The Way Forward to Enhance Quality Assurance of Higher Education in Vietnam in the Disruptive Era

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Abstract

Recognizing the importance and development of Industry 4.0, ASEAN at the 35th ASEAN Summit in Bangkok, Thailand on 2 November 2019[1], reaffirmed its commitments to advance Industry 4.0 by promoting innovation and technology-driven industries with the desire to create a prosperous and equitable ASEAN community and to accelerate economic growth and social advancement. The declaration aims to enhance human resource development and capacity building to catch up on frontier technologies and innovation in relation to smart factories, digital value chains and digital literacy emphasizing the need to up-skilling and re-skilling their workforce.

Aligning with the ASEAN's declaration and Vietnam's economic strategy, Vietnam has invested to build a network of smart cities across its Northern, Southern, Central and Mekong Delta regions under its Smart Urban Development plan (2016-2030). Skilling, re-skilling and up-skilling its workforce to meet the needs of Industry 4.0 will be vital for Vietnamese higher education institutions which are the key providers of quality human resources.

Producing high quality human resources requires Vietnam and its higher education institutions to implement robust and holistic internal and external quality assurance systems.

This paper attempts to carry out a SWOT analysis of the internal and external quality assurance in Vietnam and to offer suggestions to develop and enhance the quality assurance of higher education in Vietnam as a way forward.

Key words: Industry 4.0, quality assurance, SWOT analysis, smart cities

1. Introduction

This paper attempts to carry out a SWOT analysis of the internal and external quality assurance in Vietnam and to offer suggestions to develop and enhance the quality assurance of higher education in Vietnam as a way forward in view of the ASEAN's development and Vietnam's Economic Strategy in Industry 4.0.

2. Industry 4.0 Development and Investment in ASEAN and Vietnam

At the 35th ASEAN Summit in Bangkok[1], ASEAN member states had agreed to 6 areas of collaboration and enhancements in embracing Industry 4.0:

- Accelerate ASEAN transformation to Industry 4.0, with special focus on start-ups, micro, small and medium-sized enterprises (MSMEs), eGovernment, smart cities and vocational education;
- Enhance human resource development and capacity building on frontier technologies and innovation in smart factories, digital value chains and digital literacy through up-skilling and re-skilling of the workforce including MSMEs;
- Stimulate adoption and diffusion of innovation and technologies involving Industry 4.0 such as internet of things (IoT), big data and cloud-based technology, artificial intelligence, augmented reality and additive manufacturing (3D printing) as well as joint researches, investments, and development activities.
- Promote innovation and technology-driven industries in advancing Industry 4.0
- Enhance cooperation in developing a favorable regulatory framework in support of ASEAN Industrial Transformation to Industry 4.0 via public and private dialogues, international organizations collaborations, digital standards, cross-border data flows and developing a common platform using digital technologies such as big data and artificial intelligence.
- Address the challenges impeding ASEAN industrial advancement and the solutions to address these challenges.

Aligning with the ASEAN's declaration and Vietnam's economic strategy, Vietnam issued its national strategy for Industry 4.0 till 2030 by its prime minister on 11 December 2020 at the 2020 national forum on collective economy and cooperatives.[2] The national strategy outlines the next phase of Vietnam's sustainable economic development based on science, technology, innovation and high-quality human resources. The national strategy sets ambitious goals for the country to be among the top 40 performers in the Global Innovation Index (GII), the top 30 in the International Telecommunication Union (ITU)'s Global Cybersecurity Index (GCI) and the top 50 in the United Nations (UN)'s e-Government Development Index (EGDI) by 2030. It expects the digital economy to contribute 30 percent of its GDP with an annual average productivity growth of 7.5 percent coupled with universal access to fiber-optic Internet and 5G services, development of a digital government, and the establishment of smart cities in key economic regions forming a network of smart cities nationwide.

In the Vietnam's future digital economy – Towards 2030 and 2045 Report[3], the following seven megatrends are expected to drive the development of Vietnam's future digital economy:

1. Emerging digital technologies such as blockchain, artificial intelligence, big data analytics and the internet of things
2. International integration of Vietnam's digital economy with new export markets, knowledge and skills transfer, and greater levels of foreign investment.
3. Increasing need for cybersecurity and privacy as more businesses and consumers engage in the digital economy, and critical systems for e-finance and e-government.
4. Modern digital infrastructure with reliable digital and energy infrastructure and new telecommunications networks
5. Smart cities in optimizing the use infrastructure and resources as well as reducing waste, pollution and traffic congestion.
6. Rise of digital skills, services, gigs and the entrepreneurs which requires further investment in higher education, digital skills, entrepreneurial skills and Vietnam's innovation ecosystem.
7. Changing consumer behaviours as a result of higher digital adoption among consumers and suppliers.

3. SWOT Analysis of Quality Assurance (QA) of Higher Education in Vietnam

To realize the ambition goals of the Vietnam's national strategy for Industry 4.0, Vietnam's higher education institutions have a pivotal role in skilling, re-skilling and up-skilling its graduates and workforce in digital and entrepreneurial skills to meet the needs of Industry 4.0 and to collaborate with industries, businesses and the communities as part of the innovation producing ecosystem.

For Vietnamese higher education institutions to transform themselves into an innovation-producing ecosystem, they need a holistic approach that permits educators to see their institutions integrated and interconnected with the wider ecosystem of the economy and the world. The 4Cs Framework is a holistic framework that higher education institutions can embrace to systematically build their core competence in innovation and entrepreneurship.[4] The 4Cs framework provides a holistic approach for higher education institutions to transform themselves into innovation-producing ecosystem by embracing Competence, Capability, Collaboration and Culture in an integrated ecosystem. Creating a conducive and sustainable environment in the ecosystem that embraces a flourishing environment, seamless connectedness, and a holistic and integrated education system is critical for innovation and entrepreneurship to be successful. As the interaction in an ecosystem is dynamic, change in one element will create changes in the other elements and the overall environment. As these elements in the ecosystem are intricately related, educators and leaders need to consider them holistically when implementing the 4Cs

framework. The alignment of various elements in the ecosystem towards achieving the purpose of education is crucial.

4Cs Framework
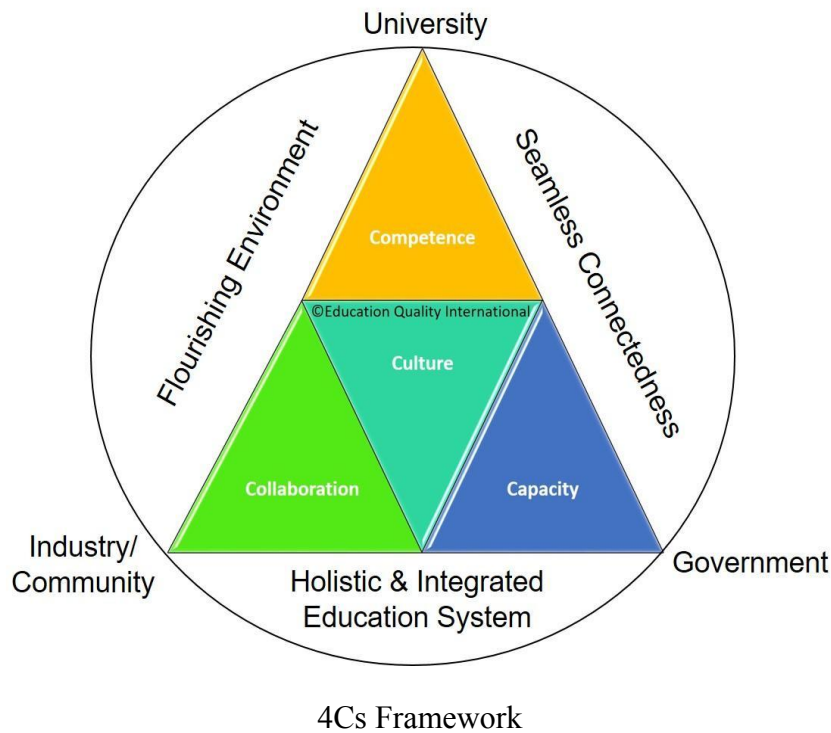
To support the Vietnamese national strategy for Industry 4.0 as well as to facilitate the establishment of innovation producing ecosystem in higher education institutions, both internal and external quality assurance systems should be designed based on quality of purpose and aligned with Industry 4.0 strategy. Educational policy makers and leaders should consider reviewing the current situation, analyzing the strengths, weaknesses as well as the threats and opportunities of the quality assurance systems in proposing the appropriate strategies for quality development and enhancement to support Industry 4.0.

A SWOT analysis of the QA of higher education in supporting Industry 4.0 in Vietnam is tabulated below.

Strengths	Weaknesses
● Higher education institutions are deeply entrenched in the 3 traditional pillars of education, research and service. ● Strong offerings in traditional discipline-based curricula.	● Innovation and entrepreneurship are newly established in higher education institutions. ● Lack of offerings in cross discipline-based or integrated curricula and in the field of Industry 4.0.

- Recently implemented the University Performance Metrics (UPM) to assess the responsiveness of universities in the 4th Industrial Revolution (4IR) era. - National accreditation regulations and laws on institutional and program accreditation. - Adapted the AUN-QA program and institutional framework for accreditation of higher education. - Agencies of accreditation such as Centers of Education Accreditation are approved and distributed across the country - Licensing and training of national QA accreditors (mainly knowledge-based) - Recognition of international and regional accreditation results including AUN-QA program and institutional certification	- Relatively low participation of universities in UPM comparing the number of universities in the country and the region. - Lack of a robust intellectual property management at higher education institutions. - Lack of a clear policy and roles of higher education institutions in reskilling and upskilling of the workforce especially on their alumni. - Lack of a licensing and training of QA accreditors based on competency framework. - Lack of quality, professional, and competent national accreditors that are equal to regional and international standards. - Rules-based accreditation culture and mindsets - Sub-optimization of the adapted AUN-QA program and institutional framework - Lack of certification scheme for accreditation centers under ASEAN Quality Assurance Framework (AQAF). - Limited autonomy and independent status of accreditation centers as some of them are under the management of their universities. - Over-regulated and rules-dependent higher education and institutions on quality assurance and accreditation - Lack of institutional and national analyzing and using the accreditation results for improvement of quality assurance of higher education.
Opportunities	**Threats**
- Trends towards regional and international accreditation schemes - Attract regional and international venture capitalists into Vietnam.	Perceived low quality of Vietnamese higher education institutions and higher education

- Expanding UPM to the region and beyond. - Moving towards principles-based assessment - Collaborations with industries and businesses on innovation and entrepreneurship development and research - Collaborations with AUN-QA Network and other accreditation agencies as well as professional bodies in ASEAN and beyond - Raising quality of higher education with regional and international accreditation schemes.	- Unattractive to global talents in academic, research, innovation and start-ups. - Limited recognition of national accreditation status outside Vietnam - Lack of authenticity of the adapted AUN-QA program and institutional framework - Limited number of qualified and competent assessors that meet regional and international standards. - Limited reputation and credibility of national accreditation centers outside Vietnam.

3.1 Strengths

In general, the national accreditation of higher education system bears some strengths as it is strongly supported and regulated by MOET and 2 VNUs (as the foundation in the beginning phase of implementing EQA system for national accreditation). The national accreditation is carried out by agencies approved by MOET across the country. These accreditation centers train accreditors and there is a national licensing scheme for qualified accreditors mainly focusing on knowledge. MOET has adapted the AUN-QA program and institutional framework for its national program and institutional accreditation of higher education in Vietnam. It also recognizes and accepts AUN-QA program and institutional certification as well as other regional and international accreditation schemes (e.g. ABET, AACSB, Hcéres etc.).

The setup of higher education institutions is deeply entrenched in the 3 traditional pillars of education, research and service offering mostly traditional discipline-based curricula. Recently, a ranking framework "University Performance Metrics" (UPM) has been launched to assess the responsiveness of universities in the 4th Industrial Revolution (4IR) era.[5] 40 universities in Vietnam (27 universities) and ASEAN member states (13 universities) have been assessed under the UPM framework.

3.2 Weaknesses

The adaptation of AUN-QA program and institutional framework with the incorporation of rules-based assessment may have eroded the principles-based approach of AUN-QA framework and assessment, and programs and institutions being assessed by the local

accreditation centers may not benefit fully the strengths of the AUN-QA framework. The limited accuracy of interpreting and translating the AUN-QA manuals into local language may cause sub-optimization in implementing the AUN-QA framework.

There is a lack of training and licensing of national accreditors based on competency framework rather than knowledge alone. The affiliation of some accreditation centers to universities might be perceived as being beholden to them which may affect their objectivity and trustworthiness. The lack of a certification scheme to certify the accreditation centers under the ASEAN Quality Assurance Framework (AQAF) may exacerbate the credibility of the national accreditation system. The rules-based culture and mindsets in the higher education and the lack of quality, professional and competent national accreditors may affect the quality of assessment and their credibility and trustworthiness. There is a lack of institutional and national analyzing and using the accreditation results for improvement of quality assurance of higher education.

Innovation and entrepreneurship are newly established in higher education institutions coupled with the lack of a robust intellectual property management at higher education institutions to protect and commercialize inventions and discoveries may hinder innovation and entrepreneurship growth. This may also be a reason for the relatively low participation of universities in UPM comparing the number of universities in the country.

The lack of offerings in cross discipline- based or integrated curricula and in the field of Industry 4.0 at higher education institutions may hinder the development of competence among students and academic staff in innovation and entrepreneurship. Higher school leavers are the main stream of student intakes in higher education institutions which has given them a lesser emphasis on the reskilling and upskilling of the workforce to meet the demands of Industry 4.0.

3.3 Opportunities

Externally, there has been a growing trend towards principles-based quality assurance framework and assessment in both regional and international accreditation schemes such as outcomes-based education (OBE). There has also been a rising interest for universities in ASEAN to be accredited by regional and international accreditation schemes to raise their education quality and reputations. This provides opportunities for MOET to collaborate and to negotiate for mutual recognition agreements (MRAs) with other national, regional and international accreditation agencies. Such initiative would benefit the universities and raise the recognition of its accreditation centers and the quality of QA in higher education in Vietnam.

To connect and integrate higher education institutions into their ecosystems, there is a need to attract regional and international venture capitalists into Vietnam to encourage start-ups and commercialization of inventions and discoveries. Collaborations with industries and businesses on innovation and entrepreneurship development and research would enhance the

capacity and competence of innovation and entrepreneurship in higher education institutions. This would help to promote and attract the adoption of UPM in region and beyond.

3.4 Threats

Several threats can be seen in the quality assurance of higher education in Vietnam. Due to the lack of trust and credibility of the national accreditation system, recognition of accreditation status beyond Vietnam is limited. The lack of authenticity and comparability of the adapted AUN-QA framework coupled with the limited number of qualified and competent assessors may affect the quality of the national accreditation and assessment and limit its growth.

An accurate interpretation and translation of AUN-QA manuals into local language is critical to the implementation of authentic and compatible AUN-QA program and institutional framework. This lack of authenticity and qualified regional and international quality assessors may cause the low perceived quality of higher education institutions and higher education. This perception may also result in higher education institutions not being able to attract global talents in academic, research, innovation and start-ups into their institutions.

4. The Big Way Forward

Based on the context and SWOT analysis of higher education and quality assurance of higher education in Vietnam, it is proposed that appropriate micro and macro strategies with both short-term and long-term plans be deliberated and implemented to exploit the strengths and opportunities and to eliminate or reduce the weaknesses and threats faced in the quality assurance of higher education in Vietnam towards the realization of the national economic goals and the aspirations of industry 4.0.

Some key suggestions for consideration are:
- Embrace innovation and entrepreneurship as the 4th pillar of higher education institutions to give them more visibility and attention as key drivers of the innovation producing ecosystem.
- To develop competence in innovation and entrepreneurship, enhance the offering of cross disciples-based or integrated curricula in higher education institutions as well as offering innovation and entrepreneurship as strategic competence among academic staff and students. Some common approaches towards integrated curricula include design thinking, x-curriculum, phenomenon-based (Research/Project/Problem),

service learning, work-study integration, teaching enterprise and technology-based projects as illustrated below.[6]
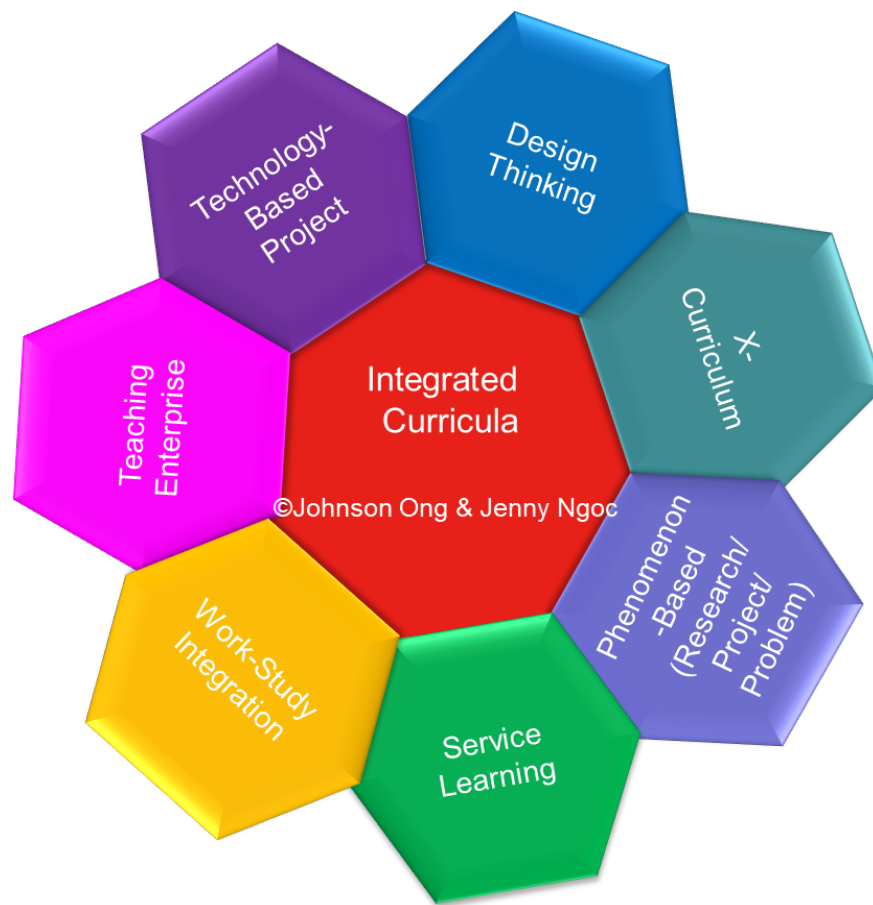
- Strengthen the intellectual property management in promoting and protecting new inventions and discoveries, attract venture capitalists and enhance collaborations with industries, businesses, communities and other universities to increase the innovation capacity for commercialization and patents.
- The strengthening of innovation and entrepreneurship competence and capacity of higher education institutions coupled with enhanced collaborations may lead to a higher interest in UPM scheme particularly with the Vietnamese universities.
- Provide a clear mission and roles to higher education institutions in developing digital literacy and skills, and to reskill and upskills the national workforce to meet the demands of Industry 4.0.
- Better alignment to the AQAF to enhance the national quality assurance system and quality of accreditation centers, as well as, to meet the need of quality of higher education in the regional and global contexts.
- More focus on developing IQA and EQA capacity building particularly based on a competency-based framework rather than knowledge alone, aiming for consistency and sustainability of the national and institutional quality assurance systems.
- To enhance the national EQA and encourage external accreditation so as to create positive impact to the universities and society. It is important to enhance the capacity

of accreditation agencies, including applying the principle-based evaluation concept, and developing the competent assessors. Mixed assessor teams with regional and international experts would be an option for the quality of assessment. Furthermore, it is important to revise periodically the effectiveness of the instruments with the engagement of relevant stakeholders.

● There is a need to shift from input evaluation to outcome evaluation. At present, current accreditation is mostly focused on input orientation, which is based on rules and regulations, whereas the emphasize for learning outcome-based education is considered as the top concern to enhance the student's achievement and the quality of education in general. The characteristics of principles-based assessment are tabulated below.[7]

Characteristics	Rules-Based	Principles-Based
View of Assessment	Separate part of an ecosystem	Integral part of an ecosystem
Reference of Assessment	Standards	Contexts
Focus of Assessment	Compliance	Alignment
Sources of Evidence	Hard	Hard and soft
Interpretation of Data	Descriptive analytics and thresholds	Diagnostic, predictive and prescriptive analytics
Feedback of Assessment	Summative	Formative

● To develop the holistic quality assurance ecosystem with embedded culture of quality assurance, innovation and entrepreneurship in MOET, higher education institutions, and EQA agencies with stakeholders.

● To establish a research and data center within higher education institutions and MOET to gather and analyze big data arises from higher education institutions and accreditation results to enhance the quality of QA and accreditation and quality of higher education.

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