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Education and innovation: An interview with Charles Chen Yidan

Charles Yidan CHEN

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FROM ZERO TO INFINITY



An interview with Charles Chen Yidan.

Charles Chen Yidan, Co-founder of Tencent, Founder and Honorary Chairman of Tencent Foundation, and Founder of Chen Yidan Foundation, the Yidan Prize Foundation and Wuhan College, talks about how positive education can unlock endless possibilities for economic growth and social advancement and development.

Your entrepreneurial journey has led you to develop a passionate belief in the power of education. What does education mean to you?

Education begins with the individual, but its impact extends far beyond the individual. The teacher-student relationship may be personal, yet it carries a lineage of knowledge, skills, values and beliefs that is a crystallisation of the teacher's wisdom. And that relationship carries the hope of society—the hope that by collectively contributing to an outstanding education system, we are all investing in society's culture and growth. None of the major developments we see in our world today are being made possible by one or two people. Each member of our society, no matter how insignificant he or she may seem, holds the infinite potential for making the world a better place. The transformative power of education is the fuel for technological innovation, social progress, the cultivation of right values, justice and equality. Education is never just about one person; it is always about every single person. Education carries the hope of elevating entire communities of people.

Greek philosophers Socrates and Plato believed that one key objective of education is to attain knowledge, which is in the interest of both the individual and society, and as such, education was a virtue in itself. In the East, ancient Chinese wisdom—mainly rooted in Taoism, Confucianism and localised Buddhism—tells us that education is about knowing right from wrong. Education enlightens us on how society works and how to live a meaningful life. In

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Chinese culture, education means more than just acquiring knowledge. The Confucian classic, *The Great Learning*, says the purpose of education is “to illustrate bright virtue, enlighten the people, and rest in the supreme goodness”.

When we look at the wide range of challenges we face in the world today, it is clear that the purpose of education has gone beyond simply teaching individual students to excel in attaining knowledge. The world relies on education to unlock the potential of turning the limited into unlimited. That is why I firmly believe that education is the fundamental driving force for social progress.

How can education facilitate innovation?

One of the biggest achievements of the modern world is increased literacy and a widening access to basic education. This solid foundation gives young people, especially those coming from disadvantaged backgrounds, the self-esteem, confidence and opportunity to connect with the fast-changing world and the potential to tap into the infinite possibilities of innovation.

Innovation requires an open mind, burning curiosity, and the resourcefulness to put ideas into action; a good education can instil these qualities in us. Research conducted by scholars from Ghent University and the University of Cambridge found that as individuals participate more in education, they develop a more open mindset, which in turn increases a country's potential for innovation.¹ Based on data collected from 96 countries, education increases the pool of talent equipped to promote innovation.

Innovation is not only the engine of economic growth in an increasingly knowledge-based global economy, but it will also lead us to solutions for the crises we face today. At an individual level, it is through learning that we are able to move beyond our personal boundaries. Teachers help, guide and empower young people to take risks by removing any real or perceived barriers, and develop in them an inquisitive mindset, the ability to cooperate and collaborate, to self-learn, to experiment, to experience failure, and to find the perseverance to try again.

Educators and policymakers play an important role by nurturing innovative human capital and increasing inventive skills through well-planned educational policies; interventions have the potential to spur a wide range of innovative outcomes. A study from Finland's Helsinki Center of Economic Research suggests that innovation can be encouraged through the right education policies, resulting in more inventions.² Investment in subjects such as engineering and science has a direct link to the number of patent registrations. A science, technology, engineering and mathematics (STEM) education increases the net gains of innovation and encourages more people to become inventors.

The important task facing policymakers, investors, researchers and educators lies in understanding how their work and decisions will shape the innovativeness of future generations. Today, in a world where many people's basic needs for survival have been met, I take the liberty to tweak the old adage "necessity is the mother of invention" to "education is the mother of innovation, and innovation is a modern-day necessity".

What does it take to develop an education ecosystem?

Innovation is never a solo endeavour. When we think about innovation, we have a mental picture of a single lightbulb moment. However, the truth is that innovation is a collaborative transformation of an industry or field that is never achieved by a single person or organisation. Great innovation does not take place within one field of expertise but is the product of cross partnerships among different domains.

That is why we need to think in terms of input and output. If education is to fulfil its role as the mother of innovation, educators and policymakers need a clear picture of what inputs are being fed to the education ecosystem. We need to create a pipeline of young people who are ready to take the lead in an increasingly interconnected world.

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Innovative ecosystems in the education sector comprise evolving multi-party partnerships in which schools are able to tap into advanced tools and technologies from their partners for the benefit of their students. Education technology promotes student engagement and enables pedagogical innovation, which in turn creates a learning environment that fosters innovation. When innovative ideas are fed to the technology sector, a powerful, creative synergy is born.

The chemistry between Stanford University and Silicon Valley is a perfect example of how schools and the private sector thrive together and reinforce innovation in each other's DNA. Stanford has been described as the 'farm system' for Silicon Valley. Its Office of Technology Licensing has licensed 8,000 campus-inspired inventions. Some believe that as many as 5,000 companies can be somehow traced back to Stanford faculty and students, including household names such as Hewlett-Packard, Yahoo, Cisco Systems, Sun Microsystems, eBay, Netflix and LinkedIn. An entrepreneurial spirit allowed Stanford to forge a symbiotic loop with the tech-intensive Silicon Valley, nurturing a diverse body of students, encouraging learning for the sake of learning, risk-taking, trying new things, and discovering unknown terrains.

How is the Chen Yidan Foundation helping to develop such an education ecosystem?

The chemistry between Stanford University and Silicon Valley is only one success story. We need more of these innovative hubs for future generations to flourish. Small, wealthy, globally-connected economies like Finland, New Zealand and Singapore have shown themselves to be good examples, with their education ecosystems based on the principles of strong, comprehensive policies, well-trained teachers, and rigorous assessment frameworks to test for students' future skills. We also see educational innovation initiatives are gathering momentum in China and Israel. However, preparing the fertile soil for young people to blossom into innovative leaders of tomorrow requires many more questions to be answered.

In 2017, the Worldwide Educating for the Future Index (WEFFI) was founded by the Yidan Prize Foundation.

The Economist Intelligence Unit was commissioned by the foundation to produce the index on an annual basis. This study seeks to facilitate an actionable way forward for a better, more equitable future—a future where young people are ready to tackle the evolving challenges of work and society. The theme for the 2018 index was 'Building tomorrow's global citizens' and covers 50 economies, representing nearly 93 percent of global GDP and 89 percent of the world's population.

The goal of the index is to provide a useful benchmark, comprehensive data and independent analysis for policymakers and educators around the world. The index measures three pillars of education systems—policy approaches, teaching conditions and broader gauges of societal openness. It remains the only major ranking to assess a wide range of inputs to education ecosystems, instead of putting a narrow focus on outputs such as examination results. The index is not designed to offer a ranking of education systems, but as a tool for assessing the complex functioning of the key ingredients that make up a future-proof education ecosystem. This is how the success of one country's work can benefit many.

It is also important to note that future-oriented education is not exclusive to wealthy economies. Based on the index results, Ghana leads among low-income economies; its education system is founded on the strength of its strategy to teach future skills and adoption by supportive assessment frameworks. On the other hand, the U.K. provides an example on the importance of investing in the continuing education of educators, as the quality of teacher training bears the brunt of low government expenditure on education.

The index reinforces the idea that in order for economies to adopt a more holistic approach to learning, the following factors are critical: strengthening assessment frameworks, regularising reviews of curriculum and improving teaching conditions. Looking at the results of the index, it is clear that there are gaps to fill in the provision of future-ready education for today's youth.

How have the Yidan Prize Laureates contributed to the field of education?

Founded in 2016, the Yidan Prize recognises those whose work is future-oriented, innovative, transformative and sustainable in education. While the Yidan Prize Laureates tackle challenges specific to their environment, they also offer potential solutions to the world addressing

Future-oriented education is not exclusive to wealthy economies.



similar issues. The 2017 Laureate for the Yidan Prize for Education Development, Vicky Colbert of Colombia, is the founder and director of Fundación Escuela Nueva, whose innovative learning model, the 'New School', was born out of very challenging conditions in low-income villages in her country. Students across multiple levels were cramped into one classroom, without access to the Internet or other technological support. Over several decades, her model, which emphasised empowerment, interpersonal skills and student-centric learning, has become an inspiration in Colombia. It is highly successful and has been adopted in 19 countries worldwide. What arose out of necessity has become a blessing to many.

The 2018 Laureate for the Yidan Prize for Education Development, Professor Anant Agarwal, is the CEO and founder of edX, an open-source online platform that makes education accessible to people around the world. Professor Agarwal grew up in India, and at that time, school for him was a cramped, uninspiring place, where teachers sometimes hit students. What he endured as a student has now gone through a complete overhaul through his platform. Online learning becomes fun and creative—

something learners can enjoy whenever and wherever they want. His platform allows exponentially more students to have exposure to high-quality education without the limitations of prohibitively high cost or distance.

Professor Larry Hedges, the 2018 Laureate for the Yidan Prize for Education Research, is the Chairman of the Department of Statistics at Northwestern University in Chicago. Professor Hedges developed statistical methods of meta-analysis before the idea of Big Data became a fashionable term. His work in educational policy allows policymakers, educators and the public to see the evidence of what works in the field of education. His work and leadership are sending ripples across the world, making it possible for educators to take a scientific approach to improving education.

The possibility for education to turn from zero to infinity can be summed up in the concept of ‘the growth mindset’, developed by another 2017 Laureate for the Yidan Prize for Education Research, Professor Carol Dweck from Stanford University. Professor Dweck’s research has demonstrated that students’ mindsets can be changed. Barriers can be broken when a fixed mindset is transformed into a growth mindset. The implications of her work are far-reaching; she has shown us not only the generative potential of education for students in schools, but also the limitless potential for humanity.

How can we prepare the next generation in terms of knowledge, skills and training?

The second industrial revolution did not bring in a significant change in the education system. But today we are in the midst of the fourth industrial revolution that is focused on information technology, and we need to prepare our graduates for this future. It is very heartening to see that business schools are taking the lead in bringing about the requisite change so that education and industry can serve each other. I believe we will have more multidisciplinary studies and project-based studies in the future. Business schools are focusing on project-based studies, and their innovations can be evaluated by their own clients or areas of applications to see if they are successful.

We also have to focus on the comprehensiveness of the training system. We want to pay attention to a person’s qualities rather than their skills or professional knowledge. So many things cannot be taught in the classroom. It is about gaining experience and competence to face the future. The young generation needs to enhance their problem-solving capabilities and develop a mindset of lifelong learning. Every nation has its own strengths and opportunities. My advice to young entrepreneurs would be to think first about the local market because they know it best, and then consider developing a global product.

How can education instil a sense of optimism for future generations in an era of megatrends such as Artificial Intelligence and climate change? Whether we see the cup as half full or half empty is relative. Similarly, emerging new technologies and the demands of sustainability can be viewed as obstacles or opportunities. We need to understand the *status quo* to know where we are now, and then see how we can move forward from here. If a school believes in this value system, then the optimism can be passed on to its students and the teachers will feel the same aspiration as well. It is about having a positive



attitude, and families and society can help. If we want to focus on people, we need to focus on a growth mindset and positive education. We need to learn to be more open-minded and to embrace future changes.

Looking ahead over the next five to 10 years, what do you think will be the future of education in Asia?

In Chinese, education consists of two characters—Jiao (教) and Yu (育)—which mean ‘teaching’ and ‘cultivating’. In other words, education means more than merely knowledge transfer and skill-based training. People are at the heart of education. Education can come from family, school, community and society. We are also nurtured by our culture and religion.

Asia is where some of the fastest-growing economies in the world are. The talent pool here is mind-blowing. The entrepreneurial spirit, vitality, opportunities and creativity are contagious. Asia is also home to ancient civilisations that hold some of humanity’s deepest wisdom and most important life-changing inventions. Innovation is in our blood, and ever present in our everyday life. Every time we have Asian cuisine, we are reminded of the wisdom behind one of the simplest tools ever invented—chopsticks. By solving problems with intelligent simplicity, practicality, flexibility and ingenuity, we have great potential to serve as a reference to the world.

Educators in Asia can leverage the best that the East and the West have to offer and realise education innovation across sectors. Technology will be key, helping to lower the cost of quality education and boosting outcomes, such as through Big Data applications, and using analytics to deliver an optimal learning environment. This may provide the next exciting stage in the growth of widespread open online courses.

Investment in education has had a fantastic impact on students around the world, through better technology in the classroom, higher funding for institutions, and scholarships for underprivileged students. The upcoming generations of philanthropists can extend this impact by embracing their role as champions of innovative approaches to one of our biggest challenges.

Traditional Taoism tells us that the Tao begets one, one begets two, two begets three, and three begets infinity. Tao starts from chaos and is the primitive order out of chaos. I believe that the journey of education is just like the progression of Tao, and it also goes from zero to infinity, so while the first step is critical, what really defines the spirit of education is the effort and growth after zero.

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