Innovation in Education: Singapore

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ABSTRACT

The following paper covers the educational development of one of the four Asian dragons of the east i.e. Singapore. This paper focuses on the innovation implemented by the country in the field of education. This paper highlights the steps that Singapore, to keep up with its status of being the largest and fastest growing global economy in the world, is taking towards education and innovation in the same field.

Keywords: *Educational Development, Singapore, Innovation.*

1. INTRODUCTION

Singapore, ever since the time of independence from the Britishers has come a long way. It has covered and crossed a huge number of hurdles in the race to become one of the fastest growing Asian economies despite its lack of hinterland and raw materials of its own. Being an overwhelmingly urban state in a part of the world where agriculture is the prevailing way of life contributes to Singapore's pride in having a distinctive personality (Lucian W. Pye, 1965). Singapore is in many ways unique: it is a planned city-state and is one of the four 'Asian tigers' that has achieved a high gross national product (Eng, 1992), which makes Singapore stand out amongst its three counterparts. Another factor that makes Singapore stand out among the other three Asian tigers is the fact that even Singapore has a more diverse and multiethnic population, this factor though has never been a barrier in the growth and progress of this island-city.

Singapore has come a long way. It has changed hands for centuries, starting from the Chola Dynasty in the 11th and 12th century, till the acquisition of Singapore by the Japanese and then the British. Gaining complete independence on the 9th of August, 1965; with the progress that the island has made, the education of this country has also evolved just as rapidly, because of the different influences that it had to face. Influences from the Japanese style of teaching and the British style of teaching have been the most prominent.

Since its independence, the Singaporean government has made constant efforts in making sure the students of Singapore get the best available education, and thus a linear upward progress can be seen in the allocation of funds towards education in their annual budget. The problem though still remains, that even though so much effort is put into education, then why Singapore is not called an innovative country and hence what are the steps that they are taking towards it.

2. THOUGHTS ON INNOVATION IN SINGAPORE

In 2011, Steve Wozniak, who founded Apple with Jobs, said during an interview that a company like Apple could not emerge in structured countries like Singapore:
"When you're very structured almost like a religion . . . Uniforms, uniforms, uniforms . . . everybody is the same. Look at structured societies like Singapore where bad behavior isn't tolerated. You are extremely punished. Where are the creative people? Where are the great artists? Where are the great musicians? Where are the great singers? Where are the great writers? Where are the athletes? All the creative elements seem to disappear" (Wozniak, 2011). With such thoughts being revealed by the co-founder of a fortune 500 company, it says a lot about how the world in general looks at Singapore. In spite of being on a continuous path towards promoting and encouraging innovation in the country, the world seems to see less of the same.

The sad truth is that even native Singaporeans agree with the statement made by Steve Wozniak. Singaporean entrepreneur Willis Wee wrote "I'm not sure how much Wozniak knows about Singapore and its system. But as a Singaporean, who grew up in this tiny island, I have to agree with his words." (Wee, 2011).

The above statement was made by an entrepreneur. An entrepreneur is always credited to be called so when they are able to look at this world in a creative manner and takes the courage to turn that creativity into reality to turn it into an innovation. When does such an individual say that there is no scope for creativity and innovation in Singapore, then who is to blame? Who is to take the blame?

Willie Wee further talks about why Singapore's education is not the grounds for the growth of creativity and innovation, stating- "We're smart, but we are not the most open-minded and creative people because we've been stuck on this small island for so long. Our restrictive education system also doesn't help the creative thought processing. Everything — from education and national service — has to have a system, points, and rigidity." (Wee, 2011)

Native Singaporean Mendi Ang writes about education in Singapore after the statement made by Steve Wozniak stating- "Don't blame our education system for stunting creativity. Yes, we dare not challenge our teachers or actively ask questions. Our education involves intense memory work and regurgitation; creative thinking is as good as zilch. Back in secondary school, essay writing tests always felt like contests of 'who remembers it best' and 'who can write the most and hit as many points as possible" (Ang, 2015).

A Marketing and Communications Manager at DesignedUX, Dustin Manley writes in his article "Teach less, Learn More in Singapore" – "Singapore's education system may produce students who lead in reading, mathematics, and science, but they receive failing grades when it comes to innovation" (Manley, 2015). Thus, stating his disappointment towards the failure of the Singaporean education to create innovative minds.

Comments as above, clearly talk about how the education system in Singapore is redundant and how only rote learning is encouraged in Singapore, just like any other Asian country, discouraging creativity and innovation.

3. POSSIBLE REASONS FOR LACK OF INNOVATION IN SINGAPORE

Over the years, Singapore has been able to capture the attention of the world, because of the incredible progress it has made, in terms of economics and trade. Singapore has also come into the lime light because of its ability to provide quality universal schooling to its citizens (How, 2015). It consistently tops international educational rankings, produces students that win international competitions, and churns out graduates that are among the most desired in the world (How, 2015).

Despite these achievements in the field of education, why has Singapore not been able to nurture innovative minds? These are some possible reasons:

- **Competition** competitions like the PISA and the TIMSS are 2 very important competitions that Singaporean students take part in.

The Trends in International Mathematics and Science Study (TIMSS) provides reliable and timely data on the mathematics and science achievement of U.S. students compared to that of students in other countries. Whereas the Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of the 15-year-old student.

Unfortunately, for some countries, acing PISA has become the main aim or one of the aims of education policies (How, 2015), and Singapore falls in one of those countries.

Singapore's compulsory education system consists of six years of primary school, four years of secondary, and between one and three years of post-secondary school. Students undergo two major exams before even leaving primary school (Jelita, 2017). The preceding sentence makes it clear, that ccompetition does not exist only on these international platforms, they exist in the classroom as well, where the students are all expected to excel at every level of the education that they receive. Thus, adding in more pressure of competition. Also, since competition increases the level of stress in the children rises as well, making the students more vulnerable to harming themselves; in 2016, there were 22 deaths reported of individual's ages between 10 and 19 years of age (Au-Yong, 2017).

- **Parents' expectations/ student parent relationship** Parents are increasing the pressure on their children due to the pressures that they face from the society. Parents are increasingly expected to have their pre-school aged child reading and writing, and with basic math skills before they even enter school — and this is frequently achieved through private pre-schools and "enrichment" tuition (Wise, 2016).

Parents and schools spend a lot of time worrying about how kids measure up academically (Anderson, 2017). Being a highly competitive environment, even the parents' have to succumb to the pressures. Also, because they do not want their children "to be left behind", parents continuously place a lot of pressures in terms of getting higher grades, attending tuitions, acing in competitions like PISA and TIMSS, going for extra-curricular classes, has increased.

Even though the parents of Singapore understand that they are placing a lot of hopes and pressures on their children, they do not have a choice, but because the children are too naïve to understand their position, they start to drift away from their parents emotionally. Thus, creating a drift between the children and their parents.

- **Tuitions** students are under constant pressure of doing well in academics and thus are always under the mentorship of teachers or their parents. Teachers teach what the curriculum assigns them and parents take up the task of constantly guiding them and encouraging them to do better in their lives, academically and in terms of extra curriculars also, because of the external pressures that the parents feel, in terms of the competitive environment that the students go through.

The intense competition also means that parents are not satisfied with the high quality of teachers, curriculum and school administration, and heavy demands are made on students in homework and on their time in particular. Parents thus turn to tuition (How, 2015). Tuitions are a means of providing the same information to the students as that provided in schools, only in a format

that suits the child. But interestingly, a survey of 500 parents, conducted by The Straits Times and research company Nexus Link, found that only a third agreed that tuitions actually pulled up academic performance to "a noticeable extent"; Nexus Link chief methodologist Jack Loo said the survey clearly showed that parents sent their children for tuition not because they believed grades will rise but because of peer pressure and competition (Davie, 2015)

Tuitions are extra classes that take place after regular school hours. They take place between a student and a teacher individually, to help the student cope up with the current academic progress and to help them improve their academic scores. But this again, places a level of stress on the students, as it shows them that their parents are concerned for them and want them to perform well, which pressurises them to focus solely on their academic progress only and not on anything otherwise.

- **Rote learning** In Singapore, there is so much testing based on rote learning that all the system does is create students who become really good at short term memory – being able to memorize vast amounts of notes for no more than a few weeks at a time (Singapore Daily , 2016). Rote learning helps the students retain enough of the information provided in their textbooks, for a week and to pass the examinations, but it does not provide the practical knowledge that the students require.

Rote learning is not the only concern, the complexity of the problem is deeper. Firstly, the sheer volume of learning thrown at the students means that they have to resort to rote learning in order to get through the many tests and exams, without ample opportunity for them to learn at a deeper level. (Singapore Daily , 2016) Secondly, the huge pressure placed on children to excel in these exams means that a lot of the more creative, immersive learning processes are sacrificed for more rote learning (Singapore Daily , 2016). Thus rote learning is ridiculed for not exposing the students to explore their minds and their capacities. When the mind will not be allowed to open itself and to explore the world, then how will that mind innovate anything? Rote learning, becomes the reason for the students of Singapore to become more of robotic, or short-term learners, than learners for life.

- **Teacher-student relationship** Teachers who try to teach in the novel and interesting ways that lead to more rounded education outcomes are told to stick to the tried-and-tested method of teaching to score at tests and rote learning (How, 2015).

The latest OECD report places the relationship between students and teachers at the 20th position. Though it is above the OECD average, there is still scope for this relationship to strengthen. Students no more want their students to only teach them what the books give, they even want to understand the real world faster than their entry into it. Students want their teachers to be their mentors and guide them through the thick and thin, and teach them about life apart from academics.

With such expectations, if the student-teacher relationship improves, the quality of students who graduate, will be far better, as the students will have a better understanding of life and its journey. This relationship will help the students get to know about the teachers at a more personal level, which will help the students get more help from the teachers without hesitating. Also, teachers will also be able to get a closer look at the lives of their students and thus will be able to cater to their personal needs more carefully, helping the students progress faster, in every manner.

- **Low risk-taking capacity** students in Singapore go through their education period under stress and pressure, from their parents, teachers and their competitive environment. The competitive environment makes the students scared, and afraid of taking any step on their own, as they are constantly under the guidance of their teachers and parents. The rote learning pattern, keeps the student's minds in their elementary state, as this pattern of learning, does not expose them to the concept of exploration and creativity and innovation. Students are always kept inside a shell till they finish their highest level of education, not exposing them to the real world.

All the above five factors, make the students' unconsciously understand that all the information that they need shall be provided to them when needed and that they do not need to explore anything from their side. Since the students have understood this at a very young age, they take this understanding for granted. Thus the students enter a comfort stage, where they only want to take calculated and measure steps when they move out of their highest level of education. Also, since the students have not taken any risks at any stage of their lives, because of the closed environment that they go through, they either do not want to take any risks or prefer taking very calculated small risks; but innovation calls for the individual to be able to take high risks, in order for them to achieve their desired goal. Hence, the students lack the high risk-taking capacity. Thus, Singapore's education style does not encourage creativity and innovation.

4. INNOVATIONS OVER THE TIME IN SINGAPORE'S EDUCATION

Due to the lack of encouraging creative minds and innovative thinkers, the education in Singapore has changed over time. The Singaporean government and the Ministry of Education in Singapore have taken steps and measures to help students open to a wider horizon of innovation and creativity.

Innovative steps taken in Singapore's education over time have been significant. Changes are being made, to help the students understand their capacities and their talents. Also, since the economy also requires its citizens to be more of entrepreneurs, to keep up with the high progress that Singapore has made over time, continuous steps are being taken to cater to this need.
Some innovative steps taken are:

- Innovations in Education in the 1900's

The system of education in the first four decades of the twentieth century continued to be characterized by 'the absence of a single, clearly enunciated, guiding policy (Wilson, 1972). This was one of the major problems faced by Singapore in terms of education. The first major step of innovation in education was taken in the 1940s. The government created a 10-year policy for schooling wherein the students could opt to study their primary schooling in any of the four languages namely Malay, Tamil, Chinese, and English, apart from which there was a collective curriculum too. This was one of the unique steps taken by any country at that time.

Another measure was the concept of integrated schools, in which students using different language media for instruction were, housed in common buildings under one principal. Joint participation in sports and other extramural activities was encouraged (Ministry of education, 1959). Apart from that, despite Malay becoming the national language afterwards, there was no special treatment given to the Malay community over the others and everyone was treated equally. The secondary education too saw advancement. Initially, the students used to dropout from the primary education but the percentage of students in secondary school increased from 45 to71 percent (Ministry of education).

The tertiary education had a slower growth comparatively. The numbers were as low as 10 percent in the 1960s which increased later. The main source of tertiary education in the country at that time was the government rather than private institutions. This was mainly due to the trend of studying overseas for the latter half, but the government, to curb this, took some innovative steps, one of them being the split-site course where the local institutions were in collaboration with foreign institutes where the students were allowed to take a transfer at their convenience to have an outside exposure.

- Thinking schools, Learning Nation: Gardner's model was used for the thinking school model in Singapore, in order to develop critical and creative thinking in students (Saravanan, 2005). Thinking schools will be learning organisations in every sense, constantly challenging assumptions, and seeking better ways of doing things through participation, creativity and innovation (About Us: Our Vision, 2017). A Learning Nation envisions a national culture and social environment that promotes lifelong learning in our people (About Us: Our Vision, 2017). Although, the challenge for schools is to go beyond the form of the initiative to bring real substantial and sustainable change through this movement (Tee, 2004).

- Teach less, learn more: the syllabus under this program was cut by 10-20%, encouraging the students to spend more of their time in carrying out extra-curricular activities. Teaching will be focused on developing understanding, critical thinking and the ability to ask questions and seek answers and solutions; Examinations and assessment methods will be reviewed, to reduce reliance on rote learning and encourage independent learning and experimentation (NURTURING STUDENTS: Teach Less, Learn More, 2015). This program though is still being questioned, with regards to its success in schools.

- Every school, a good school: The main step by the Ministry of education in Singapore was to resource each and every school for providing customized and specialized programs. It even aimed at raising the standards of teachers by creating a biased and logical selection process for them. But one of the major game changing step by the ministry was to cover the gap or create a bridge for connecting the schools to the community.
- Global school house project
  The project focuses on promoting and developing the tertiary sector education or the post graduation to the global world. It aims to increase the diversity levels and improve the autonomy for the same. One of its major steps will be to restructure the state funding and accountability for education. This will create a more reliable system to reach the desired goals at the global level.

5. CONCLUSION

An elephant is caught when it is young and is tied to a very strong chain. Since the elephant is very small, and the chain is very strong, the elephant fails to free itself from the chain. Over time, after trying to free itself for a very long time, the small elephant understands that is cannot break the chain. After accepting this fact unconsciously, it stops fighting against that chain, and so, even though the elephant grows to be a very magnificent and strong animal, it does not even try to break the chain, why? Because it had accepted the fact that it cannot break the chain when it was young, and so he does not even try challenging that fact even after it has grown stronger.

Even we humans are just like the small elephant. When we are small, we might fight the situation or the environment to be free (ourselves), but slowly, the environment makes us fit into it. We unconsciously accept the fact that we cannot fight the systems that exist in this world. And this is exactly what happens to students in Singapore.

The education pattern/system does not provide a platform for the students to explore their creative and innovative sides, and so after a point of time, the students also stop fighting and start accepting the education system as it is, willingly or unwillingly. Even though there are measures that have been taken to make sure that the students can express themselves better, the Singaporean education, on the whole, will take some time to accept the changes and to implement them completely.

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