Chapter 7
Graduate Work-Readiness Challenges in Indonesia—Findings from a Multiple Stakeholder Study

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Abstract This chapter provides an overview of work-readiness challenges in the context of Indonesian labour market. The chapter presents findings of qualitative research on stakeholders' perspectives of the work-readiness related issues. In addition, two case studies on innovative ways to overcome work-readiness challenges are discussed before making concluding remarks.

Keywords Graduate work-readiness · Higher education · Indonesia
Skills gaps · Stakeholders · Vocational education

7.1 Introduction

With a population of more than 263 million and a workforce of 132 million in 2017, Indonesia is predicted by PwC (2017) to be the fifth highest growth economy of the top 21 economies by 2030, after China, USA, India, and Japan. Asia is expected to remain the fastest growing region of the world overall, with Indonesia on course to become the world's 16th trillion-dollar economy, drawing attention away from the traditional hubs of China and India (PwC 2017). This chapter explores the scope of the graduate work-readiness (GWR) challenges which threaten Indonesia's continuing economic growth, and its aspirations to achieve developed country status over the next decade.

As in other chapters of this book, this chapter first provides an overview of the country's economy and its education system, the associated skills gaps or skills mismatches. It then presents the findings from a qualitative research study conducted in Indonesia between 2015 and 2016, including the perspectives of government, industry and educational institution representatives on three key issues

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—namely, the scope and nature of the GWR challenges; their causes; and some recommended strategies to address them, within a tripartite framework. The chapter builds on the conceptual discussions of GWR challenges in Indonesia, included in an earlier book (Cameron et al. 2018: Chap. 6), by providing complementary research evidence.

7.2 A Brief Snapshot of Indonesia's Economy and Education System

There are more than 3200 higher education institutions in Indonesia consisting of universities, institutes, schools of higher learning, academies, community colleges and polytechnics, more than 95% of which are privately owned. The major challenges are the standardisation of quality across these institutions; certification, accreditation, supervision and monitoring; lecturer and trainer qualifications. The number of new graduates per year is in excess of 900,000 (see Table 7.1). Typically, it takes 3 months for the fresh graduates to get their first permanent job, and only a small percentage of graduates have that opportunity (Hoeckel 2014).

Table 7.2 below suggests that university or academy graduates constituted approximately 12% of the total number of the unemployed in the past 3 years.

7.3 Graduate Skills Gaps

Several global reports have explored the key skills gaps across industry sectors in Indonesia. For example, a World Bank report (2010) noted significant deficiencies in the supply of senior managers and professionals (80 and 60% respectively), although unskilled jobs appear to have an over-supply of willing applicants.

Table 7.1 No of Graduates of public and private higher education 2014/2015

Graduates		Public		Private		Total
		Number	%	Number	%	
1	University	265,603	47.06	298,762	52.94	564,365
2	Institute	9485	25.07	28,347	74.93	37,832
3	School of higher learning	–	–	196,404	100	196,404
4	Academy	–	–	71,763	100	71,763
5	Community college	–	–	–	–	–
6	Polytechnic	17,803	52.20	16,302	47.80	34,105
	Total	292,891	32.38	611,578	67.62	904,469

Source Statistik Pendidikan Tinggi 2014/2015, Ministry of Research, Technology and Higher Education

Table 7.2 Indonesia open unemployment 2015–2017 (Feb)

No.	Description	2015	2016	2017 (Feb)
A	Indonesia population	257,563,815	260,581,100	263,510,146
B	Potential workforce	125,340,805	126,557,809	131,544,111
C	Working people	117,833,010	119,529,835	124,538,849
D	% to potential workforce	6.0	5.6	5.3
	(Highest education attainment):			
	No school	89,929	76,820	92,331
	Not completed primary	487,368	470,744	546,897
	Primary	1,162,677	1,127,343	1,292,234
	Secondary	1,512,153	1,304,149	1,281,240
	Higher secondary/general	2,021,220	1,748,663	1,552,894
	Higher secondary/vocational	1,372,028	1,434,438	1,383,022
	Academy/diploma/higher vocational	252,927	234,549	249,705
	University	609,494	631,270	606,939
E	% to open unemployment	11.5	12.3	12.2
	% to potential workforce	0.7	0.7	0.7
	% to working people	0.7	0.7	0.7

Source DevOne consulting—compiled from Ministry of Research, Technology, Education and Higher Education (RISTEKDIKTI); National Workforce Survey (Sakernas)

An APEC report identified the industry sectors with the most serious skills gaps—namely, agriculture, forestry, hunting and fishing; transport and storage, and a series of sub-sectors in the services industry (finance, insurance, real estate and business services—APEC 2015, p. 32). The report also suggested that 'Indonesia does not suffer from a lack of graduates, but it does suffer from a *lack of appropriately skilled workers*' (APEC 2015, p. 32). Occupational vacancies which are the most difficult to fill include executive managers, scientists, engineers. Environmental and aerospace engineers are particularly hard to attract and retain (ILO 2016). The OECD divided the nature of these skills gaps into three domains—namely, a qualifications mismatch, a skills mismatch, and a field of study mismatch (OECD 2016, p.132). The qualifications mismatch concerns the lack of alignment between the university and vocational education curriculum and graduate outcomes and the identified needs of industry, in both 'soft' and 'hard' knowledge, skills and capabilities; the skills mismatch includes educational institutions' failure to adequately prepare their students for future workplaces, and the corresponding negligence of employers in providing appropriate development opportunities; whilst the 'field of study' mismatch concerns the government's failure to adequately analyse the labour market's changing skills demands, and to ensure a congruence between industry demand and education system supply (Priyono and Nankervis 2018: 112). The latter mismatch has also been exacerbated by students themselves who often choose to undertake vocational and higher education programs which bear little relation to

industry needs. Table 7.3 illustrates the preferences of students which are not necessarily congruent with industry requirements.

As a recent OECD report concludes:

'ensuring a good match between the skills acquired in education and on the job and those required in the labour market is essential if countries want to make the most of their investments in human capital, and to promote strong and inclusive growth. It affects job satisfaction and wages, increases the rate of turnover and may reduce productivity and GDP growth' (OECD 2016, p. 129). With respect to the specific graduate work-readiness (GWR) challenges in Indonesia, UNESCO (2012) identified personal integrity, intellectual capacity, teamwork, analysis and problem-solving skills as key issues; with communication, writing and communication skills, a lack of self-confidence and 'character' of secondary importance (p. 19). The OECD report also found a number of GWR skills gaps, including literacy and numeracy (OECD 2016, p. 63), job flexibility, work sequencing, time management, cooperation with co-workers and willingness and ability to train others. In similar vein, the World Bank (2010), reported gaps in critical thinking, communication and independent working competencies, leadership, team orientation, creativity, English language fluency and information technology skills (p. xiii). A report from the McKinsey Global Institute (Oberman et al. 2012) summarises the scope of the GWR challenges thus: 'a number of measures indicate that graduate skills do not currently match those required by (Indonesian) employers… forty one percent report gaps in the ability of their skilled workers to think creatively and critically, and a further forty seven percent express the opinion that their skilled employees lack sufficient computer literacy. Even young Indonesians seem to agree… fifty six percent report that they feel only somewhat prepared or poorly prepared to enter the workforce' (p. 75).

Table 7.3 10 study programs with most number of graduates, 2016

No.	Study program	Graduates	Univ/academy
1	Primary school teacher	82,259	208
2	Management	66,617	822
3	Midwifery	47,294	643
4	Accounting	42,361	615
5	Information technology	34,768	440
6	Practical nursery	27,221	419
7	Information management	27,100	318
8	Science of nursery	25,527	308
9	Law	24,970	391
10	English language	23,929	296
	Total	402,046	

Source Ministry of Research, Technology, Education and Higher Education (RISTEKDIKTI)

7.4 Views of Stakeholders—Research Framework and Early Findings

7.4.1 Research Method and Sample

Consistent with the research methods adopted for all countries in this book, the Indonesian component comprised two stages—first, a preliminary overview of the government education and workplace skills framework and the responsible departments and agencies, provided by a local key informant; and second, interviews with representatives of government, industry, and vocational and higher education. In addition, to provide an in-depth snapshot of successful projects being undertaken to address the identified GWR challenges, two case studies were solicited. They appear at the end of this chapter. The interviews followed a standardised regional survey format which included questions on the scope and nature of graduate work-readiness challenges; the causes of these challenges; possible strategies to address them; and examples of innovative approaches to their resolution. Table 7.4 shows the positions of the nineteen (19) interviewees included in the research study.

Table 7.4 List of interviewees

No.	Position	Institution
1	Director of vocational study	Ministry of Education and Culture
2	Head of overseas cooperation	Ministry of Education and Culture
3	Director	Politeknik Negeri Jakarta
4	Director	Politeknik Aceh
5	Lecturer	Politeknik Bandung
6	Lecturer	Politeknik Bandung
7	Headmaster	Vocational high school, SMK Wikrama Bogor
8	Senior lecturer	Vocational high school, SMK Wikrama Bogor
9	Headmaster	Vocational high school, SMKN 6 Jakarta
10	Senior lecturer 1	Vocational high school, SMKN 6 Jakarta
11	Senior lecturer 2	Vocational high school, SMKN 6 Jakarta
12	Professor	Universitas Sriwijaya Palembang Sumatera Selatan
13	Vice dean	Universitas Islam Indonesia Yogyakarta
14	Assistant director of cooperation	Politeknik Negeri Jakarta
15	Secretary of department of computer and informatics engineering	Politeknik Negeri Jakarta
16	Head of CCIT project	Universitas Indonesia Depok
17	Resource coordinator	Fujitsu Indonesia
18	GM of services	Metrodata group Jakarta
19	Director	SS-trans logistic Jakarta

The preliminary findings from the local key informant revealed that Indonesia currently has a National Qualifications Framework (NQF) which is monitored by a board responsible to the Ministry of Education and Culture (MEC), the dominant government authority in relation to workforce policies in vocational and higher education. The Ministry of Labour (MOL) supervises the Centre for Job Training (BLK) which runs a limited program for assisting high school students who have dropped out of school, and there are some targeted programs for other minorities (Papuans, Ambonese), but there is no department wholly responsible for overall workforce/human capital development. Labour market groups targeted for some industry sectors—notably automotive, heavy industries, hospitality and geomatics—also have their own occupational standards, supervised by the BNSP (Bandar Standar Nasional Pendidikan—National Education Standards Agency).

Recognition of Prior Learning (RPL) is a relatively new concept in Indonesia, although the MEC is currently rolling out a rudimentary program. There is no lifelong, or continuous, learning imperative. The key industry sectors which have been identified as the most affected by graduate work-readiness challenges are (in order of importance) tourism and services; agriculture, forestry, fishing and hunting; construction; manufacturing, electricity and gas, and water supply. These sectors were also identified in the reports of global agencies such as the OECD, ILO and APEC discussed above. Typically, these sectors employ low or medium-skilled employees, and it is likely that the high-tech sectors will also suffer from similar labour supply difficulties in the future, as will management level positions whether in public, local private or multinational organisations. The Indonesian government does collect data on graduate work outcomes, but it is unclear whether this information is actively used in government workforce planning.

7.5 Specific Stakeholder Perspectives

The Indonesian findings are presented in accordance with those in all chapters—namely, the perspectives of stakeholders (government, industry and education providers) on graduate work-readiness challenges, their causes and implications; current programs used to address these challenges; and case studies of innovative GWR programs.

7.5.1 GWR Challenges

Government participants in our study highlighted a number of key challenges, some of which are consistent with those identified in global agency reports and others which are more focused. Thus, they indicated that there are problems with vocational and university curricula in terms of their lack of alignment with industry skills demands both currently and into the future. These problems were partly

attributed to the absence of regular communication and liaison opportunities between educational institutions and industry representatives, and partly to the inconsistent application of job competencies across Indonesia (O'Neil 2014; Priyono and Nankervis 2018: 110). The latter issue appears to be exacerbated by unclear responsibilities and sometimes problematic relationships between the three main government ministries (Ministry of Education and Culture, Ministry of Labour and Ministry of Manpower). Illustrative comments included

> communication between different government institutions is pathetic…is in existence to some extent, but its effectiveness is in question… minimal to none.

This problem is exacerbated by the numerous disconnected and geographically isolated provincial governments whose policies and practices are difficult to coordinate from Jakarta (Priyono and Nankervis 2018).

Industry research participants were less introspective, preferring to focus on the deficiencies of graduates. They reported that their skills needs are for graduates who are equipped with knowledge of the particular industries and organisations which they wish to join, the necessary competencies to 'immediately perform the job', positive work attitudes, willingness to relocate geographically and to work full time. Contradictorily, some industry participants also suggested that their preference was to initially hire graduates as temporary employees or on contract bases. 'Employee loyalty' was perceived as an important issue. Despite these expectations, the industry participants generally agreed that the extent of the GWR challenges is 'medium to high', and that 'demand outweighs supply by far'. Information technology, accounting, medical specialists, and nurses were identified as occupations in the greatest demand. The key problem is that the qualities of graduates are less than adequate to bridge the gap between demand and supply.

Educational institution participants criticised government curriculum requirements as 'too heavy' and largely unrelated to current industry skills requirements, too difficult to change, and there is a lack of funding and resources to support curriculum changes, especially with respect to laboratories and instructors. They also suggested that skills such as English and Mandarin fluency, creative thinking, interpersonal communication, teamwork and administrative skills are not encouraged in the standard government curriculum, and that they do not have sufficient funding to provide such additional training. In addition, some participants explained that education institutions in Java (particularly Jakarta) benefit substantially more from government assistance than their counterparts in more remote areas of Indonesia.

In summary then, there are clear and urgent GWR challenges throughout Indonesia, and in most industry sectors. The IT sector, for example, has an ongoing significant demand for programmers in Java, PHP, .Net, and C/C++, together with a growing need for graduates in occupations such as data mining, database administration, business intelligence, internet security, and fraud investigation, skills not presently taught in either vocational or higher education institutions. As in most other regional countries, the health sector continually requires more qualified and skilled care workers to meet the needs of the ageing population, as well as

radiologists and operators of new medical technologies. Very few vocational education institutions offer relevant programs, and only one university in the broader Jakarta district (Universitas HAMKA) provides such courses.

Finally, the oil and gas sector reports skills shortages in occupations such as underwater welding operators, remotely operated vehicles (ROV) engineers and subsea piping inspectors; and non-traditional agricultural operations (for example, organic, hydroponic and membrane cultures) also have growing workforce demands but problematic labour supply options. A somewhat disturbing trend reported across industry sectors is a discernible employer preference for vocational education rather than university graduates because they are cheaper to employ, usually more obedient to their supervisors, possess more practical skills and thus require less training time (and associated costs) to achieve desired work performance levels. The corollary of this (arguably) short-term perspective is that these graduates may prove to be less innovative, less adaptable and less equipped to progress to managerial roles in the longer term than their university graduate colleagues.

7.5.2 Causes and Consequences of these GWR Challenges

As in all of the other countries included in this book, the GWR challenges in Indonesia have arisen as the result of the introduction of new technologies in all industry sectors with their inherent implications for the nature of workplaces, jobs and work processes, together with significant failures on the part of the three key stakeholders (governments, employers and educational institutions) to recognise, and in combination, to adequately adapt to them. Government representatives suggested that the sheer size and complexity of the bureaucracy and the conservatism of many middle and senior administrators, together with the shared responsibilities for labour market and education systems across ministries, have contributed to a lack of national (and provincial) planning and coordination with respect to skills identification and development, and ongoing policy revisions. Both industry and government representatives suggested that university graduates have been generally favoured over vocational education graduates, despite identified skills deficits, due to traditional biases. However, both stakeholders also complained about the significant lack of practical industry-focused content and skills outcomes provided by most of Indonesia's universities. The higher education representatives suggested that the government has not undertaken appropriate labour market planning or implemented adequate skills upgrading programs; whilst employers have failed in their responsibilities for post-employment on-the-job skills development. One industry participant, more optimistically, reported that there is growing recognition that

> outputs one can produce are now regarded as far more important than one's academic qualification.

The key consequence of these GWR challenges was reported as serious constraints on the speed and competitiveness of businesses within increasingly aggressive local and regional marketplaces, due to their inability to attract and retain sufficient numbers of qualified, skilled and work-ready graduates. In particular occupations (see above), not only are skilled and work-ready professionals very difficult to find, but they are increasingly being lured to higher paying career opportunities in other Asia Pacific countries, in the middle east, Canada and the United States. Whilst large local or multinational corporations can afford to match such employment conditions, the core of Indonesian business (small and medium size companies) is unable to do so.

The available data supports this view. Only a relatively small proportion of VE and HE graduates are recruited by top tier multinational/local companies, with the remainder having to settle for jobs in smaller companies and SMEs or choosing to be self-employed. The SME sector is considered the driving force of the Indonesian economy, with almost 58 million micro-, small- and medium size local companies (99.99%), compared to only 5000 large companies (0.01%) (Ministry of Cooperation and SMEs 2015). In the current economic situation in Indonesia, many companies have ceased recruiting entirely or are actually reducing the existing workforce, exacerbating the difficulty for graduates to obtain employment. Ironically, highly skilled younger workers (especially IT) tend to be over-priced, and many of them appear to prefer to work as freelancers because they can earn more money by working on parallel projects.

7.6 Current Strategies, Policies and Programs to Address GWR Challenges

According to the study participants, the national government has recognised the communication and coordination difficulties between ministries but appears unclear about how to resolve them. The hierarchical public service culture constrains remedial actions by middle level administrators, and there are apparently no decisive policy directions provided by senior ministry officials (Wickramasinghe and Perera 2010). However, there have been some recent promising developments associated with culture change in the public sector. As an example, the special municipality government of Jakarta (*Daerah Khusus Ibukota*) has consciously and significantly increased the wages of civil servants on par with private sector managers and recruited more private sector professionals as middle level managers. It is anticipated that these initiatives will be adopted by local and provincial governments in order to modernise their administrations, enhance their efficiency and effectiveness; and encourage greater collaboration between government and industry in GWR strategy, policy and program imperatives. A report from the McKinsey Global Institute strongly supports these goals:

> the public sector in Indonesia needs to invest in developing a pipeline of future labour, and businesses have a key role to play in working with government to provide training and financing (Oberman et al. 2012: 83)

Many Indonesian employers (with some exceptions) appear to have a strong reluctance to invest resources in graduates' skills development after their recruitment, and only a mild interest in establishing collaborative ventures with local vocational or higher education institutions (Smith-Ruig 2013; Wickramasinghe and Perera 2010). Whilst this is understandable to some degree in the current economic climate in Indonesia, especially in the SME sector, there is a contradiction in their demand for qualified and work-ready graduates on the one hand, but an unwillingness to expend time or resources in strengthening the long-term skills and capabilities of their new employees in the longer term (Smith-Ruig 2013). Similarly, without close collaboration between industry and the educational institutions, their chances of aligning the curriculum and graduate outcomes with their present and future needs are slim. Some industry research participants suggested that their companies are exploring the viability of identifying proximate vocational and higher educational institutions with which to proactively develop mutually beneficial relationships to deliver 'perpetual sources of skilled human resources' to meet their ongoing skills requirements. Others already have some kinds of relationships, including occasional industry speaker inputs, membership of university advisory committees, student work placements and/or minor funding support. One industry participant also proposed that companies might consider setting up and funding their own private universities to ensure work-ready graduates, but this would necessarily only be possible for large local or multinational corporations, some of which already have such in-house 'universities' (for example, Trakindo, Astra, Pertamina). Expansion and broadening of these approaches were recommended by a McKinsey Global Institute report: 'greater private sector involvement in the education system by providing capital to helping to set up training institutions, (and) the government must find ways to help people understand what potential employers need' (Oberman et al. 2012: 79).

Both vocational and higher education institution participants also admitted that there has often been an unwillingness or inability to establish closer relationships with potential industry partners to enhance graduates' work-readiness skills. They recommended that all such institutions should actively seek opportunities to develop links with local government agencies and private companies, for the purposes of enhancing mutual communication about each other's needs; exploring options for greater student workplace experiences (including, but not restricted to, internships and apprenticeships); and providing opportunities for industry input into course curricula (for example, industry guest speakers, industry representatives on program advisory committees, work-applied student projects). A McKinsey Global Institute report recommended that Indonesia might adopt:

> the German dual system of apprenticeships in which young people can opt for classroom teaching combined with vocational training at a company. (Oberman et al. 2012: 79)

Case 1 in the next section of this chapter illustrates a similar option, namely the adoption of elements of the French approach to embedding work-readiness in both vocational and higher education curriculum.

7.6.1 Effectiveness of GWR Strategies

The following observation sums up the views of many research participants from all three stakeholder groups:

> Graduate Work-Readiness is a common problem and can only be improved if all stakeholders work together in synergy. Nothing can't be solved when there are good communications, openness, and a sense of moving toward the same direction, the same goal. Indonesia has a big chance to succeed!

However, all participants also agreed that, while the government, industry and education system strategies have been quite effective overall, they have to date only been adopted by a few municipal governments and companies; and that more success stories will hopefully entice other provincial governments, large companies and SMEs, and both vocational and higher education institutions, to follow suit hopefully in the near future.

7.7 Innovative GWR Programs

The following two cases illustrate the principles, processes and programs employed by two foreign agencies in assisting Indonesian GWR stakeholders to more effectively address the skills gaps between industry demands and current graduate outcomes. They were provided by the local program coordinators of the programs, and illustrate potentially useful approaches for governments, employers and educational systems in their own strategies and programs to address the GWR challenges.

7.8 Case 1: The Centre of Excellence Project—A Collaborative Project Between Indonesian and French Governments

The Ministry of Education decided to address the needs for up-to-date technicians in electricity production and renewable energies as one of the sectors most threatened by a skills gap in the coming years. The instrument for this pilot program would be a Centre of Excellence for vocational education, an educational institution based on an international partnership and multilateral funding for pedagogical and technical transfers of knowledge.

7.8.1 Objectives

Indonesia expects an increase in electricity production of 35 Gigawatts (GW) by 2019 (compared with only 9 GW today) and predicts that the proportion of renewable energy in the energy mix will reach 19% during the same period. This energy transition will require the training of competent industry professionals for the manufacturing, installation and maintenance of these new systems for energy production. The Centre of Excellence for training in the field of power generation, renewable energy and automation is an initiative of the French Ministry of Education; the Indonesian Centre is one example of a model developed world-wide in different economic and industrial areas, based on a partnership between the French Ministry of Education, private companies eager to consolidate their international development by investing in training, and another national government. It is a win-win operation based on a transfer of technology and of professional practices focused on the work-readiness of young students and teacher training.

7.8.2 Partner Contributions and Benefits

Each partner provides a specific contribution:

- The French Ministry of Education provides senior experts
- The Indonesian government provides the premises, teachers and logistics
- The company provides the technical training equipment, expertise and internship opportunities

Each partner also gains benefits

- The French Government strengthens international cooperation through its educational system and knowledge-sharing
- The Indonesian government receives the opportunity to modernise its vocational training system, especially in power generation and renewable energy
- The Training Centre provides the partner company with a comprehensive solution to business growth by allowing it to develop, alongside its products, the ad hoc training system.

In emerging economies like Indonesia, it is a key issue for industry to find a highly qualified workforce tailored to its needs. The Centre addresses this possible road-block of business-development while simultaneously contributing to a positive social and corporate image.

7.8.3 The Project

The Schneider Foundation, which has already partnered with the French Ministry of Education in other countries, will be funding the equipment costs for an initial state-of-the art Centre of Excellence in Indonesia, designed to develop curricula and methods which will then be disseminated through teacher training on site. The Indonesian Ministry of Education commits to covering the costs of accommodation and living expenses for teachers from across the country (there are more than 800 vocational high schools which specialise in electrical/energy maintenance and production), who will be trained intensively at the Centre by an expert seconded by the French Ministry of Education, and three Indonesian 'Master Teachers'. The trained staff will then disseminate the updated methods in their own schools which are in turn provided with newer equipment in their more limited specialty, funded by the Indonesian Ministry of Education and Schneider Electric Indonesia. Another objective of the Centre is the upskilling of existing technicians: ideally, teacher training and reskilling/upskilling takes place concurrently with the reskilling of professionals, so that the professional and educational community are put into contact through the process and can engage in peer-to-peer best practice exchanges. Thus, the Centre also becomes a hub for industry/education transfers of experience. Necessarily, the success of the Centre relies on the dedication of the Indonesian Ministry of Education, together with a substantial level of financial and human resource commitment.

(Case provided by Dr. Emilienne Baneth and Mr. Thierry Lextrait, Embassy of France, Jakarta, Indonesia)

7.9 Case 2: Sulawesi Economic Development Strategy

Graduating from university in Indonesia can be a daunting experience. The joy of graduation is often paired with an uncertain employment future. Indonesian higher education is frequently characterised by theory-driven and lecture-based curricula where students are passive recipients of knowledge. Upon graduation, those graduates who do not find employment within the public sector frequently do not have the applied skills necessary to successfully gain employment in the private sector. The Sulawesi Economic Development Strategy (SEDS) was a 5-year Canadian-funded project intended to address this issue in the provinces of North and South Sulawesi. Rather than focus on specific job skills, the project fostered the development of entrepreneurship capacities within students. Building entrepreneurship skills prepares students, regardless of their discipline of study, to start and manage their own small businesses upon graduation. These businesses, in turn, provide further employment for others. Key to the SEDS strategy was a focus on entrepreneurship programming that is applied in nature. Such programming provides students with real world skills through curriculum that bridges theory and practice and is delivered in a way that enables students to learn by doing.

7.9.1 The Applied Entrepreneurship Education Strategy

Seven Indonesian universities and one Canadian college were the vehicle for implementing the SEDS applied entrepreneurship education strategy. Humber College, the Canadian partner, used a train-the-trainers approach to build the capacity of lecturers from the Indonesian university partners to design and deliver applied entrepreneurship programming. This included both the design of applied curriculum to be delivered as university courses across multiple disciplines, and the development of business support services to be delivered outside the classroom environment. Most of the SEDS partners chose to require their students to actually start businesses or develop a product prior to graduation as part of the applied process of learning by doing. Business support services provided ongoing support to these student entrepreneurs upon creation of their businesses and after graduation. Greater self-employment, higher incomes and increased local economic development were the project's intended results.

By the end of the SEDS project in late 2017, over 12,000 students had taken an applied entrepreneurship course across the seven Indonesian university partners. More than 50% were women. Twenty-five percent of these students, many of whom are now graduates, continue to manage a business. An evaluation of the project showed that these SEDS entrepreneurs overwhelmingly identify the applied nature of SEDS programming as the reason for this situation. In particular, the applied courses provided students with general entrepreneurial skills needed to start a business, including business planning, marketing and financial management. Business support services delivered by the university partners, and business coaching in particular, further provided students with specific technical knowledge needed for the ongoing management of their businesses. The SEDS courses and business support services therefore worked together to provide a full package of support across both business start-up and management. Just as importantly, the applied approach to entrepreneurship education provided students with not only applied business skills but with self-efficacy, or the confidence that one can become a successful entrepreneur. Many SEDS entrepreneurs claimed that the self-efficacy they gained was in fact more important than the actual skills they learned. It gave them the confidence and motivation to start their businesses.

The combination of applied skills and increased self-efficacy drove one further outcome. SEDS entrepreneurs used their business skills and new entrepreneurial confidence to start and manage businesses consistent with the collectivist values of Indonesian culture. Entrepreneurship, including entrepreneurship education, is frequently rooted in western individualist values that emphasise competition and growth. SEDS entrepreneurs, however, understand entrepreneurship differently. Business growth and profit remain important, but they are tempered by the perceived necessity to use businesses to drive collective social good. This was no mere exercise in corporate social responsibility, but a sense that there is a collective social purpose of entrepreneurship that is just as important as its role in generating personal wealth. The SEDS entrepreneurs demonstrated this through the kinds of

businesses they chose to start, their hiring practices and how their revenue is used. This is an intriguing development that illustrates a cultural adaptation undertaken by students themselves once they were equipped with applied entrepreneurship skills. It ensures they are better prepared to enter the world of entrepreneurship in a manner that is culturally relevant.

7.9.2 Challenges and Solutions

The applied entrepreneurship approach used by SEDS was not without it challenges. Some student entrepreneurs are so enthusiastic about the applied education they received that they now reject the value of theory in the learning process entirely. This is a significant issue for universities whose role in society is not only to equip graduates with workforce skills but with critical thinking skills that recognise the reciprocal link between theory and practice. Other challenges also emerged. Student and graduate businesses often lack innovation, have difficulty accessing capital and, for student entrepreneurs who have not yet graduated, experience difficulties in balancing the twin burdens of being a student and entrepreneur at the same time. These kinds of challenges are not insurmountable. They require attention be paid to the nature of program design at the beginning stage of programming as well as ongoing review and revision of curriculum and business support services. Doing so will further enhance the ability of applied entrepreneurship education to prepare university graduates to successfully step out of the classroom and into the world of Indonesian entrepreneurship.

(Case provided by Dr. Kent Schroeder, Director, International Development Projects, Humber College, Toronto, Canada)

7.10 Conclusion

This chapter explores the extent, scope, causes and consequences, of the graduate work-readiness (GWR) challenges impacting the productivity and competitiveness of many large-, medium- and small-size organisations in the public and private sectors across the sprawling Indonesian archipelago. The relevant literature, largely in the form of research reports from various global agencies (ILO, McKinsey Global Institute, OECD, UNESCO), together with the findings from our recent study of stakeholder perceptions, confirm that (as in other regional countries discussed in this book) Indonesia is experiencing a significant and growing skills mismatch between the demands of industry and the capabilities of graduate employees from both vocational and higher education institutions. Whilst the current Indonesian government is developing infrastructure to bridge these skills gaps, in the forms of a national qualifications framework, a basic recognition of prior learning (RPL) mechanism, and a rudimentary labour market/human capital

planning system; all key stakeholder representatives (national government, industry, the vocational and higher education sectors) agreed that more efforts are required to proactively address these GWR challenges.

In particular, the lack of integration and coordination between the associated government ministries; the absence of regular communication between industry, educational institutions, national and provincial governments on issues such as specific graduate skills requirements, curricula, internships and work-applied learning options; and the need for greater flexibility, enhanced funding, and more innovative pedagogies in educational institutions, were reported as key factors in resolving these GWR issues and thus supporting Indonesia's future economic and social development. The challenge has become even more urgent following the formation of the ASEAN Economic Community in recent years. The chapter ends with the presentation of two cases which demonstrate the principles, processes and programs which might be emulated in different industry or educational contexts to more effectively address the GWR challenges discussed throughout this book.

Several limitations of the study should however be acknowledged. First, our research consciously focused on only three key stakeholders—governments, industry and educational institutions—because we considered them together to have the primary responsibilities for determining the required GWR competencies, skills and capabilities, on the one hand; and the resources to deliver the expected outcomes to meet their dynamic needs. Whilst we recognise that graduates, and their families are also important stakeholders, they were not included in this study, as their role is primarily as consumers of vocational and higher education services. This limitation might be addressed in subsequent studies.

The second limitation of the study is its sample size and representation. Whilst only a modest number of key informants and interviewees were included in the study (albeit carefully chosen for their specific GWR knowledge and responsibilities), we acknowledge that they cannot fully represent all the GWR challenges in such a complex and geographically dispersed nation as Indonesia. Future researchers might find it useful to conduct more focused research on particular regions, industries, and diverse educational sectors to provide a more comprehensive picture of the GWR challenges. Given the threats posed by these challenges to the Indonesian economy, its political stability and social development, ongoing research leading to practical solutions to the issues raised is a crucial imperative.

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