

Remaining a Prepared Society: Identifying the Best for University Education in Singapore

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Introduction

Education in Singapore receives the second highest allocation in the national budget. Even during the financial crisis experienced in Southeast Asia during the late 1990s the allocation for education witnessed a steady increase in funding. In the light of the financial crisis, the International Monetary Fund praised Singapore for good fundamentals, which have helped shield its financial market from the regional crisis (New Paper, 18 March 1998). With only human resource to depend on, the Singapore government has placed a premium on manpower planning to ensure that it can keep pace with the developmental strategies for the future (Linda Low et al. 1991). The economic priorities of the nation were subsequently translated into the educational goals of the tertiary institutions. The success story of Singapore can be attributed to the state's careful manpower training to cater to the changing needs of an economy that has to respond rapidly to international changes.

Singapore has relentlessly pursued the goal of maintaining comparable international educational standards. Prior to political independence in 1965, its colonial association with Britain had laid the foundations for rigorous national examinations that were used as measurements to compare the talent distribution among generations of school children. The Primary School Leaving Examinations (PSLE) taken at about the age of twelve before being admitted to secondary school, and the Cambridge School Certificate and the Cambridge Higher School Certificate were national educational tournaments in which all school children participated. After Singapore's political independence these examinations were continued with minor changes as a result of commitments to bilingualism in educational policy.

The need to avoid attrition and wastage in the schooling system witnessed the implementation of wide-ranging policy measures in 1980 (Soon Teck Wong, 1988). A major restructuring of education was carried out on the basis of the 1980 *Report on Education*. Educational streaming was introduced was implemented in primary and secondary school education to identify children's learning abilities and train them to the level from which they could benefit. The new educational policy had significant ramifications in the way parents and families attempted to ensure that their children succeeded in the major examinations. Currently all school children in Singapore take part in at least four major educational tournaments before being allowed to enter the two

universities. The fourth and sixth years of the primary school, the last year of the secondary school, and the second year of the junior college are important examination hurdles that parents must assist their children to overcome before entering the university. Even though there are other routes to a university degree, this is the competitive route taken by most of the aspiring students. A student who is able to remain at the top of all these examinations can aspire for some of the top scholarships. The prestigious scholarships include the President Scholarships, Singapore Armed Forces Scholarships, and the Public Service Commission Scholarships. The recipients of these scholarships are identified as the top performers in their respective cohorts. Once such an identification is made, then the select few can be ensured of being sponsored to the most prestigious universities in developed countries, and upon graduation appointed to career track civil service positions. Later in their career they may even be recruited for top management positions in the government-linked private sector companies, and some of them may even be recruited to political office. This sponsored mobility route for about 100 to 200 students in each cohort is not available to all students. The rest of the successful students enter the two universities. A university degree in Singapore can contribute to greater life chances than being without a degree (David Clarke and Pang Eng Fong, 1970; Ko Yiu Chung, 1991; Stella Quah, 1991).

Until recently the entry criteria for university education in Singapore was the successful completion of twelve years of school education with demonstrated ability at the Singapore-Cambridge General Certificate Examinations Advanced Level Certificate Examinations (GCE 'A Level'). Despite the growing rigorousness of the primary and secondary schools streaming and examinations, the criteria for being admitted to university education has largely used the GCE A Level examinations. Within the universities in Singapore, there has been a gradual but consistent shift to orientate the curriculum and training of students to a rapidly changing global economy. The changes were often borrowed from the leading universities in the developed economies and adapted to Singapore's needs. The largely unchanged 'GCE A Level' examinations were seen as producing 'exam-smart' kids rather than producing pupils who could adjust well through university training to the rapidly changing global economy.

In this paper an attempt is made to document the changed criteria for university admissions in Singapore and postulate the consequences of this policy for the wider society. The contemporary determinants of university admissions are examined in the first part of the paper. The following section examines the new criteria for admissions. The concluding section examines the consequences that the new criteria for university admissions will bring about within and outside the schools in Singapore.

Determinants of Access to University Education.

Higher education has been advocated by many policy makers in view of the positive role it plays in the developmental process (Martin Carnoy, 1994). Since 1979,

two important and inter-related environmental changes in the economy have been observed (Selvaratnam, 1994). Firstly, industrial change commonly referred as the 'second industrial revolution' took place in Singapore. This meant the economy was restructured to focus on high-technology, skill-intensive manufacturing and service sector activities. Employment was to be orientated to more skilled and professional manpower. This meant higher education in Singapore had to respond to provide the needed manpower. As a consequence of the perceived demand, the second change occurred within university training and number of students admitted.

Since the mid 1980's, the perceived role of higher educational institutions to maintain Singapore's international competitiveness in the global economy has been constantly highlighted by all policy makers. As Singapore surged into economic diversification into service-oriented activities like financial services and tourism, higher education was looked to, to produce the core human resource needed in the economy. Being a global city that invited human talent from anywhere in the world, Singapore still relied on training its own core quantity of expertise.

A significant feature of Singapore's higher education is the dominant interventionist role played by the government in directing higher education policy and planning toward prescribed social and economic goals. Thus, the government's policy on higher education, which is highly oriented towards manpower needs above all other social, political, or even educational objectives, is a major factor determining access into universities.

The government either makes manpower needs known to university applicants by identifying disciplines where job prospects are good, such as information technology and engineering, or discourages students from disciplines which are approaching saturation levels, such as law and medicine. This is reinforced by the actual availability of places in various courses where expansion can take place in response to high manpower needs, and quotas may be set to restrict intake in less economically viable courses.

The concern with economic relevance goes further than simply monitoring enrolment levels to regulating access to certain fields of study. Since 1979 onwards, for example, a quota has been enforced to limit high-achieving university entrants from being concentrated only in medical and dentistry disciplines, so that they can become specialists in other disciplines. The admission of female students was limited to one-third of the medical faculty places, when it was observed that females opted out of medical practice easily. The government justified its intervention by pointing out that state subsidies to university training were not meant to satisfy personal ambitions but to meet the nation's economic and social needs. In 1993, the legal profession was seen to have an oversupply of graduates. Admissions to the NUS Law Faculty (the only faculty for legal training in Singapore) were reduced, while external law degrees obtained in and after 1996 were not recognized. The number of overseas universities whose legal degrees were recognized by the government for practice in Singapore was confined to

fifteen universities in the United Kingdom.

The two state-funded universities, the National University of Singapore (NUS) and the Nanyang Technological University (NTU) practice a joint admissions scheme in rationing aspiring students for higher education in Singapore. This practice, besides assisting the administration of university admissions, promotes close coordination between the two universities. The admission criteria of the two universities, however, based exclusively on the conversion of GCE A Level grades to a point system, need not be the same for the two universities. The cut-off points for engineering faculties, for instance, may be different for the two universities. In addition, there are variations for different faculties within any one university. The 'cut-off' points are revised periodically depending on the number of available places and overall quality of the student cohort seeking admission. Candidates who meet the minimum qualifications are not likely to be admitted due to competition from a larger cohort.

The two universities currently admit the majority of their applicants solely on a single requirement, namely the GCE A Level examinations or equivalent.[1] The applicants are evaluated based on the three best 'A Level' subjects, together with the 'General Paper' and the 'Second Language Paper' at the 'AO Level.' The grades obtained are converted to numeric scores and are summed to give an admission score. All applicants are then allocated to their respective choices of faculties and universities. Certain courses impose subject requirements such as mathematics or physics. Some professional courses like medicine and law require applicants to be interviewed or sit for an aptitude test.

A limited number of places are given to polytechnic graduates who are assessed based on their polytechnic attainments and GCE 'O Level' grades. Work experience may also be considered. Students who have obtained their education in other countries are evaluated based on their qualifications. Mature applicants, if they want to be admitted, will have to compete with school leavers through the regular admission process. Exceptionally talented students may also be admitted to the universities if they are medallists at International Olympiads or winners at National Science Talent Search.

The New Admissions Criteria

In the late 1990's, as Singapore geared itself for the twenty-first century, one of the many areas of concern for political elites and policy makers was the area of higher education. As the Singapore economy was entering a phase of no return to a pre-global economy, higher education and training within universities was deemed to provide the needed future manpower for the future. As in the past, the government began the process of re-examining university admission policies.

Figure I : Admission Framework for A-Level Graduates

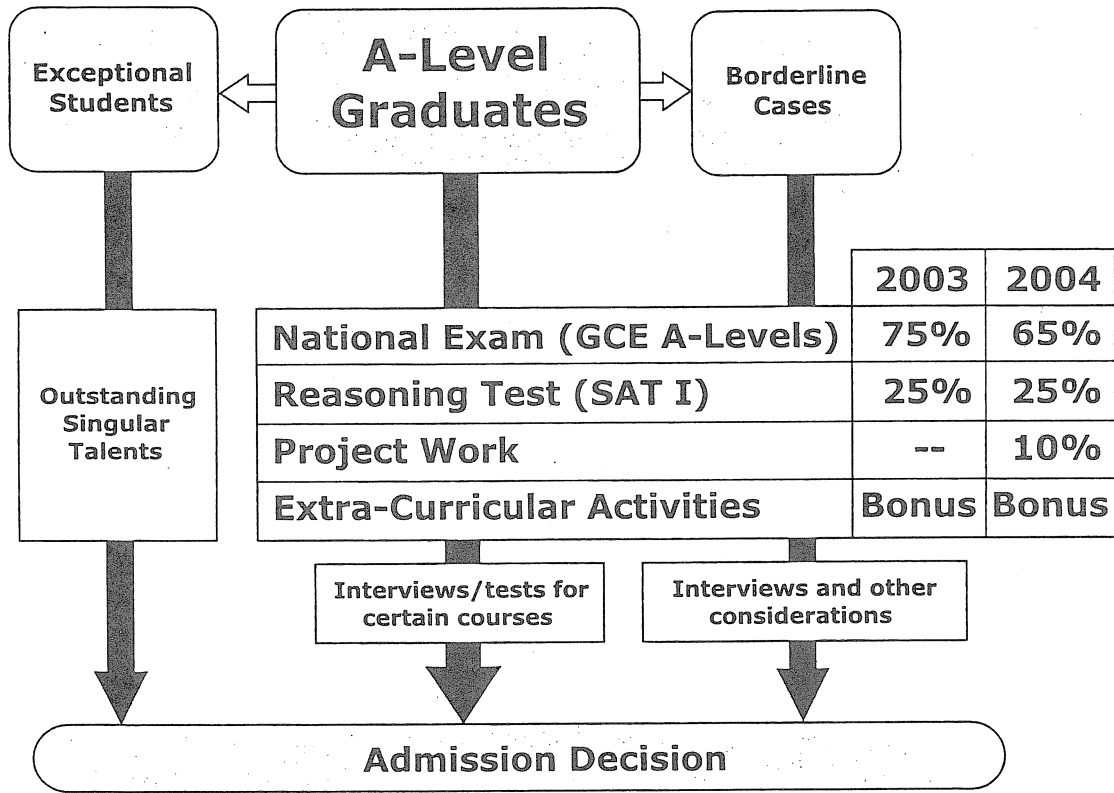


Figure II : Admission Framework for Polytechnic Graduates

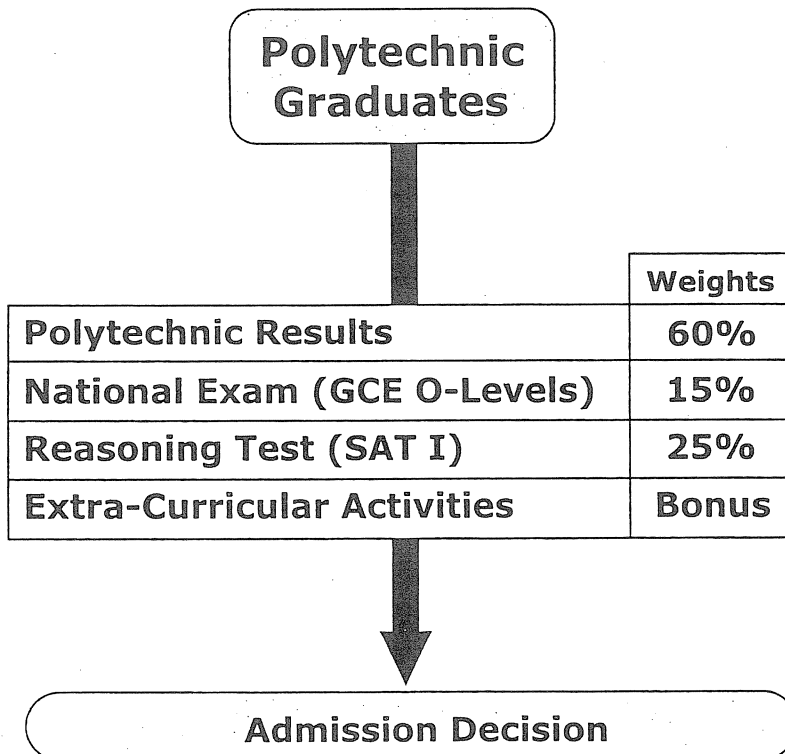


Figure III : Admission Framework for Mature Applicants

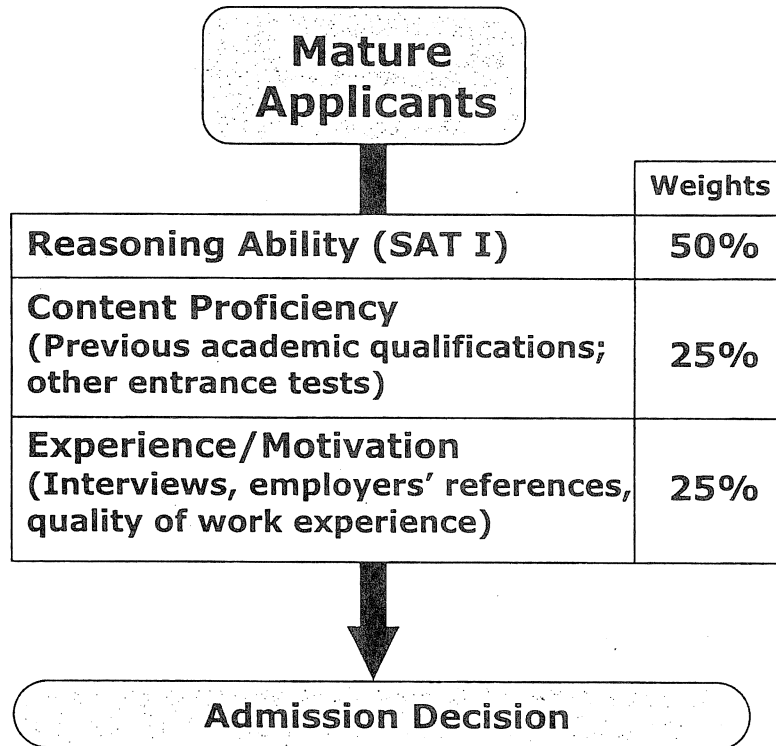
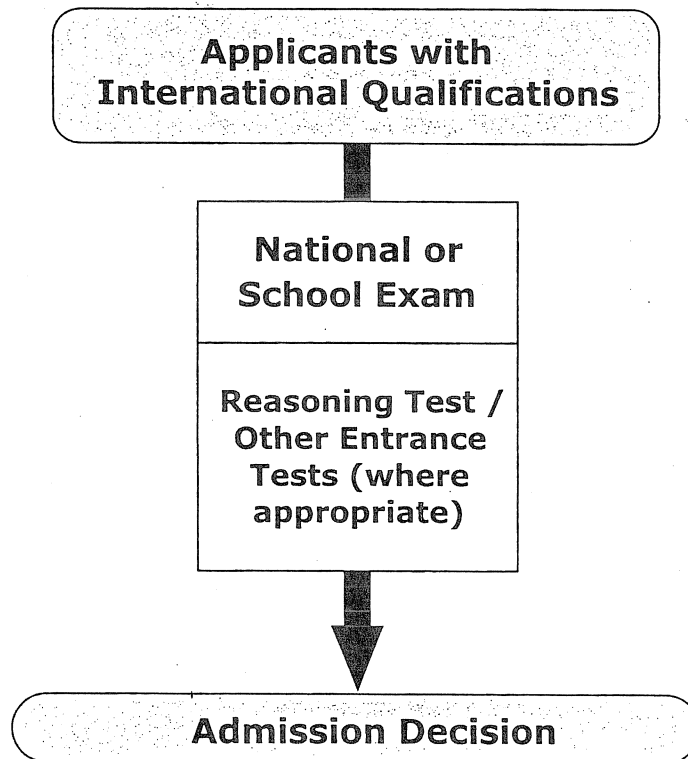


Figure IV : Admission Framework for Applicants with International Qualifications



In February 1998, the announcement of a review of the university admission system was made by the minister in charge of higher education, Dr. Tony Tan, who is also the Deputy Prime Minister and Defense Minister of Singapore. Even though minor adjustments had been made to university admission requirements in the past they did not affect the selection being based solely on the GCE A Level results. A newly constituted 'Committee on the University Admission System' was formed in April 1998 to propose alternative admissions criteria. The 'Committee' consisted of representatives from the Ministry of Education (MOE), the Ministry of Trade and Industry, the two universities, the newly proposed Singapore Management University (SMU), the junior colleges, and the private sector.

The 'Committee' was to examine the current system and propose the necessary changes. The members studied the systems of selected countries and visited the United States, United Kingdom, Sweden, Israel, and Japan. They also held discussions with senior officials from a total of sixteen institutions, including universities, government departments, testing agencies, admissions clearing houses and high schools.

The 'Committee' published its report in July 1999. The government adopted the report and announced that it will become fully operational from 2003. The new features of the proposed admission criteria do not neglect the use of GCE 'A Level' examinations. The importance given to it, however, is lessened, while aspects seen as useful for society in future are included for admission purposes. Another compulsory feature is the aspect of bilingual abilities. The present requirement of 'mother tongue' subjects will continue whereby students will be required to have the GCE 'AO Level' pass in their mother tongue (namely Mandarin, Malay or Tamil). The scheme will be applied uniformly to all the three universities, with SMU adding other features to its admission requirements.

The 'Committee' proposed that there be four categories of applicants, where each will have their specific admission requirements. The new categories of student applicants are divided into 'A Level graduates,' 'Polytechnic graduates,' 'Mature applicants,' and 'international applicants.'

The students who enter the university immediately after their junior college education are expected to be fully prepared for their university training (See Figure I). As the majority of the students are junior college graduates, their admission criteria will include the current GCE 'A Level' results as well as Scholastic Aptitude Test I (SAT I) in 2003; after that, Project Work will be added from the 2004 academic year. The current policy of waiving the requirement for the few students who attain international fame (for example the winners of International Olympiads) will remain, while borderline students may be asked to appear for an interview before admission is given. The Extra-Curricular Activities (ECA) will be used as a bonus when all other things are equal among competing students. The weighting given to ECA, however, will not be more than 5% of the total points.

The SAT I, offered by the United States College Board, has been recommended by the Committee as a means of testing reasoning ability rather than achievement. It is recommended for use in the initial years, with Singapore devising its own reasoning tests in the future. As students may spend too much time in attempting to score higher on this test and therefore suffer from overwork at school, it has been recommended that the applicant's best test score in the five years prior to university application be used. This allows students to take the test ten times, as the New York College Board administers the tests every six months.

The 'Project Work' is to be carried out in the junior colleges and aims to measure qualities like curiosity, creativity and enterprise. It is also hoped to encourage group work, team spirit, and interpersonal skills. The MOE is already testing a pilot project in schools from 1999 and this is to be incorporated into school-based assessment from 2001. The 'Project Work' will become a component of university admission from 2004.

The ECAs, which include participation in sports and arts, community service and other interest groups, will be treated as bonus points for students up to 5% of the total admission score.

A large percentage of the school cohort choose to go to the polytechnics in Singapore as admission to junior colleges is based on achievement at the GCE 'O Level' examinations. In the last decade the number seeking to enter the universities after their polytechnic education has steadily increased. The new criteria for university admissions have also drawn up the necessary criteria so as to encourage more of them to enter the universities, especially in the technology-based faculties (See Figure II).

The polytechnic graduates are already being assessed by their polytechnic results and their performance in GCE 'O Level' examination results. The SAT I scores are an additional feature for their entry to university training. The 'Project Work' required of junior college students is not expected of the polytechnic graduates, as much of their polytechnic training is assumed to have involved project-based activities.

It is in the admission criteria of mature students that university admission criteria have seen a radical departure from the past practices. Mature students are those who are at least 25 years of age and older with at least four years working experience. The three criteria applied to them are reasoning ability, subject proficiency, experience and motivation (See Figure III).

As mature students represent an older cohort of students, the academic requirements of them is reduced in favor of the wealth of experience they would add to the university student cohort in their classes. The only relative comparison they will have with junior college graduates will be the SAT I scores.

The universities in Singapore have planned to increase their international student population steadily to 30% of the total student population. As at present their presence is felt in the increased number of postgraduate students from other Asian countries. This is in line with Singapore's aim to attract foreign talent to help Singapore

compete internationally. In view of this long-term goal, university admission criteria have been planned to attract more of them. As most international students would be high achievers in their home countries, the criteria for their admission is designed to make it easier for them to come to Singapore than go to universities in developed western countries. International applicants will be admitted on the basis of their national or final school examinations together with SAT I scores.

Implications for the Future

Singapore represents one of the few states in the world where ethnic and linguistic divides have been socially engineered to create a political community (Milton J. Esman, 1990:166-201). Since the 'All-Party Report on Chinese Education' in 1956, education has been systematically used to consolidate the nation for economic progress (Michael Hill and Lian Kwen Fee, 1995: 67-90). Even though the political elites have used the state's repressive apparatus to overcome situations that were considered difficult, educational policies have always remained the best ideological state apparatus for transforming the population to participate in economic progress. The 1978 'Report on the Ministry of Education' produced by a team led by the then Deputy Prime Minister, Dr Goh Keng Swee, provided further impetus to the creation of a competitive population through education. The national streaming implemented since 1980 has carried the competition from the school classroom to the homes of the children. Since then, when a household sent its children to school, it also entered the national competitive struggle to enhance the survival of its children in the national education system. Though streaming at school continues to be a subject of political debate at every national election, families in Singapore continue to strive in ensuring that their children achieve. The implementation of the 1978 educational policy has produced numerous consequences ranging from the multi-million dollar private tuition industry to the production and sale of examination oriented educational materials, the growth of language specialists to ensure second-language learning (especially Mandarin), and the government supported ethnic self-help organizations that organize tuition classes for Malay, Indian, and Chinese children. Educational policy has been able to create a political community that largely accepts educational attainment as a meritocratic measure in a multi-ethnic society. Families continue to struggle to ensure that their children obtain the immense advantages which come from obtaining the necessary academic credentials through attendance at premier schools and private tuition .

As educational achievement has become an important criterion for admission to desired occupations and higher income in Singapore, the efforts to make children achieve in national examinations have been intense within and outside the school. Most parents and teachers push their children to be exam-smart. The certificates obtained in the national examinations have become an end in themselves as they are viewed as instrumental in obtaining admission to the next stage of the educational tournament, or

to better occupational prospects. This process, however, was seen by political elites as unsuitable in a global economy where competition is based on having the national capacity to react quickly to global economic shifts. The changes implemented in the criteria for university admissions are seen as necessary to create the man-power required for the twenty-first century knowledge-based economy. It must be noted that the changes to the criteria for university admissions have not been made in isolation from the rest of the educational scene. The universities are already undergoing rapid changes from within to become 'world-class' universities (Postiglione and Mak, 1997). The two universities have also revised their curriculum and undergraduate training (Mani, 1998). The government funds graduate training and research extensively in the tertiary institutions. A similar process has also been implemented at the school level where the popularization of information technology had received an S\$300 million boost (*Straits Times*, 1 March 1998).

In 1999, the two universities admitted 8,600 local students, including 900 polytechnic graduates. This represented a 231% increase from the 2,600 students admitted in 1980. The university participation rate has increased from 5% of the student cohort in 1980 to 21% of the cohort in 1999. When the three universities (NUS, NTU, SMU) eventually reach their capacities, it is expected to increase the cohort from 21% to 25% of the student cohort in any year. International students who may form up to 30% of the total university student population will join the local cohorts.

Until recently, the national examinations were seen as the major hurdles in the educational system. Students needed to jump higher at each 'hurdle' in order to be placed at the top of their respective student cohorts. Whenever these national examinations were synchronized to suit the expectations of the economy, it had implications throughout the educational system. Textbooks needed to be re-written, teacher training had to be pursued, and a whole range of adjustments within and outside the school took place.

So far, students who aspired to go up the educational ladder only had to overcome the examination oriented subjects like GCE 'O' and 'A' Level subjects. With the introduction of SAT I and 'School Projects,' the ramifications will be felt immediately in the junior colleges where students, teachers and parents will try to figure out how the new criteria can be managed. It will have more implications for children from working class background, and the ethnic based (but government linked) self-help organizations will be called upon to help the underprivileged. The gap between children from homes having the adequate educational cultural capital and those without will become an important factor. Children from disadvantaged backgrounds may be further disadvantaged in their pursuit to cope with the learning of content subjects as well as overcoming the reasoning tests and school projects. Needless to predict, the students from advantaged homes may find it more worthwhile, after being successful in SAT I, to apply to American universities than compete for places in the three Singapore universities. Besides the training of teachers, the junior college curriculum will undergo

rapid revision. The consequences for the education system was aptly summarized by the Minister for Education Teo Chee Hean during the Parliamentary Debate on the new criteria for university admissions:

“What we do in the University Admission System does not only have an impact on what types of students enter the universities [it] has a big impact on the whole school system because students who aspire to go to the university will focus their attention and efforts on this”. (Parliamentary Speeches, 21 March 1998)

The proposed admission system is a radical departure from the system that was totally dependent on performance in national examinations. While the former was influenced through Singapore’s close association with the British examination system, the new criteria also include those also used by American universities. The new generations of students who will be subject to these new criteria will be pushed to perform well so as to make it into the universities. It may be entirely futile to postulate whether the new criteria will only make students cross more hurdles to enter the universities, or whether they will really produce the type of youth whose training at the universities will spur them to take Singapore into the twenty-first century. It may also be equally problematic to postulate whether more Singaporean students will choose the polytechnic route to local universities or totally avoid going to local universities at the end of their junior college years. What is more significant, however, is the profound effect it will have on the entire education system and on lives within families. Besides leading to a broadening of the school syllabus, the university admission system will indeed set the bearings for the direction of change in education. At a broader level, the new policy will change the attitudes of people towards education and the attachment of value to the desired qualities necessary for the future of Singapore.

Notes

1. The other examinations considered as equal to the Singapore-Cambridge A Level Examinations are as follows: GCE ‘A’ Level Examinations/ Higher School Certificate Examinations (English and Malay Medium) conducted by the Cambridge Local Examinations Syndicate); HSC Examinations conducted by the Malaysian Examinations Syndicate; Sijil Tinggi Persekolan Malaysia (STPM) conducted by the Malaysian Examinations Council.

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