

Chapter XIX

Education and Training

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I. INTRODUCTION

The overall objective of education and training is to promote national unity. The education and training sector is one of the most important social investments that will benefit the country in the long run. The role of education and training in Malaysia is to produce knowledgeable, trained, and skilled individuals to meet the manpower requirements as well as the growing social needs. Future national development of the country is expected to bring forth challenges that require manpower to be innovative and equipped with knowledge and training in science and technology, management, and related skills. Equally important is the need for the national education system to mould disciplined, diligent, and motivated individuals. In line with the Education Act, 1961, Government and Government-aided schools at the primary level which use Chinese or Tamil language as the medium of instruction continue to exist.

During the Fifth Malaysia Plan period, the recommendations of the Report of the Cabinet Committee to Review the Implementation of the Education Policy, 1979, will continue to be implemented. Selective implementation of the Report of the Cabinet Committee was undertaken during the Fourth Malaysia Plan period.

II. PROGRESS, 1981-85

The National Education Policy, as spelt out in the Education Act, 1961, emphasized the greater access to education, the implementation in stages of *Bahasa Malaysia* as the main medium of instruction, the establishment of a common curriculum, and the use of *Bahasa Malaysia* and English in the national examination system. The teaching of pupils' own languages as provided for under the Education Act, 1961, continued to exist during the period. The Policy also emphasized vocational and technical education to meet manpower needs as well as moral and religious education.

Among the programmes implemented to achieve these objectives were free education for children up to upper secondary level and the provision of teaching and other educational facilities, trained teachers as well as educational aids to assist the poor such as text books on loan and scholarships. At the lower secondary level, the teaching of elective subjects was improved to strengthen the basis for a work-oriented education. Emphasis was also given to science and vocational education at the secondary level by providing residential schools and vocational and technical schools.

The Report of the Cabinet Committee, which was accepted by the Government in 1980, emphasized greater accessibility to education and training, the development of a Malaysian-oriented curriculum as well as the acquisition of skills in reading, writing, and arithmetic at the primary level. It further stressed the importance of science and technology in education as well as the need to improve the quality of education and to extend universal education from 9 to 11 years. Co-curricular activities to balance with academic programmes and the strengthening of religious, civic, and moral education to develop positive social values were also emphasized.

Pre-school education

A nationwide study on the status of pre-school education was conducted in 1981 and completed in 1984. The objectives of the study were to provide information to the Government on the status of pre-school education and to assist the Government in determining policy guidelines for pre-school education in matters such as supervision, control, co-ordination, teacher training, curriculum development, and upgrading the quality of pre-school education.

The study showed that pre-school education expanded during the period 1981-84. The children in the four to six age group receiving pre-school education increased from 171,000 in 1980 to 279,000 in 1984. During the same period, the number of pre-school centres increased from 2,974 in 1980 to 5,657 in 1984. Out of the total number of pre-school centres in 1984, 4,487 or 79 per cent were run by Government agencies. These centres, which were mainly in the rural areas, enrolled about 149,800 children or 54 per cent of the total enrolment in 1984.

Primary education

Enrolment increases at all levels of education are shown in Table 19-1. At the primary level, enrolment in Government and Government-aided schools increased from about 2 million in 1980 to 2.2 million in 1985. The proportion of children aged six to seven enrolled in Standard I in Government and Government-aided schools increased from 98.6 per cent in 1980 to 99.0 per cent in 1985. Of the total number of children enrolled in Standard I in 1980, 96.3 per cent reached Standard VI in 1985.

TABLE 19-1

MALAYSIA: STUDENT ENROLMENT BY LEVEL OF EDUCATION IN LOCAL INSTITUTIONS, 1980, 1985, AND 1990

Levels of education	1980		1985		1990		Increase (%)	
	Number	%	Number	%	Number	%	1981-85	1986-90
Primary	2,008,587	63.8	2,191,676	61.2	2,434,407	59.1	9.1	11.1
Government ¹ and Government-aided ² schools	2,008,587		2,191,676		2,434,407			
Lower secondary	812,065	25.8	918,406	25.6	1,055,756	25.6	13.1	14.9
Government and Government-aided schools	809,406		914,434		1,035,506		12.9	13.2
MARA Junior Science Colleges	2,659		3,972		20,250		49.4	409.8
Upper secondary	247,889	7.9	333,041	9.3	413,866	10.1	34.4	24.3
Arts and science								
Government and Government-aided schools	228,994		309,615		364,057		35.2	17.6
MARA Junior Science Colleges	810		2,955		8,400		264.8	184.2
Tunku Abdul Rahman College	40		136		240		240.0	76.5
Technical and vocational								
Government and Government-aided schools	18,045		20,335		41,169		12.7	102.4
Post-secondary	29,484	0.9	46,638	1.3	57,882	1.4	58.2	24.1
Government and Government-aided schools	27,017		43,849		55,882		62.3	27.4
Tunku Abdul Rahman College	2,467		2,789		2,000		13.1	-28.3
Teacher education	13,247	0.4	16,559	0.5	19,869	0.5	25.0	20.0
Primary and lower secondary levels	13,247		16,559		19,869			
Pre-diploma and pre-university courses ³	2,014	0.1	5,280	0.1	10,055	0.2	162.2	90.4
Certificate level	2,603	0.1	6,878	0.2	14,353	0.4	164.2	108.7
Diploma level	12,262	0.3	25,046	0.7	47,226	1.1	104.3	88.6
Degree level ⁴	21,944	0.7	37,838	1.1	65,413	1.6	72.4	72.9
Total	3,150,095	100.0	3,581,362	100.0	4,118,827	100.0	13.7	15.0

Source : Ministry of Education.

Notes :

¹Includes fully assisted schools in Peninsular Malaysia.²Includes partially assisted schools in Peninsular Malaysia.³Preparatory courses conducted at the MARA Institute of Technology and all universities, excluding University of Technology Malaysia and enrolment of foreign students at the International Islamic University. Enrolment in 1985 and 1990 also includes A-level and language courses for students pursuing diploma and degree level courses overseas.⁴Includes enrolment in post-graduate courses and enrolment at the MARA Institute of Technology, Tunku Abdul Rahman College and enrolment in off-campus courses at the University of Science Malaysia but excludes enrolment of foreign students at the International Islamic University.

During the Fourth Plan period, about 11,000 classrooms were constructed to cater for the increased enrolment and to replace dilapidated facilities mainly in the rural areas. In addition, hostels for students and quarters for teachers were also constructed, especially in the rural areas of Peninsular Malaysia and the interiors of Sabah and Sarawak. Such facilities were essential to ensure access to education for those in areas without proper communications and transport facilities.

In line with the recommendation of the Report of the Cabinet Committee, a new curriculum for primary schools (KBSR) was introduced to replace the old one. In 1982, KBSR was introduced on a pilot basis in 305 primary schools, and in 1983, it was implemented fully in all Standard I classes throughout the country. In 1985, it was extended to Standard III, thus completing the first phase of the implementation of the curriculum. Manipulative skill as a subject was introduced in 1984 as a pilot project in Standard I classes in 74 primary schools. The objective was to initiate interest and develop the creative skill of the child in the use of simple gadgets and hand tools.

Secondary education

In Government and Government-aided schools, enrolment at the lower secondary level increased by 13.1 per cent from about 812,100 in 1980 to 918,400 in 1985, while enrolment at the upper secondary level increased by 35.2 per cent from about 229,000 in 1980 to 309,600 in 1985. The transition rate from primary to secondary level increased from 83.7 per cent in 1980 to 88.2 per cent in 1985. During the period 1981-85, 5,000 classrooms were built to cater for the increased enrolment and to replace dilapidated classrooms. In addition, science laboratories, workshops, libraries, teachers quarters, and students hostels were also provided.

Among the measures taken to increase the number of students from the rural areas in the science stream were the provision of residential science secondary schools and the MARA Junior Science Colleges (MRSM). During the period 1981-85, four residential science schools were constructed. Intake of students into these schools at the lower secondary level increased from 2,600 in 1980 to 2,940 in 1985.

Children who were deaf and blind also had access to education. In 1985, there were about 1,400 deaf children and 300 blind children at the primary level compared with 1,200 and 200, respectively, in 1980. In the same year, about 400 deaf children and 200 blind children pursued education at the secondary level compared with 300 and 150, respectively, in 1980. Besides enrolling these children in special schools for the deaf and blind, facilities were provided in selected normal schools enabling these handicapped children to pursue education with other normal children.

Technical and vocational education

While the number of technical schools remained at nine during the Fourth Plan period, the enrolment in these schools increased from 5,500 in 1980 to 6,700 in 1985. In addition to science and other academic subjects, subjects such as surveying, engineering workshop practice, building construction, technical drawing, and commerce were offered at the technical schools.

In addition to 37 existing schools, three secondary vocational schools were completed during the period, while 18 secondary vocational schools were in various stages of implementation. Enrolment in two-year courses in the vocational schools increased from 12,500 in 1980 to 13,700 in 1985. The enrolment in short courses for those with *Sijil Rendah Pelajaran* (SRP) and Lower Certificate of Education (LCE) also increased from 125 in 1982 to 330 in 1985.

The curricular for the various courses for vocational education were reviewed in stages during the period. The revised curriculum for engineering trade courses, however, was completed and implemented in 1985. Tracer studies were also conducted with the purpose of obtaining feedback on graduate employment and acceptance by the commercial and industrial sectors.

Teacher education

Teacher education programmes were provided in 24 teacher training colleges, three of which were located in Sabah and four in Sarawak. Intake into these colleges increased by 35.9 per cent from about 6,700 in 1980 to 9,100 in 1985. This large increase was to cater for the increasing demand for trained teachers, especially at the primary level. During the period 1981-85, 23,900 teachers graduated from the training colleges, of whom 15,300 were teachers for primary schools and 8,600 for lower secondary schools. In addition, there were four colleges specializing in specific subjects, namely, the Language Institute, the Specialist Teacher Training College, the Islamic Teacher Training College, and the Technical Teacher Training College. During the period, intake into these four colleges increased from 940 in 1980 to 1,470 in 1985.

Local training of graduate teachers was conducted at the University of Malaya (UM), the National University of Malaysia (UKM), the University of Agriculture Malaysia (UPM), the University of Science Malaysia (USM), and the University of Technology Malaysia (UTM). During the Fourth Plan period, these institutions trained a total of 17,350 graduate teachers, of whom 6,420 were in science and related subjects and 10,900 in arts and humanities.

In-service courses were also conducted for about 165,600 qualified teachers with a view to upgrading the quality of teaching. These courses included a one-year course in selected subjects, such as agriculture science, remedial education and special education for the deaf and blind, and a three-year course in the

teaching of *Bahasa Malaysia* as the medium of instruction as well as teaching of English as a second language. Short courses to upgrade knowledge and improve teaching skills in various subjects were also conducted. In addition, basic teacher training courses for serving temporary teachers were conducted during school term holidays.

Of the total 92,200 primary school teachers in 1985, about 13,200 were untrained teachers. The recruitment of untrained teachers was necessary as a temporary measure to overcome the shortage of trained teachers with the improvement in the class-teacher ratio from 1:1.2 to 1:1.5 required in KBSR.

In 1985, there was a total of 40,300 college trained teachers at the lower secondary level and 16,600 graduate teachers at the upper and post-secondary levels. The upper and post-secondary levels experienced a shortage of about 2,300 graduate teachers. There was also a shortage of teachers in certain subjects such as science, physics, chemistry, mathematics, English, and *Bahasa Malaysia*. Excess of teachers was, however, experienced in subjects such as economics, history, and geography.

Tertiary education

During the Fourth Plan period, enrolment in tertiary education increased from about 36,800 in 1980 to 69,700 in 1985. Of the total enrolment in 1985, about 6,900 or 9.8 per cent were enrolled in certificate level courses, 25,000 or 36.1 per cent in diploma level courses, and 37,800 or 54.1 per cent in degree level courses. In addition, about 5,280 students were pursuing preparatory courses to assist them to gain entry into diploma and degree level courses in institutions of higher learning in the country and overseas.

In the local institutions, intake into certificate, diploma, and degree level courses increased by 56.6 per cent from about 14,300 in 1980 to 22,400 in 1985. In line with the need to increase graduates in applied arts and sciences, intake of students into these courses at the degree level was increased, as shown in Table 19-2.

During the Fourth Plan period, three new polytechnics were set up on temporary premises in Alor Setar and Batu Pahat, and Kota Bharu. A new university namely, the Northern University of Malaysia (UUM) was established in 1984. Several branch campuses were also established during the same period. USM founded its School of Medical Sciences in Kelantan and a branch campus in Perak to house its Schools of Engineering. In addition, the Government assisted the establishment of the temporary campus of the International Islamic University (IIU) in Petaling Jaya.

TABLE 19-2
MALAYSIA: INTAKE INTO DEGREE¹ LEVEL
COURSES, 1980 AND 1985
(number)

<i>Courses</i>	<i>1980</i>	<i>1985</i>	<i>Increase, 1981-85 (%)</i>
Arts	1,664	2,210	32.8
Applied arts	1,643	3,984	142.5
Pure sciences	1,235	1,051	-14.9
Applied sciences	1,200	2,161	80.1
Engineering/ technology	615	1,225	99.2
Total	6,357	10,631	67.2

Source: Ministry of Education.

Note: ¹ Excludes intake into post-graduate courses.

Malaysian students overseas

There was a large number of Malaysian students overseas. The number increased at an average of 9 per cent per annum from an estimated 36,900 in 1978 to about 60,000 in 1985. Of the total in 1985, about 49,200 were registered with the Malaysian Students Departments, of whom 10,300 were in Australia, 2,700 in Canada, 1,100 in New Zealand, 13,500 in the United States of America, and 3,400 in the United Kingdom. It was estimated that of the total in 1985, 20,000 were pursuing courses at first degree level. In addition, there were about 2,700 students in Brunei Darussalam and 10,700 in Singapore pursuing secondary level education. The breakdown of enrolment in higher education by level and ethnic group in local and overseas institutions is shown in Table 19-3, while Chart 19-1 shows the breakdown of enrolment in 1980 and 1985.

Malaysian students continued to seek education overseas due to the shortage of places in local institutions as well as to pursue courses which were not offered locally, especially those in the sciences and technology. The large number of students overseas, however, resulted in an outflow of foreign exchange of about \$1,200 million per year. Efforts were made to gradually reduce the number of students overseas by expanding facilities for higher education in local institutions. In order to shorten the period of overseas stay, pre-university courses, including foreign languages, were also conducted locally for Government-sponsored students.

Participation and performance in education

Apart from promoting national integration and unity, the objective of education and training is also to provide opportunities for those in the low-income group to find employment in better paying occupations and, thus, move

TABLE 19-3

**MALAYSIA: ENROLMENT IN TERTIARY EDUCATION BY ETHNIC GROUP AND LEVEL OF EDUCATION
IN LOCAL AND OVERSEAS INSTITUTIONS 1980, 1985, AND 1990**
(number)

Types of tertiary education	1980				1985				1990		Increase (%)		
	Bumiputera	Chinese	Indian	Others ¹	Total	Bumiputera	Chinese	Indian	Others	Total	1981-85	1986-90	
Certificate	2,338	8,287	1,205	128	11,958	13,445	16,955	4,072	476	34,948	14,353	192.2	-
%	19.6	69.3	10.1	1.0	100.0	38.5	48.5	11.6	1.4	100.0	-	-	-
Polytechnics	1,468	459	93	10	2,030	4,236	907	196	34	5,373	11,995	26.8	123.2
Tunku Abdul Rahman College	-	448	3	-	451	6	1,189	27	-	1,222	2,358	171.0	93.0
MARA Institute of Technology	122	-	-	-	122	283	-	-	-	283	-	132.0	-
Local private institutions	554	3,029	455	54	4,092	8,694	9,804	3,091	368	21,957	n.a.	436.6	-
Institutions overseas	194	4,351	654	64	5,263	226	5,055	758	74	6,113	n.a.	16.2	-
Diploma	13,809	7,636	1,563	175	23,183	27,151	11,066	2,355	235	40,807	47,226	76.0	-
%	59.5	32.9	6.7	0.8	100.0	66.5	27.1	5.8	0.6	100.0	-	-	-
Polytechnics	148	55	6	-	209	368	104	22	1	495	2,490	136.8	403.0
Tunku Abdul Rahman College	-	409	3	-	412	-	951	4	-	955	2,004	131.8	109.8
MARA Institute of Technology	7,492	-	-	-	7,492	16,889	-	-	-	16,889	35,062	125.4	107.6
University of Agriculture Malaysia	1,566	71	42	2	1,681	2,940	29	34	2	3,005	3,068	78.8	2.1
University of Technology Malaysia	2,215	180	54	19	2,468	3,363	229	96	14	3,702	4,602	50.0	24.3
Local private institutions	577	4,358	943	90	5,968	1,491	6,786	1,602	144	10,023	n.a.	68.0	-
Institutions overseas	1,811	2,563	515	64	4,953	2,100	2,967	597	74	5,738	n.a.	15.8	-
Degree ²	18,804	18,381	3,928	341	41,454	29,875	24,647	5,581	419	60,522	65,413	46.0	-
%	45.4	44.3	9.5	0.8	100.0	49.4	40.7	9.2	0.7	100.0	-	-	-
Tunku Abdul Rahman College ³	6	1,687	59	-	1,752	3	2,099	42	2	2,146	4,339	19.9	39.9
MARA Institute of Technology ⁴	725	-	-	-	725	1,560	-	-	-	1,560	7,363	115.2	372.0
University of Malaya	4,063	3,124	677	181	8,045	5,041	3,374	841	126	9,382	9,544	16.6	1.7

University of Science Malaysia ⁵	1,612	1,073	195	17	2,897	3,996	2,509	657	45	7,207	12,576	148.8	74.5
National University of Malaysia	4,896	628	189	13	5,726	6,454	1,914	468	64	8,900	12,794	55.4	43.8
Agriculture University of Malaysia	1,431	221	88	12	1,752	3,652	603	253	17	4,525	9,309	158.3	105.7
University of Technology Malaysia	877	115	44	11	1,047	2,284	567	154	26	3,031	5,616	189.5	85.3
International Islamic University ⁶	-	-	-	-	-	363	14	14	-	391	1,740	27.3	269.4
Northern University of Malaysia	-	-	-	-	-	488	161	44	3	696	2,132	42.7	206.3
Institutions overseas	5,194	11,533	2,676	107	19,510	6,034	13,406	3,108	136	22,684	n.a.	5.6	-
Total	34,951	34,304	6,696	644	76,595	70,471	52,668	12,008	1,130	136,277	126,992	77.9	-
%	45.6	44.8	8.8	0.8	100.0	51.7	38.7	8.8	0.8	100.0			

Source: Ministry of Education.

Notes:

¹ Excludes enrolment in local private institutions and institutions overseas.

² Includes enrolment in post-graduate courses.

³ Degree conferred by the University of Campbell, United States of America.

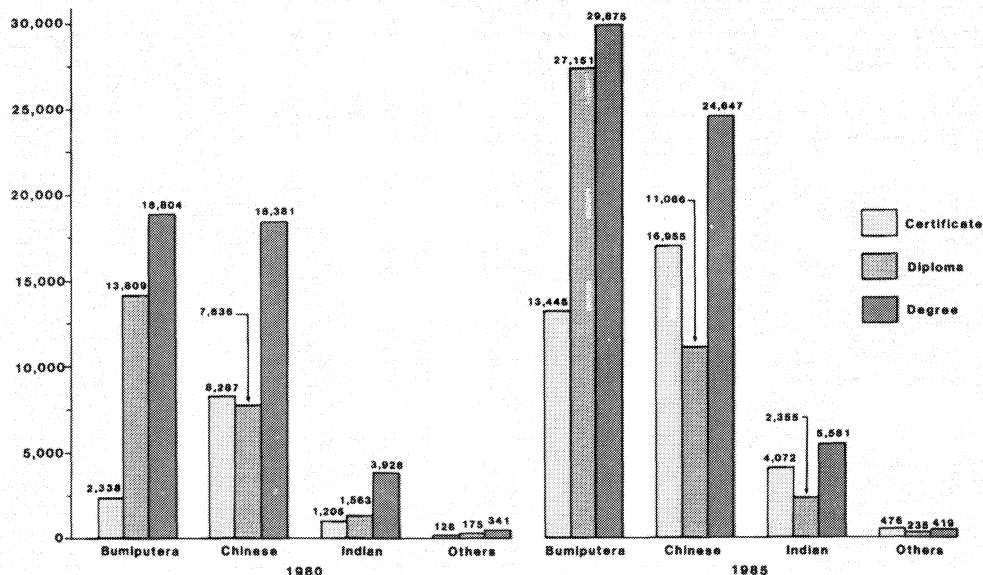
⁴ Degree conferred by the National University of Malaysia and the University of Ohio, United States of America.

⁵ Includes enrolment in off-campus courses.

⁶ Excludes enrolment of foreign students.

n.a. Not available.

CHART 19-1
**MALAYSIA: ENROLMENT IN TERTIARY EDUCATION BY ETHNIC GROUP AND LEVEL OF EDUCATION
 IN LOCAL AND OVERSEAS INSTITUTIONS, 1980 AND 1985**
 (number)



up the social ladder. One measure of the extent to which the objective of education is achieved is the rate of participation of students at various levels of education. Participation among the ethnic groups at the various levels of education in local institutions improved during the period 1981-85, as shown in Table 19-4. The participation of Bumiputera at the primary level based on enrolment improved from 58.4 per cent in 1980 to 61.0 per cent in 1985. In the case of the non-Bumiputera, although the rates fell in relative terms from 41.6 per cent in 1980 to 39.0 per cent in 1985, their participation in absolute terms increased from about 835,600 in 1980 to 854,800 in 1985. At the degree level, Bumiputera participation rate increased from 62.0 per cent in 1980 to 63.0 per cent in 1985, while the participation rate for non-Bumiputera decreased from 38.0 per cent to 37.0 per cent, respectively. In absolute terms, however, non-Bumiputera enrolment increased from about 8,300 in 1980 to 14,000 in 1985, while Bumiputera enrolment increased from about 13,600 to 23,800.

The participation of the various ethnic groups at tertiary level in both local institutions and overseas improved, as shown in Table 19-3. At the degree level, the share of Bumiputera students in total enrolment increased from 45.4 per cent in

TABLE 19-4

MALAYSIA: PARTICIPATION BY ETHNIC GROUP AT VARIOUS LEVELS OF EDUCATION BASED ON ENROLMENT IN LOCAL INSTITUTIONS, 1980 AND 1985

Levels	1980					1985				
	Enrol- ment	Bumipute- ra		Others		Enrol- ment	Bumipute- ra		Others	
		%	Chinese	Indian	%		%	Chinese	Indian	%
Primary	2,008,587	58.4	32.2	7.7	1.7	2,191,676	61.0	29.7	7.6	1.7
Lower secondary	809,406	60.3	30.0	8.5	1.2	914,434	65.2	27.3	5.7	1.8
Upper secondary	247,039	66.3	27.0	6.0	0.7	329,950	68.1	25.2	6.0	0.7
Arts	146,597	69.3	23.1	6.8	0.8	215,067	71.0	21.4	6.8	0.8
Science	82,397	57.0	37.3	5.0	0.7	94,548	56.7	37.7	4.9	0.7
Technical	5,438	82.5	17.0	0.2	0.3	6,694	85.4	12.3	1.9	0.4
Vocational	12,607	84.8	11.1	4.0	0.1	13,641	89.0	8.5	2.3	0.2
Post-secondary	27,017	61.4	32.9	4.7	1.0	43,849	56.9	36.4	5.8	0.9
Arts	15,143	76.4	19.1	3.8	0.7	27,745	19.8	71.7	7.5	1.0
Science	11,874	42.2	50.6	6.0	1.2	16,104	75.2	19.2	4.9	0.7
Certificate	2,603	61.1	34.8	3.7	0.4	6,878	65.8	30.5	3.2	0.5
Arts	53	100.0	-	-	-	983	71.7	21.6	5.2	1.5
Science and technology	2,550	60.3	35.6	3.8	0.3	5,895	68.7	23.8	6.1	1.4
Diploma	12,262	93.5	5.5	0.8	0.2	25,046	94.5	4.9	0.5	0.1
Arts	4,412	100.0	-	-	-	12,822	99.3	0.6	0.1	-
Science and technology	7,850	88.9	8.9	2.0	0.2	12,224	86.7	10.5	2.1	0.7
Degree ¹	21,944	62.0	31.2	5.7	1.1	37,838	63.0	29.7	6.5	0.8
Arts	11,512	58.3	36.4	4.4	0.9	20,357	57.4	30.1	11.4	1.1
Science and technology	10,432	67.8	29.8	1.9	0.5	17,481	51.9	32.6	12.8	2.7

Source: Ministry of Education.

Note:

¹ Includes enrolment in post-graduate courses.

1980 to 49.4 per cent in 1985, while that of the non-Bumiputera declined from 54.6 per cent to 50.6 per cent during the same period. In 1985, there was an absolute increase in Bumiputera and non-Bumiputera enrolment. The increase in Bumiputera enrolment was 58.9 per cent from about 18,880 in 1980 to 29,800 in 1985, while the non-Bumiputera was 35.3 per cent from 22,650 to 30,650.

The increased participation of all ethnic groups in primary and secondary education resulted from various measures undertaken by the Government to provide not only classroom facilities in rural and remote areas but also hostels and teachers quarters. This enabled children to be enrolled in schools nearer to their homes, and where road transport was not available, children from remote areas were placed in hostels. Teachers were trained to cope with multigrade classes in the remote areas where the enrolment at the primary level was small. Small schools were amalgamated, wherever feasible, to enable better management and the provision of adequate facilities. Rural schools were provided with science laboratories and industrial arts workshops to enable more children from the rural areas to be enrolled in the science stream.

In addition to the provision of physical facilities, various educational assistance were given to poor students. These included scholarships, text books on loan, supplementary feeding, and health and dental services. During the Fourth Plan period, \$162.4 million was spent on scholarships, \$173.3 million for the provision of text books on loan, and \$92.8 million on supplementary feeding to enable them to attend school as well as participate actively in class.

The overall performance of Bumiputera students, especially those in the rural areas, improved during the period. At the post-secondary level, preparatory courses were conducted in various institutions to assist them to gain entry into science and engineering courses at the diploma and degree levels. Intake of Bumiputera students into these preparatory courses increased from about 1,000 in 1980 to 3,170 in 1985.

Skill and management training

Skill training. The accelerated rate of industrialization, including the setting-up of selected heavy industries, required complementary efforts in producing the necessary skilled manpower in various fields of industrial activities. At the same time, there was a growing need for managerial expertise at all levels in order to cope with the expanding business and commercial enterprises.

The public sector played the major role in the development of industrial training. Among the main producers of skilled labour to meet the demand of the economy were the industrial training institutes (ITIs) under the Ministry of Labour, the MARA vocational institutes, and the youth training centres under the Ministry of Culture, Youth and Sports. During the period 1981-85, facilities for the training of skilled manpower in these institutions were expanded, increasing the intake from about 3,890 in 1980 to 5,880 in 1985. These agencies also conducted on-the-job training for about 6,500 trainees during the same period. In addition, about 1,500 youths were provided with on-site training at the National Youth Co-operative Movement (KOBENA) training centre in Skudai.

Public sector institutions also conducted various courses to cater for the needs of industries. These courses included tool and die-making, foundry and pattern-making, welding, and metal fabricating. Instructors in skill training institutions were required to keep up with technological changes that were expected in the process of industrial development. Accordingly, the Centre for Instructor and Advanced Skill Training (CIAST) was established in 1984. During the period 1984-85, CIAST trained 120 instructors and 250 trainees in advanced skills.

The training programmes provided by the public sector was supplemented by the private sector. In 1985, there were about 250 training institutions established by the private sector. During the period, these institutions trained about 16,000 participants in various commercial, agriculture, and engineering trade courses.

The Study on the Industrial Training Schemes in the Manufacturing Sector was completed in 1984 and its recommendations were being considered by the Government. The study emphasized the need for closer co-operation between the public and private sectors in identifying and undertaking industrial training and also the monitoring of various training programmes.

Under the Look East programme, Malaysians were provided with on-the-job training in various institutions in Japan and South Korea to enable them to acquire occupational skills. During the Fourth Plan period, about 1,200 industrial and technical workers were trained. In addition, skilled workers were also attached to Japanese and South Korean firms in the country to enable them to learn and acquire the discipline and work ethics practised by the Japanese and South Koreans. These programmes also enabled the transfer of technology to Malaysia to be effected.

Management training. In the field of management, efforts were made to send employees of all professions to undergo in-service and post-graduate courses. In the public sector, about 4,600 personnel participated in such training schemes during the Fourth Plan period. In addition, serving officers in the public sector were also attached to the private sector in order to obtain the necessary corporate experience. Management training was also provided by the private sector. In 1985, the Malaysian Institute of Management conducted various management courses for about 700 personnel from the public and private sectors.

During the Fourth Plan period, the National Institute of Public Administration (INTAN) trained a total of 79,100 personnel from the public sector. The completion of the main campus of INTAN in Bukit Kiara and three regional campuses in Keluang, Kemaman, and Sungai Petani made possible increases in intake. In addition, training of personnel in areas specific to the requirement of agencies were also carried out during the period.

The construction of the building for the National Institute of Educational Management (NIEM) was also completed during the period. The objective of NIEM was to train key personnel in the education service in management. These key personnel included headmasters, senior assistants of schools, officers in the States and District Education Departments as well as principals, heads of departments, and lecturers in teacher training colleges and polytechnics, and officers in the Malaysian Students Departments overseas. During the period, a total of 10,500 education staff was trained at NIEM.

Training in management and entrepreneurial development was given priority, in order to enable active participation in the commercial and industrial sectors. Towards this end, the National Productivity Centre (NPC) conducted training for about 14,700 personnel in managerial courses and 18,100 in entrepreneurial development courses. In addition, the Entrepreneur Development Programme undertaken by ITM trained about 700 Bumiputera entrepreneurs and personnel from the public and private sectors.

III. PROSPECTS, 1986-90

During the Fifth Plan period, the strengthening of the education system will be further emphasized to improve quality and accessibility in order to promote national unity. Towards this end, the use of *Bahasa Malaysia* as the main

medium of instruction at all levels of education will be improved. The teaching and learning of *Bahasa Malaysia*, Chinese, Tamil, and English languages will also be improved through the provision of more trained teachers. Curriculum and co-curricular activities will be the means to inculcate good qualities, leadership capabilities, and strong moral values, while efforts will continue to be made to narrow the gap in educational opportunities among income groups and regions by expanding and improving educational facilities throughout the country.

The education system will also be expanded and reoriented to meet the demand for trained manpower in science, technology, and management. Measures to upgrade the quality of education will also be given priority in order to reduce dropouts, improve performance and make education more relevant and effective in contributing towards national development as well as the development of the individual in society.

The development of a school into a community institution will be pursued, involving the community at large, parents, teachers, and pupils who will cooperate and be concerned for the success of the school and the discipline of pupils. This new approach, therefore, does not restrict participation only to parents of school children. The concept of a community-based school will benefit the school through contributions and involvement of the community to upgrade school facilities, assistance in the provision of teaching and learning materials, and participation in various school activities. The community will also benefit from the use of school facilities and involvement of teachers and pupils in community activities.

Pre-school education

Pre-school education will continue to be provided as it has an important role in developing the mental capability and social interaction of children. Although pre-school education is not within the purview of the Education Act, 1961, it has implications on the performance of children at the primary level. Co-ordination of pre-school education will be undertaken through compulsory registration of pre-school centres. In addition, all pre-school centres will have to implement the guidelines on pre-school curriculum.

Primary education

Enrolment at the primary level in Government and Government-aided schools is expected to increase to 2.5 million in 1990. About 5,000 classrooms will be built

to cater for the increased enrolment and also to upgrade schools, especially in the rural areas. Priority will be given to expand facilities in all Government and Government-aided schools in the rural areas, including those in the new villages and estates, in order to provide greater access to education.

The programme for the integration of students for unity, introduced on a pilot basis in 1985, will continue to be implemented during the Fifth Plan period. In this programme, pupils from all types of primary schools will participate together in various co-curricular activities. Such an environment will encourage closer interaction among children and teachers and will foster greater unity among the races.

The amalgamation of small schools into more effective units will be continued to enable better facilities to be provided in the rural areas. When schools of a more efficient size are built to replace small schools, hostels will be provided to overcome the transport problem. During the Fifth Plan period, measures will be taken to expand and improve hostel facilities in primary schools. The provision of centralized hostels will also be considered.

The second phase of KBSR will begin in 1986 starting with Standard IV. The thrust of the curriculum will still be the acquisition of basic skills in reading, writing, and arithmetic with some of the basic academic elements introduced. In the same year, the teaching of manipulative skill will be introduced fully to all Standard IV classes.

Secondary education

In 1990, enrolment at the lower secondary level in Government and Government-aided schools is expected to increase by 14.9 per cent to reach one million, while enrolment at the upper secondary level in Government and Government-aided schools is expected to increase by 24.3 per cent to reach 413,900. During the period 1986-90, about 6,200 classrooms will be constructed to cater for the increased enrolment and replacement of dilapidated classrooms as well as to reduce overcrowding.

In 1985, there were 28 fully residential secondary schools and 10 MRSM with a total enrolment of 20,000 pupils. During the Fifth Plan period, two new fully residential secondary schools in Kelantan and Pahang and five MRSM in Negeri Sembilan, Pahang, Sabah, Sarawak, and Selangor will be constructed. This will enable an additional 3,000 students to be enrolled in 1990.

The new curriculum for secondary schools (KBSM) will be implemented in 1988 only for those pupils who were in the KBSR pilot project in 1982. Nationwide implementation of KBSM will, however, begin in 1989 at Form I level.

Education for the deaf and blind children will be expanded during the Fifth Plan period. The secondary school for the deaf in Shah Alam will be completed, enabling an additional intake of 80 students in 1990 compared with 40 in 1985. Additional facilities to accommodate these handicapped children into the normal schools will be made available. Greater co-operation and co-ordination will be promoted among the Ministry of Health, the Ministry of Sosial Welfare and the Ministry of Education in identifying children who are deaf and blind, and in creating awareness among parents of the availability of educational opportunities for these children.

Technical and vocational education

During the Fifth Plan period, priority will be given to the expansion of vocational education in order to prepare school leavers with basic skills required in the commercial and industrial sectors. In addition, the curriculum will be aligned towards the development of managerial and entrepreneurial capabilities in order to ensure graduates from the vocational schools are capable of undertaking challenges in the industrialization programme.

During the period 1986-90, the number of secondary vocational schools will increase to 68 with the completion of 31 new schools. Enrolment in these schools will increase from 13,700 in 1985 to 30,200 in 1990, constituting 8.2 per cent of enrolment at upper secondary level in 1990 compared with 3.6 per cent in 1985. Courses in the electrical, mechanical trades, construction and furniture making, refrigeration and airconditioning, automotive, agriculture, commerce, and home science will be offered. Measures will also be undertaken to improve and expand facilities in existing schools to enable intake of students in basic and specialized courses to increase from 330 in 1985 to 720 in 1990.

A new vocational education system for the secondary vocational schools, based on two specialized streams, namely, vocational and skill, will be implemented. In the vocational stream, more time will be spent on academic subjects and the certificate conferred will be at par with the *Sijil Pelajaran Malaysia* (SPM). This will provide opportunities for those who perform well to further their education in tertiary institutions. In the skill stream, the examination and certificate will be at par with standards set by the National Industrial Training and Trade Certification Board (NITTCB). Graduates from this stream will have the required skill for employment in the industrial sector.

Teacher education

During the Fifth Plan period, output of teachers from teacher training colleges is estimated to be 40,400 which is about double the output during the Fourth Plan period. This increase in output is necessary to overcome the shortage of trained teachers at the primary level resulting from the implementation of the class-teacher ratio of 1:1.5 in the KBSR classes. Five new colleges at Bangi, Batu Pahat, Kangar, Pulau Pinang, and Seremban will be constructed, enabling increases in intake from about 9,600 in 1985 to about 10,000 in 1990. The increase in intake is small as these new colleges will cater for trainees from the existing teacher training colleges which were utilized beyond their normal capacity. The intake of teacher trainees at the degree level will also be continued in order to meet increases in student enrolment at the upper secondary and post-secondary levels and to overcome shortages of graduate teachers in various subjects at the secondary level.

In-service courses to upgrade teaching skills and knowledge in various subjects will continue to be conducted. Courses to familiarize teachers with the new primary and secondary school curriculum will also be continued. In this respect, the four education resource centres, which were established during the Fourth Plan period in Kedah, Kelantan, Pahang, and Terengganu, will provide facilities for teachers to acquire teaching skills and more knowledge in various subject areas as well as new techniques in the preparation of teaching and learning materials. Measures will also be undertaken to improve the teaching capability of mathematics and English language teachers.

Tertiary education

Intake of students at the certificate, diploma, and degree level courses will increase from about 22,400 in 1985 to 42,000 in 1990. Out of the total intake in 1990, about 5,900 will be at certificate level, 19,100 at diploma level, and about 17,000 at the degree level. The increases in intake will be met by the various institutions to be completed during the Fifth Plan period. These institutions are five new polytechnics at Alor Setar, Batu Pahat, Kota Bharu, Kuching, and Port Dickson, the branch campus of ITM in Kuching, Phase I of the branch campus of UPM in Bintulu, and Phase I of the new UTM campus in Skudai. Additional facilities, including the USM branch campus in Perak, the engineering faculties in UPM and UKM, and Phase II of the UTM campus in Skudai, will increase intake into engineering and technology courses at the diploma and degree levels. The construction of permanent campuses of the Islamic Academy of UM in Bachok, UUM in Sintok, the branch campus of UKM in Sabah, and the branch campuses of ITM in Jengka and Segamat will commence during the Fifth Plan period. The Government will also assist the construction of the permanent campus of IIU in Bukit Tinggi. In addition, existing facilities at the universities will be fully utilized by extending teaching hours in order to cater for increases in intake. The intake into degree level courses are shown in Table 19-5.

TABLE 19-5
MALAYSIA: INTAKE INTO DEGREE¹ LEVEL
COURSES, 1985 AND 1990
(number)

<i>Courses</i>	<i>1985</i>	<i>%</i>	<i>1990</i>	<i>%</i>	<i>1986-90</i> <i>(%)</i>
Arts	2,210	20.8	1,830	10.7	-17.2
Applied arts	3,984	37.5	6,804	40.0	70.8
Pure sciences	1,051	9.9	736	4.3	-30.0
Applied sciences	2,161	20.3	4,223	24.8	95.4
Engineering/ technology	1,225	11.5	3,438	20.2	180.7
Total	10,631	100.0	17,031	100.0	60.2

Source: Ministry of Education.

Note: ¹Excludes intake into post-graduate courses.

Academic programmes at the degree level will give priority to courses in the applied arts, applied sciences, engineering, and technology. These courses include economics, management, accountancy, law, medicine, agriculture, chemical technology, and computer science. Intake into arts and pure science courses which include humanities, biology, and physics, will be reduced. The course structure at the tertiary level will also be reviewed to make it more dynamic. The curriculum should prepare graduates not only with basic knowledge in various disciplines but with managerial and business techniques. Equipped with such capabilities, graduates will be more willing to venture into businesses and be self-employed.

With the expansion in higher education, steps will be taken to ensure that the quality of teaching and learning will be further improved. This will be made possible with the implementation of programmes for the training of academic staff, including research activities and the provision of adequate facilities for teaching and learning. Measures will also be taken to co-ordinate the expansion of higher education in order to avoid duplication.

The new scope in intake will result in increases in trained manpower required by the expanding commercial and industrial sectors. Arts and pure science graduates will meet the requirements for graduate teachers. About 850 graduate science teachers and 2,400 graduate arts teachers are required yearly at the secondary level.

During the Fifth Plan period, output of graduates at the tertiary level will be about 106,100, of whom 16,500 will be at certificate level, 36,800 at diploma level, and 52,800 at degree level. The ratio of arts and pure science graduates to applied science, applied arts, and technology graduates is 1:4.2.

During the Fifth Plan period, facilities for providing pre-diploma and pre-university courses for students pursuing diploma and degree level courses will be expanded. In 1990, the intake of students into these courses conducted by the six universities excluding UTM and the Tunku Abdul Rahman College, which do not provide such facilities, will be about 3,950 students compared with about 3,170 in 1985. In addition, A-level courses and proficiency courses in the English, Japanese, and Korean languages will continue to be provided locally for students sponsored by the Government to pursue diploma and degree level courses overseas. This is in line with the Government policy of reducing the duration of stay and expenditure incurred overseas. Other measures to reduce the duration of stay, such as the twin-university concept and the American Associate Degree programme, will continue to be reviewed and expanded, wherever feasible. Existing programmes, such as the off-campus courses at USM and ITM, will be expanded to benefit those already employed but wishing to pursue higher education at the degree level. Intake into these courses will be increased from 753 in 1985 to 1,020 in 1990.

In order to meet increases in demand for higher education, the Government will also encourage the setting up of private sector institutions to provide facilities for pre-university as well as certificate and diploma level courses, particularly in technical subjects. The overall expansion of higher education in the country will provide greater opportunities for students to pursue higher education locally and thus gradually reduce the number of students overseas. This will help to reduce the outflow of foreign exchange.

Research and development (R & D) in science and technology is important in developing the industrial sector. In view of this, institutions of higher learning will participate more actively by establishing closer links with the private sector and other established research institutions.

Post-graduate courses in local universities will also be reviewed in order to encourage more students to pursue these courses in the country. It is estimated that during the Fifth Plan period, a total of 3,740 students will pursue post-graduate courses. Of this total, 1,020 will be in the science and professional courses. The Centre for Post-Graduate Studies at UM will also be completed, thus, enabling an intake of 115 students for post-graduate courses in various disciplines.

Skill and management training

Skill training. During the Fifth Plan period, training programmes will not only prepare trainees for employment but also for self-employment. Such training will be adjusted to include skills which emphasize creativity and innovativeness.

Intake into skill training institutions will increase from 5,880 in 1985 to 15,500 in 1990 with the completion of five ITIs in Alor Setar, Ipoh, Kota Bharu, Kuantan, and Melaka as well as the expansion of existing MARA vocational institutes and youth training centres. Programmes for youth training at the on-site training camp in Skudai will also continue to provide training for 2,500 youths in the construction industry.

In line with efforts towards industrialization, a more active participation of the private sector in providing training and training facilities will be encouraged. The role of the private sector will be significant as training will be important in industries which use high technology compared with existing ones which do not require much skill. In meeting this objective, the Government will be guided by the findings of the Study on the Industrial Training Schemes in the Manufacturing Sector.

Management training. Training of administrative and managerial personnel in the public sector will continue to be reviewed and organized with a view to increasing efficiency and productivity. In this respect, INTAN will expand its training programme and a total of about 100,000 personnel will be trained, while NIEM will provide training for about 20,000 personnel. Managerial and entrepreneurial courses will also be conducted by NPC for about 29,600 personnel, while ITM will conduct courses for about 2,100 Bumiputera in its Entrepreneur Development Programme. In addition, the attachment programme for officers in the public sector with various foreign firms will be continued. Institutions of higher learning in the country will also continue to provide short courses in business and management.

IV. ALLOCATION

The development allocation and estimated expenditure during the period 1981-85 and the allocation for the period 1986-90 for education and training are as shown in Table 19-6.

V. CONCLUSION

The emphasis of education and training programmes during the Fifth Plan period will be to provide greater accessibility and to improve quality as well as performance at all levels. The curriculum and co-curricular activities will be reviewed and reoriented to meet the objectives of national integration and unity as well as manpower requirements. In this respect, the organization and management capability of the education and training agencies will be strengthened in order to enable them to effectively monitor the education and training programmes.

TABLE 19-6

**MALAYSIA: PUBLIC DEVELOPMENT EXPENDITURE FOR
EDUCATION AND TRAINING, 1981-90**
(\$ million)

<i>Programme</i>	<i>Fourth Plan allocation, 1981-85</i>	<i>Estimated expenditure, 1981-85</i>	<i>Fifth Plan allocation, 1986-90</i>
Education	4,334.55	4,334.55	5,262.17
Primary education	759.48	759.48	784.91
Government and Government- aided schools	759.48	759.48	784.91
Secondary education	1,381.56	1,381.56	1,436.52
Government and Government- aided schools	1,024.21	1,024.21	656.86
MARA Junior Science Colleges	78.94	78.94	81.62
Technical and vocational schools	287.64	287.64	698.04
Higher education	2,056.81	2,056.81	2,591.95
Polytechnics	123.25	123.25	220.46
Tunku Abdul Rahman College	0.66	0.66	15.00
MARA Institute of Technology	184.91	184.91	225.21
University of Malaya	53.65	53.65	132.91
University of Science Malaysia	201.54	201.54	202.58
National University of Malaysia	170.34	170.34	153.25
University of Agriculture Malaysia	186.54	186.54	101.52
University of Technology Malaysia	300.21	300.21	522.62
International Islamic University	31.65	31.65	164.40
Northern University of Malaysia	27.00	27.00	164.00
MARA scholarships and loan	679.09	679.09	690.00
Teacher education	149.02	149.02	284.85
Other education support programmes	134.54	134.54	163.94
Training	407.05	407.05	303.89
Industrial training	265.01	265.01	276.71
Industrial training institutes	104.11	104.11	92.20
MARA vocational institutes	144.34	144.34	155.95
Youth training centres	16.56	16.56	28.56
Commercial training	0.79	0.79	13.00
MARA commercial institutes	0.79	0.79	13.00
Management training	141.25	141.25	14.18
National Institute of Public Administration	80.39	80.39	4.18
National Institute of Educational Management	60.86	60.86	10.00
Total	4,741.60	4,741.60	5,566.06