CAN INDUSTRIAL REVOLUTION 4.0 INCREASE ACCESS AND EQUITY TO HE IN S.E. ASIA?

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This brief highlights policies and procedures adopted by governments in South East Asia to increase better access to higher education among the lower socio-economic population groups. Increasing skills, knowledge, and competencies will create a competitive workforce for the manufacturing industry that is fast adopting Industrial Revolution 4.0 (IR 4.0) for increased production and viability.

The brief also outlines the challenges faced in actualizing these policies. It highlights the impact of Covid-19 in accelerating technology use in higher education, as well as underscoring the increased gaps in access to higher education in the region due to Covid-19. The policy brief concludes with recommendations of best practices adopted in developed countries that are grounded in collaboration and sharing of resources.

This briefing gives the views of the author, not the position of Curtin University.

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Introduction

Technology enriched learning and teaching helps to develop pedagogies that support students with independent or more self-directed learning. IR 4.0 is the ongoing automation of traditional manufacturing and industrial practices, using modern smart technology.

Education for sustainable development is an aspiration goal for many of the ASEAN nations (Higher Education in ASEAN 2016). Member nations have been collaborating and working towards achieving the following:

1. Quality and access to basic education for all especially marginalized groups.
2. Information and communication technologies in education through applying IR4.0 principles.
3. Technical and vocational education and training (TVET) and lifelong learning.
4. Education for Sustainable Development (ESD); and
5. Higher Education development and quality assurance mechanisms.

However, progress achieved in ASEAN countries in sustainable education among the population are varied and dependent on their economic success.

Findings

ASEAN Qualifications Reference Framework (AQRF)

The ASEAN Qualifications Reference Framework (AQRF) Governance and Structure, and the plans to institutionalize the AQRF processes on a voluntary basis at the national and regional levels are supported by the International Universities Association (IAU). The Kuala Lumpur declaration on Higher Education agreed upon a number of sustainable goals, primarily focusing on the critical importance of higher education as one of the catalysts in accelerating ASEAN's economic, political and sociocultural development agenda. The World Higher Education database (WHED) is maintained by the IAU which has a membership of more than 18,000 institutions (Higher Education in ASEAN, 2016).

Enhanced Cooperation in Higher Education in ASEAN

In 2017, a special senior official's meeting on education (SOM-ED) that focused on higher education in the ASEAN was held in Jakarta, in response to the awareness of the importance of higher education in the growth of industry and productivity in the region. At a follow up technical meeting, a decision was made to strengthen the quality of higher education in ASEAN to make it comparable to global standards, with a view to mobilize work forces across ASEAN (Higher education in ASEAN to enhance student mobility in the region, 2017).

The second ASEAN Work Plan on Education 2016-2020 and its strategic Kuala Lumpur Declaration on Higher Education of 2015 scaffold the SOM-ED's work towards an ASEAN Higher Education Area in which the quality of tertiary education across the region can be elevated and university degrees are comparable (Higher education in ASEAN to enhance student mobility in the region, 2017). The ASEAN nations are aware that cooperation and collaboration would pave the way for the region to be able to compete amidst the dominant economic giant of China and to a lesser extent India.

Going Global 2018, a conference for leaders of international education to deliberate the future of further and higher education was held for the first time in Malaysia, an ASEAN member state, and was co-hosted by the British Council and the Ministry of Higher Education of Malaysia, underscoring the integral role played by South East Asian nations in the higher education sector (Horizon 2025, 2019). Discussions centred around the challenges facing higher education in the fourth industrial revolution and panellists underscored the importance of 'collaboration, balance, and impact' while advancing the growth of higher education in the region. Further, ministerial sessions were held on how sustainable and equitable partnership opportunities in higher education could be ensured across the region (Horizon 2025, 2019).

Challenges Achieving Equity in Education in ASEAN

Equity and access to Higher education in the ASEAN region could be hampered by the disparities between quality of life in rural – urban areas and public – private education institutions or among provinces within the countries. There are also gender and socio-economic circumstances that result in disparities in the delivery of quality learning opportunities especially access to ICT (Sadiman, 2004). For instance, in Indonesia, educational inequities are observed across geographical areas and among groups of people according to their socio-economic standing. In Vietnam, access to education is impacted by gender, with females having much lower enrolments than males, and the gap widened among ethnic minorities. In Malaysia, the Ministry of Education focuses on understanding the gaps in educational attainment among all groups of students. There is also a strong emphasis on English language proficiency development and Science, Mathematics and ICT knowledge achievements to decrease the rural-urban gaps among children (Sadiman, 2004).

These disparities are echoed in studies conducted on South East Asian children's performance in American schools. This is particularly discerned among Vietnamese American, Cambodian American and Lao Americans, in subjects like Mathematics (Overview of South East Asian Educational Challenges - Why are South East Asian American Students Falling Behind, 2013). Poor English language proficiency, lower access to quality learning resources, the lack of South East Asian origin educators and staff, bilingual counsellors in schools, lower socio-economic groups and limited parent engagement with school communities, have been cited as the main reasons for lower educational attainment among children of South East Asian origins in America.

Many of these factors are identified within South East Asian communities living in rural areas in their home countries too. National and regional policies to address these concerns, implementation of policies and structured monitoring of these policies are key to uplifting generations of children from lower socio-economic populations in South East Asia. Unless, schooling equity is achieved in ASEAN nations, the aspirations to increased higher education access face multiple impediments.

Future Focus Agreements for Higher Education in ASEAN

Many countries in the ASEAN region have promised to build 'world-class' education systems in their countries by 2025. However, the results shown in OECD reports are far from satisfactory for most nations. For instance, the Programme for International Assessment (PISA) tests for Science, Mathematics and Reading, placed Singapore top of all 72 countries surveyed, an outlier among the results achieved for other ASEAN countries. For reading skills, Vietnam ranked 32nd and Malaysia 49th, while Thailand was featured among the bottom 20 countries for all three standards (Hutt, 2019).

Collaborative networks seeking to establish equity and access in higher education in the ASEAN region such as ASEAN University Network (UN) and the ASEAN International Mobility for Students programme under the Southeast Asian Ministers of Education Organisation (SEAMEO) face exigent scenarios in the wake of the Covid-19 era which had decelerated the progress achieved to a great degree.

Across the region, satisfaction with schooling fell significantly between 2019 and 2020 among adults with young children with the largest drop in Southeast Asia, the region where education satisfaction had previously been the highest in the world with the regional figure falling from 85% satisfied in 2019 to 63% in 2020 (Crabtree & Saransomrutai, 2021).

The decline was most pronounced in South East Asia's two largest countries: Indonesia and the Philippines, while satisfaction declined in many other countries in the region -- including Thailand, Malaysia and Vietnam, although not to the same degree as that experienced in Indonesia and Philippines (Crabtree & Saransomrutai, 2021).

The quality disparities in the education systems across ASEAN call for active engagement among governments and education ministries to work together to raise schooling standards, so that measures taken across universities in ASEAN can be strengthened. The Covid-19 pandemic highlighted the disparities in internet access across ASEAN with only three countries, Singapore, Malaysia and Brunei having over 80% internet penetration while most of the populous nations like Indonesia, Vietnam, Thailand and Myanmar had lower internet access ranging between 57-38% (Jalil, 2020). The quality and bandwidth availability in the ASEAN region had impacted inevitably on the educational attainment of entire segments of school and university communities.

Implications for Policy Makers

The findings from numerous reports post Covid-19 highlight the challenges that ASEAN nations face in providing quality education in the wake of the pandemic. ASEAN countries should be steadfast in upholding their commitment to increasing quality and access to education for all sections of the population, especially among marginalized groups. Education disruption was heightened among the rural and economically weak segments as they lacked internet access and did not have digital devices to connect to classrooms and teachers. The pandemic revealed the ineffectiveness of multilateral institutions and mechanisms to a large extent.

ASEAN nations must prioritize investments in information and communication technologies in education through applying IR4.0 principles, so that students become familiar with online learning and digital approaches to learning. The pandemic highlighted the need to equip students with digital access and schools with better technology so that education systems can prevail. Continued collaboration and cooperation among ASEAN nations will assist the region to achieve the standard of education for sustainable development that remains a high aspiration.

Recommendations

ASEAN nations must continue to work together as a group to increase the quality of schooling across the region, while formulating policies to improve access and equity to education among all sections of populations.

The education ministries should focus on increasing better access to higher education among the lower socio-economic population groups allocating specific budgets to consequently increase skills, knowledge, and competencies to create a competitive workforce for the manufacturing industry in the region for increased production and sustainability.

The higher education and further education sectors should cooperate and collaborate to build resilient education systems that allow them to respond to any future crisis more effectively and continue to work with the governments to reinforce capacity building.

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