

Chapter V

Education And Training

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I. INTRODUCTION

5.01 Human resource development will be a major thrust in the Sixth Malaysia Plan as the achievement of socio-economic objectives depends on the availability of educated, skilled and trainable labour force. Towards this end, education and training programmes will be further expanded and improved, not only to equip individuals with the appropriate knowledge and skills but also to produce responsible citizens with strong moral and ethical values. In addition, such programmes will help to develop a technically competent labour force that will enhance the competitiveness of the Malaysian economy.

5.02 High priority is given to education and training as it contributes significantly to the objectives of the National Development Policy (NDP), in particular to poverty eradication and restructuring of society. Providing greater access to education and training to those in the low-income group will increase their income and employment opportunities and contribute further to improvements in income distribution. The focus in the Sixth Plan will be to improve the quality of education and training as well as to achieve a more efficient delivery system so as to enable the low-income group and the under-served regions to have greater access to education and training.

II. PROGRESS, 1986-90

Education Programmes

5.03 During the Fifth Malaysia Plan period, continued emphasis was given to programmes and projects to cater for the increasing demand for education. Facilities were expanded substantially to enable increases in

intake at all levels of education. This expansion was in line with the objective of increasing accessibility to education, particularly for those in the low-income group and the under-served areas.

5.04 Various measures were also undertaken to improve the quality of education and the delivery system. Among them was the implementation of the New Primary School Curriculum (KBSR) in 1983 which culminated in the Integrated Secondary School Curriculum (KBSM) in 1989. The main objective of the new curricula is to produce a balanced individual with the relevant knowledge and skills as well as with strong moral and ethical values.

5.05 The Fifth Plan period also saw the strengthening of vocational education through the restructuring of the curriculum for vocational schools in 1987. The main aim of the restructuring was to make vocational education more attractive to students and to produce better quality graduates. To consolidate all the reform efforts that had been taken towards strengthening the education system, a review of the Education Act, 1961 was started in 1989.

Pre-school Education

5.06 Pre-school education which was aimed at preparing the child for primary school, was provided by both the public and private sectors. The role of the Ministry of Education (MOE) was limited to the preparation of the curriculum and the registration of pre-school centres. Of the total number of 6,960 pre-school centres in 1990, about 5,360 or 77 per cent were run by Government agencies and statutory bodies. These centres accounted for about 57 per cent of the total enrolment. The number of children aged between four and five years enrolled in pre-schools increased by 10 per cent from 300,850 in 1985 to 331,520 in 1990, indicating the growing importance of pre-school education.

Primary Education

5.07 At the primary level, total enrolment in Government and Government-aided schools increased by 11.7 per cent from about 2.19 million in 1985 to about 2.45 million in 1990. Participation at this level

had reached 99 per cent of the relevant school-going population during the period, indicating that universal education was accessible to all. The survival rate in Government and Government-aided schools, that is, the percentage of students from the same cohort who managed to complete six years of primary schooling was about 96 per cent. This augured well for the human resource development of the country as it indicated that the vast majority of school-going children had the opportunity to complete primary education. *Table 5-1* shows the enrolment increases at various levels of education.

5.08 The increasing number of students entering primary schools had led to the need for more classrooms in the Fifth Plan period. This was made more acute with the implementation of KBSR which required smaller class size of 35 children per classroom for it to be really effective. Of the total demand for classrooms, about 10,020 or 45 per cent were built during the period. Rural-urban migration, however, had led to an increase in demand for classrooms in the urban areas. As such, shortages still existed and had resulted in overcrowding in the urban areas where the average class size was as high as 44 children per class. The overall shortage of classrooms had also resulted in about 11,230 or 16 per cent of primary classes to be held in the afternoon.

5.09 The thrust of KBSR is the acquisition of basic skills in reading, writing and arithmetic. Recognizing the importance of instilling interest in the science and technical subjects from young, the new curriculum also incorporated various subjects at the primary level such as Man and His Environment and Manipulative Skills.

5.10 The implementation of KBSR completed its full cycle with the first administration of the Primary School Achievement Test (UPSR) in 1988 for pupils in standard six of that year. UPSR as a national level evaluation measure was strengthened by a series of school-based assessment tests to enable teachers to identify pupils for remedial classes if they did not perform well. Effective remedial measures were, however, hampered by the large class size and the shortage of teachers trained in remedial education. The success and effectiveness of KBSR as compared to the former primary school curriculum had been satisfactory but the results of UPSR in 1988 showed that a large number of children, especially those from the rural schools, needed remedial teaching in subjects such as English and Mathematics.

TABLE 5-1
STUDENT ENROLMENT IN LOCAL PUBLIC INSTITUTIONS,
1985-95

Level of Education	1985		1990		1995		Increase (%)	
	number	(%)	number	(%)	number	(%)	5MP	6MP
Pre-school	162,980	4.3	188,840	4.6	362,400	7.0	15.9	91.9
Government	144,720		153,890		327,400			
Semi-Government	18,260		34,950		35,000			
Primary	2,191,680	58.5	2,447,210	59.1	2,808,210	54.5	11.7	14.8
Government ¹ and Government-aided ² Schools	2,191,680		2,447,210		2,808,210			
Lower Secondary	922,210	24.6	943,920	22.8	1,126,450	21.9	2.4	19.3
Government and Government-aided Schools	918,240		942,800		1,123,950			
MARA Junior Science Colleges	3,970		1,120		2,500			
Upper Secondary	333,060	8.9	368,500	8.9	589,580	11.5	10.6	60.0
Arts and Science								
Government and Government-aided Schools	309,620		331,290		529,600			
MARA Junior Science Colleges	2,960		6,050		7,800			
Kolej Tunku Abdul Rahman	140		120		n.a			
Technical and Vocational								
Government and Government-aided Schools	20,340		31,040		52,180			
Post-secondary	52,390	1.4	75,140	1.8	82,460	1.6	43.4	9.7
Government and Government-aided Schools	43,850		62,710		68,720			
Kolej Tunku Abdul Rahman	2,790		2,130		2,280			
Pre-diploma and Pre-university Courses ³	5,280		9,010		9,360			
MARA Junior Science Colleges	470		1,290		2,100			
Teacher Education	16,560	0.4	21,580	0.5	27,300	0.5	30.3	26.5
Primary and Secondary	16,560		21,580		27,300			
Certificate	6,880	0.2	9,180	0.2	18,290	0.4	33.4	99.2
Diploma	25,050	0.7	28,000	0.7	44,230	0.9	11.8	58.0
Degree⁴	37,840	1.0	60,010	1.4	89,680	1.7	58.6	49.4
Total	3,748,650	100	4,142,380	100	5,148,600	100	10.5	24.3

Notes:

¹ Fully assisted schools.

² Partially assisted schools.

³ Preparatory courses conducted at *Institut Teknologi* MARA and all universities excluding *Universiti Teknologi Malaysia* and enrolment of foreign students at *Universiti Islam Antarabangsa*. Enrolment also includes preparatory and language courses for students pursuing diploma and degree level courses overseas.

⁴ Includes enrolment in post-graduate courses and enrolment at *Institut Teknologi* MARA, *Kolej Tunku Abdul Rahman* and enrolment in off-campus courses of *Universiti Sains Malaysia* and *Institut Teknologi* MARA but excludes enrolment of foreign students at *Universiti Islam Antarabangsa*.

n.a Not available

Secondary Education

5.11 Enrolment in the Government and Government-aided schools at the lower secondary level increased by 2.4 per cent from about 922,210 in 1985 to about 943,920 in 1990. At the upper secondary level, the enrolment increased by 10.6 per cent from about 333,060 to about 368,500. During the Fifth Plan period, about 12,960 classrooms were built to cater for the increased enrolment. The new classrooms, however, were not adequate to meet the increased demand, resulting in 32.8 per cent of the classes at the secondary level to be conducted in the afternoon. By accommodating double-session classrooms, the national average class size had been reduced to 33.4. However, pockets of large class size above the national average still occurred in the urban areas.

5.12 The transition rate between the primary and lower secondary levels in Government and Government-aided schools had remained constant at about 84 per cent during the period. However, not all students who did not enter Government or Government-aided secondary schools left the school system. Some enrolled themselves in private schools while some joined the Islamic religious secondary schools, managed by state governments or by private individuals or organizations.

5.13 The curriculum reform which started at the primary level was extended to the secondary level in 1989, starting with form one. A significant change included in KBSM was the greater emphasis given to business-related and pre-vocational subjects. At the lower secondary level, a new subject called 'Living Skills', incorporating business knowledge was introduced with the objective of exposing students to aspects of technology, commerce and entrepreneurship. However, the shortage of classrooms, coupled with the lack of other facilities such as workshops, and the shortage of teachers to meet the requirement of the class-teacher ratio of 1:1.5 under KBSM, were some of the constraints experienced during the first two years of its implementation.

5.14 Various measures to improve the overall performance and to increase the number of students in the science stream were continued. These included increasing the number of fully residential science schools and equipping science laboratories, especially in the rural schools. The examination results, however, showed that the overall performance of rural schools was lower than that of urban schools, especially in English, Science and Mathematics. This indicated that there still existed gaps in the quality of education between the urban and rural schools.

5.15 The Government also continued to implement measures to improve the quality of education for the poor. These included the rural hostel programme whereby free hostel accommodation was provided to the children of the poor. Two science secondary schools were also reserved for children of poor families who showed academic potential. Other programmes included the provision of free textbooks on loan, the supply of nutritious food and the provision of dental care through mobile dental clinics. More teachers with experience and specialist training were also deployed to schools in the rural areas.

Secondary Technical and Vocational Education

5.16 The enrolment in technical schools was about 5,880 in 1990. In secondary vocational schools, enrolment increased by 64.4 per cent from about 15,300 in 1985 to about 25,160 in 1990. The enrolment in vocational schools in 1990 constituted about 7 per cent of the total upper secondary enrolment. The increased enrolment in vocational schools was accommodated by the increase in the number of vocational schools built during the period from 45 in 1986 to 57 in 1990 as well as the expansion of existing schools. In order to improve the effectiveness of vocational education, the curriculum in the secondary vocational schools was restructured, with the academic subjects being given more emphasis equivalent to that in the normal secondary schools. In 1988, the first batch of students in the academic stream sat for the new examination, *Sijil Pelajaran Malaysia Vokasional* (SPMV). SPMV was accorded the same status and recognition as the academic *Sijil Pelajaran Malaysia* (SPM) in terms of basic qualification for jobs in the public sector. It also enabled the students to pursue their education at the tertiary level.

5.17 The reformed vocational curriculum and examination resulted in an increase in intake of students with Grade A in *Sijil Rendah Pelajaran* (SRP), from about 57 per cent in 1985 to about 70 per cent in 1990. There was also a marked improvement in student performance in SPMV. The percentage of first graders, for example, increased by 61 per cent from 9 per cent of total passes in 1988 to 14 per cent in 1990.

5.18 Besides the two-year course leading to SPMV, students who were not academically inclined entered the skills stream after completing form four. In addition, the vocational schools also offered one-year courses in trade skills such as electrical and electronics, fitting and machining, welding, and motor mechanics. Students pursuing these trade skill

courses were required to sit for the basic level examination conducted by the National Vocational Training Council (NVTC).

Tertiary Education

5.19 There were substantial increases in enrolment in tertiary education during the period. As shown in *Tables 5-2 and 5-3*, the enrolment in certificate, diploma and degree courses registered an increase of 33 per cent, 12 per cent and 59 per cent, respectively. The increases were made possible with the expansion of existing institutions and the completion of new ones. These included the five new polytechnics at Alor Setar, Batu Pahat, Kota Bharu, Kuching and Port Dickson, certain phases of the permanent campuses of *Universiti Teknologi Malaysia* (UTM) in Skudai and *Universiti Utara Malaysia* (UUM) in Sintok, the branch campuses of *Universiti Pertanian Malaysia* (UPM) in Bintulu, the medical school of *Universiti Sains Malaysia* (USM) in Kelantan and the engineering school in Perak.

5.20 During the period, about 89,700 graduates at the degree and diploma levels were produced by the local institutions. The percentage ratio of diploma to degree graduates was 41:59. As shown in *Tables 5-2 and 5-3*, the percentage ratio of output of arts to science/technical graduates at the degree level remained at about 53:47 while at the diploma level, the percentage ratio was about 50:50. Almost 50 per cent of the arts graduates at the degree and diploma levels were from the applied arts courses which included accountancy, business and law. At the certificate level, however, the percentage ratio of arts to science and technical graduates was 15:85.

5.21 A substantial number of Malaysians were also pursuing education overseas. It was estimated that in 1985 about 60,000 students were enrolled in overseas tertiary educational institutions, of whom about 43,200 were enrolled in degree level courses, 2,600 were at the diploma level, about 6,150 at the certificate level and about 8,050 at the primary and secondary school levels. In 1990, the total enrolment declined to about 52,000. The reduction in the number pursuing tertiary education abroad was the result of higher fees imposed by overseas institutions and the increasing number of local private institutions offering twinning programmes.

TABLE 5-2

**ENROLMENT AND OUTPUT FOR DEGREE COURSES
FROM LOCAL PUBLIC INSTITUTIONS, 1985-95**

Course	Enrolment			Increase (%)		Output			Increase (%)
	1985	1990	1995	5MP	6MP	5MP	6MP	6MP	
Arts	20,350	34,660	51,410	70	48	27,780	50,250	81	
(%)	34	58	57			63	61		
Arts and Humanities ¹	10,350	18,920	27,480	83	45	14,580	25,630	76	
Economics and Business ²	9,290	13,450	20,840	45	55	12,170	21,390	76	
Law	710	2,290	3,090	223	35	1,030	3,230	214	
Science	12,330	16,450	24,210	33	47	17,510	21,110	21	
(%)	32	27	27			33	25		
Medicine and Dentistry	2,210	3,100	3,700	40	19	2,280	3,190	40	
Agriculture and Related Sciences ³	1,150	1,460	3,140	27	115	1,790	2,130	23	
Pure Sciences ⁴	3,430	5,180	6,770	51	31	5,170	6,430	103	
Others ⁵	5,540	6,710	10,600	21	58	10,330	9,360	-9	
Technical	5,160	8,920	14,050	73	58	7,550	11,430	51	
(%)	14	15	16			14	14		
Engineering	4,050	7,490	11,270	85	50	5,360	9,210	72	
Architecture and Town Planning	610	950	1,920	56	102	1,070	1,450	36	
Surveying	310	300	590	-3	97	410	480	17	
Others ⁶	190	180	270	-5	50	710	290	-59	
Total	37,840	60,030	89,670	59	49	52,840	82,790	57	

Notes:

- ¹ Includes Islamic studies, language, literature and Malay culture, social sciences, library science and art and design.
- ² Includes accountancy, business management, resource economics and agri-business.
- ³ Includes home science technology, human development and veterinary sciences.
- ⁴ Includes biology, chemistry, physics and mathematics.
- ⁵ Includes pharmacy, applied sciences, environmental studies, food technology, science with education and computer science.
- ⁶ Includes property management.

TABLE 5-3

ENROLMENT AND OUTPUT FOR DIPLOMA AND CERTIFICATE COURSES FROM LOCAL PUBLIC INSTITUTIONS, 1985-95

Course	Enrolment		Increase (%)		Output		Increase (%)	
	1985	1990	1995	5MP	6MP	5MP	6MP	6MP
DIPLOMA								
Arts	12,830	14,920	20,620	16	38	18,450	29,970	62
(%)	51	53	47			50	53	
Arts and Humanities ¹	3,680	2,770	3,370	-25	22	11,020	4,390	-60
Economics and Business ²	9,150	12,150	17,250	33	42	7,430	25,580	244
Science	5,440	4,750	8,360	-13	87	7,950	10,500	32
(%)	22	17	20			22	19	
Agriculture and Related Sciences	1,850	1,140	1,690	-38	48	2,920	2,810	-4
Others ³	3,590	3,610	7,170	1	99	5,030	7,690	53
Technical	6,800	8,340	14,740	23	77	10,450	15,750	51
(%)	27	30	33			28	28	
Engineering ⁴	4,870	5,780	11,540	19	100	7,730	10,100	31
Architecture and Town Planning	880	980	1,440	11	47	1,260	1,840	46
Surveying	550	610	720	11	18	830	2,200	165
Others ⁵	500	970	1,040	94	7	630	1,610	156
Total	25,070	28,010	44,220	12	58	36,850	56,220	53
CERTIFICATE								
Arts	990	2,060	6,630	108	222	2,140	13,510	531
(%)	14	22	36			15	40	
Arts and Humanities	40	50	150	25	200	50	0	n.a
Economics and Business	950	2,010	6,480	112	222	2,090	13,510	546
Science	0	10	170	n.a	1,600	0	210	n.a
(%)	0	0	1			0	1	
Others	0	10	170	n.a	1,600	0	210	n.a
Technical	5,900	7,110	11,490	21	62	12,240	20,070	64
(%)	86	77	63			85	59	
Engineering	3,510	4,290	7,550	22	76	10,460	12,590	20
Architecture and Town Planning	1,900	2,300	3,200	21	39	1,460	6,240	327
Surveying	490	520	620	6	19	320	1,240	288
Others	0	0	120	0	n.a	0	0	0
Total	6,890	9,180	18,290	33	99	14,380	33,790	135

Notes:

- ¹ Includes public administration, music, photography and secretarial studies.
 - ² Includes accountancy, banking, hotel management and catering.
 - ³ Includes computer studies, applied sciences and mathematics.
 - ⁴ Includes building technology, automotive technology and electronics.
 - ⁵ Includes property management, material technology and valuation.
- n.a Not applicable

Teacher Education

5.22 The number of teacher training colleges increased from 24 in 1985 to 28 in 1990 with an annual intake of about 7,250 trainees. During the Fifth Plan period, the 28 teacher training colleges produced about 34,600 teachers for the primary level, about 7,700 college-trained teachers for the secondary level, and about 2,900 graduate teachers under the Post-graduate Teacher Education Programme (KPLI) for the upper secondary level.

5.23 KPLI was conducted at 11 teacher training colleges in 1990. This programme was to supplement the output of graduate teachers from local universities in line with the policy of having ultimately only university graduates as teachers in the secondary schools. During the period, the five local universities continued to train a total of about 1,800 graduate teachers, of whom about 780 were in science-related subjects, and about 990 in arts and humanities.

5.24 In 1990, there were about 120,000 teachers in the Government and Government-aided primary schools. Of this total, 13,855 were untrained teachers. The recruitment of untrained teachers was necessary because the output of trained teachers could not keep pace with the increase in enrolment as well as the implementation of the new class teacher ratio of 1:1.5. At the secondary level, there were about 72,500 teachers in 1990, an increase of 27.4 per cent from 56,900 in 1985. Of the total in 1990, about 38 per cent were graduates, compared with only about 29 per cent in 1985. Of the total number of teachers at the secondary level in 1990, about 3,400 or 4.7 per cent were untrained.

Private Sector Education

5.25 During the Fifth Plan period, private educational institutions had emerged as important avenues to meet the increasing demand for higher education among Malaysians. The upsurge in demand for tertiary education and the rising cost of overseas tertiary education led to the increase of private educational institutions. The enrolment of students in these institutions at the degree, diploma and certificate levels more than doubled during the period, increasing from about 15,000 students in 1985 to about 35,600 students in 1990. Of the total enrolment in 1990, 14 per cent were registered for degree courses, while 46 per cent enrolled

for diploma programmes and the remaining 40 per cent for certificate courses. The courses offered by these institutions were mainly in the fields of accountancy, commerce, law, engineering and electronics, computer science and business management. Private institutions supplemented public sector efforts in providing opportunities for higher education.

5.26 At the secondary level, it was estimated that about 153,000 students were enrolled in private schools in 1990. This indicated that education had developed into a service industry which attracted private sector investment and helped to supplement Government's efforts in providing education at all levels.

Training Programmes

Skill Training

5.27 There was a considerable increase in the intake into public training institutions, indicating greater efforts made to produce more and better trained manpower to meet the industrial needs of the nation. During the Fifth Plan, about 111,000 trainees completed their training programmes at the skilled and semi-skilled levels, of which 58 per cent of the output were in engineering trades. *Table 5-4* shows the intake and output of skilled and semi-skilled manpower from local public institutions. During the period, existing training institutions were expanded. New institutions were also built, including five Industrial Training Institutes (ITIs), one Advanced Training Centre and 15 *Pusat Giat MARA*.

5.28 As more training programmes were developed by various institutions, there was a need to improve coordination as well as undertake measures to ensure that the curricula and trade standards meet the requirements of industry. To meet these needs more effectively, NVTC was set up in 1989 to replace the National Industrial Training and Trade Certification Board. NVTC which has representations from both the public and private sectors coordinates the planning and development of national vocational training and ensures that training programmes are in line with the industry's requirements. To date, the curricula and examination standards covering 53 trades at basic, intermediate and advanced levels had been prepared.

TABLE 5-4

INTAKE AND OUTPUT OF SKILLED AND SEMI-SKILLED
MANPOWER BY COURSE FROM LOCAL PUBLIC TRAINING
INSTITUTIONS, 1985-95

Course	Intake			Increase (%)		Output		Increase (%)
	1985	1990	1995	5MP	6MP	5MP	6MP	6MP
Engineering trades	12,550	19,810	25,920	58	31	64,040	132,760	121
Mechanical trades ¹	6,950	11,020	12,190	59	11	28,240	71,300	252
Electrical trades ²	3,930	6,020	10,700	53	78	21,110	46,610	221
Civil engineering trades ³	1,610	1,410	1,960	-12	39	13,440	13,030	97
Other engineering trades ⁴	60	1,360	1,070	2,167	-21	1,250	1,820	146
Building trades⁵	2,460	4,180	7,260	70	74	12,850	16,750	130
Printing trades⁶	130	30	80	-77	167	170	550	324
Commerce	1,800	2,990	3,500	66	17	8,890	20,120	226
Agriculture	510	880	880	73	0	4,470	1,120	25
Home Science⁷	930	1,420	1,780	53	25	4,690	9,170	196
Others⁸	520	1,300	1,210	150	-7	11,190	6,500	58
Skill-upgrading	340	990	2,400	191	142	4,730	10,000	211
Total	19,240	31,600	43,030	64	36	111,030	196,970	177

Notes:

- ¹ Includes general mechanics, general machining, tool and die making, motor vehicle mechanics, welding, sheet metal works, fabrication, marine engineering and manufacturing.
- ² Includes electrical installation and maintenance, radio and television servicing, refrigeration and air conditioning, electrical fitting and armature winding, and electronic engineering.
- ³ Includes construction.
- ⁴ Includes material technology and food processing technology.
- ⁵ Includes carpentry and joinery, woodwork machining, bricklaying and plumbing.
- ⁶ Includes hand composing, machine composing, offset printing, bookbinding and letterpress.
- ⁷ Includes sewing, cooking and catering, cosmetology and hairdressing.
- ⁸ Includes surveying, architectural draftsmanship, photography, laboratory science, dispensing optics, computer programming and information processing, confectionery and hotel catering, heavy plant operation, architecture and quantity surveying.

5.29 During the Fifth Plan period, efforts were intensified to increase the industry's involvement in training. Private sector participation in training was in various forms, such as representation in NVTC, the utilization of the Double Deduction Incentive Scheme for training and the Apprenticeship Scheme for the construction industry. However, the overall participation of the private sector in training was still inadequate to meet the demand for skilled manpower.

5.30 Several studies undertaken during the Fifth Plan period highlighted the Government's concern to improve the effectiveness of the existing skill training delivery system in supplying the required trained manpower. These studies included those on human resource development which identified issues and recommended measures to overcome them and the preparation of an action plan to implement these recommendations. The setting up of the Cabinet Committee on Training in 1990 also reflected the Government's efforts to improve the existing system. The recommendations of the Cabinet Committee and the various studies called for major structural changes to the existing training system as well as for greater private sector participation in the skill delivery system.

Management and Entrepreneurial Training

5.31 Strategies, programmes and projects formulated to achieve various objectives could only be met with success if planners, managers and implementors in the public sector are aware of their roles and functions and are equipped with the appropriate training in related areas. As such, in-service courses for planners and implementors at all levels were given due emphasis. About 112,000 personnel from the public sector had participated in in-service training courses conducted by the National Institute of Public Administration (INTAN) in the field of management and in areas specific to the requirement of the agencies. In addition, managerial personnel in the public sector were attached to foreign firms so as to gain experience in the corporate and business sectors. For the education service, *Institut Aminuddin Baki* provided in-service courses in education administration and management for headmasters and other key personnel.

5.32 The National Productivity Centre continued to provide courses in management and entrepreneurial development. The objective was to equip private sector personnel with the necessary skills in management and entrepreneurship and be able to participate successfully in the commercial and industrial sectors. Similarly, the Entrepreneur Development Programme in *Institut Teknologi MARA (ITM)* conducted similar courses for Bumiputera entrepreneurs.

III. PROSPECTS, 1991-95

5.33 The education and training systems will be further expanded and strengthened to achieve its objective of ensuring that quality education and training is accessible to all Malaysians. The education and training systems will continue to be geared to mould individuals to become better Malaysians with the right attitude towards life and work, and to equip them with the knowledge and skills necessary to make Malaysia a developed nation by the year 2020.

Education Programmes

5.34 Education programmes under the Sixth Plan will be further expanded to provide greater accessibility and more equitable opportunities in order to achieve national unity and integration. Various programmes and projects that will enable the rural population and the poor to fully benefit from the educational process will be further emphasized. The quality of education and training will be improved and oriented towards meeting the needs of national development.

5.35 The use of *Bahasa Malaysia* as the medium of instruction at all levels of education will continue to be given priority and upgraded with improvements in its teaching and learning processes. Emphasis will be given towards improving communication and analytical skills as well as creativity in using the language. Similarly, the teaching and learning of other foreign languages and pupils' own language will be given emphasis. The teaching of English as a second language will be given greater importance in order to stem the decline in the standard of English. The Government will consider the possibility of making English as one of the compulsory subjects for a pass in examinations.

5.36 Co-curricular activities will also be given emphasis as these activities will enable children to practise what they have learnt in the classrooms. The schools will thus provide a conducive environment not only for the acquisition of basic knowledge but also character building.

Pre-school Education

5.37 During the Sixth Plan period, pre-school education will be expanded gradually to those areas not served by pre-school facilities. The Government aims to supplement existing pre-school facilities by having classes for children aged five as part of the Government primary schools

through a pre-school annex system. This is necessary as participation in well-organized pre-school facilities will give the opportunity for children from low-income families to have the same head start as others.

5.38 The implementation of this new programme by MOE will be undertaken in three phases. The first two phases will be implemented in areas where pre-school facilities are non-existent, while the third phase will be in areas where facilities are available but benefit only certain sections of the population. It is expected that by the end of 1995, the combined efforts of MOE, other Government agencies and the private sector will ensure that all children entering standard one in the primary schools would have had at least one year of pre-school education. To ensure the success of this programme, more specialist teachers for pre-school education will be trained.

Primary Education

5.39 It is estimated that the enrolment in Government and Government-aided primary schools will exceed 2.8 million pupils in 1995 as compared with about 2.45 million in 1990, an increase of about 14.8 per cent. To cater for the expected increase in enrolment and the additional demand for classrooms required by KBSR, about 12,200 new classrooms will be built.

5.40 Efforts will continue to be made to consolidate the curriculum reform which was started in 1983. More teachers for remedial instruction will be provided to the schools. In addition, new teacher trainees will be trained in remedial instruction methods so that in-class remedial teaching can be effectively carried out.

5.41 In order to ensure that the public institutions provide quality education, the period for completing the primary school syllabus is being reviewed so that it can be completed between five to seven years. Pupils at the primary level who are low achievers can take up to seven years to complete primary education. On the other hand, the best students will be able to complete primary education within the minimum five years.

5.42 The performance in important subjects, for example Mathematics and English, will be improved by ensuring that these subjects will be taught by specially trained teachers. The number of teachers trained in these subjects will, therefore, be increased.

Secondary Education

5.43 By 1995, the enrolment at the lower secondary level in Government and Government-aided schools is expected to be about 1.13 million students, an increase of 19.3 per cent from 1990. The enrolment at the upper secondary level is also expected to increase to about 589,580 students or an increase of 60 per cent from the enrolment in 1990.

5.44 The Sixth Plan period will witness the completion of the first KBSM cycle, with the first batch of students taking SRP at the end of 1991 and SPM/SPMV at the end of 1993. These will be crucial years as the curriculum reform initiated in 1983 will be put to its first test in the final year of the new curricula. In addition, 1992 will witness the implementation of the upper secondary KBSM at the form four level. The main feature of KBSM is the replacement of the previous arts/science streaming of students by a more liberal arrangement. Besides the compulsory subjects taken by all students, each student can choose a minimum of two and a maximum of four elective subjects, from at least two out of three groups. Group I contains the humanities subjects, Group II the technical and vocational subjects while Group III contains the pure science subjects.

5.45 This new arrangement will provide the opportunity for students to be exposed to basic technical and vocational education at an early stage. This arrangement provides flexibility to students to choose the subjects of their choice and enables students who are not academically inclined to opt into the labour market earlier. The possession of some basic technical training will increase their acceptance into the skill labour market.

5.46 Another important feature of the upper secondary KBSM is the inclusion of History in the list of core subjects to be taken by every student. The History syllabus gives more emphasis to Malaysian history and to the nation building experienced by the country. This is aimed at making the education system more effective in fostering national unity.

5.47 Islamic religious instruction for Muslims and moral education for non-Muslims are also included in the list of core subjects. Besides fulfilling the requirements of the National Philosophy of Education which puts prime emphasis on the Belief in God, the subjects in the core group will also inculcate in the students, the positive values that are necessary for the creation of a successful and caring society.

5.48 Secondary education in the rural areas will also be expanded to provide more places for rural students with high academic potential. Four more fully residential schools will be built and equipped with facilities and manned by specially trained teachers. Residential facilities will also be provided, where appropriate, to students who perform well in the lower secondary schools in order to maintain their high standard of performance. Measures will also be undertaken to increase educational facilities for handicapped children. They will be encouraged to mix with the normal children by having facilities built alongside with the facilities for normal children. Special schools for the handicapped which incorporate vocational subjects will also be provided.

5.49 Efforts will be made to produce more reading materials, workbooks and teaching kits for primary and secondary students. This is essential to promote a strong reading culture as well as develop manipulative skills and scientific interests among school children at an early age.

5.50 A more organized sports development programme will be implemented in schools in order to further promote the development of sports. Several schools will be identified for various sports and talented students will be enrolled in such schools. In addition, qualified and competent coaches and trainers will be provided to ensure that proper training is given to develop the capabilities of these students to enable them to develop their sports talent as well as excel in their academic performance.

5.51 Parent-Teacher Associations (PTAs) have an important role to play in determining and organizing programmes in schools. PTAs will be encouraged to be more involved and committed in activities designed to improve and further strengthen the management of schools, especially in the rural areas.

Secondary Vocational Education

5.52 Facilities for vocational education will be expanded to enable increases in enrolment from about 25,160 in 1990 to about 46,980 in 1995. The enrolment in 1995 will be about 8 per cent of the total upper secondary enrolment compared with only 7 per cent in 1990. The increase in enrolment will be made possible with the construction of eight new vocational schools and the addition of vocational annexes to normal secondary schools.

5.53 The enrolment in the skills stream of the vocational schools will also be increased. Among the new courses to be introduced are those relating to the electronics and automotive industries, general machining, technical and mechanical drawing, and furniture making and designing.

5.54 Efforts towards introducing specialization in vocational schools will be intensified. This is to optimize the use of limited resources such as specialist teachers and equipment. The pooling of resources and expertise in specific areas will improve the performance of these institutions in producing the skilled manpower needed by the industries. Specialization of these institutions will be undertaken on a regional basis so as to correspond to the levels and types of industries developed in these areas.

5.55 The specialization of vocational schools according to industry location will also provide the advantage of industrial exposure to the students as it will facilitate practical training and attachment programmes with the industries. The close proximity of these institutions to industries will allow the students to have hands-on experience in these industries. These institutions will have the opportunity to publicize their programmes to industries which are the potential employers of the students. In this regard, there will be wider dissemination of information on the various vocational and industrial training programmes to the private sector.

Tertiary Education

5.56 During the Sixth Plan, five new polytechnics will be built while the existing ones will be expanded. The polytechnics will offer more diploma level courses as well as new courses in the engineering fields, such as electronic communications, computer technology and textile engineering. ITM will open up new branch campuses in Kedah, Kelantan, Melaka, Negeri Sembilan, Perak and Pulau Pinang. *Universiti Islam Antarabangsa* (UIA) will have its permanent campus in Gombak while the feasibility study for its proposed medical complex in Kuantan will be completed. Other existing institutions will also be expanded to cater for increases in enrolment and new courses in various specialized areas. The expansion includes the construction of additional facilities for *Universiti Kebangsaan Malaysia* (UKM), the engineering and medical schools of USM, UTM campus in Skudai, UPM campuses in Serdang and Bintulu and the construction of a teaching hospital for UKM in Cheras as well as the completion of the permanent campus of UUM at Sintok. As the

establishment of new facilities is expected to incur high costs, these efforts will have to be complemented with other measures. The establishment of open university as a means to increase accessibility to tertiary education and reduce costs will also be studied.

5.57 With the completion of new facilities and expansion of existing facilities, the intake into tertiary level education will increase substantially. The intake into the certificate, diploma and degree level courses will increase by 38 per cent from about 28,000 in 1990 to about 38,700 in 1995. The largest intake will be in the applied arts, sciences, engineering and medical courses. This is in line with the need to increase the number of professionals to cope with the expansion of industrial and economic activities as well as the need to increase the research and development capabilities in the country.

5.58 In 1990, a total of 533 courses in various disciplines were offered at diploma, degree and post-graduate levels. During the Sixth Plan period, these courses will be reviewed and upgraded in line with new developments in science and technology and in relevant disciplines. Priority will be given to the expansion of courses in new engineering fields, such as systems engineering and process engineering. Although the expected increase in the output of arts courses is high, a large proportion of the output will be in the applied arts courses. This will satisfy the increasing demand for graduates in the fields of accountancy, business and finance to serve the modern services sector of the economy as well as cater for the requirement of teachers in the secondary schools.

5.59 The expansion of places at the certificate, diploma and degree levels has to be supported with the availability of high calibre teaching staff. Various programmes, such as short specialized courses, post-graduate programmes and attachments in industries and organizations will be undertaken to increase the number and upgrade the quality of the teaching staff.

5.60 Academic programmes at the post-graduate level will also be expanded, especially in the fields of applied arts and sciences and technology. The enrolment at post-graduate level is expected to increase by 69 per cent from about 3,500 in 1990 to about 5,900 in 1995.

5.61 Research and development (R&D) programmes in universities will continue to be given priority. In the Sixth Plan, a total of \$224 million will be allocated for this purpose. The universities will be encouraged to have joint research programmes with the private sector so

that the areas of research and their findings will be more relevant and commercially useful. To develop a competitive industrial economy, there is an urgent need to build competence in key technologies such as automated manufacturing, advanced materials, electronics, biotechnology and information technology. R&D programmes in these new and emerging technologies will be prioritized to ensure focus in areas which will yield high economic returns.

5.62 Sports development in tertiary institutions will also be strengthened by providing opportunities for talented students from the secondary schools to pursue their respective academic careers. Measures will be undertaken to design a flexible system to accommodate the needs of such students. This will enable a continuous development of talented and educated athletes.

Teacher Education

5.63 While incentives for teachers have been improved through the implementation of the two-tier service scheme and support facilities provided for those teaching in the rural areas, the overall teacher quality will be further improved through the provision of better basic training for new teachers. Towards this end, steps will be taken to ensure a better intake of trainees by tightening the selection criteria, providing improved training facilities and upgrading further the quality of instructors.

5.64 Steps will be taken to increase the number of graduate teachers in secondary schools to improve the performance of students. College-trained teachers currently teaching at the secondary level will be selected for degree courses in order to upgrade their skills. In addition, the KPLI programme will also be continued. In-service courses to upgrade teaching capabilities will also be continued at *Institut Aminuddin Baki*, the various teacher training colleges and at the education resource centres.

5.65 Five new teacher training colleges will be constructed during the Sixth Plan period, one of which will be specially for the training of vocational and technical teachers. Besides the building of new colleges, plans will be made to expand and upgrade some of the existing institutions to allow for increases in the intake of trainees. By 1995, it is expected that the enrolment in the teacher training colleges will be about 27,300 trainees, an increase of 26.5 per cent from 1990.

Training Programmes

Skill Training

5.66 As Malaysia continues to push forward its industrialization programme, more skilled and highly trained manpower, especially at the technician and craftsmen level, are needed. As such, during the Sixth Plan, the intake into public skill training institutions is expected to increase from 31,600 in 1990 to about 43,000 in 1995. This includes the increase in intake into the skills stream of the secondary vocational schools which will be made possible with the completion of eight new secondary vocational schools, the expansion of existing 29 vocational schools and other public training institutions such as the existing ITIs, MARA vocational institutes (IKM) and the construction of an ITI and an IKM.

5.67 During the Plan period, various measures will be undertaken to improve and increase the effectiveness of public training institutions as recommended by the various studies and the Cabinet Committee Report on Training. The Cabinet Committee Report recommended 13 broad policy directions, encompassing more than 50 policy measures. These measures, which are currently being studied and implemented, seek to improve the responsiveness of public training to market demand, expand the role of the private sector and strengthen the linkages between training and technological changes. To enable these institutions to react and adjust to changes in the types and levels of skills required by the industry, a more effective feedback mechanism and labour market monitoring system will be instituted. The education and training delivery system will also be improved to ensure that the graduates are equipped with the relevant skills demanded by the industry.

5.68 The quality of training will be improved through the review and revamping of the curriculum. Courses will also contain substantive elements of hands-on experience, more learning by doing and implementing practical projects. In addition, the concept of teaching factories will be integrated into the training systems. There will also be closer consultation and rapport with the private sector which will be encouraged to use the facilities in public training institutions through customized courses and leasing of these facilities. In this way, the public training institutions will not only be able to optimize the use of their existing facilities, but will also be able to gain from the experiences of the private sector. In order to bring about closer integration of training with private sector needs, the Cabinet Committee Report has recommended the corporatization and privatization of training

institutions. A schedule will be drawn-up to accelerate the corporatization and privatization of selected training institutions.

5.69 The Cabinet Committee Report emphasized the need to provide more attractive emoluments and conditions of service and incentives to vocational and technical instructors in order to attract and retain them. The expansion of private education will also impose additional demand for trainers and instructors. On its part, the Government will step up its efforts towards producing greater numbers of trainers and instructors through public sector training institutions. The private sector can assist in this process by collaborating with the Government or by venturing on its own to increase the supply of trainers and instructors. The private sector must ensure that trainers and instructors are well-trained to enhance the quality of education and training.

5.70 The transition from an agricultural to an industrial society involves the adoption of industrial values. While skill training provides the means of garnering new skills and enhancing efficient work practices, a fundamental requirement for an industrial workforce is proper work attitudes and positive values such as integrity, discipline, punctuality, loyalty to the company, diligence, dedication and hard work. It is the sum total of all these that help to raise quality and make the economy competitive.

5.71 Since the inculcation of values has its own gestation period, the development of these values and work culture will have to begin in schools and at the workplace. It is imperative, therefore, that our school system be geared to develop positive attitudes and values required for industrial development. The training of teachers, both existing and new entrants into the teaching profession, will have to be reoriented to meet these new challenges.

5.72 Training programmes to inculcate attitudinal changes and positive values among youths in the country will be implemented. These programmes will be undertaken by *Biro Tata Negara* and the intake into public training institutions will be required to undergo this special training programme. The main objective is to strengthen the mental, psychological and physical capabilities of the workforce so as to prepare them to meet the challenges of a competitive industrial environment.

5.73 A forward looking Malaysian society is vital to support and contribute to invention, innovation and technological advancement. Malaysian workers must be increasingly able to face the challenges of

absorbing and adjusting to new technologies. In line with this, the Government will identify existing education and training institutions as well as research institutions that can be developed into centres of excellence that will spearhead the nation's efforts in R&D tailored to meet industrial needs. In order to allow better utilization of these facilities for training purposes, the Government will review the accreditation of skills to include skills in the new and emerging technologies. The Government will establish a National Information Technology Board to formulate policies as well as implement, coordinate and manage information technology activities.

Management and Entrepreneurial Training

5.74 Expansion and modernization of the economy will require expertise as well as new approaches in the planning and management of resources on the part of the public sector. In order to be more responsive to the needs of the private sector for more efficient services, public sector personnel will be trained in new corporate and management skills. Programmes under the Malaysia Incorporated concept will be intensified. INTAN will undertake more training programmes at the managerial level, in such areas as crisis management, strategic planning, leadership and negotiation techniques.

5.75 The training of entrepreneurs will aim at making them more dynamic, innovative and market-oriented. The institutions undertaking this training will work closely with the private sector to design and implement these training programmes.

Non-formal Education and Training

5.76 The development of human resource will have to be complemented by education and training from the non-formal sector. This is especially so when the coverage of the formal system is limited. Although Malaysia has a high literacy rate and students have the opportunity to receive at least nine years of basic education, those who drop out from the system have to be given due consideration. Thus, life-long or continuing education through non-formal means is becoming increasingly important in mobilizing human resources, especially the youth.

5.77 The delivery of non-formal education and training by various agencies will be reviewed and improved to render them more effective in achieving their objectives. Programmes by the various agencies will

be coordinated so that there will be an integrated approach. Similarly, the role of the mass media, especially radio and television, will be strengthened to make them more effective in delivering non-formal education and training programmes to the people.

5.78 The Government will provide more education and training facilities to meet the demand for life-long education. While the Government will continue to do this as part of its development efforts, the private sector will also be encouraged to contribute to non-formal education and training. In this regard, continuing education through distance learning programmes will be stepped up.

Computers in Education and Training

5.79 The Government will pursue efforts to further develop programmes for computers in education (CIE) to lay a strong foundation for a computer literate society as well as to create a culture oriented towards knowledge and information. In this regard, computer education at both the primary and secondary schools will be further enhanced to facilitate the learning and acquisition of basic skills such as reading, writing and mathematics. The establishment of computer clubs in schools will be further encouraged, especially in rural schools. The private sector can assist in this by providing computer hardware and software for the CIE programmes.

5.80 At the same time, vocational and technical schools will introduce more computer-related courses, such as maintenance and repair of micro-computers, modern computer devices, and wiring and cabling of micro-computers. This is essential in view of the rapidly increasing demand for computer-related training among students as well as the need to keep abreast with the latest advancements in computer technology.

5.81 The institutions of higher learning will be encouraged to provide extension classes for computer education especially for those who wish to update and upgrade their computer knowledge. Companies in the private sector with in-house training facilities in computers will be encouraged to provide training and share their facilities with smaller companies.

Role of the Private Sector in Education and Training

5.82 During the Sixth Plan, the Government will continue to encourage and facilitate the setting up of education and training institutions by the private sector. This is in line with the Government's efforts to encourage private sector participation in the overall economic development of the country.

5.83 The demand for education has resulted in the proliferation of private institutions offering pre-school to tertiary level education. The expansion of private sector education will be encouraged as this will supplement public sector efforts. Expansion of places at the tertiary level through twinning programmes and preparatory courses in the country will also reduce the outflow of foreign exchange and improve the services account in the balance of payments. A more effective monitoring of these institutions will be undertaken in order to ensure acceptable standards and quality.

5.84 Institutions of higher learning will continue to establish and maintain cooperation and linkages with the private sector not only in R&D activities but also in various academic programmes, such as the sponsorship of academic and research positions in universities, as well as providing opportunities for on-the-job training for university students. These linkages will ensure that graduates of higher learning institutions will meet the requirements of the industry.

5.85 Closer collaboration with the private sector will also be effected through the establishment of training institutions for specific industries such as wood-based, textiles and construction. Training programmes in these institutions as well as in other public institutions will be oriented to the requirements of industries. At the same time, the training of skills will have to be consistent and compatible with changing technological needs. The Government will establish the necessary joint public-private sector machinery at the various levels to bring about greater coordination and integration of training with the needs of the economy. The Government will also seek greater bilateral assistance from industrialized countries to establish institutions in advanced skill areas in the country such as production engineering and industrial electronics.

5.86 As a measure to ensure the active participation of the private sector in training skilled manpower, the Human Resource Development Fund will be established. Employers contributing to this Fund will be reimbursed for all training undertaken for their employees. The Fund

is a form of levy-grant scheme which will serve as an incentive for the industries to intensify their training programmes as well as upgrade the skills of their workers. The private sector will also be involved in a consultative manner with the Government in the planning and implementation of strategies and programmes in producing skilled manpower. They will also be encouraged to set up specialized training centres, similar to the Penang Development Training Centre, in selected industrial zones.

IV. ALLOCATION

5.87 The development allocation and estimated expenditure during the Fifth Plan period and the allocation for the Sixth Plan for education and training are shown in *Table 5-5*. The allocation for the Sixth Plan constitutes 15.4 per cent of the total public development allocation, representing an increase of 46 per cent over the Fifth Plan allocation. To cater for the increased enrolment and the emphasis on quality improvement at the primary and secondary levels, 52 per cent of the allocation will be provided to expand and improve facilities at these levels. This includes the expansion and improvement of facilities for vocational education and the training of teachers. At the tertiary level, the allocation will be for the expansion and improvement of facilities as well as sponsorship of students at the certificate, diploma and degree levels in the applied arts and sciences, engineering, technology and medicine. Under the training programmes, \$610 million will be provided for the expansion and improvement of formal industrial training and non-formal skill training facilities.

V. CONCLUSION

5.88 With the right approach to human resource development, Malaysia is poised to face the challenges of the nineties. The capacity and capability to train and retrain manpower will enable the nation to keep constantly abreast with the changing technological development. The priority given to education and training will make our human resources more efficient, resilient and disciplined. The private sector is also expected to play a more dynamic role in the provision of education and training facilities to meet the growing demand for qualified and skilled manpower. These efforts by both the public and private sectors will enable all Malaysians to play a more productive role in the development of the nation.

TABLE 5-5
DEVELOPMENT ALLOCATION FOR EDUCATION
AND TRAINING, 1986-95
(\$ million)

Programme	5MP		6MP
	Allocation	Expenditure	Allocation
EDUCATION	5,457	5,382	7,724
Pre-school	0	0	140
Primary Education	760	760	1,020
Government and Government-aided Schools	760	760	1,020
Secondary Education	1,558	1,543	2,003
Government and Government-aided Schools	1,041	1,026	1,472
MARA Junior Science Colleges	65	65	51
Technical and Vocational Schools	452	452	480
Higher Education	1,739	1,727	2,591
Polytechnics	234	228	296
<i>Kolej Tunku Abdul Rahman</i>	2	2	20
Institut Teknologi MARA	161	155	300
Universiti Malaya	80	80	326
Universiti Sains Malaysia	183	183	255
Universiti Kebangsaan Malaysia	53	53	325
Universiti Pertanian Malaysia	82	82	276
Universiti Teknologi Malaysia	372	372	324
Universiti Islam Antarabangsa	62	62	325
Universiti Utara Malaysia	511	511	144
Teacher Education	144	144	334
Other Educational Support Programmes	1,257	1,208	1,636
TRAINING	355	318	777
Industrial Training	330	299	580
Industrial Training Institutes	104	87	112
MARA Vocational Institutes	157	152	266
Youth Training Centres	54	44	27
<i>Pusat Giat MARA</i>	16	16	45
TVEIT ¹ Development	0	0	30
Attitudinal Change	0	0	100
Non Formal Education and Training	0	0	30
Commercial Training	7	7	27
MARA Commercial Institutes	7	7	21
Youth Entrepreneurship Institute	0	0	6
Management Training	18	13	140
National Institute of Public Administration	12	7	130
<i>Institut Aminuddin Baki</i>	6	5	10
Total	5,812	5,700	8,501

Note: ¹ Technical and Vocational Education and Industrial Training.