

CHAPTER XXII

Education and Training

I. INTRODUCTION

1309. The education and training system has a multi-faceted role to play in the creation of a society based on the principles of the *Rukunegara* and the realization of the objectives of the New Economic Policy (NEP). The overriding objective is national integration and unity.

1310. *Bahasa Malaysia* will continue to be implemented as the main medium of instruction to strengthen the basis for national integration and unity among the people of Malaysia, while the use of English will be extended as a strong second language. Policies and programmes for education and training will be geared to enable all Malaysians to participate more fully in the process of national development. To attain this objective, education and training will be oriented to meet the skilled manpower needs of the nation and to provide greater opportunity for education among those in the lower income groups and regions in the country. Curricular and extra-curricular activities will be developed to inculcate discipline and social responsibility as well as to promote a National Identity and unity among all Malaysians. The education and training system of Sabah and Sarawak will be progressively integrated with the national system.

II. PROGRESS, 1971-75

1311. The Second Malaysia Plan (SMP) witnessed major advances in a number of important fields of education and training. The implementation of *Bahasa Malaysia*, in stages, as the main medium of instruction at the primary level in all English medium primary schools was achieved as planned. The expansion in education and training facilities enabled vast increases in intake of students with enrolments in tertiary education being most rapid. The progress in restructuring the education system towards science, mathematics and technology-oriented courses led to increased supplies of scientific and technical manpower. Major efforts were made to implement some of the recommendations of the Dropout Study to provide greater educational opportunities for those in low income groups. Education and training programmes were significantly expanded to increase the supply of skilled manpower among the Malays and other indigenous people to

meet the long-term objective of a racially balanced employment structure and for the creation of a viable commercial and industrial community among the Malays and other indigenous people. The developments in the education system are summarized in Table 22-1 below:

TABLE 22-1

MALAYSIA: DEVELOPMENTS IN THE EDUCATION SYSTEM, 1970-80

	Enrolment			Increase (%)	
	1970	1975	1980 (target)	1971-75	1976-80
<i>Primary</i>					
Peninsular Malaysia	1,421,469	1,586,909	1,815,600	11.6	14.4
Sabah	110,607	133,179	166,140	20.4	24.7
Sarawak	150,111	177,100	227,300	18.0	28.3
Total ..	1,682,187	1,897,188	2,209,040	12.8	16.4
(Percentage of all levels) ..	75.4	68.1	64.4		
<i>Lower secondary</i>					
Peninsular Malaysia	378,535	561,471	676,100	48.3	20.4
Sabah	25,068	41,835	68,492	66.9	63.7
Sarawak	17,041	46,400	67,530	172.3	45.5
Total ..	420,644	649,706	812,122	54.5	25.0
(Percentage of all levels) ..	18.9	23.3	23.7		
<i>Upper secondary</i>					
<i>Arts and science</i>					
Peninsular Malaysia	84,925	153,415	241,900	80.6	57.7
Sabah	3,619	6,518	16,743	80.1	156.9
Sarawak	4,384	7,120	19,130	62.4	168.7
<i>Vocational and technical</i> ..	4,899	14,338	25,920	192.7	80.8
Total ..	97,827	181,391	303,693	85.4	67.4
(Percentage of all levels) ..	4.4	6.5	8.9		
<i>Post secondary</i>					
Peninsular Malaysia	10,619	16,335	35,970	53.8	120.2
Sabah	272	293	618	7.7	110.9
Sarawak	641	1,360	2,320	112.2	70.6
Total ..	11,532	17,988	38,908	56.0	116.3
(Percentage of all levels) ..	0.5	0.7	1.1		
<i>Teacher training</i>					
Peninsular Malaysia					
Primary	1,435	2,735	7,680	90.6	180.8
Secondary	1,123	3,544	4,260	215.6	20.2
Sabah	630	782	924	24.1	18.2
Sarawak	699	879	2,200	25.8	150.3
Total ..	3,887	7,940	15,064	104.3	89.7
(Percentage of all levels) ..	0.2	0.3	0.4		

TABLE 22-1—(cont.)

MALAYSIA: DEVELOPMENTS IN THE EDUCATION SYSTEM, 1970-80

	Enrolment			Increase (%)	
	1970	1975	1980 (target)	1971-75	1976-80
Diploma level ¹	4,993	16,827	25,578	237.0	52.0
(Percentage of all levels)	0.2	0.6	0.8		
Degree level ²	8,331	14,702	24,258	76.5	65.0
(Percentage of all levels)	0.4	0.5	0.7		
GRAND TOTAL	2,229,401	2,785,742	3,428,663	25.0	23.1

¹ Includes enrolments in pre-university, preliminary and introductory courses at the respective colleges.

² Includes enrolments in preliminary and introductory courses being offered at the respective universities.

1312. Total enrolment in *primary education* increased by 12.8% from 1,682,187 in 1970 to 1,897,188 in 1975. The most significant enrolment increases were in Sabah and Sarawak. To cater for enrolment increases throughout the country and to replace sub-standard facilities mainly in the rural areas, a total of 6,151 classrooms were built.

1313. Enrolments at the *secondary level* grew by 60.2%. At the lower secondary level, enrolments increased significantly as a result of improvements in survival rates from primary to lower secondary classes. In Sarawak, major increases in enrolment at the lower secondary level resulted from the abolition of the Common Entrance Selection Examination for entry into lower secondary classes and the improvement in survival rates consequent upon the take-over by the Government of primary schools previously managed by local authorities. Overall, at the secondary level, 4,103 classrooms, 912 science laboratories and 224 libraries were constructed. At the upper secondary level, 13 out of the 19 new vocational and technical schools were constructed. The rest are expected to be completed in 1976/77.

1314. An important feature of upper secondary education was the establishment of 11 fully *residential science schools*, with a total enrolment capacity of 9,240, to provide expanded educational opportunities for pupils from rural areas. Ten of the schools have been completed, while one is expected to be completed by 1977.

1315. Under the *teacher training programme*, a total of 6,397 primary school teachers, 4,493 secondary school teachers were trained in Peninsular Malaysia. The delay in the completion of the physical development programme resulted in an overall shortage of 10,040 primary school teachers and 890 college trained teachers at the secondary level. Consequently, pupil-teacher ratios increased marginally during the period under review.

1316. A number of measures were taken to improve the quality of teacher training. In Peninsular Malaysia, considerable effort was made to implement the new integrated teacher training programme launched in 1973. This programme provides for greater mobility of teachers between the primary and secondary levels. In-service courses in *Bahasa Malaysia*, English and

other subjects were provided. Special training programmes were launched to upgrade the quality of teacher trainers. About 450 teacher trainers attended short-term courses and 72 benefitted from advanced post-graduate training in local and overseas universities.

Other education programmes

1317. The Training Division of the *Majlis Amanah Rakyat* (MARA) besides providing skill training through its vocational institutes implemented a number of other programmes to increase the supply of scientific and technical manpower among the Malays and other indigenous people. Total enrolment in MARA's Junior Science College programme expanded from 150 in 1972 to 1,259 in 1975. In addition, MARA provided scholarships and loans to 8,932 Malay and other indigenous students and 161 other Malaysians in science, technological and other professional courses.

Tertiary education

1318. Enrolments in tertiary education showed rapid growth during the period under review. Overall enrolment in college and university level institutions increased by 136.6% from 13,324 in 1970 to 31,529 in 1975. A significant part of the increase was in science and technical courses. The breakdown of enrolment increases for the various institutions in tertiary education is shown in Table 22-2 below.

TABLE 22-2
MALAYSIA: ENROLMENT INCREASES IN TERTIARY
EDUCATION, 1970-75

	1970	1975	Increase (%) 1971-75
College level			
<i>Politeknik Ungku Omar</i>	493	1,136	130.4
<i>Institusi Teknologi Mara</i>	2,142	7,872	267.5
<i>Kolej Tunku Abdul Rahman</i>	1,195	4,133	245.9
University level			
<i>Universiti Malaya</i>	7,777	8,056	3.6
<i>Universiti Sains Malaysia</i>	271	2,851	952.0
<i>Universiti Kebangsaan Malaysia</i>	169	2,562	1,416.0
<i>Universiti Pertanian Malaysia</i>	585	2,656	354.0
<i>Universiti Teknologi Malaysia</i>	692	2,263	227.0
TOTAL ...	13,324	31,529	136.6

1319. The *Politeknik Ungku Omar* which provides training for middle level technical and commercial manpower expanded its enrolment from 493 in 1970 to 1,136 in 1975 in civil, electrical and mechanical engineering, architecture and business studies. Almost all the physical facilities planned were completed. However, the marine engineering course scheduled for 1975 will now commence during the TMP period.

1320. The *Institusi Teknologi MARA (ITM)* made substantial progress in increasing the supply of qualified Malay and other indigenous manpower at the professional and sub-professional levels. In addition to the existing campus in Shah Alam, new branch campuses were established in Kota Kinabalu, Kuching, Kangar and Kuala Trengganu. A total of 32 new courses and five major schools were established. The new courses include diploma programme in microbiology, food technology, wood technology, textile technology, statistics and actuarial science, land surveying, regional planning, library science and book-keeping. Total enrolments in all the courses increased from 2,142 in 1970 to 7,872 in 1975. However, existing physical facilities at the Shah Alam campus remain inadequate.

1321. Enrolments at the *Kolej Tunku Abdul Rahman* increased from 1,195 in 1970 to 4,133 in 1975. The College, which receives Government support, offers certificate and diploma courses in business studies, arts and science, technology and pre-university courses designed to meet the manpower needs at the sub-professional level. Phase I of the College's building programme at its new campus in Ulu Klang began in 1973 and is expected to be completed in 1976.

1322. Enrolments at the *Universiti Malaya* increased from 7,777 in 1970 to 8,056 in 1975. Two new faculties in Law and Dentistry were established in 1972 with an initial intake of 32 and 51 students respectively. In addition, a Department of Anthropology and Sociology was set up within the Faculty of Arts and a Division of Chemical Engineering within the Faculty of Engineering. New courses in computer science and accounting were introduced. The University also established a Language Centre to implement and co-ordinate the teaching of languages at the University.

1323. Enrolments in full-time courses at the *Universiti Sains Malaysia* increased from 271 in 1970 to 2,180 in 1975, while enrolments in off-campus courses increased from 75 in 1971 to 671 in 1975. These increases were the result of extensions to the Schools of Applied Sciences, Pharmaceutical Sciences, Comparative Social Science and Humanities. Work on the expansion of the Schools of Biological Sciences, Chemical Sciences, Physics and Mathematics, Applied Sciences and Pharmaceutical Sciences commenced during 1975.

1324. The *Universiti Kebangsaan Malaysia* recorded a rapid rate of increase in enrolments from 169 in 1970 to 2,502 in 1975. The University now has four faculties in Arts, Science, Medicine, and Economics and Management, and an Institute of Malay Language, Literature and Culture. The first intake of students into the Medical Faculty commenced in 1973. Phase I of the development of a new site in Bangi for the relocation of the University has been completed. In addition, a branch campus was established in Sabah in 1974 with an enrolment of 60.

1325. The *Universiti Teknologi Malaysia* was established in 1972 following the upgrading of the Technical College. During 1971-75, enrolments in diploma courses expanded from 692 to 1,713. Degree courses were started in 1972 and enrolment reached 550 in 1975. Work is underway to expand the Faculties of Engineering, Surveying and Architecture. Preparatory work has commenced for the development of a new 2,440-acre site in Johor Bahru.

1326. With the establishment of *Universiti Pertanian Malaysia* in 1971, the intake of undergraduate students into agricultural science courses at *Universiti Malaya* was discontinued since 1973. Enrolments in degree courses increased from 114 in 1973 to 695 in 1975 and enrolments in diploma courses increased from 545 in 1970 to 1,858 in 1975. The first batch of students in degree courses in agriculture, forestry, veterinary medicine and animal science was admitted in 1973. New courses in agricultural engineering and agricultural science with education were introduced in 1974. A branch campus of the University was established in Sarawak in 1975 with an intake of 103 students.

III. TRAINING PROGRAMMES

1327. Considerable progress was made in expanding training capacity and strengthening training programmes at craftsmen level. Of significance was the establishment of the National Industrial Training and Trade Certification Board (NITTCB) to provide common trade standards and to improve syllabi and course structures in vocational training institutions. Training programmes of the Ministry of Labour and Manpower, the Ministry of Culture, Youth and Sports, MARA and other institutions were expanded significantly.

1328. The *Industrial Training Institutes* (ITI) under the Ministry of Labour and Manpower offer a wide variety of courses. Workshop and classroom facilities were expanded in the Institutes in Kuala Lumpur and Prai to provide preparatory trade courses for school leavers as well as courses for ex-servicemen, skill upgrading, instructor training and apprenticeship for those now in employment. A total of 51 trade instructors from the various training agencies and 326 supervisors from both the public and private sectors were trained during 1973-75. During the same period, 385 workers from industrial establishments were provided with skill upgrading courses. Total enrolments in all the courses increased from 996 in 1970 to 2,232 in 1975.

1329. There are now six *vocational institutes* under MARA and two are under construction. During 1971-75, MARA provided training to 5,747 students. This comprised 2,514 in vocational institutes, 2,535 in on-the-job training in the public and private sectors, 484 in skill upgrading and 214 as instructors both locally and overseas. In addition, MARA provided special training in specific fields to upgrade the skills of those already in employment.

1330. The Ministry of Culture, Youth and Sports provides training through the *National Youth Development Corps* and the *National Youth Pioneer Corps*. The National Youth Development Corps offers short-term training in discipline for unemployed youth. A total of 6,698 youth completed their training during the period under review. The National Youth Pioneer Corps which offers skill training ranging from 6 to 30 months achieved considerable expansion and diversification of courses. A total of 2,061 youth completed their skill training during 1971-75 and the number of trades offered increased from eight in 1969 to 20 in 1975.

Management training

1331. Apart from expansion at the tertiary education level in management and related courses, short-term management training courses are also conducted by the National Productivity Centre (NPC), ITM, the National Institute of Public Administration (INTAN) and the Malaysian Institute of Management. The NPC provided management training for 14,951 managers and supervisors mainly from the private sector. The NPC also launched special courses for 2,620 Malay and other indigenous managers and supervisors through its Bumiputra Services Division which was set up in 1973. Some 6,500 Malay and other indigenous managers and supervisors benefited from the full range of courses conducted by the NPC during 1971-75. The ITM provides a three-month full residential and intensive course in entrepreneurial and management studies for Malay and other indigenous business executives. The first intake of 47 students was in April 1974 and so far 124 such executives have attended this course. INTAN provided in-service training for 5,600 administrative and managerial personnel in the public sector. These courses focussed on various aspects of public sector management, economic and social planning.

Measures for co-ordination of training

1332. The National Advisory Council on Industrial Training (NACIT) with representation from both the public and private sectors was established in 1972 to co-ordinate overall industrial training. The functions and operations of the Council were reviewed in order to increase its effectiveness. Progress was made in formulating common standards for industrial trades and in improving the quality and content of training programmes. The NITTCB, with the assistance of the private sector, has set standards for 23 industrial trades at the basic, intermediate and advanced levels. The NITTCB has also prepared national training syllabi for 17 industrial trades at the basic level and 16 industrial trades at the intermediate level. A total of 4,760 candidates from the various training institutions and the private sector was evaluated by the Board during 1973-75, of which 40.8% met the standards set by the Board. The Board also evaluated the programmes of training institutions, the training needs of the motor and electrical industries and the employment experience of NITTCB certificate holders. However, staff shortages remain a constraint to the Board's activities.

IV. PROGRAMMES, 1976-80

Objectives

1333. The education and training objectives under the TMP will be to:—

- (i) strengthen the educational system for promoting national integration and unity through:
 - (a) the continued implementation, in stages, of *Bahasa Malaysia* as the main medium of instruction at all levels;
 - (b) the development of personality, character and good citizenship and the promotion of moral discipline through curriculum and extra-curriculum activities;
 - (c) narrowing the gap in educational opportunities between the rich and poor, and among the various regions and races in the country, through a more equitable distribution of resources and facilities; and
 - (d) the eventual integration of the educational systems in Sabah and Sarawak into the national system;
- (ii) the orientation and expansion of the education and training system towards meeting national manpower needs, especially in science and technology;
- (iii) the improvement of the quality of education in order to reduce wastage and increase its effectiveness for nation building; and
- (iv) the expansion of the research, planning and implementation capacity to meet the above objectives.

Ministry of Education programmes

1334. *Primary education* The existing policy to provide nine years of schooling for every child will be maintained. Total enrolment for the Plan period is estimated to increase from 1.9 million in 1975 to 2.2 million in 1980 or by 16.4% as shown in Table 22-3 below. A total of 8,406 classrooms and 755 libraries will be constructed to cater for this increase and to replace existing sub-standard facilities mainly in the rural areas and the less developed States.

TABLE 22-3

MALAYSIA: PROJECTED ENROLMENT INCREASES IN PRIMARY EDUCATION, 1975-80

	1975	1980	Increase (%) 1976-80
Peninsular Malaysia	1,586,909	1,815,600	14.4
Sabah	133,179	166,140	24.7
Sarawak	177,100	227,300	28.3
TOTAL	1,897,188	2,209,040	16.4

1335. *Secondary education* Enrolments at the secondary level will grow rapidly as a result of improvements in survival rates at the primary level and in response to strong demand for further education as shown in Table 22-4 below. In Peninsular Malaysia, the proportion of Form III students proceeding to Form IV increased from 49.4% in 1970 to 65.0% in 1975. In Sabah and Sarawak, the provision of nine years of schooling for every child will lead to expanded enrolments at the secondary level.

TABLE 22-4

MALAYSIA: PROJECTED ENROLMENT INCREASES IN
SECONDARY EDUCATION, 1975-80

<i>Lower Secondary</i>	1975	1980	<i>Increase (%) 1976-80</i>
Peninsular Malaysia	561,471	676,100	20.4
Sabah	41,835	68,492	63.7
Sarawak	46,400	67,530	45.5
TOTAL ...	<u>649,706</u>	<u>812,122</u>	<u>25.0</u>
<i>Upper secondary (Arts and Science)</i>			
Peninsular Malaysia	153,415	241,900	57.7
Sabah	6,518	16,743	156.9
Sarawak	7,120	19,130	168.7
TOTAL ...	<u>167,053</u>	<u>277,773</u>	<u>66.3</u>
<i>Post secondary</i>			
Peninsular Malaysia	16,335	35,970	120.2
Sabah	293	618	110.9
Sarawak	1,360	2,320	70.6
TOTAL ...	<u>17,988</u>	<u>38,908</u>	<u>116.3</u>

1336. In Peninsular Malaysia, 142 existing secondary schools will be extended or replaced and 48 new schools with a capacity of 726 classrooms will be constructed.

1337. In Sabah, extensions and improvements to 12 existing secondary schools and the construction of 17 new schools have been planned. Financial assistance will continue to be given to equip aided secondary schools. A Junior College—an SMP project—will be established in Kota Kinabalu under the TMP with full residential facilities to cater for an enrolment of 390.

1338. In Sarawak, a substantially stepped-up secondary school building programme is planned encompassing the construction of 14 new schools and extensions and improvements to 27 schools.

1339. *Residential science school* In addition to the 11 residential science schools set up during 1971-75 in Peninsular Malaysia, a further seven residential science schools will be constructed during the Plan period bringing total enrolments to 15,120 students. These schools will expand further the opportunities for rural students to pursue their education in science, mathematics and related subjects and to take advantage of centralized educational facilities.

1340. *Upper secondary technical and vocational education* In the field of vocational education, nine more vocational schools providing industrial trade, home science, agricultural science and commercial courses will be constructed bringing the total of such schools to 30. The expansion in technical and vocational education will increase present enrolment from 13,694 in 1975 to 21,540 in 1980.

1341. In Sabah, in addition to extending the vocational school in Sandakan, three new vocational schools are planned. These schools will have an enrolment capacity of 1,600 with residential facilities for 1,044.

1342. In Sarawak, extensions will be made to existing vocational schools in Kuching, Sibul and Miri. Enrolment in vocational schools will expand from 353 in 1975 to 1,100 in 1980.

1343. *Higher education* Higher education facilities have expanded rapidly under the First and Second Malaysia Plans. Their further expansion will have to be reviewed in the light of manpower requirements as discussed in paragraphs 1370 and 1371. During the Plan period, efforts will be made to consolidate degree courses and expand diploma level courses. Accordingly, a polytechnic will be constructed in Kuantan and facilities for diploma level courses at ITM, *Universiti Pertanian*, *Universiti Teknologi* and *Politeknik Ungku Omar* will be expanded. Enrolment projections at colleges and universities are indicated in Table 22-5 below.

1344. At the College level, the *Politeknik Ungku Omar* will be expanded to cater for an enrolment of 1,650 by 1980. The polytechnic at Kuantan will commence courses in engineering and business studies in 1976 with an initial enrolment of 100. Upon full completion of the project, total enrolment will reach 1,100 producing about 500 graduates a year.

1345. The *Institusi Teknologi MARA* will expand its capacity to train Malays and other indigenous people in professional and sub-professional fields. The expansion programme of the ITM at Shah Alam and the four existing branch campuses in Perlis, Trengganu, Sabah and Sarawak will raise total enrolments from 7,872 in 1975 to 9,215 in 1980. A Centre for Entrepreneurial Development will be established, as a constituent part of ITM, to provide education and training opportunities and to undertake research in entrepreneurial development.

TABLE 22-5

**MALAYSIA: PROJECTED ENROLMENT INCREASES
IN TERTIARY EDUCATION, 1975-80**

	1975	1980	Increase (%) 1976-80
<i>College level</i>			
<i>Politeknik Ungku Omar</i>	1,136	1,650	45.2
<i>Institusi Teknologi MARA</i>	7,872	9,215	17.1
The polytechnic at Kuantan	—	969	—
<i>Kolej Tunku Abdul Rahman</i>	4,133	7,030	70.1
<i>University level</i>			
<i>Universiti Malaya</i>	8,056	9,356	16.1
<i>Universiti Kebangsaan Malaysia</i>	2,562	6,241	143.6
<i>Universiti Teknologi Malaysia</i>	2,263	5,125	126.5
<i>Universiti Pertanian Malaysia</i>	2,656	4,960	86.7
<i>Universiti Sains Malaysia</i>	2,851	5,290	85.5
TOTAL ...	31,529	49,836	58.1

1346. The *Kolej Tunku Abdul Rahman* will expand its enrolments from 4,133 in 1975 to 7,030 in 1980. The new campus at Ulu Klang will commence courses with the completion of phase I of the building programme. During the Plan period, work on the construction of the Schools of Technology and Pre-University Studies is expected to be completed.

1347. The *Universiti Malaya* will increase its enrolments from 8,056 in 1975 to 9,356 in 1980. The University will consolidate its efforts at the undergraduate level and develop its capability in post-graduate research and education. A Centre for Post-Graduate Studies and Research will be established to undertake multi-disciplinary research in the science, engineering and agricultural fields in collaboration with other institutions.

1348. Enrolments in full-time undergraduate and off-campus courses at the *Universiti Sains Malaysia* will reach 3,905 and 1,040 respectively by 1980. Enrolment in post-graduate courses will increase from 132 in 1975 to 345 in 1980.

1349. The *Universiti Kebangsaan Malaysia* will diversify its courses and rationalize its academic structure through appropriate grouping and upgrading of schools into faculties. Under the Plan, the Faculty of Medicine will be expanded. The University, with the exception of the Medical Faculty, will move to the new campus at Bangi in stages from 1977. Enrolments are expected to increase from 2,562 in 1975 to 6,241 in 1980.

1350. The major development programme of the *Universiti Teknologi Malaysia* will be the construction of a new campus in Johor Bahru to be completed by 1982. The expansion of the Faculties of Surveying, Engineering and Architecture as well as the library and the hostel blocks at the

existing campus in Kuala Lumpur will be completed by 1978. Enrolments in degree courses will increase from 550 to 1,335 and in diploma courses from 1,713 to 3,790 during the Plan period.

1351. At the *Universiti Pertanian Malaysia*, enrolment at the main campus in diploma and degree courses will reach 2,509 and 2,212 respectively by 1980. The intake of students into diploma courses in agriculture and forestry in the branch campus in Sarawak will commence in 1976, while the intake of students into the diploma course in Animal Science will begin in 1978/79. The University will also introduce a new course in Food Technology.

1352. *Teacher Training* The teacher training programmes in Peninsular Malaysia will produce 25,440 college-trained teachers under the Plan from the 14 existing teacher training colleges and four new colleges scheduled for completion by 1977. Four temporary teacher training centres have been established to commence operation in 1976 with a total yearly intake of 1,440. In addition, the existing 14 teacher training colleges will be expanded.

1353. In Sarawak, existing facilities at the Rejang Teacher Training College and the Batu Lintang Teacher Training College will be upgraded. A new Teacher Training College is to be located at Miri with an initial intake of 210 students in 1979. In Sabah, extensions will be made to two of the existing three colleges in Sandakan and Tuaran. The teacher training programmes in Sabah and Sarawak will produce 6,483 college-trained teachers during the Plan period. The shortage of college-trained teachers will continue to exist but is expected to be reduced towards the end of the Plan period with the completion of the various training programmes.

1354. The shortage of graduate teachers will be sizeable. The overall demand for graduate teachers taking into account present deficits is estimated at 9,829. The output of graduate teachers, especially in the science fields, will be considerably stepped up with the establishment of graduate teacher training programmes in the *Universiti Pertanian Malaysia* and *Universiti Teknologi Malaysia*, in addition to existing ones at the *Universiti Malaya*, *Universiti Kebangsaan* and the *Universiti Sains Malaysia*. The total output of graduate teachers from these institutions during the Plan period is estimated at 5,348 as compared to 3,108 during 1971-75. Continuing efforts will be made to upgrade the quality of teaching. Intensive in-service courses will be conducted for the teaching of *Bahasa Malaysia*, English, mathematics, science, technical and vocational subjects to enable teachers to keep abreast of changes in educational curricula and innovations.

V. TRAINING PROGRAMMES

1355. In the implementation of vocational training programmes, emphasis will be given to the closer co-ordination and integration of institutional and on-the-job training within industry.

Expansion of vocational training programmes

1356. Facilities at the *Industrial Training Institutes* in Kuala Lumpur and Prai will be extended to meet the demand for skills in Printing, Metal and Foundry work, Tool and Die Making and Electronics and to provide for the expansion of instructor training particularly to meet the requirement of about 200 new instructors for the ITIs. Three new ITIs are planned for construction in Kuala Trengganu, Johor Bahru and Kota Kinabalu. They will offer courses in heavy plant fitting and maintenance, building and the automotive and engineering trades. Overall, the planned expansion in facilities will increase output annually from 464 in 1975 to 2,020 by 1980.

1357. The target of the *Training Division of MARA* is to produce 18,013 skilled workers during the Plan period. Enrolment in MARA's Vocational Institutes will be expanded to 3,845 by 1980. Programmes for on-the-job training in both the public and the private sectors will cater for about 5,906 Malay and other indigenous students. In addition, MARA will expand its scholarship and loan schemes to cater for an increasing number of Malays and other indigenous people in specific fields of education and training.

1358. The Ministry of Culture, Youth and Sports provides skill training for unemployed youth through the *National Youth Pioneer Corps* and disciplinary training through the *National Youth Development Corps* at Dusun Tua. During the Plan period, the programmes of the National Youth Development Corps and facilities for training of agricultural skills will be located at a new site at Bukit Changgang. This will provide room for further expansion of enrolments in industrial training at Dusun Tua. The intake of students at the National Youth Pioneer Corps will expand from 656 in 1975 to 915 in 1980.

Increasing the effectiveness of training

1359. With the expansion of training programmes and rapid changes in the demand and structure of skills, training activities will need to be closely co-ordinated to ensure that quantitative expansion and qualitative changes in training meet employment requirements. Continuous assessment of skill demands and evaluation of curricula, training standards and job experience of graduates will be necessary. The development of a sizeable programme of on-the-job training in co-operation with industry will also be vital for the development of a sound and effective industrial training policy and programme. A National Industrial Training Council with representation from both the public and private sectors will be established under the Ministry of Labour and Manpower for the above purposes. The functions of this Council will cover all fields of training including the development of management, technician and craftsmen skills.

1360. The Council in its operations will be guided and assisted by the NITTCB and the Manpower Department of the Ministry of Labour and Manpower. The NITTCB will expand its efforts in the setting of standards, development of syllabi and certification of skilled workers. It will be considerably strengthened to provide expert assistance to both the public and private sectors in the formulation and implementation of training programmes.

VI. EDUCATION AND TRAINING POLICIES

1361. The Government views the education and training system as a major vehicle for achieving the overriding objective of national integration and unity. The attainment of this objective calls for dynamic and pragmatic approaches in the planning and implementation of education and training policies and programmes.

1362. *Bahasa Malaysia* One of the basic elements in the effort to promote national integration and unity is the use of *Bahasa Malaysia* in stages as the main medium of instruction at all levels of education. In Peninsular Malaysia, all subjects except English and other languages, at the primary level in all former English medium primary schools, are taught in *Bahasa Malaysia*. By 1980, *Bahasa Malaysia* will be the main medium of instruction in all secondary schools.

1363. The present educational systems in Sabah and Sarawak will be integrated with the National Educational System by expanding the use of *Bahasa Malaysia* at the primary level. Measures will continue to be taken to adopt common syllabi at primary and secondary levels, including teacher training institutions.

1364. While the Government will implement vigorously the teaching of *Bahasa Malaysia*, measures will be taken to ensure that *English* is taught as a strong second language. This is important if Malaysia is to keep abreast of scientific and technological developments in the world and participate meaningfully in international trade and commerce.

1365. *Extending educational opportunities for the poor* Data on household income and educational attainment show that there is a close association between poverty and educational attainment. The majority of the poor have low levels of educational attainment which restrict their access to productive employment opportunities. Therefore, extension and improvement of educational opportunities for the poor of all races is an integral part of the Plan. Measures aimed at expanding educational opportunities for the poor include programmes for pre-school child development and the provision of other compensatory educational facilities to reduce the dropout rate at the primary and secondary levels.

1366. The Dropout Study published in 1972, identified pre-school child development as an important element in remedying the socio-economic and environmental deficiencies that impede the physical, social and emotional

development of children. During the Plan period, opportunities for pre-school child development will be expanded on a selective basis, geared mainly to the location of such facilities in areas where there is a preponderance of poverty groups. Special efforts will be made to develop suitable curricula and to train pre-school teachers. The existing pre-school centres—*Taman Bimbingan Kanak-Kanak*—of the Ministry of Agriculture will be expanded to reach 100,000 children by 1980.

1367. The Dropout Study also identified high rates of dropouts among the poor especially in the rural areas. While there has been some improvement in overall survival rates at the primary and lower secondary levels during 1971-75, the position is not uniform with respect to States and racial groups. Measures aimed at reducing dropouts from the educational system at primary and lower secondary levels will continue to be intensified. This will include the progressive amalgamation of small schools into viable educational units and expansion and improvement of library, hostel and other educational facilities. The amalgamation of small schools, mostly in the rural areas, will enable more effective utilization of resources for improving the quality of education. Other programmes comprise remedial education for slow learners, the continued implementation of the textbook loan scheme for poor pupils and health and nutritional programmes.

1368. *Manpower orientation to education and training programmes* The education and training system will be geared to equip youth with the knowledge and skills necessary for their effective participation in the development of the economy. The shortage of skills, in particular at the professional and technical, managerial and craftsmen levels poses major constraints to the expansion of the economy. As illustrated in Chapter VIII, the rapid growth planned for the economy will generate increasing demand for skills at all levels.

1369. During the Plan period, a number of measures will be taken to bring about closer orientation of the education and training system to meet manpower needs. The teaching of science and mathematics at primary and lower secondary levels will be strengthened through the increased provision of teaching materials and expansion in the number of science and mathematics teachers. Enrolment in science, technical and vocational courses at the upper secondary level will be expanded to account for 51.6% of total enrolment at this level in 1980 as compared to 39.4% in 1975. The implementation of the modern mathematics and integrated science syllabi at the lower and upper secondary levels will be kept under continuous review.

1370. In the expansion of higher education, priority will be given to diploma level courses in line with the need to remedy existing imbalances in enrolments between diploma and degree courses and to meet the sizeable demand for manpower at the sub-professional level. The intake of liberal Arts students will be progressively reduced. Engineering, science, medical, agriculture and business courses will be emphasized. The annual output

from these courses in proportion to total output of degree holders will increase from 45.5% in 1975 to 54.4% in 1980. A similar importance will be given to industrial vocational training for employment in commerce and industry.

1371. A long-term plan for the development of higher education consistent with socio-economic objectives of the NEP will be formulated in the light of manpower needs and physical and financial requirements of the country keeping in mind the need to avoid duplication.

VII. RACIAL BALANCE AND EDUCATION

1372. Table 22-6 shows student enrolments by race within the formal school system in Peninsular Malaysia in 1970 and 1975. Overall, the racial breakdown of enrolment follows the racial composition of the population. During the period 1971-75, enrolments of Malays and other indigenous people at the upper and post secondary levels increased substantially. Their share of enrolments in the science stream at the upper and post secondary levels improved significantly as a result of expansion in science education especially in the rural areas. In 1975, of the total enrolment in the science stream at the upper secondary level, 53% were Malays and other indigenous people, 41% Chinese, 5% Indians and 1% Others. The share of enrolments of the Malays and other indigenous people in the science stream at the post secondary level increased from 24% in 1970 to 42% in 1975.

1373. There were also significant improvements in the racial composition of students in institutions of higher education. Tables 22-7 and 22-8 show student enrolments by race for each of the institutions and by field of study. The data only refer to enrolment in local colleges and universities.

1374. It is estimated that a total of about 31,500 Malaysian students are enrolled in all overseas institutions in 1975. Currently available data indicate that of the total 4,005 Malaysians including scholarship holders who were newly enrolled at tertiary level institutions in the United Kingdom, Australia and New Zealand during 1975, 20.0% were Malays and other indigenous people, 69.0% Chinese, 9.2% Indians and 1.8% Others.

1375. During the period 1971-75, the share of the Malays and other indigenous people to total enrolments in domestic tertiary institutions increased from 50% to 65% (or from 6,622 to 20,547). Much of this increase took place at the degree level where the proportion of the Malays and other indigenous people in total enrolments increased from 40% in 1970 to 57% in 1975 (or from 3,237 to 8,153). At the diploma level, their enrolments increased from 2,865 to 11,579 representing an increase from 83% to 85%. There have also been improvements in the share of the Malays and other indigenous people doing science and technical courses at the tertiary level. In 1975, 29% of them were enrolled in science and technical courses at the degree level, as compared to only 12% in 1970 (or from 384 in 1970 to 2,342 in 1975). During the Plan period, continuing efforts will be made to increase enrolments among the Malays

TABLE 22-6

PENINSULAR MALAYSIA: ENROLMENTS BY RACE AND LEVEL OF EDUCATION, 1970-75

	1970					1975				
	Malay	Chinese	Indian	Others	Total	Malay	Chinese	Indian	Others	Total
Primary	759,064	511,729	142,147	8,529	1,421,469	875,975	550,064	151,744	9,126	1,586,909
%	53.4	36.0	10.0	0.6	100.0	55.2	34.7	9.6	0.5	100.0
Lower secondary ..	193,054	146,872	36,339	2,270	378,535	305,700	198,493	54,290	2,988	561,471
%	51.0	38.8	9.6	0.6	100.0	54.4	35.4	9.7	0.5	100.0
Upper secondary ..	43,627	38,800	6,258	715	89,400	101,486	54,095	10,420	1,108	167,109
%	48.8	43.4	7.0	0.8	100.0	60.7	32.4	6.2	0.7	100.0
Post secondary ..	4,609	5,267	637	106	10,619	8,817	6,617	804	97	16,335
%	43.4	49.6	6.0	1.0	100.0	54.0	40.5	4.9	0.6	100.0

TABLE 22-7

MALAYSIA: ENROLMENTS IN TERTIARY EDUCATION BY RACE, 1970-75³

	1970					1975				
	Malay	Chinese	Indian	Others	Total	Malay	Chinese	Indian	Others	Total
Diploma and certificate courses⁴										
<i>Universiti Malaya</i>	—	—	—	—	—	63	61	5	3	132
<i>Universiti Pertanian Malaysia</i>	458	72	3	12	545	1,691	139	27	1	1,858
<i>Universiti Teknologi Malaysia</i>	390	198	23	7	618	1,557	118	9	12	1,696
<i>Institut Teknologi MARA</i>	1,801	—	—	—	1,801	7,524	—	—	—	7,524
<i>Politeknik Ungku Omar</i>	216	267	10	—	493	744	341	51	—	1,136
<i>Kolej Tunku Abdul Rahman</i>	—	—	—	—	—	—	1,151	46	4	1,201
Sub-total	2,865	537	36	19	3,457	11,579	1,810	138	20	13,547
%	82.9	15.5	1.0	0.6	100.0	85.4	13.4	1.0	0.2	100.0
Degree courses										
<i>Universiti Malaya</i>	3,005	3,861	559	302	7,727	3,590	3,515	504	122	7,731
<i>Universiti Sains Malaysia</i>	68	144	35	5	252	1,205	1,361	179	14	2,759
<i>Universiti Kebangsaan Malaysia</i>	164	4	1	—	169	2,337	126	35	4	2,502
<i>Universiti Pertanian Malaysia</i>	—	—	—	—	—	538	135	22	—	695
<i>Universiti Teknologi Malaysia</i>	—	—	—	—	—	483	80	3	1	567
Sub-total	3,237	4,009	595	307	8,148	8,153	5,217	743	141	14,254
%	39.7	49.2	7.3	3.8	100.0	57.2	36.6	5.2	1.0	100.0
Preliminary and pre-university courses										
<i>Universiti Malaya</i>	28	14	6	2	50	190	3	—	—	193
<i>Universiti Sains Malaysia</i>	16	3	—	—	19	92	—	—	—	92
<i>Universiti Kebangsaan Malaysia</i>	—	—	—	—	—	54	5	—	1	60
<i>Universiti Pertanian Malaysia</i>	31	2	—	7	40	99	4	—	—	103
<i>Universiti Teknologi Malaysia</i>	74	—	—	—	74	—	—	—	—	—
<i>Institut Teknologi MARA</i>	341	—	—	—	341	348	—	—	—	348
<i>Kolej Tunku Abdul Rahman</i>	30	1,122	41	2	1,195	32	2,739	157	4	2,932
Sub-total	520	1,141	47	11	1,719	815	2,751	157	5	3,728
%	30.3	66.4	2.7	0.6	100.0	21.9	73.8	4.2	0.1	100.0
TOTAL	6,622	5,687	678	337	13,324	20,547	9,778	1,038	166	31,529
%	49.7	42.7	5.1	2.5	100.0	65.1	31.1	3.3	0.5	100.0

³ Figures refer only to enrolments in local universities and colleges.⁴ Does not include enrolments in domestic private institutions.

TABLE 22-8

MALAYSIA: ENROLMENTS IN TERTIARY EDUCATION BY RACE AND FIELD OF STUDY, 1970-75⁵

	1970					1975				
	Malay	Chinese	Indian	Others	Total	Malay	Chinese	Indian	Others	Total
	<i>Diploma and certificate courses⁶</i>									
Agriculture	458	72	3	12	545	934	109	19	1	1,063
Engineering (including Petroleum Engineering)	633	399	27	7	1,066	2,480	371	47	9	2,907
Land and Quantity Survey, Architecture and Town and City Planning	59	5	—	—	64	936	14	—	3	953
Statistics, Computer Science and Actuaries	136	—	—	—	136	267	—	—	—	267
Science and Technology and Applied Science	218	—	—	—	218	1,291	378	11	1	1,681
Animal Science, Fisheries and Forestry	—	—	—	—	—	542	19	6	—	567
Home Science	—	—	—	—	—	69	11	2	—	82
Accountancy	353	34	3	—	390	1,354	313	21	4	1,692
Business	376	27	3	—	406	1,682	588	29	—	2,299
Administration and Law	355	—	—	—	355	542	—	—	—	542
Applied Arts	277	—	—	—	277	303	—	—	—	303
Hotel Catering	—	—	—	—	—	380	—	—	—	380
Library Science	—	—	—	—	—	108	—	—	—	108
Mass Communications	—	—	—	—	—	145	—	—	—	145
Secretarial Science	—	—	—	—	—	492	—	—	—	492
Interpretation/Translation	—	—	—	—	—	5	—	1	—	6
Certificate in English Language Teaching	—	—	—	—	—	36	7	2	2	47
Others	—	—	—	—	—	13	—	—	—	13
Sub-total	2,865	537	36	19	3,457	11,579	1,810	138	20	13,547

Degree courses

Arts and Language	2,104	870	270	133	3,377	1,826	429	168	34	2,457
Economics	494	661	135	52	1,342	1,287	339	86	19	1,731
Law	—	—	—	—	—	124	62	17	8	211
Humanities, Humanities with Education, Social Science and Social Science with Education	61	41	17	3	122	1,833	449	120	10	2,412
Islamic Studies	32	—	—	—	32	486	—	—	—	486
Diploma in Education	146	237	36	24	443	240	283	55	10	588
Diploma in Public Administration	16	2	—	—	18	15	7	1	—	23
Science, Science with Education and Applied Science	188	1,222	66	41	1,517	799	2,096	170	29	3,094
Medicine, Dentistry and Pharmacy	100	403	45	33	581	399	542	60	20	1,021
Agriculture	91	208	15	10	324	273	94	20	2	389
Veterinary Science and Forestry	—	—	—	—	—	105	35	2	—	142
B. Sc. Agriculture Business and Agricultural Engineering	—	—	—	—	—	179	36	6	—	221
Engineering (including Petroleum Engineering)	5	365	11	11	392	361	737	30	7	1,135
Architecture, Land and Quantity Survey, Town and Country Planning and Evaluation	—	—	—	—	—	226	108	8	2	344
Sub-total	3,237	4,009	595	307	8,148	8,153	5,217	743	141	14,254
<i>Preliminary and pre-university courses</i>	520	1,141	47	11	1,719	815	2,751	157	5	3,728
TOTAL	6,622	5,687	678	337	13,324	20,547	9,778	1,038	166	31,529

⁵ Figures refer only to enrolments in local universities and colleges.

⁶ Does not include enrolments in domestic private institutions.

and other indigenous people in areas where they are in short supply in line with the overall manpower needs and the long-term objectives of restructuring the racial composition of employment in professional, technical and managerial occupations.

1376. During the same period, although the share of other Malaysian students in domestic tertiary institutions declined from 50% to 35%, their enrolments increased in absolute terms from 6,702 to 10,982. At the diploma level, enrolment among other Malaysians increased from 592 in 1970 to 1,968 in 1975, while at the degree level their enrolments increased from 4,911 to 6,101.

VIII. EDUCATIONAL RESEARCH, PLANNING AND CO-ORDINATION

1377. The Ministry of Education will continue to undertake research and evaluate its programmes to assess their performance in relation to objectives and costs and to design improvements and modifications. The research and planning capability of the Ministry of Education—in particular the Educational Planning and Research Division, and the Higher Education Division—will be strengthened. The planning and administration of education and the collection of statistics at State levels will be reviewed and improved.

1378. A major effort will be made to improve the curricula as well as the teaching of science and mathematics in schools. The Curriculum Development Centre, when it is fully operational in 1977, will spearhead efforts to improve the quality of education through the modification and development of science, mathematics, *Bahasa Malaysia* and English Language curricula, design effective methods for their teaching in schools, prepare materials for practical work and tests and provide in-service training for teachers. The Centre will co-ordinate its work with the activities of the various divisions of the Ministry.

1379. The Educational Media Service, incorporating the Educational Television Service (ETV), the audio visual aids programme and the schools radio programme will be further expanded and strengthened. Under the ETV programme, a total of 5,500 TV sets and 2,500 power generators were distributed to schools in urban and rural areas during 1971-75. During the Plan period, the Educational Media Service will be extended to Sabah and Sarawak.

1380. Provision has been made in the Plan for the establishment of Education Resource Centres in Kota Bharu, Kuala Trengganu, Alor Star and Kuantan to co-ordinate efforts at the State levels to improve the quality of education. These Centres will conduct in-service training for teachers and educational administrators as well as to collate and disseminate information and materials on various aspects of educational development.

1381. In view of the rapid expansion and development in education and training, the co-ordination of activities within the Ministry of Education and among all agencies involved in training and development of manpower is important. Therefore, during the Plan period, the activities of the Higher Educational Council, the National Council for Scientific Research and Development and the National Industrial Training Council will be geared to achieve a closer co-ordination of policies and programmes in education and training.

TABLE 22-9

MALAYSIA: PUBLIC DEVELOPMENT EXPENDITURE FOR
EDUCATION AND TRAINING PROGRAMMES, 1971-80

(\$ million)

<i>Programme</i>	<i>Revised SMP allocation, 1971-75</i>	<i>Estimated expenditure, 1971-75</i>	<i>%</i>	<i>TMP allocation, 1976-80</i>
<i>Peninsular Malaysia</i>	<i>545.4</i>	<i>483.2</i>	<i>88.6</i>	<i>1,068.1</i>
Primary education	87.4	80.2	91.8	210.0
Secondary education	133.2	138.0	103.6	200.7
Vocational and technical education	34.0	25.7	75.6	20.7
Higher technical education	7.7	6.6	85.7	22.7
<i>Universiti Malaya</i>	11.1	11.0	99.1	22.6
<i>Universiti Kebangsaan Malaysia</i>	40.0	30.2	75.5	176.4
<i>Universiti Pertanian Malaysia</i>	33.0	33.0	100.0	48.1
<i>Universiti Sains Malaysia</i>	25.0	15.9	63.6	45.0
<i>Universiti Teknologi Malaysia</i>	9.6	4.4	45.8	104.3
<i>Institusi Teknologi MARA</i>	107.9	101.4	94.0	66.0
<i>Kolej Tunku Abdul Rahman</i>	8.8	2.6	29.5	6.2
Teacher training	9.0	3.6	40.0	77.2
Other programmes	38.7	30.6	79.1	68.2
<i>Sabah</i>	<i>60.4</i>	<i>44.9</i>	<i>74.3</i>	<i>195.0</i>
Primary education	17.6	14.3	81.2	76.1
Secondary education	29.5	22.9	77.6	95.3
Vocational education	7.0	3.9	55.7	16.5
Other programmes	6.3	3.8	60.3	7.1
<i>Sarawak</i>	<i>60.5</i>	<i>55.2</i>	<i>91.2</i>	<i>186.9</i>
Primary education	11.2	10.4	92.8	68.0
Secondary Education	41.7	41.2	98.8	82.7
Vocational education	4.5	2.0	44.4	4.3
<i>Universiti Pertanian Malaysia</i>	—	—	—	16.9
Other programmes	3.1	1.6	51.6	15.0
<i>Other Agencies⁷</i>	<i>97.3</i>	<i>92.6</i>	<i>95.2</i>	<i>221.3</i>
Ministry of Labour and Manpower	5.0	4.2	84.0	21.3
MARA Training Division	92.3	88.4	95.8	200.0
TOTAL	763.6	675.9	88.5	1,671.3

⁷ Allocation for youth training provided by the Ministry of Culture, Youth and Sports is included in Table 24-1.

IX. MALAYSIAN STUDENTS OVERSEAS

1382. During the period 1971-75, a total of about 6,050 Federal and State scholarships including MARA awards were given to students for overseas training. These scholarships are designed to augment the supply of manpower in critical areas. It is estimated that there are about 31,500 Malaysian students undertaking a variety of courses including secondary and pre-university education. Comprehensive information with respect to types of courses and the racial composition for all these students is not currently available. Efforts will be made by the Ministry of Education to improve the information system in order to enable proper assessment of the manpower supply position.

1383. Table 22-9 sets out the expenditure for education and training during 1971-75 and the allocations for the Plan period.