Malaysian Higher Education in The Era of Industrial Revolution 4.0

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INTRODUCTION

Deliberations on the ongoing transformation of education have been underway for some years, giving rise to the notion of ‘Education 4.0’. The recent emergence of the concept of Industrial Revolution 4.0 (IR 4.0) has given a new impetus to this thinking on educational transformation. The same sets of technological innovations, stemming mainly from the realm of Information and Communication Technology that are driving IR 4.0, are also having great impacts on education. In addition, the skill sets predicted to be required by IR 4.0 are putting new demands on the education providers. Very recently, there has been a thrust from the Government of Malaysia to drive the Universities to respond to the needs of IR 4.0. An overview of the efforts being undertaken by the universities, government and industries in Malaysia in order to respond to the educational needs of IR 4.0 is highlighted.

ONGOING EFFORTS IN MALAYSIA ON HOW TO RESPOND TO DEMAND OF IR 4.0 ON HIGHER EDUCATION

As Malaysia embraces the dawning of the IR 4.0, the Ministry of Higher Education of Malaysia is forging ahead by revamping the Malaysian education system. Embedded into the Malaysia Education Blueprint 2015-2025 (MEB Higher Education), the ministry plans to change the process of teaching and learning for students through its Learning and Teaching (L&T) 4.0 package. With the theme of ‘Higher Education 4.0: Knowledge, Industry and Humanity’, four principle aspects will essentially be put in focus:

1. Redesigning of learning spaces
2. Incorporation of 21st century pedagogies
3. Applying a fluid and organic curriculum, responding to innovations & new areas of knowledge
4. Incorporation of the latest L&T Technologies

HUMAN CAPITAL DEVELOPMENT IN FACEING IR 4.0

In preparation towards a competent and skilled industrialized nation, Malaysia needs to increase the number and diversity its STEM-educated or TVET-educated workforce and establish greater opportunities for job creation. Re-skilling and upskilling programmes that are knowledge-intensive are required to accommodate the transformational needs of IR 4.0. To recognize learning at workplace, Malaysian Qualification Agency (MQA) have started Accreditation for Prior Experiential Learning (APEL) programme. It is also imperative to cultivate creative human resources that could prime innovation in order to sustain growth and generate new value.

To achieve this, The National Industry 4.0 Policy Framework (MITI) created a comprehensive action plan, comprising strategies and programmes, based on the Thrust 2 of the MEB Higher Education:

Thrust 2

- Enhance capacity & capability of existing workforce
- Ensure future talent availability for needs

Strategies

- F1: Strengthening & skill need curricula
- F2: Preparing Industry 4.0 Talent
- F3: Building Capacity of Education Institutions

Programmes

- P1: APEL Networking Centre
- P2: Technology Training Programme
- P3: Expert Certification for Industry 4.0

INITIATIVES BY MALAYSIAN TERTIARY INSTITUTIONS

Malaysian tertiary institutions are preparing several measures in keeping up to the impact of IR4.0. This includes:

- Restructure Academic faculties according to the needs and scopes fitting to IR 4.0
- Introducing new courses such as data analytics, big data, cyber physical system technologies such as artificial intelligence and robotic, digitized economy and technopreneurship
- Emphasize on on-demand learning and multiple modes of education
- Introducing massive open online courses (MOOCs) to enable enrolment of global cohorts
- Developing multidisciplinary curriculum combining science, engineering, ICT and social sciences
- Putting more emphasis on soft skills

In addition to the above efforts, aligned with University of Malaya’s status as Malaysia’s premier research university, the next stage in the agenda is to expand its research into areas brought forth by IR4.0 such as the macro issues of policies and economies. Leveraging on the internally available expertise whose research areas are related to the elements of IR4.0, UM is set to establish the Centre for Research in Industry 4.0 (CR4.0) with the intention to:

- Develop talent and expertise to support the IR4.0 initiatives
- Establish collaborative network with other advanced institutions to facilitate technology adoption in the country
- Build close relationship with relevant technology provider in IR4.0
- Link with selected local SME as industrial partner to implement elements such as a ‘learning factory’. 
- Establish working relationship with ministries and government agencies like MOHE, MITI, MIDA and MDeC.

CONCLUSION

Although education is the key to face the challenges and changes brought about by IR 4.0, the pinnacle agenda for Education 4.0 in Malaysia is much emphasized on developing and nurturing a future generation with culture and core values. It hopes to establish a blueprint for the future of learning i.e lifelong learning- from childhood schooling to continuous learning in the workplace and most important, learning to play a better role in society. Thus the revitalization of Education 4.0 in Malaysia would ultimately benefit humanity and protects the nation’s interest in the long run.

REFERENCES

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