

Public-private partnership to produce future-proof talents

Close collaboration between government and higher education institutions can lead to more marketable graduates

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A STRONG partnership and a collaborative understanding between the government and higher learning institutions must exist for the 'Humanising Higher Education for Future-Proof Talents' IR4.0 framework to succeed, said National Association of Private Educational Institutions (Napei) president Assoc Prof Elajsolan Mohan.

"Coming up with frameworks, blueprints, and plans are not sufficient if the ministry receives no input from all relevant stakeholders from both public and private higher education institutions (HEIs).

"Find out the difficulties institutions face in implementing these. We need help and support from the government to improve.

"Regular engagement between the institutions and relevant authorities are a must," he said, adding that foreign expertise may be needed to ensure that the 'Humanising Higher Education for Future-Proof Talents' IR4.0 framework achieves its objectives.

According to the Higher Education Ministry's framework, there is a need to develop talents who are future-ready and equipped with humanistic values in becoming holistic and balanced individuals amid IR4.0.

The framework listed attracting and sustaining academia, engaging in technology-based learning and teaching, and transformation of the workforce in existing jobs towards the digital environment as challenges in the country's higher education sector.

The lack of sustainable approaches in IR4.0-related initiatives by varsity management, low awareness of IR4.0 opportunities among varsities and students, and improper handling of data security and privacy were also issues listed in the document.

The country, said Elajsolan, needs to have very good cyber and Internet infrastructure to support both learning and application of IR4.0.

Funding, especially for private HEIs, he said, is non-existent so institutions have to charge students with high tuition fees.

"Some could not even support basic online learning and teaching during the movement order control (MCO).

"If the government can look into providing us with a stimulus package, low-interest loan or centralised facility that private institutes can share, it would be helpful."

The higher education sector, said Universiti Kebangsaan



Concerted effort: All parties including relevant ministry's, public and private sector, must work together in unison to ensure that graduates will be ready to meet demands of the IR4.0 marketplace.

Malaysia (UKM) vice-chancellor Prof Datuk Dr Mohd Hamdi Abd Shukor, must evolve fast and accept that conventional education, research and service processes have to be changed if they are to stay relevant.

"The rapid cyber development in the era of IR4.0 with emphasis on smart technology, artificial intelligence (AI), Internet of Things (IoT), virtual reality (VR) and robotics, has greatly impacted our daily life.

"Therefore, these technologies have to be embedded into the curriculum, teaching and learning activities to elevate the students' experiences and create a significant paradigm shift in the education system."

To keep updated, the IR4.0 Research Institute was set up in March this year, he said.

"This is the country's first IR4.0-dedicated institute which integrates diverse fields such as education, medicine and health, and engineering and socio-economy, to make it a multi-disciplinary centre of excellence," he said, adding that research carried out at the institute covers emerging technologies in Cloud Computing, Augmented Reality (AR), autonomous systems, system integration, additives manufacturing, Big Data analytics, and cyber security – all of which, are the cornerstone of IR4.0.

Noting that curriculum needs to

be redesigned to nurture futuristic skills, Prof Hamdi said these new technologies have led to teaching and learning in the university becoming a more interactive experience, which helps prepare the graduates to be more marketable in the future.

Quoting the World Economic Forum, he said jobs are transformed by IR4.0 technologies so there is a need to reskill more than a billion people by 2030.

"In the next two years, 42% of core skills required to perform existing jobs are expected to change.

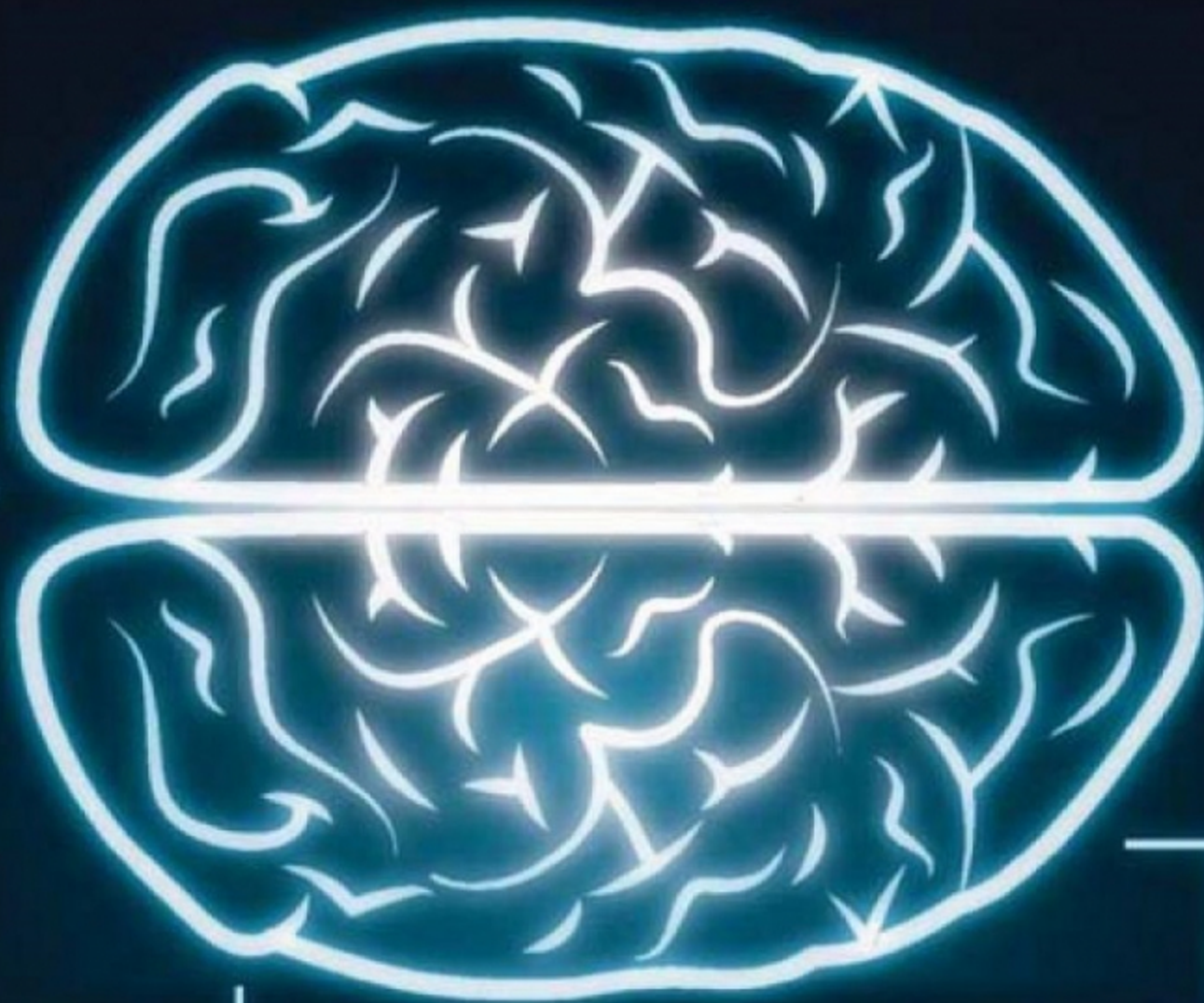
"In addition to high-tech skills, specialised interpersonal skills will be in high demand, including skills related to sales, human resources, care and education. The world is facing a reskilling emergency."

Pointing out that universities have been moving towards personalised learning, he said data allows detailed monitoring of a student's performance so that interventions can be carried out immediately if needed.

"Education 4.0 is about analytics as each individual's learning requirement and desired outcome is different.

"A new approach to programme structuring is expected to produce holistic graduates who are versatile and can adapt to multiple careers."

The Four strategies of Humanising Higher Education for Future-Proof Talents



Action Plan

Future-ready Curriculum

- Redesigning Higher Education Initiatives
- Transformative Curriculum
- Transformative Learning and Teaching Delivery
- Alternative assessments

Agile Governance

- Digital Ethics and Values
- ACE Delivery
- Smart Campus
- Autonomous Governance

Research and Innovation

- Pioneer Culture
- Key Driver of Economy 4.0
- Research Alliances and Partnership (MyPAIR)
- Autonomous Governance

Talent Planning

- Neoteric Values-Driven Academia
- Student Innovation and Capacity Building

Source: Higher Education Ministry

Star graphics

Adapting to IR4.0, said Prof Hamdi, is not an issue for Gen-Z because they are born into technology.

They are good in communication and lean towards collaborative learning, he added.

“Lecturers should integrate technology in teaching and learning so that education stays relevant at all levels of the system.”

Instead of shying away from diversity, Universiti Putra Malaysia (UPM) deputy vice-chancellor (Academic and International) Prof Dr M. Iqbal Saripan said there is a need to embrace and celebrate each student’s uniqueness if education is to thrive in IR4.0.

During the National Education and Learning Summit 2020 held

on July 28, panelists present – UCSI University vice-chancellor and president Senior Prof Datuk Dr Khalid Yusoff and International University of Malaya-Wales (IUMW) vice-chancellor Tay Kay Luan – had also highlighted the need for rapid change and adaptability.

Noting that the process will be difficult, Prof Khalid said one of the main issues is ensuring accessibility to electronic gadgets and Internet connectivity.

“There is a massive digital divide even within the Klang Valley.

“The solution to this requires government support.

“We need to have a constructive plan on what is needed and what

can be done so that no one is deprived of access to quality education and technology.”

He also stressed on the need for inter-connectedness in the various disciplines.

It is important that those in the Sciences, Social Sciences, Arts, and Humanities come together as this can spark constructive thinking among students.

“Universities, which have often neglected small and medium sized enterprises (SMEs), should collaborate more with these companies to provide their students with new opportunities and skills,” said Prof Khalid.

Tay said IR4.0 has greatly impacted the education sector.

Technology is the key for insti-

tutions to continue providing education to students, he said, adding that HEIs play an important role in enabling exciting discoveries that benefit society.

TVET to focus on tech

The country’s Technical Vocational Education and Training (TVET) landscape will see a transformation in IR4.0, said Universiti Sains Malaysia (USM) Business and Sustainability Programme Head of Science Assoc Prof Dr Muhammad Izzuddin Syakir Ishak.

Possessing skills alone will not be enough for TVET graduates to do well.

“IR4.0 changes the landscape of industries as automation and AI lead to a significant cost reduction in business operations.

“We need talents who not only have skills but are also able to optimise resources and ensure that the organisation grows sustainably.

“In this regard, educators must go beyond teaching and act as career advisors to help students define their skills in line with evolving industry expectations,” he said, adding that the TVET curriculum must change to encourage high thinking skills.

Emphasis on the “why” rather than “how” is crucial, he said, as IR4.0 is about complex problem solving, people management and judgement and decision-making skills mastery that require an interdisciplinary perspective from both the social sciences and science and technology components in the TVET curricula.

“The TVET curricula needs to be tweaked so that students will have a better understanding of how dynamic industries today are and their expectations.

“Pushing students to be more creative and innovative is a must as this enables them to create value for the industry and increase their employability prospects,” he opined.

Asian Academic Society for Vocational Education and Training (AASVET) president Prof Dr Ramlee Mustapha, who is also Universiti Pendidikan Sultan Idris (UPSI) Faculty of Technical and Vocational dean, said the main challenge for TVET providers is the lack of advanced equipment and infrastructure required for training, resulting in the slow advancement of the sector.

The present TVET ecosystem is not conducive for IR4.0, with most TVET training providers still using conventional machines. Existing TVET curric-

ula and occupational standards may become obsolete soon, he said.

“Urgent efforts are needed to think about the new trajectories in TVET and skills qualification. In the digital age, an intelligence-based TVET model is needed to bring together the power of innovation, a new culture and a new mindset that embraces creativity.”

This, Prof Ramlee said, requires TVET institutions and the industry to invest in intelligent skilled talent and first-class infrastructure. They must provide their charges with continuous access to formal and informal on-the-job training opportunities.

“The government should embrace a more flexible education and training ecosystem that is supported by updated labour laws. Besides producing technical work-

ers, TVET institutions must nurture technopreneurs,” he said, adding that all relevant parties must work closely to ensure that students graduate with relevant skills as enhancing the caliber of the nation’s workforce will boost the country’s economic development.

Universiti Malaya Faculty of Education deputy dean Assoc Prof Dr Norlidah Alias worries that the mismatch between industry needs and TVET outcomes will worsen as IR4.0 demands more complex, technical knowledge and skills for current jobs, as well as positions that have yet to be created.

“The industry and TVET institutions are closely linked. IR4.0 has created a new dimension of skills for industry, blurring the lines between physical, digital and biological scopes.”

Another major concern, she said, is the poor acceptance of TVET graduates in the industry due to their lack of communication-for-work skills.

“Local and international studies have found that communication is the largest skill gap across education levels, industries and public services.

“It is worrying, as the advancement of technology in IR4.0 requires more complex communication skills as interactions now largely involve an online international audience.”

She said the traditional face-to-face and teacher-centred teaching should make way for learner-centred approaches like flipped-classroom and problem-based learning.

“Focus should be given to developing workplace competencies, technical communication, critical and creative thinking, as well as ICT skills which are transferable across various work disciplines,” Prof Norlidah said, while stressing on the importance of regular revisions and improvements on the curriculum.