

# The potential of Singapore's ability driven education to prepare students for a knowledge economy

---

**Charlene Tan**

National Institute of Education, Nanyang Technological University, Singapore [hpctan@nie.edu.sg](mailto:hpctan@nie.edu.sg)

*This paper focuses on the attempt by the Singapore government to introduce a new education paradigm to prepare students for success in a knowledge economy. The paper highlights the policy statements and changes for a new paradigm known as an Ability Driven Education (ADE) in Singapore. The ADE, launched as part of the Thinking Schools, Learning Nation vision in 1997, has the explicit aim of developing creative, innovative and life-long learners who will rise to the challenges presented by a knowledge economy. The paper discusses the potential of the ADE to prepare students for a knowledge economy by exploring some issues and challenges in Singapore. The concluding section raises implications for the key stakeholders of education in Singapore.*

Ability Driven Education, knowledge economy, Singapore, life-long learners

## INTRODUCTION

A knowledge economy marks a shift from the old economy of the industrial age. In the past, government leaders could focus on investing in some of the potential of some students. In a new economy which depends on knowledge, ingenuity, innovation, and mobilisation of the talents of all, government leaders need to develop all the potential of all the students (Brown, 2000; Ryan, 2000). A knowledge economy is characterised by rapid obsolescence where knowledge-intensive activities contribute to an accelerated pace of technical and scientific advance (Powell and Snellman, 2004). Such an economy values intellectual capital with knowledge being constantly created and exploited in a dynamically changing future (Shapiro and Varian, 1999). Successful individuals are those who possess the ability to innovate and learn continuously (Bell, 1973; Drucker, 1993; Nonaka and Takeuchi 1995; Prusak 1997). It is therefore imperative for government policies to stress upgrading human capital through promoting access to a range of skills, especially the capacity to learn (OECD, 1996).

The government of Singapore is acutely aware of the need to prepare its future citizens to be active and successful contributors in a knowledge economy that relies heavily on innovation and entrepreneurial abilities. In order to educate its current students to develop such skills, the government has invested in a new educational paradigm, an Ability Driven Education (ADE). The ADE, launched as part of the Thinking Schools, Learning Nation vision in 1997, has the explicit aim of developing creative, innovative and life-long learners who will rise to the challenges presented by a knowledge economy. This paper highlights the policy statements and changes for a new paradigm known as an Ability Driven Education (ADE) in Singapore. It discusses the potential of the ADE to prepare students for a knowledge economy by exploring issues and challenges in Singapore. The concluding section raises implications for the key stakeholders of education in Singapore.

## AN ABILITY DRIVEN EDUCATION (ADE) FOR SINGAPORE SCHOOLS

An Ability Driven Education (ADE) represents a paradigm change in the education framework adopted by the government in Singapore. There have been three phases in the history of education in Singapore (Chen, 2000). The first phase was a 'survival' phase when the aim was to produce trained workers in the early years of Singapore's independence and industrialisation. The next phase, an 'efficiency' phase, fine-tuned the system through measures such as streaming in order to produce skilled workers for the economy in the most efficient way. In other words, the government projected the manpower demands in various sectors of the economy and trained people to fit into jobs in those sectors. The current paradigm, ADE, aims to equip and prepare students to meet the challenges in a knowledge economy by taking into consideration their individual abilities and talents. Then Minister for Education, Teo Chee Hean, explained that there are no pre-determined sets of jobs in a knowledge economy; instead, it is the collective talents and abilities of all Singaporeans that will define the economy and what jobs and opportunities are available (Teo, 1999b). Economic growth has become innovation-driven rather than efficiency-driven as the focus is shifted to the ability of the country to innovate, rather than the ability to absorb and adapt advances made elsewhere and to make products more efficiently (Tharman, 2003b). Students in Singapore will need not only the skills to apply the knowledge they have acquired but also the ability to create new knowledge. As creativity and innovation are the key driving forces to progress in a knowledge economy, non-traditional forms of learning like arts education has become valuable (Ng, 2002). The former Senior Minister of State for Education, Peter Chen, elaborated on the relationship between the education system in Singapore and the knowledge economy:

In a knowledge economy, intellectual capital is the nation's wealth. But intellectual capital is not just about a person's mental or intellectual capability. It also embodies other equally important aspects that make up a whole person. The education system in a knowledge economy should be to provide a balanced and well-rounded education that will develop every individual morally, intellectually, physically, socially and aesthetically so that his or her full potential can be realised. This is the aim of my Ministry (Chen, 2000).

An ADE consists of two components (Teo, 1999a):

a. Identification and Development of Individual Talents and Abilities

We will aim to help every Singaporean excel according to the combination of talents and abilities he possesses; and

b. Harnessing of Talents and Abilities

We will inculcate in our young national values and social instincts so that they will be committed to the nation and actively contribute their talents for the good of the society.

There are two main policy changes in the implementation of an ADE in Singapore: greater flexibility and choice in educational programs, and greater autonomy at the school level which will allow a greater variety of programs across schools (Teo, 2002). First, students have more choices from the different types of new schools and programs available in Singapore. There are schools that offer the Integrated Program (IP) where students skip O levels and head straight for the A levels or the International Baccalaureate (IB) diploma, specialised schools in sports, the arts, and science and mathematics schools. To present a broader picture of the schools' performance in academic and non-academic domains, the annual ranking of schools has been replaced by banding. More emphasis is placed on non-academic activities like sports where traits like resilience, team spirit and resourcefulness are inculcated in the students. Secondly, flexibility and autonomy will be given to school principals to admit more students based on the criteria laid

down by the schools. This may include both academic and non-academic criteria such as artistic or sporting talent. School leaders are also entrusted with more authority to manage their resources as they tailor their programs to meet the needs of their students. To offer more opportunities for students to nurture their talents and abilities, schools are encouraged to select and develop their niche areas. A niche area can be a sport such as rugby or a program such as teaching students about robotics. Through a comprehensive swathe of programs, the MOE hopes to reduce the emphasis on examinations, focus on a holistic education, and promote a broader definition of success for schools (Ministry of Education, 2004a).

## **REFLECTIONS ON THE POTENTIAL OF AN ADE FOR SINGAPORE SCHOOLS**

### **Identification and Development of Individual Talents and Abilities**

What is the real potential of an ADE to prepare students for success in a knowledge economy? It is important to relate our discussion to the two components of an ADE, the first one being the aim of the government to 'help every Singaporean excel according to the combination of talents and abilities he possesses'. The presence of skilled workers with diverse talents and abilities is crucial to help Singapore meet the challenges of a knowledge economy. By developing all the potential of all the students, the government hopes that they will provide the creativity, innovation and enterprise needed in a knowledge economy.

But the achievement of this aim depends not only on the policy changes, but also on a change in the mindset in Singapore. There is a need for the key stakeholders of education in Singapore to define success more broadly to include both academic and non-academic talents and abilities. However, the general perception is that academic achievement is still the most important. In particular, the aptitude and ability to excel in academic subjects like mathematics, science and the languages take precedence over musical, artistic and sporting talent. It is a well-known fact that students in Singapore are heavily dependent on private tuition in academic subjects in order to achieve well (Quah, 1990). Statistics show that the number of tutorial schools registered with the Ministry of Education has increased by 86 per cent in the last five years (Tharman, 2004a). More tellingly, 50 to 60 per cent of upper primary students receive tuition in subjects that they already excel in. Educators also observe that teachers in Singapore are very focused on testing; in particular, one lecturer at the National Institute of Education in Singapore commented that mathematics teachers in Singapore "take their job very seriously and drill the students really hard" (Ho and Lin, 2004a). It is not uncommon for a typical primary school student to attend lessons and enrichment classes in school, and spend three hours each day doing assessment tasks and another two hours of tuition (Almenoar and Chan, 2004).

The orientation towards academic subjects such as Mathematics and Science has already borne fruits for Singapore. A study by Green from the University of London Institute of Education shows that Singapore students perform better than their counterparts in the United Kingdom at every level through to basic degrees (quoted in Teo, 2001). About 20 per cent of each cohort in Singapore gain a Mathematics A level compared with around 7 per cent in the UK. In a more recent study, it is reported that the primary four and secondary two students in Singapore outperformed students from 48 countries in these two subjects at the Trends in International Mathematics and Science Study (TIMSS) in 2003 (Ministry of Education, 2004b). The fixation with academic ability is further corroborated in a recent study to find out the contributory factors for Singapore's high performance in these two subjects. The study reveals that the most popular educational aspiration cited by students is to 'finish university' (Ministry of Education, 2004b).

It is also important to note that schools in Singapore still rely on academic performance as a measure of success. This is in spite of the shift from ranking schools based on exact academic

scores to banding schools with similar academic performance. Although the exact positions of the schools are no longer revealed under the banding system, schools are still assessed based on how high a band they are placed in. This means that schools still need to compete with one another to get into or remain in the desired band. While academic performance is no longer the main determinant of a school's ranking, it remains a significant indicator for a school to be favourably banded. The School Achievement Tables display the number of awards the schools have won in value-added academic areas as well as non-academic fields such as the arts and sports. This means that school leaders may focus on those non-academic programs that will reap the greatest number of awards for the schools, and drop those that are unlikely to produce quantifiable results for their school. What is likely to happen is another round of inter-school competition and rivalry, albeit under a different set of criteria. It is therefore unclear how the decentralisation of schools will help every student explore and cultivate his or her talents and abilities.

### **Harnessing of Talents and Abilities**

The second component of an ADE is the aim by the government to 'inculcate in our young national values and social instincts so that they will be committed to the nation and actively contribute their talents for the good of the society'. It is essential that all the government's efforts to develop the talents and abilities of the students are channelled to benefit Singapore economically. But this is possible only if the students themselves are imbued with a sense of loyalty and commitment to the country. Then Minister for Education, Teo Chee Hean, stated that "schools have to prepare tomorrow's Singaporeans for life in a global world, as well as root them to our nation" (Teo, 2001). This need for students in Singapore to be nationalistic is given an added urgency due to the globalising influences in a knowledge economy. Observing that many Singaporeans travel overseas and are exposed to diverse influences in an increasingly globalised world, then Prime Minister Goh Chok Tong noted that the students needed a 'sturdy values system'. This will define who Singaporeans are and anchor them to a place called home: "Otherwise, we will be mocked as 'bananas' – yellow on the outside but white inside" (Goh, 2004).

That there is a need for Singapore students to possess 'national values and social instincts' is seen in the influences of 'Western values' on the students through the learning of English. Chua (1985) observes that while English proficiency gives Singaporeans greater access to global economic opportunities, it also opens the door to cultural influences from Western sources. The government has noted that students in Singapore have embraced certain 'undesirable Western values' such as Western permissiveness, decadence, and the loss of work ethic (De Souza, 1980). For example, the former Prime Minister, Lee Kuan Yew, noted that the young in Singapore have adopted 'contemporary Western attitudes to work', described by him as 'the same desire to avoid taking jobs which are considered demeaning or are dirty or heavy' (quoted in De Souza, 1980, p.215). To counter these external influences and promote a set of desired values in students, the government has selected a set of values known as Our Shared Values. The government states that these values "capture the essence of being a Singaporean" and "help to preserve the cultural heritage of our ethnic communities" (Remaking Singapore Committee Recommendations, p.2). These shared values are nation before community and society before self, community support and respect for the individual, the family as the basic unit of society, consensus in place of conflict, and racial and religious harmony. The government has also introduced National Education (NE) in schools since 1997. NE aims to develop in all Singaporeans national cohesion, the instinct for survival, and confidence in the future.

However, it appears to be a daunting task to develop students who are global in skills and outlook yet rooted to Singapore. The government has painstakingly invested in the education of the young, equipping them with the requisite skills, knowledge and language ability to compete

internationally. This increased marketability, however, has given the impetus for the young and successful to leave Singapore due to personal reasons such as taking up a better job offer or simply wanting a slower pace of life. The former Deputy Prime Minister, Lee Hsien Loong, explained how the government is placed in a rut:

This is the dilemma for the Government. The more successfully we educate you, the more mobile you become. But if the best educated up stakes and leave, then Singapore will regress and fail. It is right to invest in our people. But we can only continue to do so if those who benefit the most from this system contribute back to it their fair share and more (Lee, 2003).

### **CONCLUSIONS: IMPLICATIONS FOR KEY STAKEHOLDERS OF EDUCATION**

Given the prevailing mindset which focuses on academic achievements, and the competing influences and values faced by the students in Singapore, how can an ADE help to meet both the individual and community needs? There is a need for the key stakeholders in education – principals, teachers, parents and students – to work together to balance educational ideals with pragmatic considerations to achieve what is best for the students and society at large.

Principals are in the forefront as they are now given more autonomy to run their schools and market their programs and activities to the public. There is now a greater responsibility and accountability to the other stakeholders in education who want to have a greater say in the school policy and practices. The practical challenge is for principals to match, as closely as possible, the needs of the school as a whole and the needs of individual students. Limited resources and opportunity costs mean that schools have to decide where to channel their money, time and manpower in order to develop their niche areas. How then can the schools still cater to the talents and abilities of individual students? One suggestion is for schools to explore ways to encourage student initiative and to tap onto the resources of the community. Under a new policy initiative, students can earn up to two points in a non-academic activity (known as co-curricular activity or CCA) if they start a new CCA, an ad hoc activity or a one-off event. In one instance, two students from a secondary school that does not offer soccer succeeded in organising a two-day soccer match in school for their schoolmates. In another school, the students acted as guides at the Singapore Science Centre for younger children (Ho and Almendoar, 2004). These, and many more projects, could be conceived, planned and executed by enthusiastic students under the proper guidance of the teachers. Ultimately, as Mrs Carmee Lim, executive director of the Academy of Principals, puts it: “Results are just one snapshot of life. Each school should put up its own target for its students, ultimately promoting the enjoyment of whatever they choose to do” (Tor, 2004).

In the midst of all these educational reforms under ADE, the challenge for teachers is to keep up with the plethora of changes while sustaining their passion to teach. There have been complaints about the heavy workload faced by teachers and the pressure from the school management (Liew, 2004). Consequently, some teachers respond to educational changes with a sense of pragmatic scepticism (Hall and Hord, 1987). Cognisant of the stress and constraints faced by teachers, the Ministry of Education has introduced a number of initiatives such as providing more teachers to schools, developing teachers through Learning Framework, and expanding Teacher Work Attachment (TWA). More than ever before, teachers are encouraged to explore different pedagogical methods that are innovative, interactive and enjoyable. Through an array of appropriate communicative activities, students will not only enjoy learning, but perform better in that subject. That students’ enjoyment in a subject contributes to their performance is affirmed in a recent study that shows that three in every four students attribute their good results in Mathematics and Science to their enjoyment in learning the subjects (Ho and Lin, 2004b). One such effective teaching method is peer teaching where the students took turns to explain topics to their classmates with the help of the teacher as facilitator. The success of this teaching method is

testified to in one school where classes that have tried this method outperformed the rest during the end-of-year examinations ('Curriculum change pays off for school' *The Straits Times* 16 December 2004). It should be pointed out that teachers need to adapt their teaching methods and materials to suit the local cultural context (Tan, 2005). Efforts should also be made to teach moral education beyond a utilitarian perspective; the task is to educate imaginative minds by stimulating students to reason critically about moral issues (Tan, 2004).

Apart from principals and teachers, parents play an indispensable role in supporting the initiatives under an ADE. The marketisation of education in Singapore means that parents are given more options to decide on the kind of education they want their children to receive. For example, the latest change to the bilingual policy where learning is flexible and customised allows parents to choose how much English and Mandarin they want their children to learn in schools (Ministry of Education 2004b). But given the examination-oriented culture where parents impose a lot of pressure on their children to excel in their studies, how much room are parents willing to give for their children to explore their talents and abilities? The truth is that many pragmatic parents seek to fulfil their aspirations vicariously through their children, expecting them to be lawyers, doctors and accountants, and not artists, ballet dancers and poets. However, parents need to realise that young Singaporeans have become increasingly more individualistic. Driven by pragmatism, this group resent excessive social engineering, seeing it as curbing personal freedoms, and stifling both initiative and creativity (Zainul and Mahizhnan, 1990). Increasingly, more young Singaporeans who have completed their education in Singapore have regretted spending too much time and energy on academic subjects that helped them ace their examinations but not helped them appreciate life. A typical view is expressed by a young Singaporean who stated that there is an over-emphasis on Mathematics and Science in Singapore schools. Questioning the functionalist approach to education, he alluded to the intrinsic worth of education:

Are we learning a lot more than necessary for science and maths? ... Education is about preparation for life, not just to pass exams. .... It is nice to top the world in maths and science but, as we all know, we have only so much time; we need to distribute our learning more evenly, to other fields that will be crucial in our later years. This will enable us to have a culture too and not merely be walking computers. (Kai, 2004)

Given the changing social norms and external influences due to globalisation, parents and other stakeholders in education need to accept the fact that they may no longer impose their expectations on their children. Through mutual understanding, open-hearted interaction and constant dialogue, all the key stakeholders of education need to decide on what is really best for the country and its critical resource – its children and youth.

## REFERENCES

- Almenoar, M. and Chan, E. (2004). Average in S'pore but tops in world. *The Straits Times*, 15 December.
- Bell, D. (1973). *The Coming of Post-Industrial Society*. New York: Basic Books.
- Brown, G. (2000). Lecture by the Chancellor of the Exchequer to the Royal Economic Society on Thursday 13 July 2000. [Online] [http://www.hm-treasury.gov.uk/newsroom\\_and\\_speeches/press/2000/press\\_90\\_00.cfm](http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2000/press_90_00.cfm) [February 7, 2005]
- Chen, P. (2000). Ability-driven education in post-secondary institutions. Address by Mr Peter Chen, Senior Minister of State for Education at the first symposium on teaching and learning in higher education on Thursday 6<sup>th</sup> July 2000 at 9:00 am at the Engineering Auditorium, Faculty of Engineering, National University of Singapore. [Online] [http://www.moe.gov.sg/speeches/2000/sp06072000\\_print.htm](http://www.moe.gov.sg/speeches/2000/sp06072000_print.htm) [2005, February 7]

- Chua, B.H. (1985). Pragmatism of the People's Action Party government in Singapore. *Southeast Asian Journal of Social Science*, 13(2), 29-46.
- De Souza, D. (1980). The politics of language. In E.A. Affendras and E.C.Y. Kuo (Eds) *Language and Society in Singapore*. Singapore: Singapore University Press.
- Drucker, P. F. (1993). *Post-capitalist Society*. New York: Harper Business.
- Goh, C.T. (2004). Speech by Prime Minister Goh Chok Tong at the Chinese High School's 85<sup>th</sup> Anniversary and Hwa Chong Junior College's 30<sup>th</sup> Anniversary Dinner held at the Chinese High School on Sunday, 21 March. [Online] <http://www.moe.gov.sg/speeches/2004/sp20040321.htm> [February 7, 2005]
- Hall, G.E. and Ford, S.M. (1987). *Change in Schools: Facilitating the Process*. New York: State University of New York Press.
- Ho, A.L. and Almendoar, M. (2004). No football team, so they started their own. *The Straits Times*, 8 November.
- Ho, A.L. and Lin, L. (2004a). Students here enjoy learning maths, science. *The Straits Times*, 15 December.
- Ho, A.L. and Lin, L. (2004b). Teaching less won't hurt maths, science. *The Straits Times*, 20 December.
- Kai, W.B. (2004). Education should be about preparation for life. *The Straits Times*, 17 December.
- Lee, H.L. (2003). Work and play in Singapore. Speech by Deputy Prime Minister Mr Lee Hsien Loong at the Pre-University Seminar, 3 June 2003, 9am. [Online] <http://www.moe.gov.sg/speeches/2003/sp20030603.htm> [February 7, 2005]
- Liew, K.K. (2004). Don't let teachers suffer in silence. *The Straits Times*, 4 November.
- Ministry of Education (2004a). A more broad-based school ranking system. [Online] [http://www.moe.gov.sg/press/2004/pr20040317a\\_print.htm](http://www.moe.gov.sg/press/2004/pr20040317a_print.htm) [2005, February 7]
- Ministry of Education (2004b). Singapore tops the trends in International Mathematics and Science Study (TIMSS) 2003. [Online] [http://www.moe.gov.sg/press/2004/pr20041214\\_print.htm](http://www.moe.gov.sg/press/2004/pr20041214_print.htm) [February 7, 2005]
- Ng, E.H. (2002). Human capital – the new competitive advantage in the new economy. Speech by Dr Ng Eng Hen, Minister of State for Education and Manpower at the opening of the forum on creativity in the arts, science and technology on Friday 29 November 2002 at 9.00am, Nanyang Polytechnic Auditorium. [Online] <http://www.moe.gov.sg/speeches/2002/sp29112002a.htm> [February 7, 2005]
- Nonaka, I, and Takeuchi, H. (1995). *The Knowledge-Creating Company*. New York: Oxford University Press.
- OECD (1996). *The Knowledge-Based Economy*. Paris: Author.
- Powell, W.W. and Snellman, K. (2004) The knowledge economy. *The Annual Review of Sociology*, 30, 199-220.
- Prusak L. (1997). *Knowledge in Organizations*. Boston, MA: Butterworth-Heinemann.
- Quah, J.S.T. (1990). Searching for Singapore's national values. In J.S.T. Quah (Ed.) *In Search of Singapore's National Values*. Singapore: Institute of Policy Studies.
- Remaking Singapore Committee. (2004). *Changing Mindsets, Deepening Relationships*. A Report of the Remaking Singapore Committee.
- Ryan T. (2000). The new economy's impact on learning. *The 21<sup>st</sup> Century Learning Initiative 2000*. [Online] <http://www.21learn.org/acti/prime%20economics.pdf> [February 7, 2005]
- Shapiro, C. and Varian, H.R. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Boston, MA: Harvard Business School Press.
- Tan, C. (2004). Indoctrination, imagination and moral education. Paper presented at the 2<sup>nd</sup> International Conference on Imagination and Education by the Imaginative Education Research Group, Simon Fraser University, Vancouver, Canada, 14-17 July.

- Tan, C. (2005). How culturally appropriate is the communicative approach for primary school children in Singapore? *The Reading Matrix*, 5(1), 21-35.
- Teo, C.H. (1999a). Speech by Radm Teo Chee Hean, Minister for Education. [Online] [http://www.moe.gov.sg/speeches/1999/sp291199\\_print.htm](http://www.moe.gov.sg/speeches/1999/sp291199_print.htm) [February 23, 2005].
- Teo, C.H. (1999b). The desired outcomes of education. Ministerial statement by Minister for Education Radm Teo Chee Hean at the Committee of Supply Debate, FY1999 in Parliament on 17 Mar 99. [Online] <http://www.moe.gov.sg/speeches/1999/sp170399.htm> [February 7, 2005]
- Teo, C.H. (2001). Making an Ability Driven Education happen. Ministry of Education. FY2001 Committee of Supply Debate. 15 March 2001 12:30pm. Minister's First Reply on Schools. [Online] [http://www.moe.gov.sg/speeches/2001/sp15032001\\_print.htm](http://www.moe.gov.sg/speeches/2001/sp15032001_print.htm) [2005, February 7]
- Teo, C.H. (2002). Speech by Radm (NS) Teo Chee Hean, Minister for Education and Second Minister for Defence at the launch of Academy of Principals on Friday 11 Jan 2002 at the Law Academy. [Online] [http://www.moe.gov.sg/speeches/2002/sp11012002\\_print.htm](http://www.moe.gov.sg/speeches/2002/sp11012002_print.htm) [February 7, 2005]
- Tharman, S. (2003a). Speech by Mr Tharman Shanmugaratnam, Senior Minister of State for Trade and Industry and Education at the Seminar on 'The Significance of Speaking Skills for Language Development', organised by the Tamil Language and Culture Division of National Institute of Education, 15 February. [Online] <http://www1.moe.edu.sg/speeches/2003/sp20030215a.htm> [February 7, 2005].
- Tharman, S. (2003b). Speech by Mr Tharman Shanmugaratnam, Senior Minister of State for Trade and Industry and Education at Anglo-Chinese School's 117<sup>th</sup> Founder's Day and Academic Awards presentation on Sat 1 Mar 03 at Anglo-Chinese (Independent), Dover Rd. [Online] <http://www.moe.gov.sg/speeches/2003/sp20030301.htm> [February 7, 2005].
- Tharman, S. (2004). Speech by Mr Tharman Shanmugaratnam, Minister for Education at the MOE Work Plan Seminar 2004, on Wednesday, 29 September 2004 at 9:50 am at the Ngee Ann Polytechnic Convention Centre. [Online] <http://www.moe.gov.sg/speeches/2004/sp20040929.htm> [February 7, 2005]
- The Straits Times* (2004). Curriculum change pays off for school. 16 December.
- Tor, C.L. (2004). It's not just their grades that count. *Today*, 18 March.
- Zainul, A.B.R. and Mahizhnan, A. (1990). The new environment, the young Singaporeans and national values. In J.S.T. Quah (Ed.) *In Search of Singapore's National Values*. Singapore: Institute.