Recent Developments in Education in Singapore

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ABSTRACT

This analysis of recent developments and trends in education in Singapore attempts to show how a government through a pragmatic approach to education and nation-building has tried to resolve, within the framework of a number of unchanging parameters, some of the problems posed by constant social change and a rapidly changing national and global economy. The parameters are the multiracial and multilingual nature of Singapore society, the maximisation of the potential in all its young citizens through the provision of educational opportunities, and the maintenance of equality of treatment and opportunity for all, irrespective of ethnicity, religion and language. In the final analysis, the central tenets of an ideology underpinning the education system are identified.

In 1998 Singapore celebrated the 33rd anniversary (1965–1998) of its independence from colonial rule. Thirty-three years is not a long time in the history of a nation, but in a typically Asian tradition an anniversary is always a good time to take stock of what has been achieved or not achieved in the years past in order to prepare for the challenges ahead. Being able to take stock, review the past objectively and be self-critical has been a principal feature of Singapore’s pragmatic approach to nation building. The same is often done in the field of education, which would explain the amount of “fine-tuning” that has taken place over the last 10 years.

Singapore’s educational policies have been reviewed often enough, principally to ensure that the central aim of the system continues to be

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1 For readers not familiar with the development of Singapore, it may be pointed out that Singapore was under British rule from 1879 until 1959 when it was granted self-government but not independence. Its population, which is largely made up of the descendants of immigrants from the region, is multi-ethnic comprising Chinese (77.5%), Malays (14.2%), Indians (7.1%) and others (1.2%) including Eurasians, Jews and Europeans.

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achieved. Its aim, in brief, is to equip the young with the skills to earn a living, to have sound moral values and, as they grow up, to become responsible adults and loyal citizens. The schooling process attempts to draw the best out of each child, helping each to maximise his or her potential. The largely centralised system of schooling currently oversees 192 primary schools, 144 secondary schools (including 18 autonomous schools), 6 full schools offering both primary and secondary education, 8 independent schools, 14 junior colleges and 4 centralised pre-university institutes. Schooling is not compulsory but almost all children attend school from the age of 6. They are provided with 10 years of education: 6 years of primary and 4 years of secondary schooling. Post-secondary education of the academic type is provided in centralised pre-university institutes and junior colleges, while direct training for the world of work is given in training institutes and the four polytechnics. As will be explained in the rest of this chapter, the system has been so structured as to encourage children to complete the 10 years of basic education before they enter the world of work. A statement from the President’s address at the opening of the first session of the Ninth Parliament in Singapore in May 1997 sums up very succinctly the government’s current educational thinking, which serves as a very neat preamble to the discussion that follows:

We must develop our young to think creatively and apply knowledge in innovative ways, while recognising the wide range of abilities among pupils. We will revise the school curriculum to stretch but not overload our pupils. We will reduce the amount of factual knowledge they must acquire, and do more to build thinking and process skills. We will review the system of assessment of both schools and pupils to meet their objectives, while maintaining rigorous standards.

On looking back, we find that the educational developments in Singapore after 1965, when it achieved full political independence, are best understood with reference to the other more visible, tangible changes. The most dramatic has been the economic and physical transformation of the state, from an economy in 1965 supported largely by a sea port to a fully developed country with a per capita income in Asia second only to Japan’s. This transformation could only have been possible with a deliberate application of economic and social management principles and with a workforce properly equipped to support the transformation.

In reviewing the trends in formal school education, this analysis will examine briefly Singapore’s distant past in education (providing a historical perspective) and then focus on the changes and developments in the
education system in the last 10 years. In the analysis that follows, attention will be drawn to the central tenets of an underlying ideology which, despite modifications and changes, never wavered in its objective of educating “a child to bring out his greatest potential so that he will grow up into a good man and useful citizen” (Lee, 1979, p. iii).

In this article, we take the position that schools, as deliberately created social institutions, are nested within certain socio-political-economic realities, which explain the differences among schools across countries. While schools may not mirror society completely, they are heavily influenced by events, trends and resources in society. So, as Singapore enters a new phase of its economic development, there are new demands on the education system to produce a creative and innovative workforce with the skills required in an increasingly competitive global economy.

A HISTORICAL PERSPECTIVE (1965–1984)

Before 1965
The year 1965 marked the most important turning point in the history of Singapore. Following an unusual turn of events, Singapore assumed complete political independence. With the complete transfer of power back to Singapore, the new political, economic and social conditions prevailing then required that national policies be re-assessed and thought out anew. This was also the case with education.

In fact, the foundation of a national education system was laid way back in 1956 in the proposals of the All-Party Report on Chinese Education (Singapore Government, 1956). It proposed a system that met the educational needs of the various ethnic groups (Chinese, Malay, Tamil and others), and through this provision the larger needs of the state. Later a policy statement (in People’s Action Party, 1959), made it clear that the achievement of social cohesion and the development of a national identity through education, working against the colonial legacy of communalism and division, was the overriding priority. In particular, it proposed to break down the walls of cultural and linguistic separation through the encouragement of multilingualism, the use of locally-oriented textbooks and by giving schools a sense of common purpose and a common direc-

2. Singapore was asked to leave the Federation of Malaysia following very serious disagreements between Singapore and Malaysian leaders over policy matters and the implementation of them. The so-called “merger” experiment (1963–1965) therefore failed.
tion. This was to be done by providing a uniform curriculum for all types of schools.

1965: Year of Full Independence

These same aims were re-affirmed in 1965. Language remained a crucial factor in policy decisions. Bilingualism in education has been a constant theme, although it has been interpreted differently at different stages of Singapore’s development. One immediate consequence following separation from Malaysia was the decision to make the study of a second language (L2)\(^3\) in all secondary schools compulsory from 1966. Other measures introduced subsequently included making the second language (both oral and written) examinable and compulsory at the primary and secondary levels.

With the beginnings of export-oriented industrialisation in the late 1960s, thus breaking away from over-dependence on an import-substitution and economy, the school system experienced the beginnings of a shift in emphasis from academic to technical education. Greater attention was also paid to developing post-secondary technical and vocational education at the polytechnics. Other measures were taken subsequently to strengthen technical education. An important measure was the setting up, some years later, of the Vocational and Industrial Training Board in 1979 through a merger of the then existing Industrial Training Board and the Adult Education Board. This series of measures to strengthen technical education and the continuing education of the workforce represented the kind of down-to-earth rationality that characterised the government’s approach to building a modern industrialised state.

Report on the Ministry of Education

From the beginning, education was regarded as an investment in human resource development. For a large part of the 1970s, education managed to provide a workforce to meet the manpower needs of a burgeoning industrial economy. However, as the economy matured, the types of skills required were changing. In addition, there was high attrition when the education system became too rigid and inflexible and thus inefficient. The bilingual requirement, as understood then, was also seen to be making an excessive demand on the students. Reform of the system was therefore inevitable. The system underwent some drastic changes with the publication of the Report on the Ministry of Education (1979), which recommend-

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3. By convention in Singapore, the language of instruction (English), which is the school’s first language, is referred to as L1 and the mother tongue is the second language of the school, hence L2.
ed a method of streaming pupils based on academic ability, principally ability in languages and mathematics. On the basis of a series of tests, examinations and teachers’ reports, pupils were to be streamed into different courses of study to cater better to their needs and pace of learning. This type of academic tracking or streaming was adopted at both the primary and secondary levels, marking a major structural innovation to the system. With further refinement of the streaming system, there is now greater flexibility for pupils to move from one stream to another (i.e., a lateral transfer). The implementation of the *Report on the Ministry of Education* led to what was then called the New Education System. This system comprised the provision of streaming and changes to the school curriculum including the provision of an additional year in school for those in the weakest stream. Notable changes in the curriculum included greater emphasis on language education in primary schools, the provision of moral education as a subject in both primary and secondary schools, and the introduction in 1982 of religious knowledge as a compulsory subject in the upper secondary curriculum.4

In relation to reform of the system and the school curriculum, two other developments, namely, the establishment of the Curriculum Development Institute of Singapore (CDIS) in 1980 and the Schools Council in 1981 were very significant. CDIS was designed to produce teaching materials for schools, including textbooks, multi-media materials and educational television programmes. The Schools Council itself involved principals in the decision-making process at the Ministry level. The establishment of the Schools Council was also seen as the first step towards giving school principals greater autonomy and wider responsibility with regards to decision-making. The idea of ‘decentralisation’ underpins the new ‘cluster school’ scheme, which at the pilot stage (from January 1998 onwards) involves 59 schools. The cluster scheme is intended to be a decentralised approach to problem-spotting and problem-solving.

Although the colonial experience and historical factors continue to weigh heavily in areas such as maintaining a national examination system partly linked to an external British examinations syndicate and adopting curricular orientations that are traditionally subject-based, Singapore has, for good reasons, taken in some areas a direction seemingly against trends in mainstream Western practice if they do not suit its purposes. In fact, the streaming scheme as practised (with the provision of lateral transfers) has

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4. Subjects classified under religious knowledge were Bible Knowledge, Islamic Religious Knowledge, Buddhist Studies, Hindu Studies, and Confucian Ethics. However, after 1989, religious knowledge became an elective subject instead (i.e., not compulsory) in the secondary school curriculum.
provided greater access to learning opportunities within the system than was the case before as fewer students leave the system prematurely because of an inability to cope with an inappropriate curriculum (Soon, 1988).

There has been a close connection between educational provision and the economy in the case of Singapore. As a former Minister for Education in Singapore put it, “Particularly in the modern world, education and economic performance are indivisible” (Tan, 1992, italics added). This strong connection has so far prevented a mismatch in Singapore between the nature of schooling and what is needed to maintain and promote economic growth. However, this does not mean that schooling and education should be best defined exclusively in economic terms. Since the 1980s the government has become more conscious of some serious omissions in its educational provision. How Singapore has attempted to bring about a more rounded education for her young will be mentioned briefly here and discussed in greater detail in the next half of this chapter. For example, there is greater emphasis than before on community service in the students’ extra-curricular programme. More particularly, the fine arts (music and art) programme received much attention in the early 1980s in the school curriculum through the provision of Special Art and Music Elective programmes, located in selected schools.


Recession in 1985

The year 1985 is identified as another staging post in the development of education because it was in that year that Singapore, like many other capitalist countries, suffered a serious downturn in its economy. There was negative growth that year. This experience reminded the government and the population at large of the vulnerability of Singapore’s economy to both internal and external factors and the fact that in late 1997 Singapore weathered well the Asian currency turmoil speaks well of the lessons Singapore had learnt from past experience. In 1985, in a typically pragmatic way, a high-level Economic Committee was set up to study the situation and to make recommendations, which it did in the following year.

Translating these recommendations into educational terms, the Minister for Education announced in 1986 the following principles or guidelines for his Ministry:
(1) Education policy must keep pace with the economy and society.
(2) The basics, i.e. languages, science, mathematics, and the humanities, will be stressed to encourage logical thinking and life-long learning.
(3) Creativity in schools must be boosted through a ‘bottom-up’ approach whereby initiatives must come from principals and teachers instead of from the Ministry (Tan, 1986).

In connection with this call for promoting excellence in schools, a study tour made by 12 senior school principals to the United States of America and the United Kingdom to identify factors which would make for a good and effective school culminated in a report prepared by the same group of principals, entitled *Towards Excellence in Schools* (1987), which was acclaimed by the Minister as a ‘breakthrough’ in fostering educational innovation at the school level, and marking “a new phase in the development of education in Singapore” (Tan, 1986).

The result of all these developments was the introduction of significant reforms in the school system or the intensification of existing measures. For example:
(1) At least three measures were introduced to improve the quality of schools, the most significant of which was to allow a few of the more established schools to go independent.
(2) At the level of school management, training programmes for principals and heads of departments were intensified.
(3) There were more and varied vocational and industrial training programmes to upgrade the education and skills level of the workforce.
(4) In tertiary education, facilities were expanded and student intake increased.

The provision of independent schools requires some elaboration here. The scheme started in 1988 with three well-known government-aided schools opting, with the government’s encouragement, for greater administrative and professional autonomy. By 1990, six schools had taken the independent route and today there are eight of them. The idea was for these schools, working under the same parameters of a bilingual policy and a common national curriculum, to hire their own staff on improved salary scales and try out innovative programmes and new ways of teaching. If the new measures should work in these schools, it was intended that they could be replicated in other schools to improve the general quality of schooling in Singapore. While each independent school continues to receive a grant from the government and is expected to set its own fees (currently ranging
from S$70 to S$200 per student per month), which are considerably higher than those in government schools, the government has given the assurance that “no academically able pupil who wishes to attend an independent school is deprived of the opportunity to do so as a result of financial constraints.” The reference was to the Edusave\(^5\) scholarships and other forms of financial assistance (see Gopinathan & Morriss, 1996).

**Fine-Tuning of the System After 1990**

The term ‘fine-tuning’ has served as a useful code word to describe major changes in the system, as it connotes both continuity and change. Such a fine-tuning exercise took place in 1991, a year which was marked by a number of major initiatives in decisions concerning education.

*New Initiatives in Education*

In that year, for example, the Committee set up to review the education system issued its report entitled *Improving Primary School Education* (Ministry of Education, 1991), which recommended a number of changes to the system. The main recommendations adopted after further modifications were, in brief:

1. The provision of a two-stage primary school system with a number of streams for language learning which children can opt for depending on their academic ability and on their parents’ wishes.
2. The provision of a modified primary school leaving examination, taken at the national level, which will place children into appropriate courses at the secondary school level.
3. The expansion of vocational and technical training opportunities at the secondary and post-secondary level with the establishment of a technical option in the Secondary Normal course as well as the creation of additional opportunities for post-secondary technical education via the setting up of the Institute of Technical Education.

The then Minister for Education described the changes as “far-reaching”, because many more children will have at least 10 years of general education before they go on to junior college or vocational or technical training at technical institutes or polytechnics. To get a mental picture of the structure of the education system as it is now, see Figure 1 (See also Sharpe & Gopinathan, 1996).

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5. The nature of Edusave as an additional financial scheme of the government to help improve the quality of educational provision here is explained in some detail under a separate sub-heading later in this chapter.
Fig. 1. Singapore Education System. From Ministry of Education Singapore (1997).
As a quick overview of the re-vamped system shows, it is to be noted (Fig. 1) that primary education, spread over 6 years, is so structured to have a foundation stage of 4 years (primary 1 to 4) followed by an orientation stage of 2 years (primary 5 to 6). Streaming of pupils now takes place at the end of the foundation stage at primary 4, instead of primary 3 previously. Secondary education continues to have the Special, Express and Normal courses, which represent the different streams of academic pacing.

The revised guidelines for the distribution of curriculum time in primary 1 to 4 allow for 33% for English language, 20% for mathematics and 20% for other subjects, retaining the present allocation of 27% for mother-tongue learning including moral education. In the spirit of giving schools greater responsibility in decision-making, school principals have some flexibility and latitude to allocate curriculum time according to the needs of their own pupils.

In order to cater to a wider range of abilities and aptitudes among pupils, the secondary Normal course provision was expanded in 1994 to include a technically-oriented stream. This additional provision of a Normal (Technical) stream makes it possible for some less academically-oriented students to have a basic secondary education comprising a curriculum of four core subjects (viz. English language, the mother tongue at the functional level, mathematics and computer applications) together with science, technical studies and home economics. These are examinable subjects. Non-examinable subjects are social studies, civics and moral education, physical education, and art and crafts.

As shown in Figure 1, the provision of post-secondary education in the junior colleges and the four polytechnics remains largely unaltered. Academically able students (about 20% of the age cohort) who want eventually to further their studies at university will go to junior colleges, while the polytechnics will train students (about 40% of the age cohort) with technical and commercial inclinations, who meet the stated admission criteria. The four polytechnics now offer a wide range of subjects and disciplines leading to the award of a diploma qualification, which can be used as an admission qualification to the 2nd year of degree courses both in Singapore and in some universities overseas. This therefore constitutes another route to university, that is, through the polytechnic.

Another major initiative was in the provision of post-school training represented by the former Vocational and Industrial Training Board (VITB). VITB was renamed Institute of Technical Education (ITE) in April 1992 to reflect more correctly the post-secondary nature of its training provision planned for another 20% of the age cohort of school leavers.
The new ITE is so structured as to provide vocational and technical training courses to meet the needs of students with 10 years of secondary education. Full-time training and apprenticeship programmes, leading to the award of different types of certificates, are offered. There was an enrolment of almost 10,000 students in ITE’s 13 vocational institutes in 1996.

In the meantime, the process of decentralising the school system by allowing the more established schools to become independent continues, as a way of improving the quality of educational provision. Currently there are eight independent schools, but the government announced in 1992 the setting up of a number of ‘autonomous’ schools from among good so-called neighbourhood schools. These schools are located in the heartlands of public housing estates and generally serve children from working class catchment areas. The results of public examinations, usually a visible measure of achievement for parents, have shown that they have done as impressively as the more prestigious, sought-after schools. This quality is often described by the government as the value-added attribute of certain neighbourhood schools, that is, the students did much better than could be predicted from their performance at the point of entry to the schools. Such partially independent or autonomous schools have the flexibility to introduce innovations while complying with national standards regarding the core curriculum and the language policy of bilingualism. Initially, 6 schools became “autonomous” in 1994, another 6 in 1995 and a further 6 schools in 1996 to make a total of 18 schools taking the same route. These schools have been chosen for their good track record, the leadership quality of the principals and their physical location. With regard to the last attribute, it should be noted that the current 18 autonomous schools are located in different parts of the island - a consideration that makes the government’s claim of equality of educational opportunity transparent and tangible.

Autonomous schools receive additional funding from the government to allow them to introduce extra programmes for the students’ personal and educational development. Unlike those in independent schools, students pay only S$15 to S$32 per month or S$3 to S$18 more than what is paid by each student in government schools as school fees. For this reason, parents welcome this latest educational development as a less expensive alternative to independent schools.

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6. While the autonomous schools receive more government funding (about 10% more for each student each year) than other government schools, independent schools receive less government funding but they have full authority over staffing matters, the choice of special programmes for their schools and the setting of fees.
Teacher Education and Tertiary Education
To support the move towards greater excellence in the school system, teacher education was also upgraded with the formation in July 1991 of the National Institute of Education (NIE), by merging the former Institute of Education and the College of Physical Education. At the same time, NIE also became part of the new Nanyang Technological University (NTU), Singapore’s second university, which currently offers courses in engineering and the applied sciences, accountancy and business administration and communication studies. In time, NTU will develop into a comprehensive university like the National University of Singapore. It is reported that the present Singapore Institute of Management within which the Open University Degree Programme is located will serve as the nucleus of a third university in Singapore.

To allow working adults to study for degree qualifications as mature students on a part-time arrangement, the Open University Degree Programme (OUDP) was formed in 1992. It is modelled largely on the British version of an open university, although unlike the British Open University, the OUDP has set minimum admission criteria at the “A” level.7

In summary, there are now 13 vocational/technical institutes, four polytechnics, two universities and an open university. Having provided greater access to post-secondary education in the local setting, the government is working towards the target of having 20% of a school cohort receive technical-vocational education at the ITE, 40% receive polytechnic education and another 20% university education.

Changes in Educational Funding
All the changes have led to increased educational expenditure on the government’s part. In this connection, it has in recent years made several new moves in the financing of education. Firstly, the government has committed itself to increase spending on education from 4 to 5% of the GDP. Furthermore two bold initiatives were made in 1991. An Edusave scheme was announced to enable grants to be given to each child between 6 and 16 years to meet specified educational expenses. An endowment fund was established with a capital sum of 1 billion dollars to be topped up yearly to 5 billion dollars. Students will be given grants with income generated from this fund, which could be used for additional classes in schools, extra courses such as those for music and computer education, educational tours, textbooks and part of miscellaneous fees in independent schools. There

7. The terms ‘O’ and ‘A’ level refer respectively to the ordinary and advanced level General Certificate of Education examinations conducted by the Ministry of Education in Singapore in conjunction with the Cambridge Examinations Syndicate in the UK.
are also scholarships and grants drawn from this fund for the top 25% of students in independent schools and the top 10% in government and government-aided schools. The Edusave scheme has been further widened to provide, from 1996, new merit bursaries for able students who cannot afford the cost of education. In summary, then, this new arrangement, aimed at giving “all the help it can to able children from poor homes” provides four avenues for financial assistance to the student population in the school system, namely, (1) Edusave for every child irrespective of academic ability or social-economic standing, (2) Edusave for the school irrespective of the school’s academic standing, (3) scholarships and grants for top students, and (4) merit bursaries for students in the top 25% in their own schools whose families earn less than S$3,000 a month. Interestingly, this additional financial provision incorporates an element of choice in the use of funds, thus serving to customise the use of educational facilities according to need as well as merit.

AN UNDERLYING IDEOLOGY IN EDUCATION

In looking back over the last 10 to 15 years, we have no difficulty in identifying the central tenets of an ideological position with regard to education in Singapore. The first would be the belief in an overriding relationship between education and the economy. Speaking in 1986 to a university audience, a former Minister for Education declared: “One of the key factors which must guide our education system in future years must be to ensure that our education system remains relevant to the type of economy in which our children will have to find employment when they leave school” (Tan, 1986).

The second tenet is the belief in providing equality of educational opportunity based on merit, ability and effort. There has been a deliberate policy of singling out students deemed to have exceptional ability to develop a talent pool, which will provide the continuity for middle-level and top-level leadership into the next generation. This system of selection and reward has been justified on the grounds that, given the limited talent pool because of the relatively small size of the population, those with the potential to lead must be given the widest opportunity to develop into effective leaders. However, this does not necessarily mean that the less talented are neglected; there are ample opportunities for them, too, but they must expend the effort to benefit from the provision. The Ministry of Education has set up a scheme of Learning Support Co-ordinators, currently at its pilot stage, to co-ordinate and streamline existing schemes to help slow
learners and underachievers. Those who will benefit from this new scheme form the bottom 20 to 30% of primary one pupils who are thought to be at risk. In this way, the system caters simultaneously to both the fast and the slower learners.

The third tenet is implied in the language policy for schools, which is that equity and efficiency in educational provision must be complemented by character development. Students must leave school with a moral understanding of right and wrong and of their place in society, what one Singapore leader has called “moral and spiritual underpinnings” (“Young need moral,” 1998). This provision is partly implemented by the maintenance of the mother tongue in the school curriculum and partly through the direct teaching of moral values. Thus the mother tongue is intended to be a means of strengthening cultural resources and ethnic identity as well as a vehicle for moral instruction. As in the case of the Chinese community, for example, the government has attempted to preserve the best traditions of the former Chinese community schools by turning some of these better schools into Special Assistance Plan schools offering English and Chinese at first-language level and attracting the best of the primary school leaving cohorts to these schools. There was also the experiment with the teaching of Confucian ethics. Moral education is presently included in the primary school curriculum and is taught in the mother tongue, which continues into the secondary school as moral and civics education. Such measures help to preserve the mother tongues as valuable cultural resources. In addition, because of a demand for it, a total of 43 schools are now offering the mother tongue (i.e., Chinese, Malay and Tamil) at a higher level (i.e. Higher Chinese, Higher Malay, Higher Tamil) to increase students’ mastery of the respective languages.

**SCHOOL EFFECTIVENESS AND EFFICIENCY: CURRENT AND FUTURE ISSUES**

Singapore presents an interesting case of a developing country which has made both efficiency and effectiveness prime elements in the education system; it also illustrates some of the difficulties. What has continued to drive the system in the recent past is a recognition of Singapore’s vulnerability owing to its small size (with a population of less than 3 million), lack of resources, and its recognition that it cannot continue to have poorly educated people as it moves into a developed economy status. Thus the development of human resources through education and training, and indeed the promotion of lifelong learning have become critical. This ex-
plains why Singapore links education so closely to its economic priorities and its continued high investment in education and a pragmatic vision that allows for continual fine-tuning and reform.

The case of streaming deserves further discussion. As noted earlier, it flew against conventional wisdom and practice. Many critics in Singapore had earlier (at the inception of the scheme) pointed to possible adverse effects on pupil motivation and self-concept that would flow from the streaming-labelling process. It was also pointed out that it would be very difficult to make accurate predictions about students’ ability at the age of 8 (an earlier practice), especially in a system in which English was the main medium of instruction and Chinese dialects (for the Chinese community at that time) the main home language. The government’s answer was that the system in the late 1970s was inefficient as shown by pupil attrition and wastage; it could not, without reform, provide for Singapore’s needs. Streaming would make it more efficient as it would force teachers to come to decisions about students’ ability and performance and the government would provide resources through a new set of syllabuses, curriculum materials and in-service teacher training, to meet the differentiated needs of students. As a result, the system was able to reduce attrition but at the cost of segregated classrooms and narrowed academic opportunities.

The 1991 reform could be seen as a further comment on the basic assumptions of the solutions proposed in the 1979 Report on the Ministry of Education. While the reform did not remove streaming, it delayed by 1 year (now at age 9) the streaming decision. More fundamentally, and driven by the economic imperative of the need to develop a post-industrial economy, it recognised the need to have all students provided with 10 years of general education. It recognised the failure in the earlier policy of sending out students to vocational training on the basis of insufficient education. However, while the principle of 10 years of general education for all is accepted, students are still tracked at the secondary level. The greatest curricular challenge for the system today and in the immediate future is to provide a relevant general education for the Normal (Technical) students who constitute the bottom 20% of the ability band in a school setting in which schools aim to have students do well in the ‘O’ level examinations. The first cohort of Normal (Technical) students has graduated and all qualified for admission to ITE’s full-time training programmes.

The government has also borrowed, in its quest for efficiency in the education system, some market principles. Since 1992 secondary schools and junior colleges have been ranked in the Straits Times Schools 100 Report each year, principally on the basis of the schools’ ‘O’ and ‘A’ level
examination results. The principal objective of The Straits Times, Singapore’s only English daily, was to make the information on good schools available to a larger segment of the population. This move, it was hoped, would make schools more efficient as parents would be able to make more informed choices as to which were more effective schools. While this has indeed happened, the costs are not inconsiderable. There is evidence of increased pressure on students and teachers, and this in an already competitive system. It is said that some schools have even gone to the extent of dropping subjects like literature because it is perceived as a difficult subject in which to score high marks. But the criteria for judging schools may have to be modified. Given the structural changes in the Singapore and world economy in the 21st century, a former Minister for Education has said, “We will ... have to shift the emphasis of the education system, beginning with our primary schools, away from the mastery of content towards the acquisition of thinking and learning skills that could last students through life. The Education Ministry is looking at ways to achieve this.” (Lee, 1995) This is one of the fundamental concerns for the next stage of Singapore’s educational development.

On the question of the effectiveness of these reforms, it is obvious that most of the consequences of these changes can only be observed and be apparent years later, but there are already some signs pointing in a positive direction. Firstly, the reduction of student attrition has taken place, but the present political leadership would like to see a further reduction in such educational wastage. Secondly, the findings of a survey reported in The Straits Times, “Singaporeans better educated,” (1995) show that the mean number of years of schooling of the adult population rose from 5.8 years in 1984 to 7.3 years in 1994. More pertinently for the argument of this chapter, as of 1994, younger Singaporeans, aged between 25 and 29, had spent an average of 10.1 years in school. Thirdly, it will be recalled that one of the expressed objectives of the education system in Singapore is the development of individual capacities to their fullest potential through the provision of equal educational opportunity. The measurable part of this objective is, in our view, reflected in the results of public examinations over time. These results have improved in the last few years, as shown in some tables made public by the Ministry of Education in The Straits Times (“Malay pupils,” 1995), of which Table I is a relevant example.

Mathematics was generally thought to be a relatively weak subject for students of ethnic groups other than the Chinese, and is therefore a fairer subject to look at for intra-group improvements (if any) and on which to make inter-group comparisons. The ‘O’ level papers taken at the end of 10 years of formal education continue to this day to be set and marked over-
seas; there is therefore external validation. As Table 1 shows, there have been increasing levels of achievement in mathematics over the years for each of the ethnic groups. Of the Malay students in particular, because equality of educational opportunity must be seen to be operating, it is reported in *The Straits Times* (“Malays must tackle”, 1997) that 35% of the Malay candidates taking the ‘O’ level in 1996 passed mathematics, up from 10% in 1980 and 30% passed science, up from 12% in 1980.

Seen in the proper context, these results do reflect the effectiveness of the system measured in a particular way. While it is true that the relative positions of groups which have gone through the same education system have not altered much, what is most significant is that each group has been making substantial progress and that the gaps between groups are getting narrower.

However, the issue of school effectiveness raises broader philosophical questions. In the last analysis, what is education for? How will the different needs, abilities and aptitudes of children be catered for? Given that economic competitiveness is important and thus a linking of the economy and education necessary, how does a country avoid an excessive utilitarianism from narrowing educational objectives and processes? As indicated earlier, the government is paying attention to these issues.

We noted earlier the introduction of Art and Music Elective programmes in selected schools. There is concern to produce well rounded individuals, and this ties in with developments outside schools where a strong infrastructure in the form of museums on civilisations, art galleries and a performing arts centre are being built to support and develop a general interest in the arts and the country’s and Asia’s cultural heritage.

Perhaps the most telling aspect of the education system is the commitment to producing a good citizen. That presupposes a commitment to

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* The term literally means the union of an European and an Asian. There is a distinct community in Singapore of the offspring of such inter-marriages and their descendents.
social responsibility, to adherence to civic values, and an affirmation of morality. With increasing materialism among the young growing out of general material affluence, we believe that in education for the future the stress on morality in subtle ways will be valuable as a further bonding mechanism for the different ethnic groups in Singapore and also as a counter to the types of undesirable influence that the young in Singapore, being as open as the city is, are subject to. Currently the inculcation of values in many ways redeems the Singapore education system from being a mere tool of social engineering and balances off the bias on efficiency and complete systematicity.

In summary for this section, the challenge for the school system in Singapore in the immediate future is to combine the methodology and the learning discipline that have produced high academic standards with new teaching-learning strategies and practices that will also promote critical thinking, creativity and morality.

CONCLUSION

Briefly, then, developments in education in the last 15 years in Singapore have been directed at fine-tuning the system through (a) reducing educational attrition so that students remain in the system at least 10 years, (b) giving greater flexibility to streaming and providing more routes to post-secondary and polytechnic education, (c) providing greater access to university education by starting a second university for school leavers as well as an open university for mature students, and (d) decentralisation of schools in the form of a major change in governance providing “independence” for some schools and “autonomy” for a number of other schools.

This analysis has tried to show how in recent years school management, curriculum planning and development and teacher education have all been quite dramatically transformed through major educational initiatives, reforms and new policy directives. From the connectedness of all these initiatives we have inferred an orientation or force driven by a particular ideological position. Finally, it may be worthy of note that while most education systems undergo changes from time to time, in this case all these changes have been made without much disruption to the system. It is an efficiency driven by pragmatism.
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