

Human Resources Development in Indonesia – Towards 2045

Key Issues:

- **Human resources development** for and through digital technology is crucial for development in Indonesia.
- **Vocational education** should be strengthened for Indonesia to participate in global value chains.
- **Partnership between Indonesia and Japan** will contribute to the development of human resources in both countries.

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Indonesia and Japan are highly committed to maintaining human resources development to support economic growth, in line with the development in the political and social dimensions. They are focusing intensively on the use of digital technology throughout many aspects of people's lives, especially for application in the education sector.

Background

Human resources development (HRD) is vital to achieve Indonesia's Vision 2045 (Coordinating Ministry for Economic Affairs, 2011). It is also emphasised in various chapters of the Project 2045 report (ERIA, 2018) from a political, economic, and social perspective. This policy brief introduces some key arguments in the above report, in particular the section on HRD.

Indonesia's Vision 2045 (ERIA, 2018) stated that HRD and technology advancement is one of its four development pillars. HRD contributes to economic development, political stability, and quality of life in Indonesia.

Trend of urbanisation. Indonesia follows the general global trend of increasing urbanisation resulting from a rising population. In 2045, small towns and cities will grow. Big cities and peri-urban areas will evolve to become mega urban areas. The north coastal area of Java is projected to integrate as a large urban area. Some 90% of the population in Java lives in urban areas. Increasing urbanisation will shift economic activities from rural or land-based activities such as conventional agriculture to urban-based activities such as services and industries.

Trend of advancement in artificial intelligence, information technology, and disruption technology. The industrial revolution 4.0 and the Internet of things focus on speed and quality. Industries will also have to survive in situations of volatility, uncertainty, complexity, and ambiguity (VUCA), including when disruptive technology emerges.

Local resources and special economic zones. Indonesia is rich in natural resources, which have diverse potential in each area. It offers many opportunities to create businesses and industries to exploit these resources and their derivative businesses, which are generally localised. In addition, the Government of Indonesia has set up 12 special economic zones (SEZs), which enjoy special government services and incentives. Each SEZ has specific economic commodities or sectors based on local resources.

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Key Questions

- What kind of HRD should be promoted in Indonesia?
- In which area of HRD should Indonesia and Japan cooperate?
- What are the opportunities for digital technologies in the area of HRD?

Recommendations

First, HRD should be strengthened by using digital technology

If we want to narrow the urban–rural gaps in development, efforts should be directed to developing opportunities for the young population in rural areas, especially regarding access to skill development through training and higher-level education. Particular attention should be given to the young female population in rural areas. This would be an effective way of addressing related gaps, such as the high labour informality gap and underemployment gap. Skill development needs to be addressed through certain types of formal education, such as tertiary education. However, it can also be developed to be more vocational in nature, e.g. by establishing polytechnics or technical schools near rural areas. Informal education through access to information and communication technology should be expanded more progressively to rural areas, as this is where access to education is more unreachable physically.

The use of digital technology, especially communication technology, offers scope for reducing social disparities. Communication technology can enable children in remote areas and low-income families to access high-quality education. It can also promote free or low-cost long-distance learning, both in regular and vocational schools, enabling educational needs to be served in an equitable manner regardless of location and social status. Also, there is an importance of character building, which is fundamental in education. Such character building should include civic values (Pancasila) and characters to survive for doing business in VUCA conditions. Digital technology has a pivotal role in increasing the credibility and usefulness of distance learning, which can be used to provide access to quality education in remote and developing regions.

Indonesia established Universitas Terbuka (UT), the Open University, in 1984. As one of the first institutions in Indonesia to offer distance education services, UT has become a leading educational institution in Indonesia, serving people who cannot attend traditional university classes because of time constraints or distance from universities. Currently, most of the students (62%) attend the faculty of teaching and education (FKIP), half of whom are teachers. In its early stages, UT packaged the learning materials in printed modules for students to learn independently, supported by TV and radio programmes. With technological advances, particularly information and communication technology, tutorials now take place online via the Internet – allowing for more interactive discussions between students and lecturers – and the materials are available in digital form. In addition, UT has its own YouTube channel, online radio, and Internet-based TV channel.

The Government of Indonesia, through the Ministry of Research, Technology and Higher Education (Kemenristekdikti), has encouraged more institutions to develop online degree programmes. Currently, 51 higher education institutions are licensed to offer online programmes (19 public and 32 private institutions). This gives consumers plenty of options to choose from while making the courses accessible to anyone at any time or place. The government's support for these online courses is aimed at meeting the market demand for labour. By having more institutions providing online programmes – encouraging and promoting online certification and skills acquisition – more people, especially women and people with disabilities, can benefit through higher enrolment rates.

Second, to respond to the digital revolution, HRD for using digital technology should be promoted

The Cabinet Office of the Government of Japan proposed a vision of 'Society 5.0', in which big data collected by the Internet of things will be converted to a new type of intelligence by artificial intelligence and will reach every corner of society. Such technologies are expected to solve challenges such as increased energy and food demand, ageing, international competition, regional inequality, greenhouse gas reduction, and sustainable industrialisation. The Ministry of Education, Culture, Sports, Science and Technology of Japan also formed a committee to consider what kind of education should be provided to facilitate Society 5.0. The committee, which reported in June 2018, proposed using educational technology (EdTech) and big data in elementary schools, strengthening education in data science and statistics, revising the teacher licensing system, and developing human resources in the humanities and social sciences with artificial intelligence.

Improving productivity on Indonesia's supply side would require not only infrastructure but also upgrading of the country's human resources and innovation systems, as the world has moved into a digital economic revolution.

The Industrial Revolution 4.0 (digital disruption) has put the relevance of higher education into question. Many universities around the world are aware of what is coming. However, unfamiliarity with the massive shift in technology as well as a lack of vision and commitment mean that many may be caught unprepared. Unlike other industrial revolutions in the past, digital disruption is more difficult to anticipate, which will eventually make technological adaptation difficult (Hill, 2017). For universities to remain relevant in the digital age is not easy. Information technology is only a small part of the endeavour. It requires a university-wide strategic vision by the top management, supported by departments and faculties, not just information technology (PWC, 2015). Basic skills in digital technology should be taught in elementary, junior high, and high schools.

Third, to be part of the global value chain, vocational education should be enhanced

The mobility of skilled and educated workers will increase under the Association of Southeast Asian Nations (ASEAN) Economic Community. For Indonesia to exploit this opportunity, the priority is to improve higher and vocational education. In the formal vocational education system, including polytechnics and vocational high schools (SMKs), the problem is that the number of teachers or instructors with relevant qualifications and work experience is relatively small compared with those holding academic S1 or S2 degrees (Asian Development Bank, 2012).¹ Teaching laboratories and equipment are mostly outdated and have not kept pace with technological progress. Therefore, reforms of the national accreditation system are needed. We propose to include the following in this section:

- Link and match. Increase the link and relevance between the education world (competency developer or supply side) with employment needs in business and industry (demand side).
- Based on the nature of employment needs, jobs are classified into two groups:
 - (i) Specific skilled jobs. Formal vocational education at SMKs and polytechnics should include training on industry and skilful material. Skill/competence certifications are needed to acknowledge specific technical competencies of human resources and should become the place for industries or businesses to find employees with specific technical skills.
 - (ii) Managerial jobs. Formal university education should include teaching on industrial matters, a programme set up for entrepreneurs, CEOs, and high-level managers to teach and share experiences from the business and industrial world. Work placements allow students to experience working in various companies and give companies an opportunity to headhunt talented staff. Students are expected to become creative and adaptive in doing business.
- Vocational education and training. Ensure relevance to the geo-economy – combining economic and geographic factors while enforcing potential local resources.

The Japanese school method of Kosen uses a unique blend of classroom-based, hands-on, project-based learning. At Kosen schools, learning is both cross-curricular and student-centred; and teachers are mainly coaches, mentors, facilitators, and evaluators. Kosen students typically work for several years on developing and realising their big ideas (Schleicher, 2018).

The Government of Japan could draw a comparison with the educational system in Japan to start a system for expatriate exchange. This could be accomplished through exchanges between officers from Indonesia's Ministry of Education and Ministry of Higher Education and their counterparts in Japan, as well as between individual educational institutions (universities and schools). The Japanese government, through the Japan International Cooperation Agency or another organisation, could also help to set the content and productive settings of schools activities since schools are free to design their own context-related approaches – including the arrangement of apprenticeships, the establishment of profit-oriented school production units and, just recently, the well-known 'teaching industry' model, as demonstrated by Japanese companies such as Honda and Toyota. These are basically project-oriented programmes, planned and conducted in partnership with industry, focusing on market-relevant products and services to be developed inside schools by industry experts, teachers, and students. Despite this, the programmes may differ considerably in quality, effectiveness, and sustainability since they depend on the characteristics of the companies involved.

¹ The qualifications (certificates/diplomas) of teachers with less than a bachelor's degree (S1/D4) are not highly valued. This appears to be paradoxical since instructors with sound work experience and appropriate pedagogical qualifications might be more suitable to teach vocational majors.

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References

- Coordinating Ministry for Economic Affairs (2011), Masterplan: Acceleration and Expansion of Indonesia Economic Development, 2011–2025. Jakarta: Government of Indonesia, Ministry of National Development Planning/National Development Planning Agency.
- ERIA (2018), Report of Project 2045: For “Joint Partnership” Towards Our Common Future – A Joint Project of Two Maritime Democracies. Jakarta.
- Hill, J.B., ed. (2017), Leading Through Digital Disruption. Gartner. https://www.gartner.com/imagesrv/books/digital-disruption/pdf/digital_disruption_ebook.pdf (accessed 17 May 2019).
- International Monetary Fund (2018), Japan’s Economic Outlook in Five Charts. Washington, DC: International Monetary Fund.
- Asian Development Bank (2012), ‘Aligning HRD Planning with Economic Development and Investment Plans in the MPE3EI Economic Corridor of Sulawesi’, Consultant’s report. Manila (TA 7453-INO).
- Nasir, M. (2018), Policy for Curriculum and Competencies in the 4th Industrial Revolution, Presentation, Education World Forum, London, 28 January. <https://www.theewf.org/uploads/pdf/D1-16.00-HE-Dr-Mohamad-Nasir.pdf> (accessed 17 May 2019).
- Organisation for Economic Co-operation and Development (2018), ‘How Japan’s Kosen Schools Are Creating a New Generation of Innovators’, OECD Education and Skills Today, 13 March. <https://oecdeditoday.com/how-japans-kosen-schools-are-creating-a-new-generation-of-innovators/> (accessed 12 June 2019).
- PWC (2015), The 2018 Digital University: Staying Relevant in the Digital Age. <https://www.pwc.co.uk/assets/pdf/the-2018-digital-university-staying-relevant-in-the-digital-age.pdf> (accessed 17 May 2019).
- Schleicher, A. (2018), ‘How Japan’s Kosen Schools are Creating a New Generation of Innovators’, OECD Education Today, 13 March. <https://oecdeditoday.com/how-japans-kosen-schools-are-creating-a-new-generation-of-innovators/> (accessed 17 May 2019).

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