitalization effort is trying to be realized by the Ministry of Industry of the Republic of Indonesia through the cooperation of 2,612 vocational schools and 899 industries[11]. Revitalization carried out by the government is still stressing on industrial and technology vocational schools. Then what about non-technology and industrial Vocational Schools? To answer this question, this study tries to put forward maps of non-technology and industrial vocational graduates in Indonesia, which include Agribusiness Vocational Schools, Vocational Economics & Business (SMEA), Graphic Vocational Schools, Marine Vocational Schools, Health Vocational Schools, Tourism Vocational Schools, and Vocational Schools Hospitality related to the relationship and compatibility between the majors they choose with their jobs after graduation. Through this mapping, the results can later become the foundation of government policies related to the link and match program so that non-technology and industrial vocational education graduates in Indonesia are able to produce graduates who are ready to work.

2. Method

This is a descriptive quantitative research. According to Arikunto (2014)[12], descriptive research is research that is intended to gather information about the status of an existing symptom, the state of symptoms according to what it was at the time the study was conducted, and reveal the facts that exist, although sometimes given interpretation or analysis, whereas quantitative research is research whose information or the data is managed by statistical tables[13]. Researchers try to describe and reveal the facts in the field that relate to non-technology and industrial vocational high school graduates in Indonesia, specifically the relationship and suitability between their chosen majors and their work after graduation.

For the sample in this study, there were 1398 non-technology and industrial vocational students and alumni in Indonesia. Distribution of samples, namely Java, Kalimantan, Madura, Papua, Sulawesi, Sumatra, Bali and other islands. The questionnaires distribute in period November 2018 until August 2019 through social media and other online media such as facebook, whatsapp, twitter, ask.fm and also by e-mail. This media would be more effective to used in industry 4.0 when society familiar with internet for everything. Credibility research using internal validity research by negative case result analysis, and external validity research with tabulating respondent area.

3. Result

To see the relevance and suitability of the chosen majors when attending vocational with work after graduation, four indicators are used, namely the reason for entering vocational, the suitability of vocational material with industrial needs, experience of courses at vocational, and employment after graduation. First, the reason for entering vocational. To find out the reason for entering vocational, six alternative answers were given, according to their interests, following parents' requests, being close to school locations, low cost, following friends, and wants to work immediately. Research findings can be seen below:

| No | Reasons                        | Amount | Percentage |
|----|--------------------------------|--------|------------|
| 1  | According to your interest     | 938    | 67%        |
| 2  | Following the request of parents | 272    | 19%        |
| 3  | Close to the location of the school | 123    | 9%         |
| 4  | Low cost                       | 39     | 3%         |
| 5  | Following friends              | 67     | 1%         |
| 6  | Want to work right away        | 159    | 1%         |
|    | **Total**                      | 1398   | **100%**   |
From the table above it can be seen that, the majority with a percentage of 67 percent of the reasons for entering vocational schools are in accordance with their interests, in the second place which is following the requests of parents with a percentage of 19.1 percent. Parents influenced to their children to decide their education.

Second, the suitability of the vocational education material which is formulated in 5 alternative answers, which are very appropriate, appropriate, almost appropriate, less appropriate, and not appropriate. For more details, see the table below:

| No | Suitability of vocational material and Industrial Needs | Amount | Percentage |
|----|-----------------------------------------------------|--------|------------|
| 1  | Very suitable                                       | 68     | 10.8%      |
| 2  | Corresponding                                       | 278    | 44.2%      |
| 3  | Almost Suitable                                     | 181    | 28.8%      |
| 4  | Not quite right                                     | 60     | 9.5%       |
| 5  | It is not in accordance with                        | 31     | 4.9%       |
| 6  | No answers                                          | 11     | 1.8%       |
|    | Total Alumni                                        | 629    | 100%       |

From the table above it can be seen that the majority of non-technology and industrial vocational school graduates answered according to the percentage of 44.2 percent say that vocational materials is suitable with and industrial needs, and in the second place which is almost in accordance with the percentage of 28.8 percent says almost suitable.

Third is the experience of courses in vocational. During the period of attending school, only 303 graduates had attended the course, while 326 graduates had never attended the course while attending school. A half of alumni thought that vocational education is not enough to prepare their skill for the future. Thus, they take course in the outside. For the percentage distribution see the table below.

| No | Course Experience | Amount | Percentage |
|----|-------------------|--------|------------|
| 1  | Ever              | 303    | 48.2%      |
| 2  | Never             | 326    | 51.8%      |
|    | Total             | 629    | 100%       |

Fourth, work after graduation. Of the 629 non-technology and industrial vocational high school graduates, as many as 432 people have now gotten jobs, while 197 others are still unemployed. This research find 432 non-technology and industrial vocational school graduates who have worked, as many as 222 people work in accordance with the majors in vocational schools, and 210 graduates work in jobs that are not in accordance with the majors when attending vocational school.

4. Discussion

From the finding research above, we can see that there was a problem between the initial motivation for choosing to go to a non-technology and industrial vocational school and the choice of work when graduating. Where out of the 938 people who initially chose to attend non-technology and industrial Vocational Schools because according to their interests and 19 people hope could work immediately, in fact only 45 percent or 283 alumni worked according to their majors they choose. If it is totaled from the whole sample, then we find even more sad data, namely from 629 alumni, most of their works are not accordance with their chosen majors.

The case that the researchers found in this study has actually been addressed by the Government of the Republic of Indonesia through Presidential Instruction No. 9 of 2016 concerning Vocational Revitalization. In this Impress, one of vocational revitalization is related to vocational curriculum which must be aligned with competencies according to the needs of graduate users (link and match) and specifically mandated to the Minister of Education and Culture of the Republic of Indonesia. In addition to curriculum revitalization, the Presidential Instruction also includes vocational...
The idea of link and match or relevance and suitability for vocational schools in Indonesia is actually not new. This project first started in 1989 and was refined for years. This policy adopts a form of teaching factory learning, where theories learned in schools are combined with a production-based approach in industrial facilities, thus synchronizing vocational education with industry demands and standards[15]. Broadly speaking, according to Arifin (2014)[16], there are three teaching factory models known in the vocational education system in Indonesia. The first model, vocational or tertiary vocational institutions provide space for industrial partners to build a teaching factory within the school location. Thus the teaching factory is a mini replica of the actual factory, where vocational students learn to collect and produce goods for their industrial partners, with vocational schools or tertiary vocational institutions responsible for managing teaching factories.

The second model, vocational or tertiary vocational institution builds a teaching factory together with its industrial partners, with a teaching factory located inside or outside the school building. Teaching factories operate as separate business units from vocational or tertiary vocational institutions, and management of teaching factories is different from those owned by vocational or tertiary vocational institutions. This particular teaching factory model is very much shaped by the needs of vocational programs. Also more expensive to build and operate compared to the previous model. The third model, teaching factory takes the form of a special cooperation class between industrial partners and vocational or tertiary vocational institutions. Thus, students practice their skills in two places, namely in laboratories owned by vocational or tertiary vocational institutions, and in factories that are actually owned by industrial partners. Operational costs for this special collaboration class can be fully or partially paid from Corporate Partners’ Corporate Social Responsibility (CSR) funds[16].

Now, the idea of link and match is so massive implemented by the Ministry of Industry, in 2019 the number involved 2,612 vocational and 899 industries [17], [18]. So since it was launched by the Ministry of Industry since 2017[19], a total of 4,997 cooperation agreements have been signed on the link and match program[18]. But the massive link and match at the Ministry of Industry is certainly more on the vocational technology and industry. Then what about non-technology and industrial vocational schools, such as Agribusiness Vocational School, Economic & Business Vocational School (SMEA), Graphic Vocational School, Ocean Vocational School, Health Vocational School, Tourism Vocational School, Aviation Vocational School, and Hospitality Vocational School. Even though some of the vocational schools mentioned earlier are also integrated with ministries which are also mandated by Presidential Instruction Number 9 of 2016, such as the Ministry of Transportation, the Ministry of Maritime Affairs and Fisheries, the Ministry of State Owned Enterprises, the Ministry of Industry, Ministry of Manpower, Ministry of Transportation, Ministry of Maritime Affairs, Ministry of Energy and Resources Minerals, Ministry of Health, Ministry of Finance and Head of the National Professional Certification Board - and the provincial government[14].

The non-technology and industrial vocational schools mentioned above are also charged with responsibility as the main support in the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development 2011-2025 (MP3EI), which coordinates the medium and long-term action plans, highlighting six economic corridors as new growth centers to encourage overall economic growth of the country. This was reinforced by Presidential Instruction No. 9 of 2016 which imposes four national development priorities on vocational, namely Agriculture, Maritime, Tourism, and Creative Industries[20]. For this reason, it is important that the availability of non-technology and industrial vocational education in Indonesia be able to support Indonesia's national development agenda that is charged to vocational education.

Therefore, non-technology and industrial vocational education in Indonesia, such as Agribusiness Vocational Schools, Economic & Business Vocational Schools (SMEA), Graphic Vocational Schools, Ocean Vocational Schools, Health Vocational Schools, Tourism Vocational Schools, Aviation Vocational Schools and Hospitality Vocational Schools must be able to perfect and establish
themselves from the demand model-driven, to be a supply-driven model, with an emphasis on education and training that prioritizes a job-based learning approach. The school develops a curriculum where the curriculum development involves relevant parties, and the learning system is towards the certification process to be able to face increasingly fierce labor competition. In addition, it is also important to develop a life based learning model as an alternative education with creative training, which prioritizes a potential-based approach with the excellence of regional potential[21].

So that the problem of appropriateness between the selection of study programs in non-technology and industrial vocational schools in Indonesia with future work after graduation as found in this study is not repeated. For this reason, it is necessary to revitalize non-technology and industrial SMKs in Indonesia. Revitalization steps that need to be taken, namely 1) Revitalizing human resources; 2) Building a SIM-based SAS; 3) Link and match with industry; 4) Industrial-based curriculum; 5) Teaching factory; 6) Use of Video Tutorial Media and Video-Based Portfolio Skills; 7) Professional Certification Test; 8) Fulfillment of facilities and infrastructure; 9) Develop Local Wisdom; 10) The Role of Vocational Schools as Local Economic Drivers[22]. See details below:

![Picture 1. Vocational Revitalization Model][22]

5. Conclusion
The findings in this study are of the 938 people who study in non-technology and industrial vocational schools in Indonesia who choose to study in non-technology and industrial vocational schools because they are in accordance with their interests and can immediately work, only 45% alumni work according to the chosen majors. In the efforts of the Government of Indonesia to revitalize vocational education, it seems that they are still focused on the Ministry of Industry and are still not visible on other ministries mandated by Presidential Instruction Number 9 of 2016 concerning vocational Revitalization. While Indonesia’s four national development priorities for vocational education, namely agriculture, maritime affairs, tourism, and creative industries are an inseparable part of non-technology and industrial vocational education. For this reason, revitalization of non-technology and industrial Vocational Schools in Indonesia is required, with the following steps: 1) Revitalization of human resources; 2) Building SIM-based SAS; 3) Link and match with industry; 4) Industrial-based curriculum; 5) Factory teaching; 6) Use of Video Tutorial Media and Video-Based Portfolio Skills; 7) Professional Certification Test; 8) Fulfillment of facilities and infrastructure; 9) Develop Local Wisdom; 10) The Role of Vocational Schools as Drivers of Local Economy.

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