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Creating a nation of innovators

Prof Desai proposes creating an innovation academy as a catalyst for shaping Singapore into a nation of innovators

A VETERAN innovator with more than 40 years of experience creating and launching cutting-edge technologies, Professor Arcot Desai Narasimhalu teaches his students at Singapore Management University (SMU) innovation and entrepreneurship.

But he wonders if it is too late in their lives to be taught these subjects only after entering the university. Said the Director of SMU's Institute of Innovation and Entrepreneurship (IIE), "A few years ago, a student told me that for 12 years, he was used to memorising and reproducing answers, doing 10-year-series, and teachers actively spotting exam questions for him. And now, we expect him to become an innovator the moment he steps into the university. Is that reasonable?"

So the question Prof Desai asked himself was, "What can be done to instill an innovative mindset among Singaporean students before they step into a university?"

Nurturing an innovative mindset

The solution, according to Prof Desai, is to create an innovation academy that plans and executes a tiered approach to the study and practice of innovation in Singapore for students from upper primary all the way to junior colleges and polytechnics.

Here, we can take a leaf from soccer academies that train children from young in a systematic manner outside of the education system. Football academies teach six to 10-year-olds basics such as stamina building, dribbling, passing the ball, before progressing to the next level and at later stages, perhaps from 18 to 21, they are taught more strategic skills.

Similarly, an innovation academy can introduce six to 11-year-olds to simple methods such as QaDIM, or Quick and Dirty Innovation Method that Prof Desai has designed. "This would encourage young students to exercise their creative juices to identify innovation opportunities from an early stage in their lives," he said.

Teenagers aged 12 to 16 can be introduced to Blue Ocean Strategy methodology. Blue oceans refer to markets and industries yet to be discovered, created or contested by existing players. By contrast, red oceans refer to known,

competitive market space. An example is performance group Cirque du Soleil, which reinvented the circus by taking away animal and star performers, adding artistic elements like music and dance to attract adults and corporate clients.

Older students aged 17 to 21 can then be taught Innovation Rules, which are in reality how innovations evolve over time.

"Innovations are known to evolve in certain patterns. One of the popular patterns is, innovations created for special purposes like space or defence are then developed for corporate use, departmental use, desktop use, then mobile use," Prof Desai said.

"Innovations in computers, copiers and networks moved along this evolution path. If an innovation is for department level use, one could ask whether it makes sense to create something for the next level – personal use on a desktop? This method would introduce concepts such as market readiness and technology readiness to young adults."

Prof Desai has identified 25 Innovation Rules.

Creating a culture by establishing an ecosystem

While the proposed staged learning by Prof Desai provides a structure for creating a mindset, "more is needed for creating a national ecosystem for innovation," he said.

Here, we can learn from Hungary, famed for producing many world-class mathematicians.

"Magazines and newspapers publish math problems aimed at different age groups," Prof Desai said. Students are constantly challenged to solve these problems on a regular basis.

"Young Hungarians develop a penchant for math by continuous engagement at different levels, thereby taking a liking to math. In many places, students hate math, in Hungary, many students love math," he said.

A rating system could also help. Prof Desai points to the World Chess Federation, which rates competitive players and awards titles like master, international master and grandmaster; or Singapore's water safety and survival programme, which awards bronze, silver, and gold certifications.

'Students can be trained to look out for innovation opportunities and ultimately create new products and services for the global markets. You have to engineer the system properly.'

— Professor Arcot Desai Narasimhalu (above), Director of SMU's Institute of Innovation and Entrepreneurship, and a professor of information systems (practice) at SMU's School of Information Systems

Family support is critical

Family involvement is also critical. Prof Desai said we can learn from America's Little League for baseball which became successful because families were involved in their children's games.

"Today, families in Singapore are not involved in any significant way in innovation and entrepreneurship of their children. In fact, in some cases, parents are against their children pursuing innovation given that nine out of 10 start-ups fail. I have heard some students say that their parents want them to get a real job. We need to educate parents for them to realise that their children will learn much more through innovation and entrepreneurship than working for a small department in a large company.

"Family support in the form of parents-led school-level fan clubs to support and encourage student innovators is essential."

Innovation can be taught

"I've come across several students who want to start yet another restaurant or cafe, they are so ingrained in food and beverage (F&B) activities, but there are so many F&B outlets going out of business."

"People are just not introduced to innovation in a systematic way. Can innovation be taught? Absolutely, I believe so. Students can be trained to look out for innovation opportunities and ultimately create new products and services for the global markets. You have to engineer the system properly."

"We hope to contribute to the innovation and entrepreneurial landscape of Singapore in some significant way. We look forward to working with like-minded partners in the public and private sectors on this meaningful endeavour of instilling and nurturing the spirit of innovation and entrepreneurship among young Singaporeans," Prof Desai said.

Actions speak louder than words

Singapore has the Tan Kah Kee Young Inventors' Award. That is a good start.

SMU is also doing its part. Last year, Prof Desai's institute designed and launched the Youth Innovation Challenge for secondary school and junior college students.

"This competition was created with the Ministry

of Education's support," Prof Desai said.

In this competition, students with ideas for a new product, service, social enterprise or an enhancement to an existing product or service submit their business plan. The plans are judged on the originality, scalability and feasibility of the business idea, among other things.

Teams that progress to the semi-finals are assigned a mentor to help them prepare a fuller business plan. The top six teams present their plans in front of a panel of judges and are quizzed on their business plan.

This year, there were 77 submissions for the contest, but the actual number of submissions could be far greater.

"We talked to a school which had six submissions. They said those were the ones they had sent to IIE, but within the school there were around 100 submissions," Prof Desai said.

"This level of participation in one school may indicate that the competition has the potential to get a very large number of students and teachers to start thinking about innovation," he said.

Prof Desai's institute already runs a gamut of events promoting innovation and entrepreneurship, be they lunchtime talks, training, business incubation, fund-raising, joint research and development with small and large companies, and business development support for start-ups.

In addition, IIE launched the Innovation Club, or i-Club, last year to deepen its education, outreach and research leadership in the area of innovation. The Club consists of the Chief Innovation Officer or the equivalent from global companies which demonstrate a deep interest in the study and practice of innovation for organisational growth and market leadership.

This is a monthly thought leadership series brought to you by the Singapore Management University. Next month's feature will examine the hidden dangers of the digital intermediary.

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