Chapter 3
Technical and Vocational Education and Training and Training in Indonesia

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3.1 Overview/Summary

Based on Statistical Centre Institution (BPS) 2018, the Indonesian economy grew 5.27% compared to the previous year, and it is estimated that in the future Indonesian economy will experience even bigger surges. By 2020–2030, Indonesia will face a demographic bonus, namely the growth of the workforce age (15–64 years) reaching around 70% of the population. This amount of workforce will increase economic value which is very useful as long as skilled and standardized workforce can be managed and prepared. In this period, 5 million skilled workers are projected each year, so that over the next 15 years 75 million workers are needed in accordance with twenty-first century skills. Based on Global Talent Competitiveness Index survey conducted by INSEAD in the year 2017, the rating of Vocational & Technical Skills indicator (65) in Indonesia is still better than the other five indicators, namely Enable (84), Attract (105), Grow (87), Retrain (93), Global Knowledge Skills (91) from 118 countries in the world. This condition shows that mid-level skills in Vocational & Technical Skills are still good even though the fulfillment of low-level workers with employability is ranked 22 of 118 countries or is the world's best 22% (book: Vocational Development Policy Roadmap in Indonesia 2017–2025—Ministry of Economic Affairs Coordinator of the Republic of Indonesia 2017).

This paper uses references from SEAMEO VOCTECH Regional Knowledge Platform and UNESCO-UNEVOC that has been validated by the key informants from Indonesia.
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3.2 Demographic and Socio-Economic Data

See Table 3.1.

3.3 TVET Mission, Legislation, and National Policy or Strategy

3.3.1 TVET Mission/Goals

According to Indonesia's Law No. 20 of 2003 on the National Education System together with the Ministry of Education and Culture (MoEC), the mission of technical and vocational education and training to prepare students for work in industries and continue to study in higher education institutions (colleges and universities), and work independently as entrepreneurs following the principle of *"BMW"* (*Bekerja, Melanjutkan, dan Wirausaha/Work, Continue to higher education and Entrepreneurship*).[1] Also at the higher level (such as polytechnics), Ministry of Research, Technology and Higher Education (MoRTHE) states that technical and vocational education and training (at higher level) "is one of the bridges for supporting the Indonesian golden generation". Thus, Indonesia aims at increasing TVET delivery as one strategy of acquiring economic transition and increasing competitiveness of its graduates and employment performance.[2,3] It aims at increasing the provision of TVET to young people through both private and public institutions, which in turn will have an impact on the development of the economy. The government is emphasising more about TVET in order to reduce high unemployment rates among educated youth and to ensure this the government is committed to providing students who cannot continue for higher education with skills to enable them to find work.

This makes objectives and goals of TVET in Indonesia as:

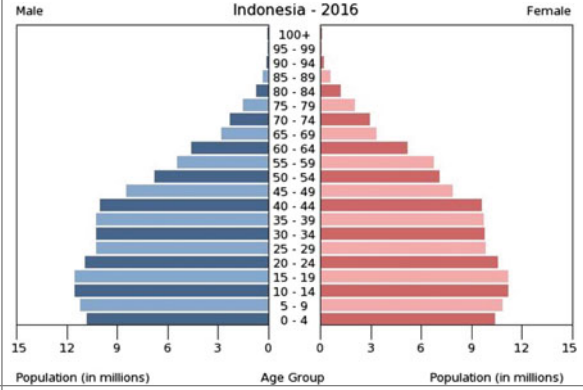
- Increasing quality in the delivery and accessibility of TVET Education
- Improving the employability and participation of graduates in lifelong learning
- To reduce unemployment rate among the young generation
- To shift the enrolment ratio of students in general secondary education to vocational secondary education from 70:30 to 30:70 by 2020
- To boost the competence and competitiveness of vocational school graduates locally and internationally
- To boost job creation through entrepreneurship skills to support higher productivity, competitiveness and growth.

[1] Dit. PSMK (2017).

[2] Ministry of Research, Technology and Higher Education of the Republic of Indonesia (2017).

[3] Unevoc.unesco. World TVET Data Base Indonesia (2013).

Table 3.1 Demographic and socio-economic data

Economy/standard of living	Population (overall v/s workforce participation)	Overall: 261.1 Millions (2016)[a] Workforce: 125.4 Millions (2016) Population pyramid[b]: 
	Human development index	Index: 0.689 Rank: 113 (2016)
	Purchasing power parity	3.031 Trillion USD (2016)
	Gini coefficient	39.5 (2012)
	Gross Domestic Product (GDP)–total	932.4 Billion USD (in 2016)
	Gross Domestic Product (GDP)–per capita	11.700 (2016)
	Poverty rate	10.9% (2016)
	Gender dynamics/human sex ratio	Sex ratio at birth (male births per female births): 1.05 (2015)

(continued)

Table 3.1 (continued)

Composition of economy by	Industry/sectors	Agriculture: 14% Industry: 40.8% Services: 45.3% (2016 est.) *Agriculture—products*: rubber and similar products, palm oil, poultry, beef, forest products, shrimp, cocoa, coffee, medicinal herbs, essential oil, fish and its similar products, and spices *Industries*: petroleum and natural gas, textiles, automotive, electrical appliances, apparel, footwear, mining, cement, medical instruments and appliances, handicrafts, chemical fertilizers, plywood, rubber, processed food, jewellery and tourism
	Contribution of each industry/sector to GDP	Agriculture: 14% Industry: 40.8% Services: 45.3% (2016 est.)
Education	Education index	0.603 (2013)
	Adult literacy rate (% ages 15 and older)	93.9 (2016)
	Expected years of schooling	12.9 (2016)
	Mean years of schooling (of adults)	7.9 (2016)
	School dropout rate	Primary school dropout rate (% of primary school cohort) 18.1 (2016)
Employment	Unemployment rates	5.8% total 19.3% youth (2016)
	Industry/sector wise employment	Employment in agriculture (% of total employment): 32 Employment in services (% of total employment): 47 Employment in industry (% of total employment): 21 (2016)

(continued)

Table 3.1 (continued)

	Composition of workforce	Employment in services, female (% of female employment): 53.3 (2016) Employment in services, male (% of male employment): 45.4 (2016) Employment in agriculture, female (% of female employment): 30.9 (2016) Employment in agriculture, male (% of male employment): 28.0 (2016) Employment in industry, female (% of female employment): 15.8(2016) Employment in industry, male (% of male employment): 26.6 (2016) According to UNDP 2016 Statistics, the percentage of Labor Force Participation rate of Male (84%) higher than that of the Labor Force Participation rate of female (51%) for ages 15–64. This explains the unemployment ratio of male to female of 1:2.[c] In Indonesia, majority of female labor force participation is seen in informal sector. Usually women take up Informal work as it offers incentives of working close to home, particularly for domestic and migrant workers.[c] This indicates the great role of informal sector in Indonesian economy as supported by Suhariyanto—BPS Chairman[d] and ADB report[e]

[a]The World Bank (2017)
[b]The World Fact Book (2017)
[c]United Nations Development Programme (2002)
[d]Indonesia-investments (2002)
[e]Asian Development Bank (2002)

3.3.2 TVET Legislation[4]

Indonesian National Education System Law of 2003 stipulates the overall legal structure of the Indonesian education system including TVET. The Law describes that all levels of education and structure attached to each of them are under the responsibility of MoEC supported by Manpower Act No. 13 which issued in 2003 that regulates the national vocational training system (preparation for work) as well as the Teacher Law in 2005 that regulates the teacher's profession and quality. Indonesia is planning and in progress of establishing new law stipulations about TVET in Indonesia. The latest regulations from the Minister of Education and Culture No. 34 of 2018 about the National Standards for Vocational High School/Vocational High School Madrasah Education. In terms of quality assurance of TVET systems, accreditation authorities were established under decree No 38/2013 for ensuring accreditation standards of TVET providers.

These accreditation bodies include national accreditation board of school/religious school (Bandan Akreditasi Nasional Sekolah/Madrasah/or BAN-SM) for all institutions at the secondary level including TVET (SMK), accreditation authority for training providers (Lembaga Akreditasi—Lembaga Pelatihan Kerja or LA-LPK) for vocational training centers or BLK under MoMT, and Badan Akreditasi Nasional-Perguruan Tinggi or BAN-PT National Accreditation Body for Higher Education responsible for polytechnic accreditation.

3.3.3 TVET Strategy

According to Directorate of technical and vocational education and training—Ministry of Education and Culture (DITVE-MoEC)—Indonesian government is making effort to significantly improve the effectiveness of technical and vocational education and training based on introducing specific curricula that is "Demand driven curricula". This is according to Presidential Instruction Number 9 in 2016 on Revitalizing SMK in the framework of improving the quality and competitiveness of Indonesian Human Resources (Instruksi Presiden Nomor 9 Tahun 2016 Tentang Revitalisasi SMK dalam rangka Peningkatan Kualitas dan Daya Saing Sumber Daya Manusia Indonesia).[5] This improvement of technical and vocational education and training aims to help learners to be competitive at the global level and meet the challenge of globalization. In ensuring that technical and vocational education and training is based on the labour market needs, MoEC is now directing secondary vocational schools to focus on six priority areas: tourism, maritime programs, food security, creative industries, energy, and construction.[6]

[4]DITVE-MoEC (2017), Flevin (2002), Centre of Educational Data and Statistics, MoEC (2017), GESS Indonesia (2016).

[5]DITVE-MoEC (2017).

[6]See Footnote 5.

Ministry of Industries (MOI) launch a National Industry Development Plan 2025–2035, which focuses on the development of human resources through preparing competent human resources, facilitating Competency Testing Center (Tempat Uji Kompetensi/TUK), human resources certification center, and Indonesian National Work Competency Standards (Standard Kompetensi Kerja Nasional Indonesia/SKKNI) in the field of education.[7] Developing people-based economy through small medium industries (SMI) between 2025 and 2035 as a source of employment and an increase in production generates incomes in economy.[8] In summary, Indonesia TVET strategies can be summarized under the revitalization strategy outlined in the report about the Presidential Instruction Number 9 in 2016 on Revitalizing TVET (SMK) under the framework of Improving the Quality and Competitiveness of Indonesian Human Resources as given below:

1. Development of revitalization of vocational schools that support the development of national priorities such as food security, energy security, business and tourism development, maritime development, especially in underdeveloped areas and border areas, and accelerated development of Papua and West Papua;
2. Development of SMK model that is driven by cooperation with business/industry;
3. The development of skill-based skills/skills programs based on the projected needs of the workforce;
4. Completion of curriculum preparation of competency of technical and vocational education and training skill based on SKKNI (Indonesian National Work Competence Standard), KKNI and other relevant standards;
5. Improving the quality of learning and assessment of learning outcomes, with the application of competency certification for learners;
6. Improvement of quality assessment of education unit through accreditation;
7. Improving the quality of the implementation of entrepreneurship and work skills of SMK (Teaching Factory) graduates;
8. Improving the quality of facilities and infrastructure of learning and working practices of SMK; and
9. Fulfillment of availability, quality, competence and professionalism of technical and vocational education and training personnel (through Teacher Certification—in-service program for TVET teachers and apprenticeship programs).

[7] MoI (2015).

[8] See Footnote 7.

3.4 TVET Governance and Financing

3.4.1 Governance

TVET governance is under the responsibility of many ministries in Indonesia; however, the most prominent ministries include the following:

(1) MoEC through the Directorate of technical and vocational education and training. The MOEC has the responsibility of planning and implementing educational services in Indonesia with the help of the central branches such as the General Secretariat; the National Institute for Educational Research and Development; the General Expectorate; the General Directorate of Basic and Secondary Education; the General Directorate of Higher Education; the General Directorate of Non-formal and Informal Education; and the General Directorate for Quality Improvement of Teachers and Education Personnel.
(2) MoRTHE is the body responsible for higher education and vocational education programs organized by universities and polytechnics through Diploma programs (D1 to D4) in Indonesia.
(3) The Ministry of Manpower and Transmigration (MoMT) is responsible for the national training centres (BLK) that prepares citizens for work. Educational planning is at the central level but the implementation of educational plans should be under the local governments according to the decentralization strategy of Indonesian government.

At the lower level, provincial offices of education were established in each of the 34 provinces (as of June 2009) and district offices in 508 districts and municipalities. These offices manage, adapt, and implement ministerial policies at the local level. For accreditation and competence certification, the following authorities take up the responsibility: National Professional Certification Board (BNSP) is in charge of issuing competence certificates, National Accreditation Board for School/Madrasah (BAN-SM) under MoEC is in charge of accreditation in vocational high school; National Accreditation Board for Higher Education (BAN-PT) under MoRTHE is in charge of polytechnics, colleges, and university accreditation; while Accreditation Board for Training Centres (LA-LSPK) under MoMT is in charge of BLKs.[9]

3.4.2 Financing

Stipulated by the Law on National Education No 20 in 2003 like other educational services, TVET financing is a joint responsibility between the government through MoEC (20% of national budget to finance education services) and other education

[9]Flevin (2002).

stakeholders such as local governments (20% regional budget contribution) and communities.[10] Private TVET (SMK) are privately financed depending on the type of ownership of the institution (individual, faith-based, NGO, and partnership) with operational authorization from the ministry.

Kementerian Koordinator Bidang Perekonomian, 2017. Road Map: Isi Kebijakan Pengembangan Vokasi di Indonesia 2017–2025 (See Footnote 13).

3.5 Education and TVET System

Indonesia's National Education System is coordinated by several ministries according to their levels; for example, the Ministry of Education and Culture (MoEC) is responsible for planning and implementation, monitoring and evaluation of educational services for: pre-school (Kindergarten), basic education, secondary and community education as mandated by the Education Law. The Ministry of Research, Technology and Higher Education (MoRTHE) is responsible for education services in higher levels of learning such as polytechnics, colleges and universities in Indonesia. The Ministry of Manpower is responsible for BLKs.

At the central level, MoEC consists of units like Secretariat General; National Institute for Educational Research and Development; Inspectorate General; Directorate General of Basic and Secondary Education; Directorate General of Higher Education; Directorate General of Non-Formal and Informal Education; and Directorate General for Quality Improvement of Teachers and Education Personnel, while at lower levels, MoEC is represented by Provincial Offices of Education in each of the 34 provinces (as of October 2012) and by District Office in all 508 districts/municipalities. The main task of the provincial and district offices "is to operationalize, manage, adapt and implement ministerial policies with respect to each of their distinctive features and local and environmental needs" (Education Law No 20 in 2003).

Indonesia's formal education starts from kindergarten to higher education and the names of formal education are kindergarten (KG), primary school (PS), junior secondary school (JSS), general senior secondary school (GSS), vocational senior secondary school (VSS) and higher education (HE: polytechnics, colleges and universities). This education is also provided by religious institutions at each respective education level. The length of study in KG (Taman Kanak Kanak/TK) is 2 years, followed by 6 years in elementary school (SD). The next level after this is junior secondary school (SMP) which takes 3 years. After JSS, pupils can continue to senior secondary by joining either general secondary school (SMA) or vocational secondary school (SMK) for 3 years. Graduates from general secondary can continue to higher education institutions such as universities, institutes, schools of higher learning, academies, or polytechnics, while graduates from vocational secondary can either enter the labor market by filling the job vacancies available in industries or

[10]Flevin (2002), Centre of Educational Data and Statistics, MoEC (2017).

work independently as entrepreneurs. Also, SMK graduates can join higher institutions of learning like polytechnics for diploma certificate (DI-DIV) or universities for bachelor's certificate (S1). After undergraduate or DIV, all graduates can continue to graduate (S2) and doctoral (S3) programs and if they choose diploma program, they can continue to specialist I and II programs (See Footnote 11).

3.5.1 Structure of Education System of Indonesia[11]

See Fig. 3.1.

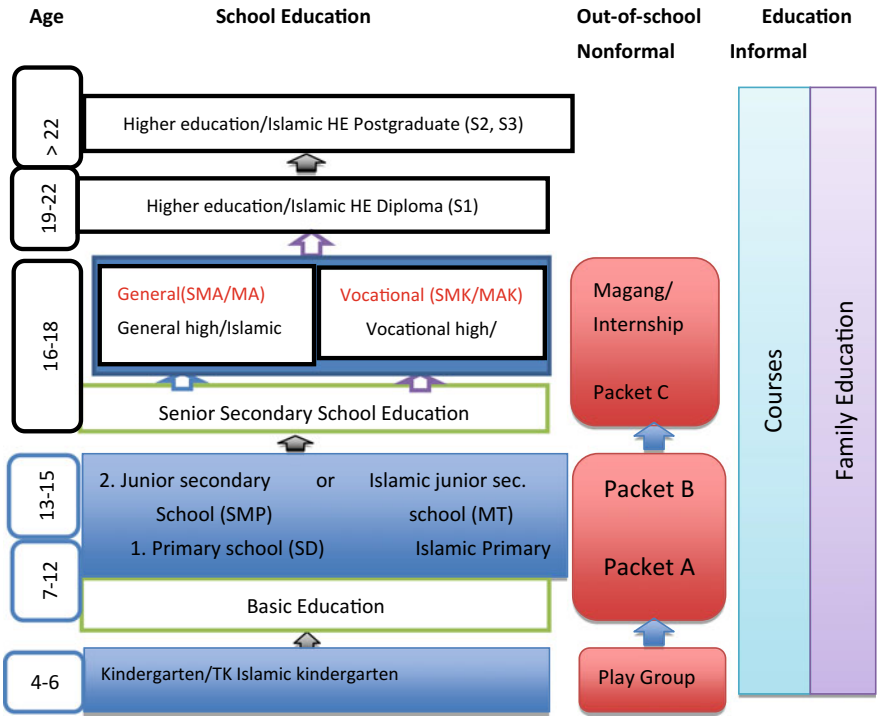


Fig. 3.1 Structure of education system of Indonesia (SD = Sekolah Dasar SMP = Sekolah Menengah Pertama SMA/SMK = Sekolah Menengah Atas/Kejuruan S = Sarajana (S1 = Bachelor, S2 = Master degree, S3 = Doctorate)

[11] Centre of Educational Data and Statistics, MoEC (2017), The World Bank (2011b), The World Bank (2010).

Pre-school Education

According to National Education System Law Article 28, Early Childhood Education (ECE) is provided through formal, non-formal and/or informal education. ECE is also known as pre-school education which refers to non-compulsory education provided to children between 4 and 6 years which takes a duration of 1–2 years. Formal ECE is provided in kindergarten and other similar institutions while non-formal ECE consists of day care centers and playgroups, and the informal ECE consists of infants' family development and integrated health service center. ECE is also provided in Islamic religious preschools with kindergarten.

Compulsory Education

- Primary education is a part of nine years compulsory formal basic education for all Indonesian citizens at the age 7. All learners end their primary education (grade 6) by sitting national examination which enables them to continue to junior secondary level depending on their academic results and psychological tests. Primary education is also provided by religious schools in general secondary education.
- Junior secondary education is the last part of compulsory basic education that takes duration of three years to complete the nine years of basic education program. Learners complete this level (grade 9) by sitting the national examination which leads to an award of lower secondary certificate to those who have successfully passed the examination.

Senior Secondary School

Successful candidates from junior secondary school can continue to study in senior secondary education which consists of general secondary education (SMA) or vocational secondary education–all provided for duration of three (3) years. In general secondary school (grade 10–12), students are prepared to continue to study in higher institutions such as universities, colleges and polytechnics. Students are prepared through general learning for one year at grade 10, after which in 2nd and 3rd year (grade 11 and 12), students can specialize by taking options that are provided in four specializations such as natural sciences (IPA), social sciences (IPS), languages and religious studies. Vocational secondary school (SMK) prepares students with technical and vocational education and training and training to be ready for work. SMK programs are taught to students for three (3) years although some vocational schools can extend to four years with one year for diploma level. There are about 144 programmes were provided in technical and vocational education and training with the more popular programs being information and communication technology; technology and engineering; health; arts, crafts, and tourism; agro-business technology; and business and management. These technical and vocational education and training programs are also provided by religious vocational schools (MAK).

SMA/SMK/MAK graduates will receive a national certificate of secondary education upon successful completion and passing of final national examinations. Upon completion of this level, successful students from general senior secondary school can continue to study in higher education (universities and colleges), while others may opt to start working with respect to their study programs.

3.5.2 TVET System

Indonesian technical and vocational education and training (TVET) is provided in three levels, namely the Training Center for short vocational courses, Secondary education level (for 3 and 4 years), and higher education (for more than 3 years). In Indonesia, the former program or level is called the Job Training Center (BLK) for the Vocational Training Center, while the latter is referred to as vocational education center for Vocational High Schools (SMK) in secondary education, and Polytechnic (Polytechnic) or Vocational Education at the University and other higher education for Education high Vocational High Schools are governed by or vocational education in university and other higher education. Vocational high school is managed by the Ministry of Education and Culture (Kemendikbud), especially Directorate of Technical and Vocational Education (DITVE). Vocational Training Centers (BLK) are institutions for vocational training which is part of the National Training for Regulated Work Systems by the Ministry of Manpower and Transmigration (Kemenakertrans) under the Act on Employment and Government Regulation on National Training for work systems (National Job Training system). Vocational / Vocational Higher Education including Polytechnic vocational including polytechnic is regulated by the Ministry of Research and Higher Education (KemenristekDikti), Ministry of Research, Technology, and Higher Education. Polytechnic is part of the higher education system, regulated by the Ministry of Research, Technology and Higher Education (Kemenristek)

3.5.2.1 Formal TVET System

Formal technical and vocational education and training are provided in vocational secondary schools (SMK) or Islamic vocational school (MAK) both in public and private for three-years even though there are several vocational secondary schools (SMK-Plus) offering four-year program to offer graduates with one diploma certificate (D1) experience industrial work. In addition, the management of vocational education must refer to eight the standard of Vocational Education (Article 2, Permendikbud 34 of 2018 concerning SMK SNP). Corresponding internship experience in the industry. Besides, vocational high school (VHS) management has to align with eight VHS education standards (clause 2, Permendikbud 34 year 2018 on SNP SMK). Also, in accordance with the Higher Education Law (Law No. 12 of 2012 concerning PT and Permenristekdikti no. 44 of 2015 about SN-PT), vocational programs are offered by various tertiary institutions such as community academies, academies, polytechnics, secondary schools, institutes and universities in diploma level and applied bachelor degree. At the secondary level, education and technical and vocational training provided by vocational secondary schools consists of state vocational high schools (State Vocational Schools) and private vocational secondary schools (Private Vocational Schools). Registering at a vocational high school (SMK), a student must successfully complete junior high school level and participate in a

three-year program leading to a secondary certificate award after taking the national examination. In addition, students' TVET is encouraged to register for skills certificates from the industry while they are still at schools to improve their working skills. After completing a three-year study at vocational high school (SMK), a student can immediately join the power market employment (filling out job vacancies available in the industry or working independently as entrepreneurship) or can continue to advance to a higher level of education (such as polytechnics, colleges, and universities) for 4-year diploma certificates (polytechnics) and 4-year courses which leads to an undergraduate certificate (S1) award at a college or university.

There are 144 types of vocational competencies in Indonesia; however, around 60% of the competency proportion is only filled by 10 main competencies, namely computer and network engineering, accounting, office administration, light vehicle engineering, mechanical engineering, motor vehicle engineering, multimedia, marketing, and cooling technique.[12]

According to the 2015 BPS, as stated in the report of the Field Coordinating Ministry of Indonesian Economic Affairs 2017 entitled "Call development policy in Indonesia 2017–2025", there are now 13,337 vocational secondary schools with 3434 vocational high schools country and 9903 private vocational high schools.[13] There are also 172 polytechnics, with 32 state polytechnics (State Polytechnics), 140 private polytechnics (Private Polytechnics), and 1034 academies private sectors. There were 276,099 teachers (134,332 teachers in state vocational schools and 141,737 teachers in vocational schools private), where 49.6% were male and 50.4% were women with a student registration of 4.6 million in all vocational schools.[14] At the secondary education level, MoEC is responsible for designing and developing vocational curricula in consultation with the Ministry of Manpower and Transmigration (Ministry of Manpower) and the Ministry of Industry (MOI).

In general, vocational high schools focus on developing the skills of students in the sector or fields such as technology and engineering; information and communication technology; health; arts, crafts, and tourism; agribusiness technology; and business and management. However, there are many vocational institutions specializing in technology and industry programs (86%) or business and management programs (76%). All of these programs produce a national intermediate certificate award after the students successfully complete and pass the national examination. Also, after completing the study program for 4 years, a diploma certificate is given to students at this level by polytechnics and universities (in the planning process).

[12]Centre of Educational Data and Statistics, MoEC (2017).

[13]Menteri Koordinator Bidang Perekonomian: Kebijakan Pengembangan Vokasi Di Indonesia (2017–2025), Ministry of Research, Technology and Higher Education Republic of Indonesia (2012), Paryono (2015), Flevin (2002).

[14]Paryono (2015).

3.5.2.2 Non-formal and Informal TVET System

Non-formal education means education out of formal education. It is educational provided for community members who need education services which functions as a replacement, complement and/or supplement to formal education in the framework of supporting lifelong education"[15] Non-formal education can be recognized in the following lines:

- As an alternative method to formal education (equivalency method)
- Community education (functional literacy, life skills)
- Commercial courses (vocational skills).

In Indonesia, non-formal education is provided to develop the potential of learners with the acquisition of mastery academic knowledge and functional skills for professional and personality development. Non-formal education includes life-skill education, early childhood education, youth education, women empowerment education, literacy education, vocational training and internship, equivalency program and other kinds of education aimed at developing learners' ability.[16] Under the MoEC, non-formal education is regulated by the Directorate General of Early Childhood Education and Community Education,[17] and it is provided as equality education to those individuals who did not have access to formal education.

It is organized as Education Outside School (*Pendidikan Luar Sekolah* or *PLS*) under several programs among which the commonest ones include:

1. Community Learning Centre (CLC) program, commonly known as *Pusat Kegiatan Belajar Masyarakat (PKBM),* which is lifelong learning right from childhood for those who did not have access to formal education.[18]

Equivalency program is one of the education programs provided by *PKBM* with *pakets* as study groups (*Kejar*) equal to formal education streams; for example Paket [package] A is equal to elementary school/*sekolah dasar* (*SD*), *paket* B is equivalent to junior secondary school/*sekolah menengah pertama* (*SMP*) and *paket* C is equivalent to senior secondary school/*sekolah menengah atas/kejuruan* (*SMA/SMK*). These pakets are a part of equivalency programme that permits those individuals who do not attain access to formal education system to achieve formal qualifications. Paket A and B together equal to basic education, whereas Paket C equals to senior secondary education. These study groups are targeted at majorly for people living in remote areas, although they are also provided in urban areas with the focus to prepare workers and trainees to enter the job market with specific and upgraded skills.

The purpose of this form of education is to: (1) Ensure the completion of quality of basic education for disadvantaged children such as dropouts, never attended

[15] http://desikunatasolin.blogspot.com/2013/05/pendidikan-kesetaraan.html.

[16] http://desikunatasolin.blogspot.com/2013/05/pendidikan-kesetaraan.html.

[17] *Direktorat Jenderal Pendidikan Anak Usia Dini dan Pendidikan Masyarakat*. https://www.paud-dikmas.kemdikbud.go.id/.

[18] Community Learning Centre (CLC) (2002).

school, ethnic minorities, and children residing in backward, poorly, socially, isolated or difficult-to-reach villages due to geographic locations and or with limitations of transportation; (2) Ensure the fulfilment of learning needs for all citizens of the productive age through fair access to learning and life skills programs; (3) Contributing to the increase of the average length of education for the Indonesian community for at least 9 years so as to improve the Human Development Index (HDI) and efforts to erase gender inequalities in primary and secondary education; (4) Provide opportunities for community members who wish to complete education equivalent to elementary/junior and senior high school or equivalent with good quality; (5) Serving learners who need academic education and life skills flexibly to actualize themselves while improving the quality of life.

About education standards as stated in the law regarding national education standards No 19 in the year 2005, PKBM also follows[19]:

(a) content standard as stated in the national education standards (covers basic education framework, curriculum and calendar)
(b) learning process standards, such as the national education standards law No 3 of the year 2008[20] (which covers: planning, implementing learning, evaluating learning outcomes and supervising of learning programs). Graduates are recognized after following the national assessment and certification process conducted by the non-formal and informal education accreditation and certification agencies under MoEC. After that, graduates can either go for employment in the labor market or enroll for further studies as same as graduates from formal education channel.

2. Balai Latihan Kerja (BLK) is a technical and vocational training center commonly used in Indonesia's non-formal education system. Balai Latihan Kerja (BLKs) are vocational training centers regulated by the ministry of manpower (MoMT) which provides technical and vocational education and training and job placement services to formal and informal workers.[21] Through the decentralization process, BLKs are under the responsibility of district governments that provide programmes for poor individuals, especially school dropouts (primary or secondary schools).

The main objective of BLKs is to provide non-formal and informal vocational training skills to individual that enable them to access a qualification in formal education or be able to work in the formal sector.[22]

BLKs offer a variety of programmes provided through the means of community-based training (CBT) and mobile training units (MTU). There are 3 types of BLKs: Type A; Type B; and Type C.

BLK Type A—vocational training provided by larger providers of urban centers providing industrial training and service skills while smaller types provide training in

[19] http://desikunatasolin.blogspot.com/2013/05/pendidikan-kesetaraan.html.

[20] BSNP Indonesia (2002).

[21] ILO Bangkok (2012).

[22] The World Bank (2011a), TNP2K Working Paper (2015), The World Bank (2010).

different technologies and skills for self-employment.BLK Type B–training provided by providers in smaller urban centers involving informal education consisting self-study, family and community education. BLK Type C is the training provided in rural areas by the smallest training providers. For recognition, all BLKs at all levels have to be assessed by the government assessment board.

BLKs provide 4 kinds of training which include institutional training (job training programmes which aim to increase the skills of job seekers); non-institutional training (training programmes for people in remote areas organized through mobile training units); apprenticeship programmes; and demand-based training (training based on the demand of industries).

These programs may include hotel/tourism, telematics/IT, agriculture, institution (Train PNS), construction, apprenticeship, electricity, mechanical technology, and commerce. The most promising employment sectors for BLK graduates are agriculture and hotel and tourism. BLK graduates are awarded with BLK certificate upon successful completion and meeting the assessment standards by the national certification board.

3.6 National Qualification Framework

The Indonesian National Qualification Framework (INQF) or Kerangka Kualifikasi Nasional Indonesia (KKNI) is used in Indonesia. KKNI is an independent system and a bridge between the education and training sectors to establish national qualified and certified human resources through formal, non-formal, informal, job training, or work experience schemes. KKNI provides new vocational qualifications known as Sertifikat Kompetensi Kerja, (SKK) within that provide new pathways for Indonesian citizens to access formal education and skill training. SKK in KKNI is directed at creating a demand-driven system with relevant training outcomes ensuring that it is identified as "competencies" that are systematically packaged into vocational qualifications that aligned to the needs of Indonesian enterprises and entire national economy. KKNI increases the relevance and flexibility of technical and vocational education and training and training programmes by better aligning them to the needs of the labour market.[23] INQF is implemented as a tool for TVET quality assurance.

At the ASEAN level, the KKNI provides a basis, through improved labour mobility, for better regional integration of economies consistent with Indonesia's commitments to the ASEAN Economic Blueprint. It will not only provide a mechanism for improving the ability of workers from Indonesia to find jobs in other ASEAN countries commensurate with their training and experience but also improve the capacity of ASEAN employers to appreciate and benchmark the skills and abilities of Indonesian workers. KKNI also performs the function of a reference tool for both the higher education and the vocational training systems. It provides one measure of

[23]GIZ (2017a), Ministry of Research, Technology and Higher Education Republic of Indonesia (2012).

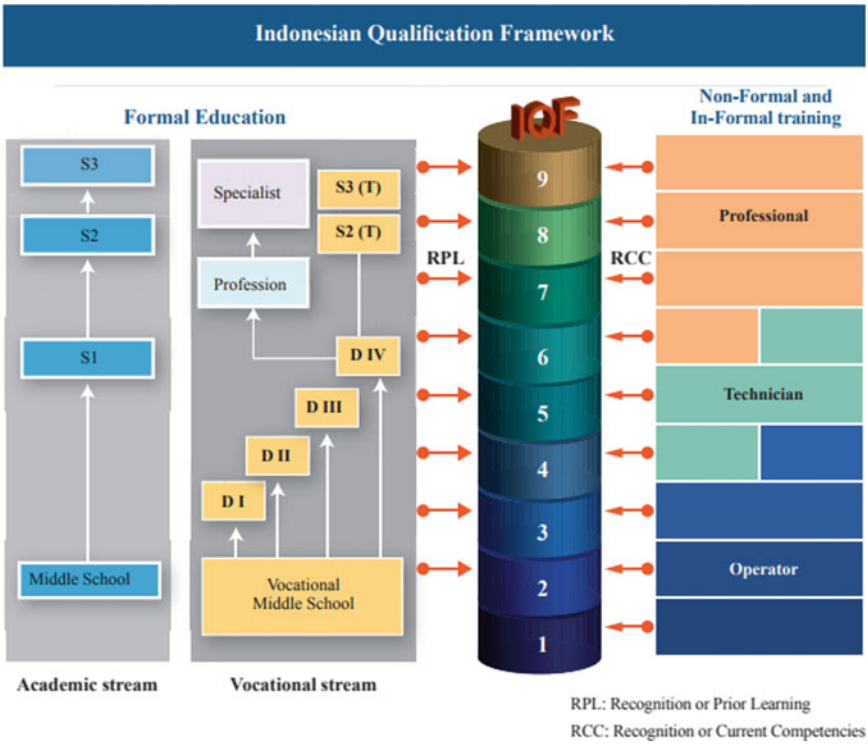


Fig. 3.2 Structure of Indonesia National Qualification Framework (KKNI). *Source* GIZ 2013. Implementing the vocational stream of Indonesian NQF

the approximate equivalence between various vocational and higher education qualifications for a fair determination of credit transfer between programmes or courses for those individuals following a chosen career path that requires them to bridge both sectors.[24] Upon completion of senior secondary level, a graduation certificate is awarded to either continue with tertiary education, upon which successful completion leads to an award of higher education institution certificate as diploma-level qualification when graduating from an academy or polytechnic; and Sarajana (level S1) qualification is awarded after 4 years of full-time studies at a recognised university, institute or advanced school; Magister (S2) is awarded after a period of 2 years of further studies at University level, whereas students in public non-formal vocational training institutions (BLKs) receive certificates upon completion. They may also take a company trainee examination and/or a professional association examination to obtain a certificate from the company or association in question (Fig. 3.2).[25]

[24] UNESCO-UNEVOC Indonesia (2002).

[25] GIZ (2017a), UNESCO-UNEVOC Indonesia (2002), UNESCO-UNEVOC (2011).

3.7 Quality Assurance and Standards

The quality assurance of education services including TVET is crucial for providing more confidence to consumers of the educational output produced by TVET providers. In Indonesia, quality assurance of TVET is under the responsibility of the Ministry of Education and Ministry of Labor. These ministries implement the above responsibility through accreditation bodies and authorities. For example (1) National Accreditation Board for school/madrasah (Badan Akreditasi Nasional Sekolah/Madrasah or BAN-SM) for Vocational High schools (SMK) together with Competency Standardization (STANCOM) institution; (2) Accreditation of training providers (LA-LPK) and Non-formal—National Accreditation Board for Non-formal Education (Badan Akreditasi Nasional—Pendidikan or BAN-PNF) institutions for training centers; and (3) National Accreditation Board for higher Education (Badan Akreditasi Nasional Perguruan Tinggi or BAN-PT) with all certification of profession competency under National Professional Certification Board (BNSP) (See Footnote 30). The function of these institutions is to provide competency tests and certifications of recognition for certain trades and professions. However, coaching, supervision and licensing of professional certification agencies are conducted by BNSP.

Accreditation of vocational schools as an assessment process of quality assurance is undertaken by LA-LPK—an independent institution for ensuring that training institutions implement vocational programs and always apply standards (8 quality standards) set by MoMT to consistent and continuous order to produce competent and competitive graduates.[26] Also, accreditation is done to LPK conducting education/training for graduates to obtain Work Competence Certificate (SKK) according to the level of qualification (KKNI) or SKKNI cluster. Also, LPK conducting education/training based on other standards (such as international standards, special standards and local standards) may also be accredited. The eight (8) quality standards set by the MoMT include (Table 3.2):

Standard 1: Work Competence (Use of SKKNI and other standards);
Standard 2: Structured Curriculum;
Standard 3: Training Materials;
Standard 4: Management System (management of training center);
Standard 5: Staff Qualifications (instructors and training personnel);
Standard 6: Facilities and Equipment;
Standard 7: Financial Feasibility (financial administration);
Standard 8: Assessment.

As a way of quality assurance, accreditation of both formal and non-formal educational programmes and education institutions is being emphasized.[27] Currently, there

[26] GIZ (2017b).

[27] GIZ (2017b), (See Footnote 28) MoRTH (2015), (See Footnote 28) UNESCO Bangkok (2017a, b), (See Footnote 29) TIA, Indonesia (2015).

Table 3.2 Eight quality standards set by the MoMT

Summary of eight standards	
Standard	Purpose/objective
Standard 1: Work competence	Training is based upon national qualifications or units of competency clusters endorsed according to national guidelines set by MoM or upon other standards/training outcomes that are clearly identified
Standard 2: Curriculum	The provider uses structured written curriculum based upon outcomes or SKKNI
Standard 3: Training materials	The provider uses training materials and training processes appropriate for its scope of services
Standard 4: Management system	The provider has a management system that supports its current and intended scope of operations the provider
Standard 5: Staff qualifications	The provider has staff appropriately qualified for their jobs
Standard 6: Facilities and equipment	The provider has access to equipment and facilities to support its scope of operations
Standard 7: Financial administration	The provider is financially viable
Standard 8: Assessment	The provider conducts high quality skills assessment that enables candidates to demonstrate their competency to a LSP or achieving of training outcomes to

Source GIZ (2017b) and http://lemsar.net/filepedoman/pedomanakreditasi2014.pdf Lemsar (2002)

are 327 institutions in Indonesia recognized by BNSP as accreditation and competence test assessors.[28] Also, for ensuring quality assurance, Indonesian policies at the regional level include the following:

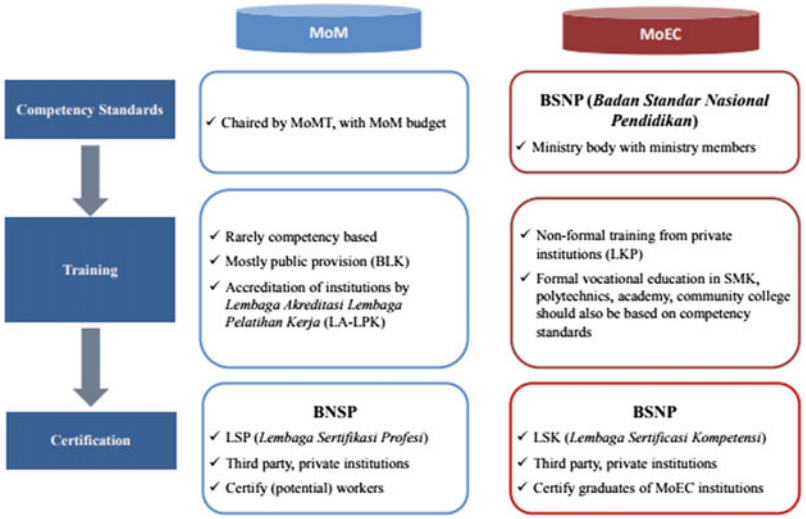
- To develop regional cooperation for developing standards, certification and qualifications, and implement the standards with national bodies responsible for certification and accreditation.
- To accelerate and implement national standards, qualifications and certification by national bodies through involving industries and governments.
- To conduct a benchmarking of regional quality assurance and adopt and adapt the regional quality standards for improving the national quality assurance standards (Figs. 3.3 and 3.4; Table 3.3).

[28] Kabar24.com (2017).

Table 3.3 Quality Assurance Procedure of Assessment and Verification

Quality Assurance Procedure of Assessment and Verification		
STANCOM Quality Assurance of Standardization of Competency & Qualification conducted by Stancom (MoMT)	**LA-LPK** Quality Assurance of Training Provider conducted by Accreditation Authority (LA-LPK)	**BNSP** Quality Assurance of Professional certification conducted by Certification Authority (BNSP)
Procedure of verification	**Procedure of verification**	**Procedure of verification**
Planning stage • Identify technical bureau of trustees • Verify industry association • Validate representation association **Preparation stage** • Verify representative of committee • Verify RMSCS standard on competency draft • Verify of implementation of convention **Standardization stage** • Verify the final result convention • Verify the final draft of SKKNI/competency standard • Verify requirement document for further processing **Establishment stage** • Verify technical institution of trustees • Verify the agenda of convention • Verify the documents for MOMT approval	**Dissemination stage** • Identify the process of dissemination • Verify self assessment of provider **Application stage** • Verify request of accreditation • Verify accreditation document of provider • Verify schedule of accreditation **Desk assessment stage** • Verify completeness of document • Verify assessor examination record • Verify desk assessment result **Visitation stage** • Verify the findings of assessor record • Verify assessor's assessment result **Final report stage** • Verify completeness of report of assessor • Verify the accuracy of assessor report	**Assessment information stage** • Verify dissemination process by LSP **Registration stage** • Verify list of applicant • Verify assessment readiness of LSP **Evaluation of application stage** • Verify completeness of application • Verify pre-/self assessment • Verify sufficiency of evidence **Competency assessment stage** • Verify suitability of assessment place • Verify methods of assessment • Verify result of written test, performance and other portfolios **Assessor recommendation stage** • Verify assessor recommendation • Verify assessor assessment result • Verify completeness of report document

Source UNESCO Bangkok, 2017



Note: MoMT = Ministry of Manpower and Transmigration; MoM = Ministry of Manpower; BLK = public vocational training centre; LA-LPK = Non-formal Accreditation Authority, Ministry of Manpower; LSP = Professional Certification Institution; MoEC = Ministry of Education and Culture; BSNP = Indonesian National Education Standards Board; LKP = private courses and training institutions; SMK = vocational schools; LSK = Competency Certification Authority, Ministry of Education and Culture

Fig. 3.3 Accreditation structure and process

3.8 TVET Graduates

The quality of (SMK) graduates is ideally determined of the mastery of work competency standards (Indonesian National Work Competency Standards or SKKNI). Based on the standard of competence, a system of testing and certification was formulated. Certification schemes for TVET (SMK) graduates that involve professional associations and world of business and industry as well as the implementation of competency tests have been the strategy to minimize the competency gap. Generally, regarding the quality of TVET graduates is still a great challenge especially the low absorption of SMK graduates in the labor market.

According to several reports from several websites (such as: Global Business Guide Indonesia.com, Berita Satu.com, Republika.co.Id and Finance.detik.com), it is indicated that the quality of vocational school graduates in Indonesia is still low without conformity to the needs of the businesses and industries.[29] It is believed ideally that vocational school graduates are meant to be potential employees who can fill the available vacancies in the labor market, become specialist employees in

[29]Global Business Guide Indonesia.com (2002).

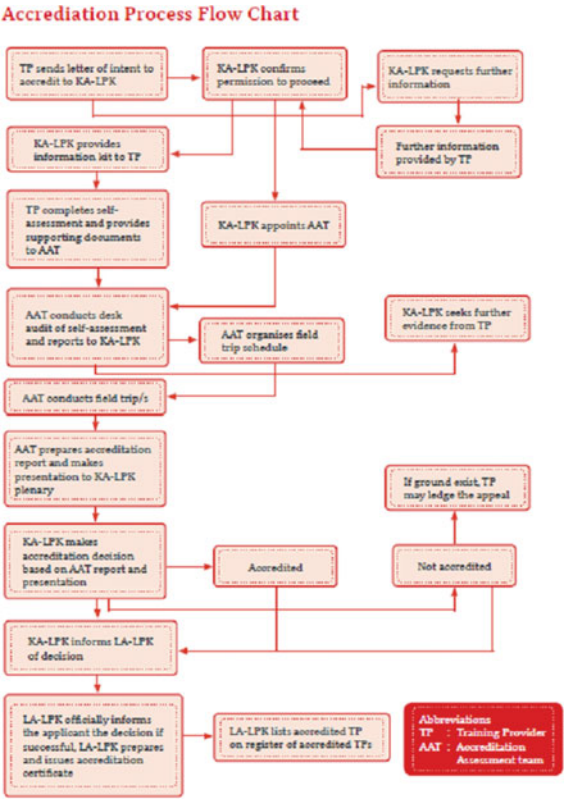


Fig. 3.4 Accreditation structure and process. *Source* GIZ 2017, 12

their professional fields, become job creators as potential entrepreneurs or candidates for higher education.[30]

TVET graduates enrol in many fields which include technology and engineering; information and communication technology; health; arts, crafts, and tourism; agro-business technology; and business and management. According to Indonesian Bureau of Statistics (BPS), the unemployment rate as reported in August 2017 based on the education level, SMK graduates ranked second highest (13.83%) to SMA as seen from the diagram above. This shows the skill gap between the labor market demands with the supply of labor from educational institutions especially in vocational high school (SMK).[31]

[30]Republika.CO.ID (2017), Finance.detik.com 2017), Berita Satu.com (2002).

[31]Lawitta et al. (2017), Kementerian Koordinator Bidang Perekonomian (2017).

3.9 Unemployment Rate by Education Level in Indonesia

3.9.1 TVET Personnel (Teachers)

Based on the law, the minimum educational qualification for teachers at secondary vocational schools (SMK) is Diploma IV (DIV) or Undergraduate Degree (S1). Teachers for secondary vocational and technical schools are prepared by the Educational Institutions for Teaching Personnel (LPTK) such as universities offering vocational and technical teacher education formerly Institute of Teacher Training and Education (IKIP) and Faculty of Teaching and Educational Sciences (FKIP) under, and private STKIPs (Colleges of Teaching and Educational Sciences; Vocational Education Development Centres (Pusat Pengembangan dan Pemberdayaan Pendidik dan Tenaga Kependidikan or P4TK/Center for Development and Empowerment of Teachers and Education Personnel). Teacher certification is one strategy intended to ensure the quality of teachers with competencies that lead to the improved quality of TVET education in Indonesia. The Teacher Certification is an in-service program for teachers that expected to improve the quality of education and it is conducted through (1) the direct provision of the certificate, (2) portfolio assessment, (3) education and training of the teacher (PLPG) and (4) teacher professional education (PPG).

3.10 /Percentage of Number of Teacher by Highest Certificate and Level of Education

Source: Center for Educational Data and Statistics-MoEC, 2017.

3.10.1 Salaries of Teachers/Trainers/Instructors[32]

Indonesia adopts a basic salary strategy for all civil servants who are at the level of professionally certified and appointed government worker without taking up any extra responsibility besides their professions. Indonesian basic salary for civil workers upon their first work starts from the range of 2,000,000–5,000,000 rupiah and increases according responsibility undertaken and duration of services. After this level, there is an extra benefit offered depending on the type of other responsibility (ies) that is taken up by any civil worker such as the head of department, supervisor and professor. For example, those who have already been certified will receive increments as much as their basic salary. For professors, the increments can be three times as much as the basic salary.

[32]Unhas (2015).

Sources: Gaji Pokok Indonesia 2015. http://htl.unhas.ac.id/form_peraturan/photo/111003-03.%20PP%20No.30%20tahun%202015%20Perubahan%20Ketujuh%20Belas%20Gaji%20PNS.pdf.

3.10.2 Teachers' Professional Development

To become a qualified TVET teacher, one has to complete a four-year university degree or four years of higher education or Diploma IV from polytechnics obtaining the teacher certificate, and demonstrating professional, pedagogical, personal and social competencies. Also prospective teachers are required to complete teaching practicum at a selected school and obtaining an annual teacher competency-based assessment.

In Indonesia, pre-service and in-service teacher progams are provided for teacher professional upgrade is encouraged by the MOEC through offering scholarships through Institute for Educational Quality Assurance.[33]

Research project as one way of teacher development is also emphasized by MoRTHE. Some professional developments made in Indonesia for improving teacher professionalism include Centre for Teacher Activity or Pusat Kegiatan Guru (PKG); Teachers Working Group or Kelompok Kerja Guru (KKG); and Forum of Teacher-subject or Musyawarah Guru Mata Pelajaran (MGMP) that allow teachers to share their experiences in solving the problem they encounter in teaching activities. According to Paryono, Indonesia has undertaken the following policies regarding teacher development: (1) Teacher certification programme for In-Service Teachers, including vocational teachers; (2) Establishment of Teacher Certification Consortium; (3) National Standard of Education; (4) Qualification and Teacher Competence Standards (legal instruments) being used as the basis for the implementation teacher certification; (5) A teacher will be required to have academic qualification of DIV or Bachelor for secondary TVET or Magister or Doctor for HE lecturers to obtain accredited higher education institutions or relevant subject and to fulfil the requirement of sufficient teaching experience.[34]

3.11 Private Sector Cooperation

As one strategy for improving the quality of technical and vocational education and training public–private partnership (PPP) development by vocational institutions at national, regional and international levels in TVET programmes is emphasized by the government, for example, in 2016, Indonesia's Cabinet Secretariat quoted President Joko Widodo's speech saying "I also think we have to involve the business world and

[33] TVET@Asia (2017).

[34] Paryono. (2015), Allen (2016).

industries because they have a better understanding about the needs of workforce, including in primary sectors such as maritime, tourism, agriculture, and creative economy. The system and demands of the business world and industries must be integrated into the technical and vocational education and training system, such as vocational schools or vocational training center or BLK".[35] Also, Presidential Instruction Number 9 Year 2016 on Revitalizing SMK in the framework of Improving the Quality and Competitiveness of Indonesian Human Resources (*Instruksi Presiden Nomor 9 Tahun 2016 Tentang Revitalisasi SMK dalam rangka Peningkatan Kualitas dan Daya Saing Sumber Daya Manusia Indonesia*) indicates Indonesia's priority for public–private partnership. PPP between TVET (SMK) and world of business and industries can take several forms, such as student internship placement, supporting institutional refurbishment, "train-the-trainer" programmes and curriculum design to ensure the delivery of demand-driven TVET programs.[36] This is based on the concept of "*Link"* and "*Match*" concept to align the relevance of SMK programs with the labor market needs. The government through MoEC encourages TVET institutions to build cooperation with both local and international industries as a strategy of *link* and *match* between school programs and the industry's needs.

One strategy of the concept of *link* and *match* implementation is the dual education system (*Pendidikan Sistem Ganda* or *PSG*) that systematically integrates and synchronizes educational programs in schools and skills acquisition programs that are gained through direct work in the workplace. A common example of PSG in Indonesia is the internship or industrial work practice program (Prakerin) which involves activities such as synchronization and curriculum validation, guest teachers from industries and competency test.[37] Currently, there is no formalized public–private partnership in Indonesia; however, each vocational institution is encouraged to initiate their cooperation with industries depending on their locations and needs. During National TVET curriculum development, government through MoEC always invites industry representatives to engage and participate in curriculum design and then pass it to the provincial levels for implementation.

DITVE-MoEC 2017. Road Map. *Kebijakan Pengembangan Vokasi di Indonesia 2017–2025* [Development Policy of TVET in Indonesia 2017–2025].

UNESCO Bangkok, 2017. Towards Quality Assurance of Technical technical and vocational education and training and Training.

3.12 Current Trends and Practices

Indonesia has undergone several trends and practices in education especially in TVET among which the following should not go unmentioned.

[35] Setkab Indonesia (2016).
Direktorat Pembinaan SMK Kemdikbud (2017).

[36] Global business guide in Indonesia (2002).

[37] Sarvi et al. (2015), [5] The Jakarta Post (2016).

3.12.1 Revitalization of TVET (SMK) in Indonesia

Indonesia has for long time been lagging behind in terms of human resource development due to the low quality of its labor force as expressed by its ranks (113) in Human Development Index (HDI).[38] This is one of the challenges for economic competitiveness in the global era. The government is, therefore, making efforts to improve the quality of its labor force through improving the quality of education systems, especially through TVET revitalization strategy. This strategy is established to produce quality human resources with relevant skills, competencies and excellent character that increase their global competitiveness. Following the Presidential Instruction Number 9 Year 2016 on Revitalizing SMK in the framework of Improving the Quality and Competitiveness of Indonesian Human Resources (Instruksi Presiden Nomor 9 Tahun 2016 Tentang Revitalisasi SMK dalam rangka Peningkatan Kualitas dan Daya Saing Sumber Daya Manusia Indonesia), this strategy has:
Vision: *"Terbentuknya Insan dan Ekosistem Pendidikan Kejuruan yang Berkarakter dengan Berlandaskan Gotong Royong, sehingga mampu menghasilkan lulusan SMK yang mampu Bekerja, dapat Melanjutkan dan terampil Wirausaha (BMW)"* ("Establishment of technical and vocational education and training characters and Personnel and ecosystems based on Mutual collaboration, that is capable of producing SMK graduates who are capable of work, can continue for further studies and have skills for Self-employment"), where

B = *Bekerja* (Work): the purpose is that TVET graduates should be able to work in available vacancies in the world of businesses and industries with competency skills;
M = *Melanjutkan* (Continue): the purpose is that TVET graduate can continue to higher levels for learning like polytechnics, colleges and universities and can become professionals in their fields of expertise; and
W = *Wirausaha* (Entrepreneurs), the purpose is that TVET graduates can become potential entrepreneurs creating jobs for others too.

Mission:

1. Refining and harmonizing TVET (SMK) curricula with competencies in accordance with the needs of graduates (link and match) and industries;
2. Increasing the number and competence for educators and educational power in SMK;
3. Improving cooperation with ministries/agencies, local governments and the business/industry;
4. Increase access, certification and accreditation of SMK graduates.

This strategy has the purpose of developing human resources with the twenty-first century skills as a result of rapid technological advancements, changes in business processes as well as changes in the work structures in the workplace which demands soft skills. These skills include (a) skills related to thinking (e.g. creativity and innovation, critical thinking, problem solving, decision making, learning to

[38] Page (2002).

learn/metacognitive); (b) work-related skills (e.g. communication and cooperation): (c) skills that can be used as instruments of action (collection information/data, use of information technology and media devices); (d) skills related to the ability to function well within personal and community life (integrity, discipline, responsibility, adaptability, leadership, nationalism and other insights). After two years of implementing VHS Revitalization (2016–2018), the Ministry of Education and Culture has task through six program objectives, namely; (1) Preparing Vocational Schools road map for the national level development and at 34 provincial levels (provinces must make a vocational education roadmap adapted with the superior potential development in the industrial and services sector in their regions), (2) Improving and aligning the vocational curriculum with the competency needed by graduate users, (3) Improving the number and competency of educators and education staff, (4) strengthening the collaboration between Ministries/Institutions, Local Governments, Business and Industry, (5) Enhancing access to certification for Vocational graduates and Vocational accreditation, (6) Forming working groups for VHS development. The objectives of the improvement and alignment curriculum have been carried out while the other five targets are in the process of completion (Two-year overview of VHS Revitalization, Dit. PSMK of Ministry of Education and Culture 2019).

3.12.2 Increasing More Practical Skills Than Knowledge (Theoretical)

Due to skills gap and mismatches in competencies provided by TVET institutions and those required by industries, the Indonesian government prioritizes skills over knowledge as a new educational goal for Indonesia through its Ministry of Education. This entails application of demand-driven curriculum, involvement of industrial partners in conducting of TVET activities such as curriculum synchronization, certification and assessment of students.

3.12.3 Prioritization of Economic Booster Occupations

As Indonesia is seeking economic transition, the government has identified occupations that can promote its economy towards that objective, some of which aims at reducing imports and increasing exports. According to Indonesia Salary and Employment Outlook 2017 published on Michael Page.com website, outlines sectors such *real estate sector*, *e-commerce sector, digital sector, marketing secto*r. with current occupations in job market demand in fields such as food security and cash crops (for boosting exports), engineering and manufacturing (lean manufacturing, shipbuilding, infrastructure push textiles, fashion industry); food and beverages, steel, mining, transportation services and ICT (such digital professionals, e-commerce

professionals, cybersecurity professionals; account and finance; marketing and sales professionals; procurement and supply chain; health and life sciences and many others and meeting the market demands in these fields calls for the development of new skills in these occupational areas through TVET (SMK) in the country.

Also, a point of consideration is the required qualifications in these occupational trends where employers prefer hiring qualified candidates with managerial, marketing and soft skills and expertise. This means that employers prioritize qualification with potential expertise in hiring employees which require attention by the TVET providers.[39]

In terms of salary trend, Michael Page.com presents an estimated salary projection in all occupational fields with the average minimum salary being: Indonesian Rupiah IDR: 195 (millions) for system analyst until IDR 1495 for chief technology officer.[40]

3.12.4 Shifting the Enrolment Share of General Education to Technical and Vocational Education and Training

The current share enrolment of students in general education has been larger than that of technical and vocational education and training (70:30); however, due to the demand for more human resources with relevant skills and competencies, the government is shifting the share of enrolment in general high school (SMA) to vocational high school from 70:30 to 30:70, respectively, by 2020. In support of this, currently, the number of vocational high school in Indonesia as reported by Bureau of Statistics (BPS) in Indonesia reaches 13,337 SMK, the figure is slightly higher when compared with general high school (SMA) which only reach 12,513 schools (source BPS 2015).

3.13 Current Proportion in number of Vocational high Schools to General High Schools in Indonesia

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UNDP, 2016. Indonesia Human Development Index (HDI). http://hdr.undp.org/en/countries/profiles/IDN

[39] See Footnote 38.
[40] See Footnote 38.

https://www.michaelpage.co.id/content/salary-centre/2017-indonesia-salary-employment-outlook/#Digital.

3.14 Ongoing Reforms/Projects

Some of the ongoing reforms in Indonesian TVET system are part of the current trends in TVET which among others include the following:

- Revitalization of TVET with the objective of developing human resources with the twenty-first century skills in reflection to the rapid technological advancements, changes in business processes as well as changes in the work structures in the workplace which demands soft skills. This ideal strategy is meant to increase the employability and competitiveness of Indonesian labor force at national, regional and the global scenes.
- Shifting of the paradigm on technical and vocational education and training—change the strategy of marketing the produced graduates from vocational schools to producing the vocational school graduates demanded by the market. Indonesia is working towards demand-driven curriculum in order to produce workforce with relevant skills and competencies demanded by the industries. The government is encouraging TVET providers to train students' demand-driven skills especially the twenty-first century skills to enable them to become more employable after their graduations.
- Due to technological sophistication in the workplace and changes in work structure, Indonesia is strengthening digital literacy—utilizing the potential of digital and e-learning technologies in learning and teaching processes to enable TVET providers and learners to cope up with the globalization trend. The ministry of education (MoEC) is working towards the integration of ICT infrastructure in all TVET institutions to ease and foster the teaching and learning process.
- As one way of improving the TVET quality cooperation between TVET institutions and industrial partners is a priority strategy of the government. For example, MoEC is encouraging each vocational high school to initiate cooperation with industries as a way of promoting public–private partnership for increasing quality assurance of TVET services at the same time to skill young innovators in vocational schools enabling them to develop tangible future work skills and competencies that harness full power of ICT.
- The quality of TVET teachers is an aspect of concern for quality improvement. Indonesia has been facing the challenge with the low quality of TVET teachers due to failure of many teachers attaining qualifications, industry experiences and certification as required by Law No 14 in 2005 and No 74 in 2008 about teachers. It is a priority of the government to improving teacher's quality—through training and certification in order to get productive subject teachers by 2020 as stipulated in the revitalization strategy of Indonesia TVET system.

- Indonesia is promoting entrepreneurial skills for e-SME in order to prepare potential entrepreneurs and innovators through local-based creative industry. This is intended to create more jobs in the labor market as well as increasing the economic base through increased production that will spur up more economic growth and development (See Footnote 38).

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Dit. PSMK MoEC, 2016. *Peta Jalan Pengembangan Sekolah Menengah Kejuruan* [Development Roadmap of Secondary Vocational Schools]
Skills DMC, 2017. Sustainable Skills in Indonesia. http://sustainableskills.org/tag/indonesia/.

3.15 Key Issues and Challenges

Key issues among others include how collaboration with business is refining the demanding focus on TVET, and how the technological revolution requires an adequate fit between TVET supply and demand. The challenges includes the following:

- The quality of TVET graduates is still low to meet the industry demands and competencies, and thus many industries always complain of skills mismatch in TVET and opt for not hiring SMK graduates which increases the unemployment rate of TVET graduates in comparison with other education levels. Many SMK graduates have qualifications, but their quality is not satisfactory to the needs of industries, and thus they have to undergo an extra up-skilling in industries hence becoming another cost to be met by industries.
- Matching standards and certification towards mutual recognition of TVET graduates so that they can meet the demands of workplace standards since there is no well-established model of quality apprenticeship established with industries. There has been a link-and-match problem of skills and competencies provided in TVET schools and the needs of the industry especially in soft skills[41]; industry certifications and occupational standards are important to improve the quality of TVET institutions; however, many industries have not fully embraced this because they take this certification to be costly and integration of school activities in industry would disrupt industry's business operations;

[41] Sayuti (2016), I Wayan Ratnata (2013).

- The quality of TVET teachers has been one of the major challenges affecting the quality of TVET graduates in Indonesia because many TVET teachers do not meet the required qualifications as indicated in the Law No 14 in 2005 and No 74 in 2008 about teachers and lecturers. Twelve percent (12%) of TVET teachers had their qualifications below Diploma IV (DIV) or Bachelors (S1), and also many lack the industry experience and certification that makes them incompetent enough in their fields of teaching (See Footnote 14). Due to this challenge, there has been lack of sufficient correspondence between the practical training and skills taught in TVET institutions and the demands of the labour market.[42]
- Inadequate facilities such as up to equipment used in TVET institutions in correspondence to the ever rapidly changing technologies in workplaces. Due to advanced sophistication of technologies in the labor market, vocational schools face a bigger challenge in keeping the pace of technology change workplaces in preparing the students to be ready for work. Furthermore, these equipment may be costly for the TVET institutions to access it and as a result vocational high schools initiate institutional partnership with industries to improvise those advanced equipment. However, due to administrative and financial constraints, sometimes the cooperation is not successful, making it hard for TVET institutions to adequately prepare their graduates with relevant real workplace skills and competence.
- Inadequate better incentives for motivating industries to engage in quality assurance for TVET by the government. There is a need to give the industry some incentives that motivate them to get involved in quality assurance by the government especially easy access to becoming TVET certification body and emphasizing quality certification as a prerequisite for employment. Also the central and local governments allocate only a small budget and subsidies for quality assurance which makes the whole exercise a little harder.[43]

MONE: Ministry of National Education
MoMT: Ministry of Manpower and Transmigration
DDGHE: Directorate General of Higher Education
SMK/MAK/VSS/IVSS: Sekolah Menengah Kejuruan/Madrasah Aliyah Kejuruan/Vocational Secondary school
SMA/MA/GSS/IGSS: Sekolah Menengah Atas/Madrasah Aliyah/General Secondary School
BLK: Balai Latihan Kerja or Vocational Training Centres
MTU: Mobile Training Units
CBT: Community-Based Training
SKK: Sertifikat Kompetence Kerja/Work Competence Certificate
KKNI: Kerangka Kualifikasi Nasional Indonesia
MoMT: Ministry of Manpower and Transmigration.

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