Much Ado about Learning: A Vision for Education in Singapore, Twenty Years from Now

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Given the increasing complexity and pace of change we find ourselves surrounded by, accurately predicting what our world will be like in five years, let alone twenty, is a near-impossible endeavour. This is especially overwhelming for educators, who – to quote Andreas Schleicher, Chief of the Organisation for Economic Cooperation and Development (OECD) – have to prepare their students for "jobs that have not yet been created, to use technologies that have not yet been invented and to solve social problems that we don't yet know will arise." Nevertheless, although our world today does not give any clear answers about tomorrow, it does provide some clues.

Strong Foundation, but Greater Versatility Needed

To be able to use Singapore as starting point for this essay is very much a luxury, given that it boasts relatively excellent education statistics, from tertiary education enrollment rates to standardized test performance. This is unsurprising; a lack of natural resources means that its people are its biggest assets, and as a result its government has no qualms about investing significantly in their education. Therefore, changes that need to be made to its educational model fortunately do not stem from intractable, deep-rooted problems – corruption, gender inequality and poverty are the quintessential examples - like they do for its poorer counterparts in the region. Instead, the transformation that Singapore will need to make should be more geared towards minimizing the potential damage from, as well as making the most of the opportunities arising from, the increasing complexity and change mentioned in the first paragraph.

This is particularly imperative because while Singapore has a diverse economy and is a global leader in several economic sectors aside from education, such as financial services and healthcare, it has displayed a strong desire to be a regional or global hub in as many emerging areas as possible, as shown by its recent heavy investment in technology-driven sectors like FinTech and biotechnology. As it shifts its emphasis from poorly-performing industries to exciting up-and-coming ones, Singapore needs its workforce to adjust and reorganize itself accordingly. This implies that the demands of the workplace as a whole are likely to keep changing, and therefore – and also because most of the learning required for most roles take place on the job anyway rather than in the classroom - it makes sense for universities to prepare their students for what Arnoud De Meyer, President of Singapore Management University, terms a "portfolio of careers", instead of for specific jobs. In a nutshell, depth is substituted for breadth when inculcating skills and knowledge, allowing graduates to be occupationally nimble and better able to navigate a rapidly changing job market.

Capitalizing on the Technological Revolution

Part of this need to be agile stems from the fact that many major industries are being disrupted, if not completely transformed, by technology. Business models in many of them have evolved to incorporate

machines, which are now even able to perform many non-routine tasks, or sharing between users, for instance. From finance professionals to taxi drivers, many are finding their jobs slowly becoming obsolete. Educators might not be spared either, looking at the success of "massively open online courses" (MOOCs) provided on the internet by top universities, because of which a theoretically infinite number of students from all over the world can access the same content and even interact with each other to discuss it.

Given that Singapore has one of the highest internet access and smartphone usage rates in the world, Singaporeans naturally have access to, process and circulate vast amounts of information. The country's latest Smart Nation Programme – which aims to use all this data to make life better for citizens - indicates that this only likely to become even more entrenched into the social fabric. The upshot of this is that educators have to move quickly from a model where memorising information is rewarded to one where points are instead awarded for distilling and summarising the right information, analysing and making sense of this information and synthesising it with other bits of information, and deriving from all this insights that create value. For this, a greater value has to be placed on developing general reasoning and cognitive skills, quantitative dexterity, as well as metacognitive (thinking about how to think, and therefore to learn) faculties. Also potentially important is the ability to work with and manage robots and other smart technologies. This might involve not just having to be able to code – very possibly tomorrow's equivalent of being able to write – but also to have some capabilities in machine learning.

Possible Technological Modifications to Education

When it comes to how education is relayed, technology allows us to question many of the assumptions that underline the conventional paradigm of education, and opens up and enables us to pursue previously unforeseen possibilities. One assumption is that we need to regularly test students to assess how well they are doing. But would that be necessary if we can have real-time monitoring of their performance? For instance, what if their teachers (and parents) can view live data on their class participation, contributions to group projects, and performance on regular assignments – and evaluate them accordingly across a longer period of time in a more seamless manner? This data-centered model of education would also facilitate integration between various platforms of student activity; for example, a point a student makes in the classroom can be rebutted a few seconds later by his overseas-based peer on the class internet forum.

Technology can also potentially help in directly developing students. Want to communicate with members of a foreign community for your social science project but find yourself unable to? Universal translators can instantly let both of you know what the other is saying. Need to build situational awareness and exposure in a law student? Virtual reality can help, by transporting him to a courtroom where he will have to argue his case. Thinking of what exactly your new student is interested in and what learning style she prefers? Advanced brain imaging can give you a rough idea.

The Shrinking Singaporean Core

External circumstances aside, a look at the demographic that will be experiencing these educational changes would also be very helpful. Given that Singapore's birth rates are not just already low but continue to fall, this group is – at least compared to today, and keeping immigration constant - likely to be top-heavy with a disproportionately large number of middle-aged and older workers, and also to contain a comparatively small schooling population. Education has to adapt for both these groups.

For the former, training and reskilling – which could perhaps translate into multiple re-enrolments into degree or diploma programmes across a career – for the inevitable mid-career switches will become more accepted as a necessity. For the latter, a more personalised approach (as there would be fewer students to every teacher on average) can now be afforded. These two approaches can share an overlap if we outgrow our current tendency to classify students by age and instead group them based on knowledge and ability, or by learning style, instead. Middle-aged professionals sitting in degree or diploma classes with teenagers will become a more common sight, highlighting two key messages – that learning has to be lifelong, and that there is no rush to succeed.

Reexamining the Purpose of Education

Here, it is perhaps helpful (though odd) to think about the rise of artificial intelligence (AI). What is particularly noteworthy about AI is its ability to learn on its own – and that too at a rate much faster than humans. Considering this, it is therefore not inconceivable that it will overtake human intelligence within one to two decades. Education as an institution would then find itself facing an unprecedented existential crisis - what is the need for an organized system of learning when machines will be able to do all our jobs for us and to fulfil our deepest desires – from finding a cure for cancer to locating habitable areas in outer space?

To conclude, it is perhaps then that we may realize something that our intense hyper-fixation on intelligence and doing well in our careers has often blinded us to. It is that there are qualities more central to our learning and living - such as integrity, curiosity, resilience, optimism, self-restraint and perhaps even creativity and social intelligence – and that only by fostering these qualities can we fulfil the true purpose of education – to unlock as much of the human potential as possible, in the hope that this translates into a far better world.

It is therefore important that we do not cocoon students in smart technologies and in comfortable spaces of personalized learning, and instead that we also provide them with what can be best called “life exposure”, which teaches them to be comfortable with not having answers to real-world complexities, and to be uncomfortable with not pondering the moral and ethical issues that these complexities inevitably carry with them.

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