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**The Integration of Technical Vocational Education and Training
Systems to Expand Employment Opportunities and Business
Development**

¹Yeni Nuraeni and ²Henigusnia

^{1,2}Puslitbang Kementerian Ketenagakerjaan (The Ministry of Manpower),
Jl. Jendral Gatot Subroto Kav.51, Jakarta, Indonesia

email: ¹yeninur@hotmail.com; ²henigusnia@gmail.com

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¹Yeni Nuraeni and ²Henigusnia

¹yeninur@hotmail.com; ²henigusnia@gmail.com

^{1,2}Puslitbang Kementerian Ketenagakerjaan (The Ministry of Manpower), Jl. Jendral Gatot Subroto Kav.51, Jakarta, Indonesia

Abstract: The high unemployment of vocational graduates in Indonesia shows that vocational system needs an improvement so it can produce competent workers and reduce the number of unemployed. This study aims to evaluate and analyze the Technical Vocational Education and Training (TVET) system in Indonesia which has not been integrated causing graduates find it difficult to get a job or develop a business. The approach used in this study is qualitative. The data collection conducted through in-depth interviews with key informants. The results of the study indicate that the TVET in Indonesia still involves various government and private institutions and does not yet have a good coordination mechanism and integrated programs. The improvement of the TVET system by developing an integration model involving government and the private institutions to develop the three main pillars, they are competency standards, competency-based training programs and competency certifications.

Key words: TVET, competency based-training, employment opportunities

***Abstrak:** Tingginya tingkat pengangguran lulusan SMK di Indonesia menunjukkan bahwa sistem kejuruan memerlukan perbaikan agar mampu menghasilkan tenaga kerja yang memiliki kompetensi dan mengurangi angka pengangguran. Penelitian ini bertujuan untuk mengevaluasi dan menganalisa sistem Technical Education and Training (TVET) di Indonesia yang belum terintegrasi sehingga*

menyebabkan para lulusan SMK sulit untuk mendapatkan pekerjaan atau mengembangkan bisnis. Metode yang digunakan dalam penelitian ini adalah kualitatif. Pengumpulan data dilakukan dengan menggunakan wawancara mendalam dengan beberapa narasumber. Hasil dari penelitian ini menunjukkan bahwa TVET di Indonesia masih melibatkan beberapa instansi negeri dan swasta, serta belum memiliki koordinasi yang baik dan program yang terintegrasi. Perbaikan sistem TVET dengan mengembangkan model integrasi yang melibatkan instansi negeri dan beberapa instansi swasta untuk mengembangkan tiga pilar utama, yaitu standar kompetensi, program pelatihan berbasis kompetensi, dan sertifikasi kompetensi. **Kata kunci:** pronominal, ngana, Bahasa Melayu Manado.

Kata kunci: TVET, pelatihan berbasis kompetensi, kesempatan kerja

INTRODUCTION

TVET is expected to always be symbiotic in harmony with the needs of the world of work. In fact, it does not always match the expectation because both have dynamics of importance which are not always same. They also have systems which are not always compatible each other, besides, they have culture which is not easily integrated (Slamet, 2013). Therefore, formulating the objectives of TVET and choosing appropriate efforts to achieve them in line with the needs of the workforce, become dynamic work for policy makers and implementers.

The challenges of working in the future are increasingly heavy and complex. The availability of jobs in accordance with competence and education level is in line with the opening of the free market. Thus, it becomes a necessity to improve quality in order to compete in the international and domestic markets (Ministry of Manpower and Transmigration Regulation No. 12/2012). Changing the need for XXI century skills that emphasize higher order thinking (high order thinking skills) will be a challenge for TVET in developing technical, vocational and technical learning concepts, policies and strategies (Putu, 2017). Auditors' ability to cope with different environments and make quality judgments is dependent on their own efforts to improve performance and influenced by certain motivational factors (Bonner, 1994). Two dimensions of motivational factors are internal and external motivation. Internal motivation shaped from

individual within, while external motivation imposed by external parties or situations.

The TVET program must be developed according to the demands of the job market and industry needs. Thus, the industry will benefit directly when using competent workers from the TVET program. If graduates have high quality, the industry will get immediate benefits, because at the beginning of recruitment, the industry does not need to pay more to provide industrial training. Therefore, it is appropriate if the industry has the responsibility to care, pay attention and take responsibility together with vocational training institutions (Windarto & Sukiyo, 2014).

A TVET institution must have a strategy to improve quality in order to achieve the desired goals. In determining the right strategy, the role of education and training institution stakeholders cannot be separated from the implementation of education and appropriate training, stakeholders are not only as input, but also play a role in the process. In connection with the right strategy and the condition of stakeholders, it is necessary to create a mutualistic symbiotic relationship which is carried out by both in achieving and realizing common goals. The purpose of a collaboration is to achieve better results by mutual benefit between the parties that work together. Therefore, through cooperation can provide benefits to the parties that work together can even provide benefits for other parties outside of the parties that work together, so there is no party which is being disadvantaged (Sulistiyani, 2004). The form of the relationship is in the form of cooperation or partnership. In fact, Minister of National Education Regulation No. 19 of 2007, concerning Education Management Standards states that each school collaborates with other relevant institutions, relating to the input, process, output, and utilization of graduates (Meyana, Ulfatin, & Sultoni, 2017).

Three countries have implemented training programs which are integrated with industry. First, Australia has implemented vocational education training reforms in the last decade (Tessaring & Wannan, 2004). Second, best practices can be found in the dual vocational education training system in Austria, which has many good features, with a structured apprenticeship program that integrates learning in schools and training in the workplace (Hoeckel, 2010). Third, the dual system in Germany has made the country have a competitive advantage by successfully reducing the unemployment rate, so that in Germany there are no residents over 25 years who are unemployed for more than 3 months (Hippach-Schneider, Krause, & Woll, 2007).

The success of TVET can be measured by the absorption rate of graduates in the job market. If graduates have the ability according to the required job market, it can be said that the learning process of vocational institutions has students who are ready to get into the job market. To achieve this, vocational training providers must always improve the quality of learning in accordance with labor market demand (Sukardi, 2012).

Seeing the development of workforce needs which is predicted to change in the era of the digital economy, it is necessary to examine the condition of TVET in Indonesia whether it has been able to create graduates who are ready to get into Business World and the World of Work (DUDI) or not. Can government policies in the field of vocational education accommodate the changing needs of workers in the Industrial Revolution 4.0 era? This study aims to look at the condition of TVET in Indonesia and the revitalization that must be done to meet the needs of DUDI.

LITERATURE REVIEW

Investment in human resource development is an expenditure aimed to increase human production capacity by improving work education and training (Rumawas, 2018). Based on Law No. 20 of 2003, the national education system in Indonesia can be categorized into 3 types, (1) Formal education, is a structured and tiered education pathway, (2) Non-formal education, is an education pathway outside of formal education that can also be carried out in a structured and tiered manner, (3) Informal education, is a family and environmental education pathway (Dewi, 2016).

Based on Law no. 20 of 2003 article 26 paragraph (4) and Government Regulation no. 17 of 2010 article 103 paragraph (1), course institutions and training institutions are classified in the category of non-formal education in Indonesia. Both non-formal education units are intended for people who need knowledge to develop their skills and attitudes, develop their profession, business or continue their education to the higher level and to improve vocational competence (Lentera Kecil, 2015). In Indonesia, there are two types of course institutions and training institutions which are organized by private entities known as LKP (Course and Training Institute) and LPK (Employment Training Institutions). The two types of courses and training institutions are two different Ministries. LKP is under the guidance of the Ministry of

Education and Culture, while the LPK is under the guidance of the Ministry of Manpower.

The Ministry of Manpower's vision in fostering LPK is in order to make the training graduates ready to work after being trained by the LPK for a certain period of time, while the vision of the Ministry of Education and Culture in fostering LKP is similar as the goal of state education which is to educate the nation through non-formal education (Information Center, 2014). In general, a private course and training institutions in Indonesia has 2 operational licenses originating from two different ministries, so that the institution can be called LPK or LKP. The central government and regional governments have Course Institutions and Training Institutions called BLK (Job Training Centers). BLK is under the guidance of the Ministry of Manpower.

Based on the vision of the two ministries, the Ministry of Manpower and the Ministry of Education and Culture, LPK and LKP should have different and complementary objectives to create competent human resources to get into the workforce and the business world. For example, courses and training institutions in the field of vocational sewing, LKP aimed to produce graduates who have the skills to be able to create a picture of fashion patterns using hand movements so as to produce neck circumference shells, arm circumference shells and other pattern parts, skills training is to train one's physical movements (LPK Intan, 2015). The question is whether LKP graduates who have acquired fashion sewing skills are ready to get into the workforce and the business world?

When someone enters the business world and the industrial world (DUDI) the most important factor is work productivity and work effectiveness. DUDI is dynamic in the use of equipment and technology in accordance with its era. Someone is ready to work and open a business, if they can operate work tools and having basic skills in the vocational field of their interest. The function of LPK is to be able to create graduates who not only have skills, but also capable to operate work equipment in accordance with the demands of the work or business world. The aim of LPK and BLK is not only to have skill, but also to train participants to be ready for work and business.

With sophisticated equipment, someone who has no basic embroidery skills but they master the operation of Wilcom software with the help of digital embroidery machines, will be able to produce embroidery more quickly and more neatly (LPK Intan, 2015). In the digital age, the distance between

skills training and the world of work will be increasingly distant, especially for occupations experiencing changes in the use of work equipment from analog systems to digital systems (LPK Intan, 2015).

Based on the objectives of the course and training institutions mentioned above, ideally LKP functions to provide basic skills to course or training participants in certain vocational fields. After graduating and obtaining a competency test certification, in accordance with the objectives of LKP, graduates are not prepared to be able to directly get into the workforce and business world. LKP graduates still need to be equipped with knowledge and skills in the use of equipment according to the demands of the times and additional competence in accordance with the demands of DUDI (the business world and the industrial world) at that time. The function of LPK and BLK is to provide competencies which are adjusted to the development and demands of DUDI.

Within the formal education category, there are types of education related to preparing graduates to get into the workforce. Based on the level, education included in this type are; (1) Vocational Education, is a level of secondary education to prepare students to work in certain fields, this level in Indonesia is known as Vocational High School (SMK), (2) Vocational Education, is education which aims to prepare students to have jobs with certain applied expertise is maximally equivalent to a bachelor's program, this type of education in Indonesia is known as D1, D2, D3 and D4 Polytechnic levels, (3) Professional Education, an education that aims to prepare students to have jobs with special skills requirements, constituting higher education after the undergraduate education program, graduates will get a professional degree, the three types of educational format the same goal is to prepare students to work in certain fields (Kokom, 2018).

METHOD

This research used qualitative method. Primary data comes from observations and conducts Group Discussion Forums with key informants. Secondary data obtained from data and documents related to research. This research is focused on analysis of the current condition of TVET in Indonesia as well as opportunities and challenges going forward to conduct Revitalization in the context of welcoming the industrial era 4.0 and the digital economy.

RESULTS AND DISCUSSION

A. Technical and Vocational Education and Training (TVET) Conditions in Indonesia

How is the practice of implementing courses and training in Indonesia? The dualism of LKP and LPK / BLK which are categorized as non-formal education institutions still cause many problems. This is due to the lack of clarity between what competencies must be achieved by LKP and LPK / BLK graduates, and integration in the implementation of courses and training. In general, private courses and training institute functions as both LKP and LPK. These institutions have 2 operational licenses originating from 2 different ministries.

The aim of an institution is to have two operational licenses in general so that they can receive training programs and equipment from two Ministries, the Ministry of Education and Culture as the LKP supervisor and the Ministry of Manpower as the LPK/ BLK supervisor. Unfortunately, the program between the two ministries is not yet integrated and complementary. Private courses and training institutes run training based on the programs demanded by each Ministry. Training participants for the two training programs (as LKP and LPK) are generally different so there is no complementary element. Graduates of the two training programs are required to be distributed to DUDI, whereas ideally LKP graduates are more focused on getting supplies in the form of basic skills and not prepared to be able to directly get into DUDI. LPK/ BLK graduates are expected to have been briefed to be ready to get into DUDI. Ideally, the basic skills training program is carried out by LKP and the work training program continued by the LPK/ BLK.

Are the course and training institute able to set up their graduates to get into DUDI? In 2018, it turned out that out of a total unemployment of 7 million people, including 1.18 million people said that they had received job training at BLK (Rahadian, 2019). The number of BLK in inadequate conditions, starting from the condition of the building, facilities and infrastructure to the material being taught are not competitive, as many as 53.85% of BLK in Indonesia do not have equipment (Eka, et. al, 2018).

Vocational High School (SMK) aimed at preparing graduates who are ready to get into DUDI. The question is, whether SMK graduates really have the competence to get into DUDI? Vocational education is expected to be always symbiotic in harmony with the needs of the workforce, but in reality,

this is not always the case. The results of interviews with SMK graduates, it turns out that many of them feel that they have not had enough skills to get into DUDI, so in order to improve their competence, they must attend courses and training at LKP, LPK and BLK. Open Unemployment Rate (TPT) data shows that SMKs have the highest value compared to other formal education as shown in figure 1 TPT is an indicator that shows the level of labor supply that is not absorbed by the market.

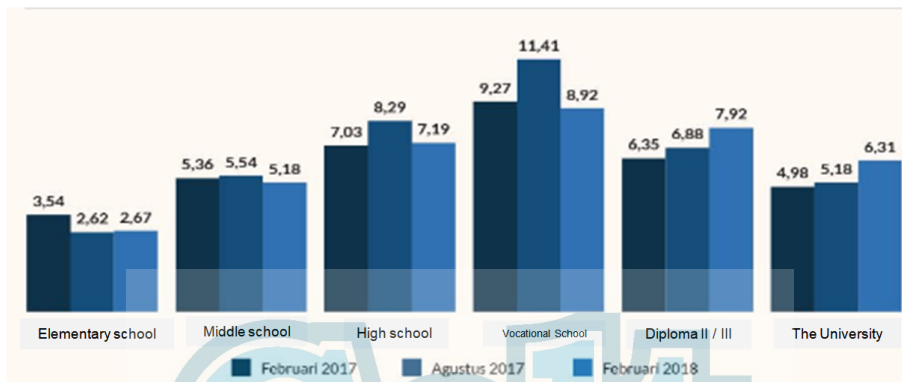


Figure 1:
Open unemployment rate according to the highest education level completed (%)
Source: (Andreas, 2018)

Vocational education can move the labor market and contribute to a country's economic strength. Therefore, SMKs must be able to contribute to the nation's competitiveness. To improve the quality of SMK so graduates can meet the needs of DUDI, Presidential Instruction No.9 of 2016 has been issued on SMK Revitalization. To follow up on Inpers 9, the Minister of Education and Culture explicitly instructed to perfect and harmonize the SMK curriculum in accordance with the competency needs of graduate users (link and match). "Link" and "match" indicate that graduates have insight or competitive attitude, such as work ethics, achievement motivation, mastery, competitiveness, understanding the meaning of money (money beliefs), and saving attitudes (attitudes to saving). "Link" and "match" require a change in the mindset of all education implementers both educational institutions and teaching staff must be pro-active in developing "links" and "matches" with the world of work (Hadam, Rahayu, & Ariyadi, 2017). In Presidential Instruction No.9 of 2016, the Directorate of Vocational Development has established five

revitalization areas consisting of curriculum, teachers and education personnel, collaboration with the Business or Industry World, certification and accreditation, as well as Sarpras and institutions. Each of five revitalization areas needs to be implemented with concrete steps for the realization of superior human resources in each field. The actual manifestation of SMK revitalization steps can be explained as shown in Figure 2.

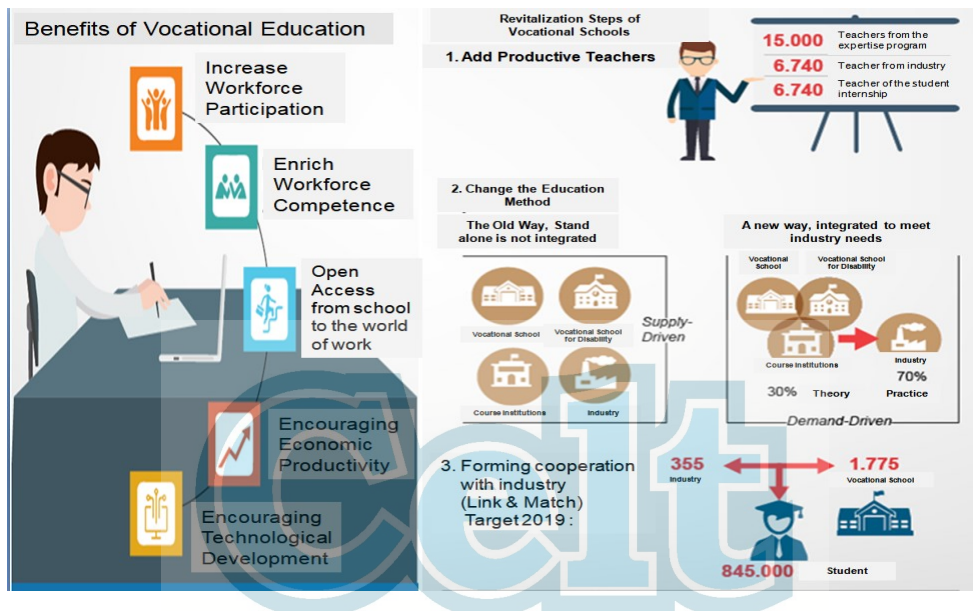


Figure 2:
Manifestation of SMK revitalization
Source: (Hartriani, 2017)

Likewise Polytechnic graduates, there are still many polytechnic educational institutions which have not adjusted their equipment and curriculum according to DUDI needs, so that when they graduate, they still have to improve their competency through training in industry. Judging from the quantity of total state universities in Indonesia, the most Polytechnic is 99, with a proportion of 26.61%, while the total private universities are 144 Polytechnics with a proportion of 3.64%.

Vocational higher education has not yet shown a significant contribution in overcoming unemployment. The unemployment rate at the tertiary level from 2017 to 2019 turned out to still show an increase as shown in the figure 3. One of the factors that caused the high unemployment rate at the tertiary level including Polytechnic is that the skills of the graduates are

not in accordance with the needs DUDI. The polytechnic program faces several challenges, including polytechnic accreditation which is still below the standard where 59 % of polytechnic study programs are still accredited under B and the polytechnic curriculum is not yet flexible in accordance with industry development and the lack of industry lecturers for polytechnic education (Eka et al., 2018).

To improve the quality of polytechnics in Indonesia, there are several things which become the focus, firstly polytechnics must have teaching lecturers from industry, polytechnic programs must implement teaching factories, and need broader development of vocational programs at the master and doctoral level (National Leadership Council Indonesian Employers Association, 2018).

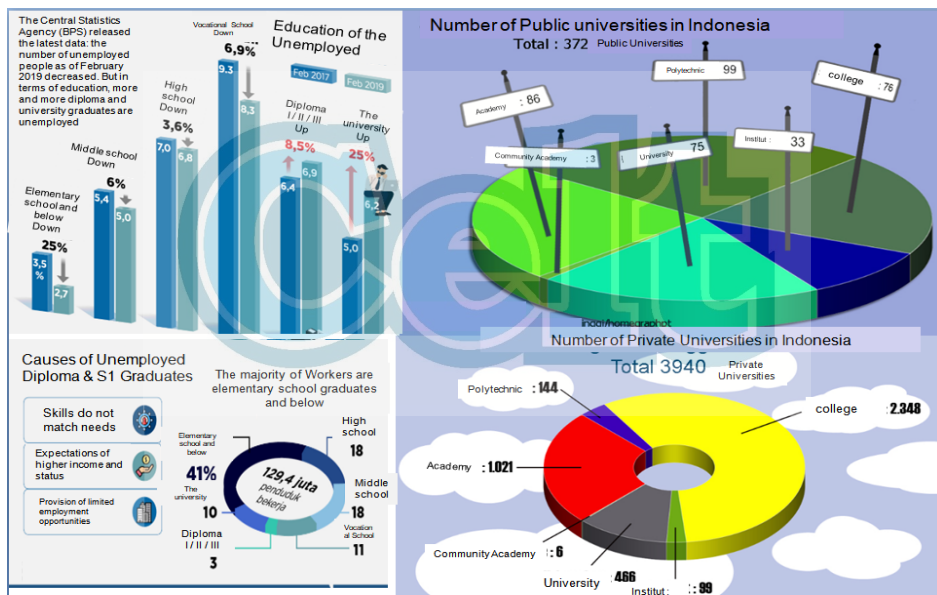


Figure 3:
 Composition of public and private universities in Indonesia and
 unemployment rate based on education level
 Source: (Pusparisa, 2019; IPTEK & DIKTI Institution, 2016)

B. TVET Integration Model in Indonesia

TVET Learning XXI Century requires the increased impact rather than just output. An important impact of TVET learning is the formation of one's professional identity or expertise. The establishment of one's vocational or

work capacity needed by the world of work and society is the goal of TVET. The TVET learning strategy is designed to increase the actual impact for students. TVET is a certified education in the world of work standard, being appreciated for its competence, developing its career and gaining prosperity.

The integration model of the conception of vocational disciplines that prioritizes learning on the basis of the needs of the world of work and competency development. This model was developed in Germany and several other countries such as Croatia and China. TVET integration in each country is still different, for example in Germany (The Otto-von-Guericke University Magdeburg-Germany) TVET is under the Faculty of Human Sciences, while at UNY is under the Faculty of Engineering. "Even in other countries TVET is also included in the faculty of education", (Prof. Dr. Frank Bünning).

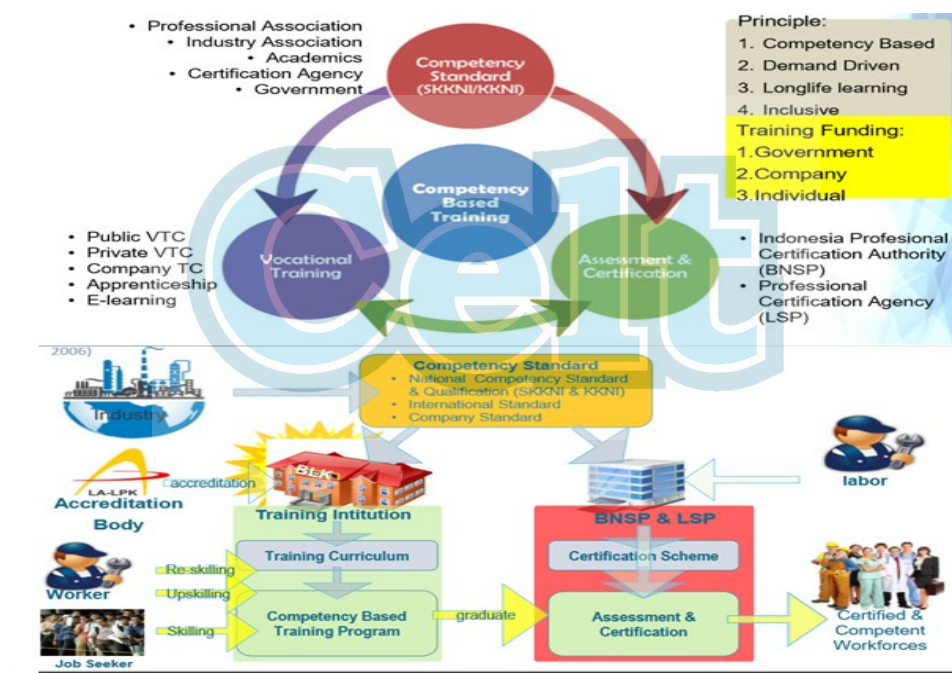


Figure 4:
National vocational training system and competency based training
in indonesia

Source: (Ministry of Manpower of Republic of Indonesia, 2019)

The TVET integration model in Indonesia refers to the TVET model in Germany and Australia. For the implementation of the TVET integration model, it must involve the stakeholders involved, Ministry of Manpower

which houses BLK, Ministry of Education and Culture which houses Polytechnics, Vocational Schools, LPK / LKP, Community Academies and private-owned companies. The TVET system has three pillars, they are Competency standards developed by business or industry, competency-based training programs developed by training institutions, and competency certification held by BNSP & LSP professional certification institutions (Kompak.com, 2017). TVET integration model in Indonesia can be seen in figure 4.

In general, competence is the mastery of knowledge, skills and abilities which can be realized by cognitive behaviours, affective and psychomotor as well as possible (McAshan, 1981). Competence is knowledge, abilities and expertise (skills) possessed by someone who directly influences their performance (Yuniarsih & Suwatno, 2009). Life competencies or skills are expressed in skills, abilities, activities, actions, performance which can be measured (Sukmadinata, 2012). Student competencies can be increased through Competency Based Training (Blank, 1982; Purnamawati, 2011).

Competency Based Training is a training approach in vocational schools which is not only oriented towards graduate outcomes, but also focuses on the training process itself. The training also refers to certain industry standards (Guthrie, 2009). The industry standards form the basis of the program (curriculum), assessment and learning materials that are designed and developed. The CBT program focuses on what participants can do in the workplace as opposed to only having theoretical knowledge (Amalia & Suwatno, 2016). Therefore, this training program guarantees students the knowledge, skills and attitudes or values to be successful in the work environment (Anane, 2013). CBT in Indonesia refers to the National Competency Standards as outlined in the SKKNI / KKNI, international standards and company standards. The preparation of the Competency Standards must involve various stakeholders as shown in the Figure 4 to be able to meet the needs of DUDI in accordance with the changing times.

C. Triple Skill Ministry of Manpower Model

In order to adjust the guidelines and the development of the business world and the world of work, the Indonesian government prepared the Triple Skilling Concept which includes skilling, upskilling, and reskilling for Indonesian HR. Skilling aims to encourage and facilitate the workforce to participate in improving their skills through vocational training programs at the Vocational Training Center (BLK).

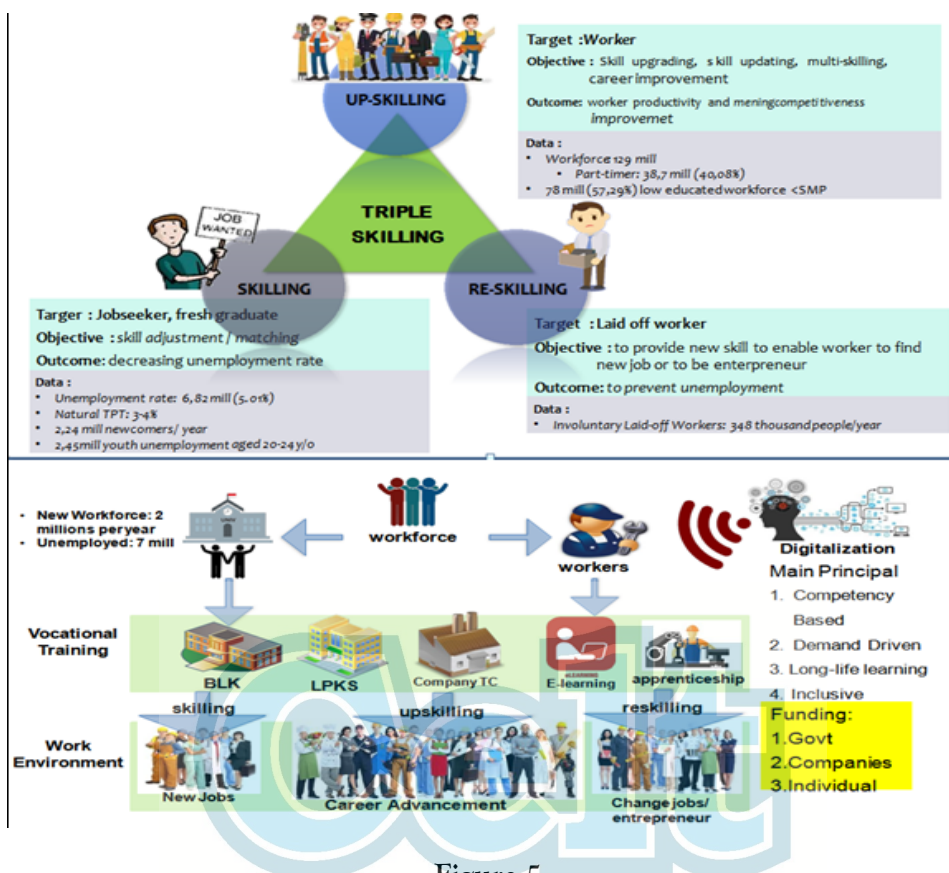


Figure 5:
 Concept and Model of Triple Skilling Implementation
 Source : (Ministry of Manpower of Republic of Indonesia, 2019)

Workers who experience the effects of job shifting will be facilitated with reskilling and upskilling programs so that they can improve their skills in accordance with the guidelines for the development of DUDI, especially in the industrial revolution 4.0 era. The triple skilling program also aims to encourage the workforce into job creation that focuses on the ability to innovate and develop themselves to become entrepreneurs and socio-entrepreneurs. To implement the triple skilling concept, various improvements need to be made including BLK development through the concept of rebranding, reorientation and revitalization (3R), development of training participants, increasing the instructor's expertise and promoting apprenticeship programs in companies both abroad and domestically (Petriella, 2019). The concept of triple skilling can be seen in the figure 5.

D. The concept of TVET Revitalization in Indonesia

TVET revitalization becomes urgent being conducted in Indonesia by looking at the facts of the problems that occur including:

1. Every year, there are around 3.3 million students graduating from high school and vocational education school, while the capacity of tertiary institutions is only around 60-65%, so the rest of the graduates are forced to fight with graduates of the Poltek and tertiary institutions to enter the job market.
2. The workforce profile has not experienced a significant change in the past 10 years.
3. The Industrial Revolution 4.0 narrows technical employment. For example, shoe factory operated 20.000 employees 5 years ago, now they only have 12.000 employees because some works can be done automatically.
4. The establishment of new polytechnics must be strived to improve the capacity as well as the quality of human resources. If it is not, then the demographic bonus they have will not be optimal in their contribution.
5. Productive age population with low education and skills can be predicted low productivity. In addition, they mostly only work in low-income sectors.

Revitalization of TVET aims to improve the quality and competitiveness of human resources, especially the creation of skilled workforce to meet industry needs and implement development. The main points of Vocational Education Revitalization include Alignment of curriculum according to the needs of the business or industry world (DUDI), provision and training of teachers or instructors, Certification and accreditation, Improvement of facilities and infrastructure, Link-and-match (partnership) with industry (for placement work). In the context of developing human resources through TVET Revitalization efforts, the Government of Indonesia has prepared the 2017-2025 Vocational Education and Training Roadmap. In preparing the roadmap the first thing to consider is; the influencing environment, labor needs, and policies that must be carried out by ministries / agencies.

In the effort to prepare the workforce for superior products which have high added value and global demand needs, the development of vocational

education and training cooperation in Indonesia can be focused on five sectors of the Indonesian economic, agribusiness, tourism, digital economy, manufacturing, and healthcare. The focus of TVET revitalization is directed to encourage the fulfillment of workforce for government priority programs, such as infrastructure programs consisting of national strategic and national non-strategic projects, equity programs, and regional development programs. In facing the development of automation trends, good human resource planning is needed, including for vocational education graduates as a basis for the development of SMK, BLK, and Polytechnic. The development of vocational education itself must be based on the needs of the industry in the future which will certainly be influenced by the level of economic growth and also the different levels of automation in each industry. The concept of HR development through TVET Revitalization can be seen in Figure 6.

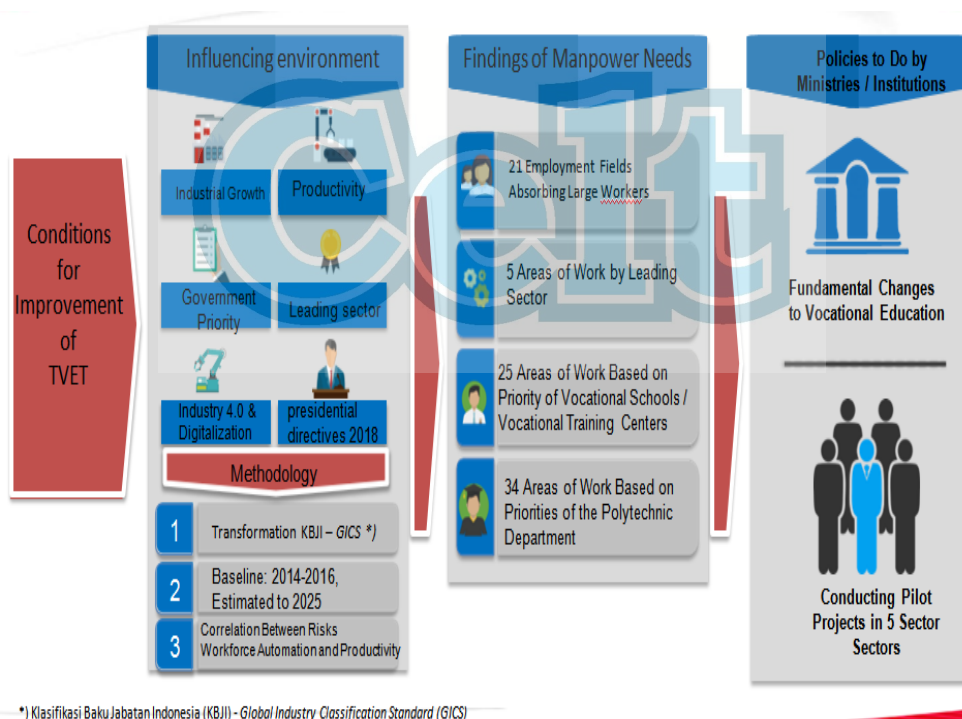


Figure 6:
Human Resource Development scenarios through TVET revitalization
Source: Coordinating Ministry for Economic Affairs

CONCLUSION

Revitalization of vocational education and training institutions must have a focus tailored to the needs of the workforce. For example, Vocational High School (SMK) to prepare workforce education level 2 operators of the Indonesian National Qualification Framework (KKNI). Then, polytechnics focuses to prepare for higher level thinking education workforce and white-collar jobs. And the Vocational Training Center (BLK) focuses to prepare workforce training for those who need short-term skills as well as upskilling and reskilling for those affected by automation and critical economic conditions. Improvements to the fundamentals of vocational education and training can be done through improving educational institutions, raising competency standards, increasing the quality of apprenticeships, increasing facilities & infrastructure, increasing funding, and increasing coordination.

REFERENCES

- Amalia, L., & Suwatno, S. (2016). Peningkatan kompetensi siswa melalui efektivitas competency based training. *Jurnal Pendidikan Manajemen Perkantoran*, 1(1), 30-37. <https://doi.org/10.17509/jpm.v1i1.3267>
- Anane, C. A. (2013). Based training: Quality delivery for Techninal and Vocational Education and Training (TVET) institutions. *Educational Research International*, 2(2), 117-127.
- Andreas, D. (2018). *Mengapa pengangguran terbanyak justru lulusan SMK*. Retrieved online from <https://tirto.id/mengapa-pengangguran-terbanyak-justru-lulusan-smk-cj6Y>.
- Blank, W. E. (1982). *Hanbook for developing competency-based training programs*. englewood cliffs. New Jersey: Prentice Hall.
- Bonner, S. E. (1994). A model of the effects of audit task complexity. *Accounting, Organizations and Society*, 19(3), 213-234. [https://doi.org/10.1016/0361-3682\(94\)90033-7](https://doi.org/10.1016/0361-3682(94)90033-7)
- Ministry of Manpower and Transmigration Regulation No. 12/2012, *Regarding long-term development plan in the area of labour for 2012-2025*.
- Dewi, W. (2016). *Apa itu LKP*. Retrieved online from <http://www.lkpbsjapirook.sch.id/2016/11/apa-itu-lkp.html>

Eka, A., Dwi, R., Irvan, T. H., Rahmanda, M., Anggara Yudha, Z., Herni, R., & Lauranti, M. (2018). *Vokasi di era revolusi industri (Kajian Ketenagakerjaan di Daerah)*. Perkumpulan PRAKARSA. Retrieved online from <https://repository.theprakarsa.org/publications/328324/vokasi-di-era-revolusi-industri-kajian-ketenagakerjaan-di-daerah#cite>.

Guthrie, H. (2009). *Competence and competency based training: What the literature says*. Adelaide, Australia: National Centre for Vocational Education Research.

Hadam, S., Rahayu, N., & Ariyadi, A. N. (2017). Strategi implementasi revitalisasi SMK. In *Book Serial Revitalisasi SMK*. https://doi.org/10.1300/J028v11n01_10.

Hartriani, J. (2017). *Pendidikan vokasional upaya tingkatkan daya saing*. Retrieved online from <https://katadata.co.id/infografik/2017/08/29/pendidikan-vokasional-upaya-tingkatkan-daya-saing>.

Hippach-Schneider, U., Krause, M., & Woll, C. (2007). *Vocational education and training in Germany*. Luxembourg: European Centre for the Development of Vocational Training.

Hoeckel, K. (2010). *Learning for jobs. OECD reviews of vocational education and training*. Austria: OECD.

Information Center. (2014). *LKP Atau LPK Bina Generasi*. Retrieved online from <http://lkpbinagenerasikbm.blogspot.com/2014/06/lkp-dan-lpk-bina-generasi.html>.

IPTEK & DIKTI Institution. (2016). *Statistik perguruan tinggi di Indonesia*. Retrieved online from <https://kelembagaan.ristekdikti.go.id/index.php/statistik-5/>.

Kokom. (2018). *Pendidikan teknologi dan kejuruan*. Retrieved online from <http://staffnew.uny.ac.id>.

Kompak.com. (2017). *Model integrasi antara pendidikan kejuruan dan pelatihan dengan industri*. Retrieved online from <https://www.kompak.or.id/id/article/model-integrasi-antara-pendidikan-kejuruan-dan-pelatihan-dengan-industri>.

- Lentera Kecil. (2015). *Pengertian lembaga kursus dan lembaga pelatihan*. Retrieved online from <https://lenterakecil.com/lembaga-kursus-dan-lembaga-pelatihan/>
- LPK Intan. (2015). *Antara pelatihan ketrampilan dan pelatihan kerja*. Retrieved online from <http://intanmp3ki.blogspot.com/2015/05/antara-pelatihan-ketrampilan-dan.html>
- McAshan, H. H. (1981). *Competency-based education and behavioral objectives*. Englewood Cliffs. New Jersey: Educational Technology Publications, Inc.
- Meyana, Y. E., Ulfatin, N., & Sultoni. (2017). Kerjasama lembaga pendidikan dan pelatihan dengan lembaga lain bidang kejuruan. *Jurnal Pendidikan*, 2(1), 157-165.
- Ministry of Manpower of Republic of Indonesia. (2019), *Regarding vocational training in Indonesia*.
- National Leadership Council Indonesian Employers Association. (2018). Kebijakan pengembangan vokasi di Indonesia. APINDO. Retrieved online from https://apindo.or.id/userfiles/laporan/pdf/Annual_Report_2018.pdf.
- Petriella, Y. (2019). Bangun SDM siap kerja, kemenaker terapkan triple skilling. Retrieved online from <https://ekonomi.bisnis.com/read/20190617/12/934593/bangun-sdm-siap-kerja-kemenaker-terapkan-triple-skilling>.
- Purnamawati. (2011). Peningkatan kemampuan melalui pelatihan berbasis kompetensi (Competency-Based Training) sebagai suatu proses pengembangan pendidikan vokasi. *Jurnal Pendidikan Medtek*, 3(2), 1-13.
- Pusparisa, Y. (2019). *Angka pengangguran lulusan universitas meningkat*. Retrieved online from <https://katadata.co.id/infografik/2019/05/17/angka-pengangguran-lulusan-perguruan-tinggi-meningkat#>.
- Putu, S. (2017). *TVET abad XXI filosofi, teori, konsep dan strategi pembelajaran vokasional*. Yogyakarta: UNY Press.

Rahadian, L. (2019). Skill tak sesuai, suplai tenaga kerja tak terserap. Retrieved online from <https://ekonomi.bisnis.com/read/20190316/12/900380/skill-tak-sesuai-suplai-tenaga-kerja-tak-terserap>.

Rumawas, W. (2018). The role of human capital to the improvement of employee performance in fisheries companies in North Sulawesi Province. *International Journal of Applied Business & International Management*, 3(20), 71-77. <https://doi.org/10.32535/ijabim.v3i2.160>

Slamet, P. (2013). Pengembangan SMK model untuk masa depan. *Jurnal Cakrawala Pendidikan*, 5(1), 14-26. <https://doi.org/10.21831/cp.v5i1.1256>

Sukardi, T. (2012). *Peranan Bimbingan kejuruan terhadap pembentukan karakter kerja pada pembelajaran teknik pemesinan*. Yogyakarta: Fakultas Teknik UNY.

Sukmadinata. (2012). *Kurikulum dan pembelajaran kompetensi*. Bandung: PT. Refika Aditama.

Sulistiyani. (2004). *Kemitraan dan model-model pemberdayaan*. Yogyakarta: Gava Media.

Tessaring, M., & Wannan, J. (2004). *Vocational education and training - key to the future*. Luxembourg: European Center for the Development of Vocational Training.

Windarto, C., & Sukiyo. (May 4th, 2014). Curriculum integration of vocational training and apprenticeship based training to fulfill competent workforce market. *3rd International Conference on Vocational Education and Training ICVET*, 207 - 215. Yogyakarta: State University of Yogyakarta.

Yuniarsih, T., & Suwatno. (2009). *manajemen sumber daya manusia untuk perusahaan dari teori ke praktik*. Jakarta: PT. Raja Grafindo Persada.