

MISSING SKILLS: Is higher education on the mark?

Malaysia's growth story is coming under pressure from many sides, including a shortage of skilled workers in critical occupations, high dependency on cheap labour, which discourages investment in innovation, a higher education system hungry for resources and low collaboration between industry and academia. Can the stakeholders come together to solve this complex problem? **Rash Behari Bhattacharjee** and **Syahirah Syed Jaafar** examine the issue.



The list of human capital obstacles that the nation is facing is certainly formidable. Take the skills mismatch that hangs over graduate job seekers like an unwelcome cloud.

The shortage of skilled workers is not only seen in the persistent problem of youth unemployment but it is also cited by businesses as a key factor constraining investment. This raises a host of questions.

Can Malaysia's higher education system close the gap between jobs and candidates' skills that is making vacancies in critical occupations increasingly hard to fill?

The answer to that question is keenly awaited by the stakeholders — including students, higher learning institutions and businesses — whose fortunes depend on the outcome.

Employers in 10 key economic sectors surveyed by the government's Critical Skills Monitoring Committee report four main effects of staff shortage.

The committee's Critical Occupations List (COL) Report 2016/17, a bellwether study by Talent Corp Malaysia Bhd and the Institute of Labour Market Information and Analysis, identifies these effects as increased workload on current employees, difficulties in providing quality goods and services, increased costs and difficulties in meeting customer needs (see Table 1).

Malaysian Employers Federation executive director Datuk Shamsuddin Bardan gives an example of where the problem lies.

"With the current trend towards digitalisation, companies need data analysts to mine big data for business growth," he tells *The Edge*.



Shamsuddin: Companies turn to countries like India because we don't have the people. I think that is very telling.

"Unfortunately, a lot of IT graduates are not suitable for this work because they have not been trained for it.

"As a result, companies turn to countries like India because we don't have the people. I think that is very telling. The industry has moved ahead but the system is not able to fit the industry with the right people."

The COL report verifies this. It states that big data analytics was one of the top skills in demand in Malaysia in 2016, citing studies by recruitment consultancy Hays and career networking platform LinkedIn, in addition to the COL survey findings.

Worse, the crunch is not about to be resolved soon. Employers in the COL survey frequently responded that they found it harder to fill these vacancies compared with the previous year, or they expected the trend to continue.

Interestingly, the latest Hays forecast on *Jobs and Skills Trends for 2018* sees "an explosion in new roles



Idris: MOHE is mindful that higher education and market demands are constantly evolving

around artificial intelligence and data and a relentless demand for specific soft skills such as adaptability, creativity and collaboration".

One constraint is that employers today want market-ready candidates to fill their vacancies rather than investing in training recruits, says Shamsuddin.

"Companies are not patient enough to train our people anymore. They say it is not their role. In the early 1980s or late 1970s, employers were prepared to train people, even up to one year. But now, they would rather have people who can contribute straight away to the organisation," he says (see Table 2 on Page 56).

Recognising the huge challenges in skills development, the Ministry of Higher Education (MOHE) is engaged in a national transformation initiative to deal with this issue in all its complexity.

"MOHE is mindful that higher education as well as market demands are constantly evolving, with new skills, knowledge and expertise

TABLE 1

CRITICAL OCCUPATIONS LIST REPORT 2016/17

Negative impact of not filling in critical occupations

SECTORS	INCREASED WORK FOR EXISTING EMPLOYEES (%)	DIFFICULTY IN GIVING QUALITY PRODUCTS/SERVICES (%)	INCREASED COSTS (%)	DIFFICULTY IN MEETING CUSTOMER NEEDS (%)
Aerospace	30	61	39	57
Business services	78	33	11	33
Education	67	25	50	42
E&E	71	42	35	35
Financial services	72	38	21	34
Medical devices	48	12	16	4
ICT	33	40	13	20
Oil, gas & energy (incl petrochemicals)	59	9	34	9
Telecoms and multimedia	61	22	30	22

required," Higher Education Minister Datuk Seri Idris Jusoh says in an email reply to *The Edge*.

"This means that MOHE too needs to evolve to ensure that educational offerings of Malaysian higher education institutions (HEIs) are in line with the needs of industry, while also keeping in mind the role of education to promote good values and appreciation for the arts, history and social sciences."

High expectations, insufficient skills

As for why businesses found it difficult to recruit the right people, the top four factors were:

- High expectations of salaries/benefits;
- Insufficient work experience;

- Insufficient technical skills; and
- Insufficient soft skills such as creativity and communication. (See Table 3 on Page 56.)

Many questions arise from this conundrum: Why is there an unbridgeable gap between the remuneration offered and job seekers' expectations? What lies behind the multiple skills deficits — student quality, deficient training, policy issues, or all of the above? Are industry and academia working together enough on solutions?

Dependence on cheap labour

The Bank Negara Malaysia 2016 Annual Report shines the spotlight on the dilemma.

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SPECIAL REPORT

Seismic change imminent in learning

The Malaysia Education Blueprint 2015-2025 (Higher Education) clearly recognises that a “fundamental transformation of how the higher education system and higher learning institutions currently operate” is required for Malaysian youth to thrive in a complex and ever-changing future.

Noting the constraints discussed in the main essay, a number of opinion leaders who *The Edge* interviewed pointed to the need for a shake-up of the education system at various levels.

The top proposals, briefly, are:

- Give education boards and institutions autonomy;
- Make curriculum reviews dynamic;
- Introduce transformative industry-academia collaboration; and
- Make market testing of academic research the norm.

Bukit Bendera MP Zairil Khir Johari, who is the DAP parliamentary spokesperson for education, science and technology, thinks that decentralisation is key to an effective education system.

“The root of the problem is structural and this needs to be fixed. The practical way is to give autonomy to educational institutions. People today want choice. Then they are happier. So let them decide. Remove politics from the governance of academic affairs,” he says.

An obvious starting point for reforms is to axe courses that no longer serve industry needs.

Universiti Malaya, for one, is already overhauling its stable of offerings.

“All undergraduate curricula have been reviewed in the last few years with input from industry,” deputy vice-chancellor (academic and international) Datuk Prof Awang Bulgiba Awang Mahmud tells *The Edge* in an email.

“UM has made it mandatory for external assessors from abroad to review the curricula of all programmes. Because curricula change at such a rapid pace, UM is now embarking on new approaches to designing programmes and curricula.

“We have terminated a number of programmes that are no longer deemed competitive and relevant. We have also put more emphasis on soft skills training, funded student participation in competitions and got students to spend time abroad on student mobility programmes. This will add to their exposure to different cultures.”

Active engagement between industry and academia is a favourite proposal among the key informants who spoke to *The Edge*.

Talent Corp Malaysia Bhd CEO Shareen Shariza Abdul Ghani highlights a slew of initiatives that her agency has taken together with stakeholders to address this issue.



Shareen: TalentCorp is working with MOHE to review and improve the course content of universities



Chua: Good industrial training programmes must be developed to bridge the skills gap that is making it difficult to run businesses



Ong: We must remember that industry often has different objectives from academia when it comes to research



Sohail: Teaching training should be adapted to prepare for a world after jobs



At a career fair ... TalentCorp is collaborating with key industry players to address the skills mismatch between new graduates and employer expectations

“To align the skills imparted in universities with those required by employers, TalentCorp is currently working with the Ministry of Higher Education (MOHE) to review and improve the course content of universities. TalentCorp is also working closely with key industry players through our Industry-Academia Collaboration to drive greater teamwork and address the skills mismatch between new graduates and industry expectations,” she says in an email interview.

While there is no quick fix for the issue, the focus must be on reskilling and upskilling, as well as collective action involving all stakeholders, she adds.

Malaysian Employers Federation executive director Datuk Shamsuddin Bardan feels that universities need to adopt a culture of community-focus in partnership with industry.

“Why don’t universities work with the industries around them so that they become part of the community?” he asks.

“Enterprises can benefit too by looking for talent in the universities. I think that is a system that can be explored further. The

community should be part of the university. There needs to be a sense of belonging, if not people will not care about the fate of the university.”

Former Universiti Malaya vice-chancellor Tan Sri Ghauth Jasmon favours an entrepreneurial approach.

“Teaching staff and even students should be encouraged and incentivised to innovate, either by sharing the research work or profiting from it. It is crucial to inculcate an entrepreneurial mindset in the faculty besides their conventional teaching role,” he says.

Ghauth currently sits on the boards of Sunway University and the International University of Malaya-Wales.

One person who wears two hats — in industry and academia — is DC & A Group managing director Datuk David Chua Kok Tee. He gives the business perspective of the challenges of hiring talent.

“Real-life application of knowledge is important. Good industrial training programmes must be developed to bridge the skills gap that is making it difficult to run businesses. Emphasis should be placed on entrepre-

neurship studies,” he says.

While the various reform proposals address the current problem of academic relevance and skills shortage, there is a whole clutch of parallel issues to be addressed because of the changing nature of work in this age.

One is the rise of independent work and another, the shortening cycle of obsolescence and renewal. As a result, workers must get used to the idea of lifelong and life-wide learning.

In describing the challenge, Khazanah Research Institute director of research Allen Ng says, “Due to the increasing trend towards independent work, upskilling programmes must change from being employer-driven to employee-centric.”

While all these measures show there is much work to be done to align higher education institutions (HEIs) with industry’s evolving needs, some progress is being achieved through MOHE’s efforts.

Early this year, the ministry formed a task force to ensure that academic programmes offered are relevant. A preliminary finding is that about 20% of programmes in public HEIs need to be updated, replaced or stopped, the ministry said in an email to *The Edge*.

Throwing light on the systemic dimension of the problem, former deputy education minister Datuk Saifuddin Abdullah advocates a “total education reform” at all levels.

“Universities must profess and practise genuine knowledge culture, academic freedom and embrace a new governance that emphasises partnership with all stakeholders (management, lecturers, alumni and students),” he says in an email interview.

While the partnership between industry and academia is a vital piece of the jigsaw, it must be well designed if the alliance is to bear fruit, says Penang Institute in Kuala Lumpur general manager Dr Ong Kian Ming.

“Clear output from industry-academia collaboration that results in win-win outcomes is needed for it to work in Malaysia,” he says in an email.

“We must remember that industry often has different objectives from academia when it comes to research. Industry wants to keep innovative research in-house and for competitive advantage but academia wants to publish this to make its work known to others. This is why clearly defined output is necessary from the start.”

Drawing from a renaissance initiative involving several educational systems, futurist Prof Sohail Inayatullah states that education needs to innovate for tomorrow’s jobs.

“We know that there are six or seven areas in which tomorrow’s industries will grow,” he tells *The Edge*.

These trends include life extension and ageing, innovations in genomics, fresh approaches to city design and new types of food, among other things. They operate in peer-to-peer environments and are disruptive.

In this milieu, high school teaching will not be by subject but by global problems, Sohail says. That would include design thinking, futures thinking, ethics, conflict resolution and meditation.

“Teaching training should be adapted to prepare for a world after jobs,” Sohail adds.

Mindful of the growing storm, the task force set up by the Department of Higher Education to align the education system with the emerging trends of the Fourth Industrial Revolution has identified 14 criteria to bring academic offerings in line with Education 4.0, as it calls the next evolution of learning.

The Higher Education 4.0 Framework being prepared by the department will be launched early this year, says Higher Education Minister Datuk Seri Idris Jusoh.

All indications are that the new paradigm will be shaped by the waves of digital transformation that have given rise to new global leaders like Airbnb, Uber and Netflix that have upended entire industries.

At any rate, it will not be long before we can tell how the next generation will fare in this new, unfamiliar world. **E**

Putting varsities to the market test

To turn anaemic universities into dynamic hubs of innovation, academic research must be routinely tested in the marketplace.

This is one of three turnaround proposals by former Universiti Malaya vice-chancellor Tan Sri Ghauth Jasmon for ensuring that higher education institutions remain viable in the era of disruptive change.

"Universities should commercialise their research. They need to know how to turn the research into products. The research is good, yet it's not enough. They need to take one more step," says Ghauth, who now sits on the boards of Sunway University and International University of Malaya-Wales.

Many US universities, for example, appoint teaching staff as adjunct professors, paying them a salary for part of the year. Academicians are expected to generate their own income the rest of the time.

Malaysian universities must be liberalised so that they can adopt innovative teaching arrangements, Ghauth tells *The Edge*.

This is necessary to produce graduates with an entrepreneurial mindset who are able to think outside the box and know how to use their skills, he says. "Malaysian universities are not on par with international universities in terms of producing entrepreneurial graduates. We need to force people to think out of the box."

Secondly, university board



Ghauth: Universities should commercialise their research. The research is good, yet it's not enough.

members must be given fundraising targets to build the resources of their institutions.

"I believe the board members must be given KPIs (key performance indicators). You must set targets. Pay them well so they will be given good incentives to raise funds," says Ghauth.

Business development is urgently needed by universities, but this is far from the board members' minds, he says.

The boards are filled with academic professors and they may not necessarily have the right business experience, he adds. "Most of those appointed are usually professors and they don't have the experience in raising money for the university. They are good at teaching but not managing a business."

Currently, not only are public university boards

indifferent to fundraising but getting their members to approve proposals is also a mammoth undertaking.

"If you have an idea, you will need to present it to the board. But it's like moving an elephant. The idea will move very slowly and this is the biggest stumbling block for improvement," says Ghauth.

In the light of reduced government budget allocation to public universities in recent years, he stresses the need for universities to know how to raise funds in various ways.

Lessons may also be taken from private institutions abroad, which have taken to increasing their asset base.

"Universities need to think about how to grow their endowment. But no one is talking about it here. For example, Harvard, which has the biggest endowment allocation (currently US\$37 billion), will be able to survive forever," says Ghauth.

Of the public universities in Malaysia, Universiti Malaya had the largest endowment of RM1.6 billion as at August 2017, followed by Universiti Kebangsaan Malaysia with RM71 million, according to the Higher Education Ministry.

Of the 20 public universities in the country, a total of RM1.85 billion in endowment has been collected so far.

"If you look at foreign institutions, they have quietly purchased land in various places. How many state universities here have done that?" asks Ghauth.

Take politics out of education

It sounds ironic coming from a political leader, but there it is: The most crucial step to turn Malaysia's education system around is to minimise political control over it.

In most developed countries, says DAP parliamentary spokesman for education, science and technology Zairil Khir Johari, the education portfolio is confined to policy debates in parliament, allocation of funding and oversight matters.

"Their education boards are autonomous, self-regulating institutions that are governed by the experts. They set their own standards and are judged by how well they maintain the quality of education," he tells *The Edge*.

In contrast, Malaysia has one of the most centralised education systems in the world, Zairil points out, stressing that this must change if the country wants to move forward.

"Education must be decentralised. Certain aspects of the system should be left to those who would know the actual circumstances better," he says. These include the community or independent educational bodies.

"Let the school board respond to the community. Let them choose the medium of instruction, set the curriculum, set the standards and so on. That's the way to ensure excellence," he asserts.

Another key area that is calling for attention is the quality of teaching.

"Teaching quality in particular needs to be relooked at as it has an impact on student outcomes," says Zairil. Moreover, the focus



Zairil: Education must be decentralised. Certain aspects of the system should be left to those who would know the actual circumstances better.

of teacher training has become employment-centric, which he opines is bad policy.

"Education policies need to better reflect 21st century learning. The policies today were designed back then for a 20th century economy," he says.

"The country realises that a skills economy is important, so the government must push for TVET to be taught from young, and continue to promote it as a viable option for employment," he says, highlighting the key role of technical vocational education and training in the development of the economy.

While serious efforts are being made to mainstream TVET programmes, the sixty-four thousand dollar question hangs on Zairil's first premise – will the politicians leave educationists to do what's best for the community, and therefore, the country?

Learning to learn all life long

Ready or not, people today must be prepared for constant, lifelong reskilling and upskilling.

This need is being driven by two trends arising from the advance of technology – the changing global economy and our development policies – according to a Khazanah Research Institute report titled "An Uneven Future? An Exploration of the Future of Work in Malaysia".

The first trend is job polarisation, writes KRI director of research Allen Ng, who co-authored the report. With the automation of semi-skilled routine tasks, there are simultaneous gains in high-skill, high-wage jobs on one end and low-skill, low-wage jobs on the other. Meanwhile, middle-skill, middle-wage jobs are vanishing.

The second trend is the rapid rise of independent, alternative

work arrangements. A worldwide phenomenon, it is being driven by the outstanding growth of digitally enabled platforms that help commercialise personal assets like cars and rooms and offer on-demand labour for everything from food delivery to mobile app design, says Ng.

To cope with this dual thrust, says the report, Malaysia must deeply inculcate a culture of true lifelong education for all, in which formal learning is not limited to just the first two decades of life.

Speaking to *The Edge*, Ng narrates the example of his late father, who found himself in a mid-career change at a time of economic uncertainty.

Running an intercity taxi service over three decades ago, Ng's father ferried passengers between Bidor and Ipoh using the



To ensure no one is left out of the cycle of renewal, access to lifelong education must be made available to everyone in Malaysia, says Ng

old trunk road. When the North-South Expressway was opened in the 1980s, business dried up.

"My father decided to take a

few years off and learnt how to be a sushi chef. To me, that is what it means to pursue lifelong learning – being able to reskill oneself amid changing conditions," says Ng.

To him, this example is a metaphor for the current changing landscape of work, given the rise of digitalisation across multiple sectors.

To ensure that no one is left out of the cycle of renewal, access to lifelong education must be made available to everyone in Malaysia, says Ng. Unfortunately, current lifelong learning platforms such as Malaysia's massive open online courses do not reach out to the wider society.

"These systems are easy to access for people who don't really need this kind of reskilling, but for those who do, it's not as

available to them," he points out.

Estonia and Singapore are among the countries that have taken big strides in adopting lifelong learning policies.

"For example, Singapore has a programme called Skills Future, which provides locals with online token credits to pursue courses on its website," says Ng.

Another leader is Finland, which has a long history of promoting adult education, Former education minister and current director-general of the Finnish National Agency for Education, Olli-Pekka Heinonen, tells *The Edge*.

About half of its population of 5.5 million is engaged in lifelong learning programmes at any one time, he adds.

Malaysia has no time to lose to set its people along that path.

SPECIAL REPORT

National plan of action to bring higher education system up to speed

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In an article on youth unemployment, the report summarises the multiple dimensions of the problem.

“Despite the workforce increasingly becoming more educated, job creation in the Malaysian economy has remained concentrated in the low and mid-skilled jobs, as domestic industries stay in low value-added activities that emphasise cost efficiency and dependence on cheap labour, rather than pursuing innovation as a source of growth,” it states.

“The Malaysian economy also continues to face the challenge of attracting high-quality investments that would create more high-paying, high-skilled jobs for the local workforce. In the meantime, firms point to skills shortage as a key factor that prevents them from making investments to move up the value chain.

“This mismatch between the changes in educational attainment of the workforce and the types of jobs created is also manifested to some extent in anaemic demand for fresh graduates, as online job postings for entry-level positions for graduates have remained largely stagnant since 2012.”

The article cites a 2014 survey by the World Bank and TalentCorp, which found that 90% of companies believe that university graduates should have more industrial training, and 81% of companies rated communication skills as a major deficit among graduates.

While businesses point to weaknesses in the national education and technical and vocational education and training (TVET) systems for the poor job prospects of graduates, the article notes, the lack of industry involvement in human capital development has also contributed to the dearth of effective training programmes for workers.

“The same TalentCorp survey found that 53% of firms have never engaged career centres in their recruitment efforts. Thus, even though youth may lack requisite skills, effective, meaningful training programmes that would prepare them for work have also not been forthcoming,” the Bank Negara report states.

Malaysia Education Blueprint (Higher Education)

Cognisant of the situation, the MOHE has been developing a national plan of action to bring the higher education system up to speed.

A key step forward is the Malaysia Education Blueprint 2015-2025 (Higher Education), which outlines 10 shifts that are designed to transform the higher education system.

Four of them focus on outcomes for key stakeholders, namely students in academic and TVET pathways, the academic community and people engaging in lifelong learning. The other six concern enablers such as funding, governance, innovation, international

TABLE 2

CRITICAL OCCUPATIONS LIST REPORT 2016/17

Measures to address difficulties in hiring for critical occupations

SECTORS	EXPANDING LOCAL RECRUITMENT EFFORTS (%)	RAISING WAGES (%)	EXPANDING INTERNATIONAL RECRUITMENT EFFORTS (%)	INCREASING WORKER TRAINING (%)
Aerospace	61	52	43	48
Business services	67	33	44	22
Education	50	42	42	17
E&E	73	44	54	33
Financial services	66	46	36	28
Medical devices	52	20	8	32
ICT	33	27	53	20
Oil, gas & energy	55	48	45	30
Telecoms and multimedia	22	48	9	22



Saifuddin: For engineering, architecture and accounting, the number of lecturers who are chartered professionals is very low

links, online learning and delivery. By the ministry’s reckoning, important progress is being made towards addressing the skills mismatch.

“Between 2007 and 2015, MOHE was guided by the National Higher Education Strategic Plan, in which Improving Graduate Employability (GE) was a part,” says Idris. “The GE rate in Malaysia increased 2.9% from 74.4% in 2012 to 77.3% in 2016.”

However, business leaders, such as property developer Datuk David Chua Kok Tee, who has served on several national committees and academic boards, say the problem remains entrenched.

“It is difficult to recruit good quality graduates as many either don’t speak good English or don’t have the right skills for the job. They are hired anyway and then retrained,” Chua tells *The Edge*.

Former deputy education minister Datuk Saifuddin Abdullah identifies distinct factors behind the two types of skills gaps.

Concerning the lack of soft skills, he argues that despite some effort to address the gap, there is no comprehensive and integrated approach to the problem.

As for the skills shortfall in professional fields like law, engineering, architecture and accounting,



Heinenon: We know the people who best cope with uncertainty are creative people. They are versatile in different circumstances.

Saifuddin, in an email response, notes that these disciplines require several years of understudy with a supervisor and certification by an accreditation body.

“For law, it is not an issue. But for engineering, architecture and accounting, the number of lecturers who are chartered professionals is actually very low. So, what do you expect from the graduates?” asks Saifuddin, who is chief secretary of the Pakatan Harapan coalition.

Former Universiti Malaya vice-chancellor Tan Sri Ghauth Jasmon opines that the time to administer strong medicine is past due.

Noting that both public and private HEIs are facing a financial crunch, Ghauth, who is on the boards of Sunway University and the International University of Malaya-Wales, stresses that universities must address this predicament or perish.

“It will be difficult for universities to survive if they do not find ways to sustain financially, especially as the government cuts the budget for higher education,” he tells *The Edge*.

TalentCorp CEO Shareen Shariza Abdul Ghani sees the need for a systemic overhaul.

“Our traditional teaching meth-

TABLE 3

CRITICAL OCCUPATIONS LIST REPORT 2016/17

Reasons for difficulty in hiring for critical occupations

SECTORS	COMPANY IS UNABLE TO MEET THE SALARY / BENEFITS REQUESTED (%)	APPLICANTS DID NOT HAVE SUFFICIENT WORK EXPERIENCE (%)	APPLICANTS DID NOT HAVE SUFFICIENT TECHNICAL SKILLS (%)	APPLICANTS DID NOT POSSESS REQUIRED SOFT SKILLS (E.G. CREATIVITY, COMMUNICATION) (%)
Aerospace	43	57	70	17
Business services	22	67	33	44
Education	42	58	42	33
E&E	48	69	67	48
Financial services	43	57	57	21
Medical devices	52	72	68	56
ICT	40	47	60	33
Oil, gas & energy (incl Petrochemicals)	34	82	68	11
Telecoms and multimedia	30	65	35	39

ods and educational syllabus must be realigned so that we can accelerate education reform towards building 21st century skills,” she tells *The Edge* in an email.

“Educators and syllabus designers must recognise that today’s skills, with their short and decreasing shelf lives, are quickly becoming obsolete.”

Reformists often say the education system is the root of the problem.

For the DAP’s parliamentary spokesperson for education, science and technology, Zairil Khir Johari, the required shift in strategy will make our education system very different from its current form.

The key is to depoliticise education and let academic boards independently set standards and handle administration in response to community needs, he tells *The Edge*.

Penang Institute in Kuala Lumpur general manager Dr Ong Kian Ming, a vocal advocate for academic quality, says the issue boils down to the question of employability.

“The first part of the challenge is what needs to change in order that educational institutions produce graduates who meet a minimum bar of being employable — being able to communicate clearly, show a basic understanding of concepts and how to apply them to the real world, an ability to absorb and process information in the workplace, and an ability to write and produce output that is understandable,” says Ong, who is MP for Serdang.

To add to the pressures facing businesses, global developments, including the impact of the Fourth Industrial Revolution, are rapidly changing the rules of the game.

One expert who is helping the Ministry of Higher Education to prepare for this shift is Australia-based Prof Sohail Inayatullah, the Unesco Chair in Futures Studies.

Tracing various scenarios that emerge in an evolving learning en-

vironment, he presents a compelling case for fostering innovation in the education system.

“Teaching training should be adapted to prepare for a world after jobs,” he tells *The Edge*.

In this scenario, lifelong learning is not a fancy idea but a critical requirement for adapting to the new economic reality.

For example, in Finland, a world leader in education, some 2.5 million of its 5.5 million people are engaged in lifelong education programmes at any given time.

Finland’s former education minister and current director-general of the Finnish National Agency for Education, Olli-Pekka Heinenon, says, “We don’t know much about the future. We know the people who best cope with uncertainty are creative people. They are versatile in different circumstances.”

In a report entitled *An Uneven Future? An Exploration of the Future of Work in Malaysia*, Khazanah Research Institute director of research Allen Ng notes that as the landscape of employment changes over the coming decades, inculcating lifelong learning for all is essential to ponder, given two important trends.

“Firstly, the fast pace of progress in technology would most likely lead to more rapid cycles of obsolescence and renewal in the types of work and industries available. Secondly, together with the first trend, with the rise of independent work, the traditional employer-employee relationship could be eroded, which would simultaneously provide greater autonomy to workers but remove the stability of more traditional full-time fixed employment,” he says.

All said, the range of challenges adds up to quite a formidable test of our resilience as an economy. Can academia and industry forge a dynamic partnership to respond to this critical task? **E**