

Distance Education in Asia and the Pacific:

SINGAPORE

Gajaraj Dhanarajan

THE NATIONAL CONTEXT FOR DISTANCE EDUCATION

Singapore is a democratic Republic. It became a sovereign, independent Republic on August 9, 1965. Before that it was part of the British colonial empire till September 1963 and after that, a part of Malaysia. It is by all measures a healthy, functioning democracy that has been highly successful economically. Other than a highly skilled and talented population, the island nation of about two million people does not have any natural resources on which to base its economy. Manufacturing and trade are the two mainstays of the market economy and in the last two decades it has established itself as the fourth dragon after Japan, Korea and Taiwan.

The Republic has a parliamentary system of government. The head of state is the President, who is nominated and elected by parliament. The administration of the government is vested in the cabinet headed by a Prime Minister. The cabinet is responsible to parliament, which is unicameral with a membership that is unique as parliamentary practices go. It is made up of eighty-one elected members, six non-constituency members who are selected from candidates who stood for and lost in elections and another six nominated members selected by parliament to represent minority views. The present parliament was constituted in 1988 following a general election.

Parliament passes legislation, approves budgets, questions the administration, debates policy and safeguards the integrity and sovereignty of the state. The two arms of the state viz the judiciary and the executive operate under the ambit of the written constitution. The President who is the nominal head of the executive is supported by the cabinet whose members are appointed by him. The head of the cabinet is the Prime Minister. There are fifteen ministries, each headed by a Minister, that serve the executive. Collectively they are accountable to parliament. The Ministries that make the Singapore cabinet are: Communications, Community Development, Defense, Education, Environment, Finance, Foreign Affairs, Health, Home Affairs, Information and the Arts, Labour, Law, National Development, and Trade and Industry. The Minister and the Ministry of Education have responsibility and jurisdiction on all matters relating to policies and practices of education at the primary, secondary and tertiary levels.

The Republic covers a territory of 620.5 square kilometers. There are also about fifty smaller outlying islands and reefs; but the bulk (99%) of the population lives on the main island.

The Singapore economy is mostly market driven. Natural resources are scarce and therefore the island depends on imports for virtually all its requirements including food, water, consumer goods, raw materials, capital goods and fuel. The island therefore must export on a sufficient scale to generate foreign exchange earnings to pay for the imports, and the volume of exports must grow if the population is to enjoy the current standards of living.

In 1990 the economy saw a growth of almost 8.5%. This growth was spearheaded by the manufacturing sector, with petroleum products, paint, chemicals, and pharmaceuticals

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being the fastest. The financial and business services sector also expanded by about 15%, the commercial sector including hotels, restaurants, and entreport trade grew at about 8.5%, transport and communication at nearly 9% and the construction sector by about 7%. The contribution of primary production to the economy, given the island's location and size did not amount to much. In 1990 it was less than 0.5%.

Current development in human resources is geared primarily to meeting the manpower needs of the Republic and towards this end provisions for and the channeling of participants in education is carefully managed by a government that is extremely sensitive to its competitive edge in the international market place.

TABLE 1: The Manpower Situation in Singapore in 1986*

Occupation Category	Total Number of Persons+
1. Clerical and related workers	180,600
2. Sales workers	155,600
3. Service workers	136,500
4. Production workers	411,000
5. Professional/Technical workers	126,400
6. Managerial staff	68,100
7. Agricultural workers	12,800
8. Others	57,900

* Source: Economic Survey of Singapore, 1986.

+ To the nearest thousand.

Government derives its income through duties levied on a selective group of products, rates or tax on landed property, entertainment, hotel accommodation, income, profits and earnings. It also derives income from various licenses, sale of land and investments. In 1990 the total government revenue was SG \$16,425,000. In that year government expenditure was SG \$9,037,000. Of this SG \$1,791,000 or 19.8% was allocated to education. Besides direct government support for education there were also other sources of funding for worker training, retraining, and upgrading, supplied by industry, businesses, trade unions and voluntary agencies.

In 1990 the population of Singapore was 2,690,100. It is basically a Chinese society with the non-Chinese races making up 22.3% of the population. The male to female ratio is roughly 1:1. Singapore is aging albeit slowly. Of the 2.6 million people about 31% are under nineteen and 9% above sixty. The remaining 60% are the productive part of the population. The literacy rate in Singapore is among the highest in South East Asia. A large proportion of the population has the capacity to use at least one of the four official languages at more than functional levels.

Language of Instruction

Singapore has four official languages. These are English, Chinese (Mandarin), Malay and Tamil. All four are also used for social, commercial and educational purposes as befits a multi-ethnic and cultural society. However, for pragmatic reasons academic instruction is

provided only in English at the tertiary level, in English and Mandarin at the upper secondary school level and in all four languages at the primary school level. Separate schools are established for each language stream. Children are given the choice of instruction at the primary level and in a society driven by market forces, inevitably English and Chinese are the most popular.

Education System

Singapore places a high premium on education. It is also a much debated political issue. The nation invests a substantial portion of its resources on educational activities. It is a vehicle for nation building. There is available today compulsory primary education and almost universal access to secondary education, at no or low cost. Access to higher education is selective and merit based.

There are, currently, 200 primary schools, 129 secondary schools, fourteen junior colleges and four centralized pre-university institutions in the country. The total enrollment in these schools was about 460,000 in 1990 and serving these half a million students are about 20,000 teachers. Besides these, some 17,000 young people attend full time training at the colleges and associated centres of the Vocational and Industrial Training Board.

Before children enter formal schooling on or just after their sixth birthday, many would have enrolled in kindergartens in courses that would vary from one to two years.

Formal primary education begins when a child is six years old. This phase of schooling lasts for six years. The curriculum is broad based. Literacy and numeracy are emphasized, as is moral education. The curriculum is common to all schools and achievement is measured by a Primary School Leaving Examination (PSLE). On the basis of performance in this examination, streaming into secondary school takes place.

Secondary education has three streams. Performance at the PSLE will determine the stream in which a student is placed. The three streams are Special, Express and Normal. Special and Express students prepare for the Singapore School Certificate Examination in four years. Students in the Normal stream take four years to do an ordinary level examination and if successful are allowed to proceed to a fifth year for the Singapore School Certificate Examination.

Successful completion of secondary education is a ticket to pre-university studies. Competition is extremely tough in this sector. Once again two options are available. High achievers can look forward to a two year programme in one of the fourteen junior colleges and the others will have to compete for a place in one of four centralized institutes where they will take three years to complete the pre-university courses. Both two and three year cohorts sit for the Singapore Advanced Level Examination. Students who perform well in these examinations compete for places in the two universities of the nation.

There are other post secondary, non university educational opportunities available to young people. Pupils interested in pursuing technical and vocational skills can continue their post primary studies in technical schools, which also have a five year curriculum leading up to technical certification. Those who do not wish, or fail, to enter pre-university programmes can seek admissions in the four polytechnics of the nation. The polytechnics offer three year programmes leading up to diploma level qualifications in business, technology and other engineering fields.

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Teacher education in Singapore is provided by the Institute of Education and the College of Physical Education. Both these separate entities were merged in 1991 to become the National Institute of Education. This is an independent establishment under the umbrella of one of the universities in the Republic. The student population of the National Institute of Education in 1990 was 3,586.

Technical education at the diploma level is provided by four polytechnics. They are the Singapore Polytechnic, Ngee Ann Polytechnic, Temasek Polytechnic and the Nanyang Polytechnic. The first is the oldest and the last the youngest. In 1990 some 16,000 students were studying a variety of courses in these institutions.

There are two universities in Singapore. The first and the oldest is the National University of Singapore. Its history dates back to 1905; the second is the Nanyang Technological Institute which was set up in 1981. Together the two institutions cater to undergraduate and postgraduate studies. In 1990 there were some 24,000 students studying in these two institutions.

TABLE 2: Enrollments in Educational Institutions in 1990

Type of Institution	Enrollment
Primary	257,757
Secondary	189,756
Vocational	26,468
Crafts	2,634
Tertiary	43,413

Singapore is well provided with communication infrastructure for internal and external linkages. It is a hub for regional air and sea services. Road and rail services link the various parts of the island nation effectively and efficiently. There are good public transport facilities. Postal services operated by the government are efficient and in recent times courier and mail services by proprietorial companies have been added to this provision. The telecommunication services are efficient. Penetration of telephones into the population is among the highest in the world. In 1990 an estimated 1,000,000 telephone lines served the population with about thirty-seven telephones per 100 people. There are more than 319,000 pagers and another 45,000 sets of mobile telephones. Facsimile transmission facilities are also increasingly popular. Advanced interactive videotext systems are being put in place as well.

The mass media includes eight daily newspapers, nine radio channels, and three television channels. Ownership of television, video tape recorders and radio receivers is very high. Some 600 licensed printing establishments service the nation.

HISTORY AND BACKGROUND

The level of current educational provision in Singapore is now very high. Adult education opportunities are also extensive. Given the compact size of the territory, ease of

communication, and public provision for training and re-skilling, participation rates in these programmes are also among the highest in Asia. All of these activities are mostly supported by public funds. They have been and are being conducted in traditional style, which by and large fits with the perception of people on matters of education.

Until very recently, educational planners in Singapore did not see a need to make provision for either an open or distance education system for the island. All levels of education were easily available to the population, and drop-out rates in schools were minimal due to an efficient streaming system that placed individuals in channels appropriate to their demonstrable abilities, therefore access to self-paced distance education was not necessary.

While there has been a lack of distance education provisions through the public sector, the private sector has been active in facilitating self-paced learning for a very long time. The history of proprietorial distance education goes back to the late 1940's in Singapore. At least two major business houses have been involved in providing correspondence tuition for the University of London (external) degree programmes in Law, Arts, Economics, Divinity, Mathematics, Statistics and English. Home study courses by off-shore organizations using Singapore agents have also been available to Singaporeans, with emphasis on career, technical and vocational fields. Most of these programmes would not be considered as distance education as defined in this study, though. In addition, statistics are generally not available or difficult to come by because of the business nature of such provision. However the existence and survival of such businesses over a fifty year period seems to indicate a sustained interest by the population for such provisions.

From the mid-eighties onwards a new kind of distance education provider has emerged in Singapore. Driven by economic necessities and a perception of market opportunities, a number of British and Australian universities have been delivering their courses in Singapore using self-paced learning materials. These materials were mostly driven by print but they also contained audio and video elements and correspondence tuition. Occasionally tutorial support was also provided by the institutions using local or foreign academics. The fields of study were limited to areas such as Business Studies and Arts. Levels of study were at the first degree level except in Business where MBA programmes were available. In 1990 more than a dozen universities and polytechnics have been active. Some of them are the Universities of Warwick, Hull, Starthyclyde, Brunel and Cranfield from the United Kingdom; and the Universities of Macquarrie, Southern Queensland, Edith Cowan and Charles Sturt from Australia. Student and course statistics are not available for these initiatives.

Concerned over the proliferation of distance education activities by overseas tertiary institutions and sensitive to the learning needs of its young adults, the Government of Singapore embarked on two major distance education initiatives in 1989. The first involves the training of working adults in basic numeracy, literacy, management and supervisory skills. The National Productivity Board is the home of this initiative. The programme is called Fast Forward and Learning. The second involves the setting up of the Singapore Open University. The planning of the University has been vested in the Ministry of Education.

The National Productivity Board of Singapore has the mandate and responsibility to improve the intellect, talent, skills and enhance the productivity of Singapore workers, supervisors, managers, industries and businesses. Set up by the Government of Singapore in 1972, the Board undertakes the task of improving the knowledge and skills of workers to prepare them for higher skilled and more value added jobs. The Singapore workforce is

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made up of about 1.3 million workers of various educational levels. Table 3 captures the educational profile of the Singapore workforce in 1986.

TABLE 3: Educational Profile of Workforce, 1986

<u>Qualification</u>	<u>Percent of Workforce</u>
Below Secondary	52.5
Secondary	30.5
Above Secondary	17.0

Source: Labour Force Survey, Singapore.

Worker improvement is conducted through short courses in specialized institutions, the Vocational and Industrial Training Board, specialized institutions in collaboration with foreign technical institutions and companies, and through the Board's own training section. Some of the major initiatives have gone by the names of MOST (Modular Skills Training Programme), BEST (Basic Education for Skill Training), and WISE (Worker Education through Secondary Education). All of these programmes are classroom based. In order to assist people who have difficulty attending classroom instruction for one reason or another, Fast Forward and Learning was developed. Currently some four self-paced learning courses are offered via television.

Encouraged by the role of open universities in a number of countries, the Government of Singapore announced the start of the Singapore Open University (SOU) in mid-1991. The SOU will be designed to "give a second chance to working adults who have missed out on a degree bearing education earlier in life and who now find it difficult to give up their jobs in order to study full time." The SOU will have the same status as other universities in the territory with its own autonomy and government. The proposed start up date of the university was expected to be 1993.

THE LEGAL STATUS OF DISTANCE EDUCATION

The National Productivity Board where the Fast Forward and Learning project is located is a semi government, self governing autonomous body. Its legal status is protected by an Act of Parliament. All of the training activities it undertakes has the support of not only government but also the business and industrial sector of Singapore. The Singapore Open University when it is set up will have necessary legislation in place, giving it the same status as the other two degree granting institutions of higher learning in Singapore, viz., the National University of Singapore and the Nanyang Institute of Technology. Universities in Singapore, similar to their counterparts in other parts of the Commonwealth of Nations are basically self governing autonomous agencies permitted by law to develop the rules and regulations governing their behavior.

OVERVIEW OF THE CURRENT SITUATION

Aims and Objectives of Distance Education

Since the Singapore Open University is still in its planning stage, the rest of the paper will describe the development of the Fast Forward and Learning project of the National Productivity Board and indicate the planning directions of the Singapore Open University.

The Fast Forward and Learning project has three main objectives: to promote the economic development of Singapore through worker education; encourage life-long learning; and build a cohesive, united and articulate society.

The Singapore Open University is expected to fulfill the national aims of providing a second change for intellectual or career development to all those who missed out on higher education for one reason or another. When the University is established, more specific short and long term objectives can be expected to emerge.

Control, Organization and Management

The Fast Forward and Learning project is located at the National Productivity Board. Its head is the Director of the project. The Director reports to the Minister of Trade through the Board of Directors who manage the affairs of the National Productivity Board. The Board of Directors is composed of representatives from government, industry, chambers of commerce, business, and academia.

The proposed Singapore Open University will report to government through the Minister of Education. In fact recent press reports in Singapore indicate that one of the two State Ministers of Education will be the Vice Chancellor of the University. Vice Chancellors are normally the chief executives of Universities in Singapore. The Vice Chancellor will report to the Council of the University which is also the supreme policy making body of the Institution. Council is made up of academics, civil servants and community leaders. Academic programmes, regulations, rules and practice are formulated and established by the Academic Board of the Institution which is also called the Senate. The structure of the SOU has not been established yet.

Financing Distance Education

The Fast Forward and Learning project is funded by development grants from the government through its various worker training and reskilling schemes. Approximately US \$10 million was spent on the project in 1990. The money was used for the development of the materials and for the support of project personnel. Indirect costs such as salaries of core personnel, space, communication, travel, stationary etc. is paid for by the National Productivity Board.

The Singapore Open University is expected to be funded by the government of Singapore. No figures have been published yet to indicate the level of funding.

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Geographical Coverage

Both the Fast Forward and Learning project and the proposed Singapore Open University are meant for Singapore nationals and therefore the coverage of the programmes is confined to the territories of Singapore.

Instructional Systems

The Fast Forward and Learning programme is video driven. Accompanying the video are printed, audio and audio graphic materials, as well as an intense tutorial support system. Tutors are assigned to students and they work with them at sites as diverse as factory floors and community halls. Tutors are trained and provided with instructional material for classroom environments. Assessment is essentially formative. Learning materials are developed by the use of contract developers who follow the curricula and instructional design of the project managers.

The Singapore Open University is expected to be a secondary rather than a primary producer and user of learning materials. Initial plans seemed to indicate the acquisition of course materials from the British Open University en bloc and deliver them in Singapore with minor adaptation. There is an indication that the University will, however, design its own programmes and not use the British system of examinations and awards.

Research Activities in Distance Education

To date there is no evidence to indicate any research activities in the field.

Enrollment in Distance Education

Since the start of the Fast Forward and Learning project some 15,000 workers have gone through the system. Annually some 2,500 new students register in the programmes. To date about 4,000 students have graduated. It is expected to graduate at least 2000 students every year during the next few years. Student surveys indicate that about 80% of the students are aged between twenty-one and forty years old, less than 1% is below twenty and not more than 2% above fifty. Regarding occupation, at least 50% are either professionals or administrators and about 13% are in production and manufacturing. The balance are distributed in a variety of trades and skills. The Singapore Open University expects to enroll students above twenty-one years of age.

International Affiliation

No international affiliations have been registered yet.

Growth and Expansion

The National Productivity Board is expected to expand its worker education programmes. Distance education or self-paced learning through the use of communication technologies can be expected to be used extensively. Current programmes are expected to double in the next few years. The Singapore Open University proposes to enroll about a thousand students a year.

Problems and Issues

It is difficult to make predictions about something as new as distance delivery of knowledge in a compact and educationally well provided society like Singapore. Challenges that the systems will face will include learner acceptance of this mode of learning, staffing and management.

BIBLIOGRAPHY

No significant documents are available.