STEM in Hong Kong

Out of the Box

Tony Chan Fan-cheong is president of the Hong Kong University of Science and Technology. He has spent his life pursuing his dreams relating to teaching and research, and has unique views on education, scientific and technological development, and nurturing the young.

RECENT REPORTS BY the Hong Kong Policy Research Institute, led by Jasper Tsang, and the Academy of Sciences of Hong Kong, led by Tsui Lap-chee, shed light on the state of STEM – science, technology, engineering and mathematics – education in Hong Kong and made meaningful suggestions on how we can do better to promote STEM in our city.

The reports gave different views, but I tend to agree with most of them, such as that STEM education should start in early childhood, studies of advanced mathematics should be given more weight in high school curriculums, and that universities should be more flexible on their admission policies regarding early entry students interested in maths and sciences.

I, too, think it is a good time for our city to pause and rethink our position on STEM. I have written about the benefits of promoting STEM education previously.

For starters, much of the world's economic engine today is powered by innovation and technology, and to compete, societies need to train young people with STEM abilities. In the face of a rapidly changing world spurred by technology, STEM knowledge allows individuals to stay current, relevant and competitive.

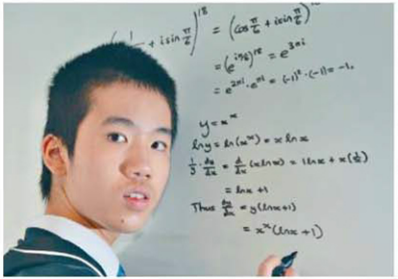
More importantly, many societal challenges, and important decisions associated with them, require a basic understanding of STEM principles in order to be able to arrive at wise decisions, such as global warming (hence cleaner energy) and sustainability (so that we leave future generations a better place to inhabit).

Societies asked these questions collectively, and the real issues and nuances cannot be understood without basic STEM knowledge.

As a city, Hong Kong has always been more fond of vocational training and application than academic pursuit, and hence to no one's surprise, some would already go as far as saying that STEM is the kind of "solve it all" potion that could change the outlook of an individual or an entire city.

Such assertions are simply not true.

While we promote STEM education, we must be careful to not send out the wrong message to our students that they are picking some new, fancy "meal ticket" majors, for one should always pick his major based on his interest and passion, not the dollar sign.



Hong Kong-born Lo Wang-pok earned a first-class honors degree in maths from the Open University in the UK last month – at the age of 13.

A good example is the maths department of the Chinese University of Hong Kong.

When I visited it over 20 years ago, it was suffering from low student enrollment, so it tried to change that by building a curriculum around applications, but the situation did not improve.

However, when it subsequently changed the syllabus to emphasize more on basic knowledge and theory, the level of applicants rose by a considerable margin. This is a great reminder to us educators that we must stand firm in our mission to advance knowledge, not vocational training.

The world is in need of talented individuals who possess broader knowledge than only specializations.

The finance industry, which is being disrupted by rapid technological changes (for example, artificial intelligence and big data), has started to hire more STEM than business graduates as it is easier to train STEM graduates to learn finance than it is to get business majors to learn the necessary maths.

A paradigm shift is already happening in the world. The earlier we adapt, the brighter our future would be.