Aspects of Vocational Education and Training in Malaysia

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REPORT FROM
THE INSPECTORATE

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Cheylesmore House
Quinton Road
Coventry CV1 2WT
Telephone 01203 863000
Fax 01203 863100
Website http://www.fefc.ac.uk

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Aspects of Vocational Education and Training in Malaysia

COMMENTARY

1 This report is based on a visit to Malaysia by a team of four inspectors, a member of the FEFC's independent quality assessment committee, a staff member from the FEFC's education and institutions directorate, and an official from the Department for Education and Employment (DfEE). The organisations and institutions visited are set out in annex B. Annex C contains pen portraits of the institutions.

2 The overall purpose of the visit was to gain an understanding of the arrangements for post-16 vocational education and training in Malaysia. The specific aims of the visit were to:

- survey the arrangements for post-16 education and training in the context of the Malaysian government's priorities and the education system generally
- review the vocational curriculum on offer to students
- understand how education and training respond to the needs of employers
- explore the role of the private sector in providing education and training
- study aspects of funding and resourcing
- review quality assurance arrangements.

3 It was not the team's aim to report on the quality of post-16 vocational education and training in Malaysia, nor to comment critically on the way the country addresses skills development. To do so on the basis of such a short visit would have been inappropriate. The team went to Malaysia to look and to learn and to gain insights into how the country is dealing with issues which also affect England.

4 There was a particular attraction in studying education and training arrangements in Malaysia. Malaysia is one of the so-called 'tiger economies' of Southeast Asia, and between 1990 and 1995 achieved an annual growth rate of nearly 9% and still anticipates growth in the years up to and beyond the millennium, despite the current economic turbulence. To achieve what it has, and to complete its transformation into a fully developed economy, Malaysia has recognised the need to equip its workforce with the knowledge and skills demanded by modern, technology-based industries.

5 The dependence of Malaysia's prosperity on its ability to develop an educated population and a highly skilled workforce was clearly articulated by the prime minister, Dr Mahathir Mohamad, in his Vision 2020 speech delivered in 1991:

> *Malaysia has one of the best educational systems in the third world. But for the journey that we must make over our second generation, new standards have to be set and new results achieved. We cannot but aspire to the highest standards with regard to the skills of our people, to their devotion to knowledge and knowledge upgrading and self-improvement, to their language competence, to their work attitudes and discipline, to their managerial abilities, to their achievement motivation, their attitude towards excellence and to the fostering of the entrepreneurial spirit. We cannot afford to neglect the importance of entrepreneurship and entrepreneurial development, which goes, of course, beyond training and education. We must ensure the correct mix with regard to professionals, subprofessionals, craftsmen and artisans, and the correct balance with regard to those with competence in science and technology, the arts and social sciences.*

6 In their visits to colleges, training institutes, government departments and other organisations, members of the team observed a range of factors which play a critical role in determining the shape of the education system

and the structure of the curriculum. These factors include:

- the private sector in education which results in the education and training of a substantial number of Malaysians at no expense to the state
- the country's moral, religious and cultural climate
- the national plans and the aspirations embodied in Vision 2020
- the plethora of government departments and other agencies with a stake in education and training and the multiple sources of funding
- centres of excellence in technical skills training
- affirmative action to promote the interests of the indigenous peoples of Malaysia.

7 The major features of post-16 vocational education and training in Malaysia are as follows:

The Education System

- government departments involved in education and training include the ministry of education (MoE), the ministry of human resources, the ministry of entrepreneurial development and the ministry of youth and sports
- a wide variety of institutions provide post-secondary education and training. They include schools, polytechnics and other publicly funded institutes, private colleges, state skills development centres and binational technical institutes
- the organisation, Majlis Amanah Rakyat (MARA), plays a key role in providing skills training for Malaysia's indigenous peoples
- some 50,000 students go on to private colleges after completing their upper secondary education. The private colleges tend to focus on general education programmes and on business and professional courses. Many private colleges offer degree programmes in collaboration with overseas universities
- there is little vocational education and training available specifically for students with learning difficulties and/or disabilities
- styles of teaching and learning in Malaysia are broadly similar to practice in England
- links with industry are strongest in the higher level technical institutions. The MARA institutes have also developed productive industrial links
- retention rates and pass rates were generally high in the institutions visited

Development of Vocational Skills

- skills training is governed by national occupational skills standards
- the polytechnics cater for approximately 14,500 students, enabling them to become technicians or skilled technical assistants, mainly in engineering
- the binational technical institutes are playing an important role in training elite, highly skilled technicians to support the growth in Malaysia's manufacturing and engineering sectors
- the state skills development centres are, with varying degrees of success, addressing the specific skills training needs of local companies
- there is an emphasis in vocational education and training on promoting team-working skills

Quality Assurance

- compared with England, external quality control of post-secondary public sector institutions is limited

- quality control arrangements in private colleges have been exerted largely through parental pressure and the demands of examination bodies and educational institutions with which they are twinned
- a national accreditation board has been set up to strengthen quality assurance arrangements in private colleges

Finance and Resources

- both the public and private sectors play important roles in financing vocational education and training
- the human resources development fund has played an important role in funding employers' retraining costs
- various loan and scholarship arrangements are available to support students, including students in private colleges
- the quality of specialist equipment varied across the range of institutions visited; the best equipment compared very favourably with the best in England.

ECONOMY AND GOVERNMENT

8 The federation of Malaysia was formed in 1963. It occupies the Malay peninsula, bounded in the north by Thailand, and the states of Sabah and Sarawak in the north-west coastal area of the island of Borneo. The federation comprises 13 states and two federal territories, Kuala Lumpur and Labuan, and covers an area of approximately 127,000 miles^2. Malaysia has a population of some 21 million, approximately 50% of whom are Malays and other indigenous peoples. Ethnic Chinese and Indians make up around 25% and 8%, respectively, of the population. Each ethnic group has its own language, religion and traditions. Apart from a period of tension leading to riots in 1969, relationships between the various ethnic groups have generally been harmonious.

9 Each of the states in the federation has a ruler and, every five years, the rulers elect from amongst themselves a King of Malaysia, who acts as the head of state. Malaysia is a parliamentary democracy with 180 members of parliament being elected every five years to sit in the house of representatives. Parliament also includes an upper house, the senate. Each state in the federation elects two senators and a further 43 senators are appointed by the King and by the house of representatives. Since 1969, the country has been governed by the Barisan National Party, a broad-based coalition made up of the United Malays' National Organisation, the Malaysian Chinese Association, the Malaysian Indian Congress and a variety of smaller political groups drawn from across the ethnic spectrum. The United Malays' National Organisation is the dominant group in the coalition and the organisation's internally elected president invariably serves as the country's prime minister.

10 Following the 1969 riots, the Barisan National government introduced the new economic policy (NEP) which aimed to reduce inter-racial tensions by improving the incomes and economic power of the Malays and other indigenous peoples, known collectively as the *Bumiputera* or 'sons of the soil'. Under the policy, the *Bumiputera* are granted certain rights such as guaranteed land rights, preferential access to training and education, and job quotas in the public service. A major objective of the NEP has been to raise the proportion of equity in Malaysian companies held by *Bumiputera* to 30%.

11 Alongside these economic measures, the government has established Bahasu Malaysia as the national language for all administrative purposes and as the medium of instruction in the state education system. Following worries in the early 1990s that young Malaysians were becoming less familiar with English, the government has been actively promoting the study of English.

12 The government of Malaysia is keen to play a prominent role in Southeast Asia and on the world stage generally. It was a founder member of the Association of South East Asian Nations (ASEAN) and is a member of the broader-based Asia-Pacific Economic Co-operation Forum (APECF).

13 Malaysia's MoE is responsible for drawing up the national education policy in line with the *Rukunegara*, the national ideology. This embodies:

- achieving a greater unity of all the people
- maintaining a democratic way of life
- creating a just society, with the wealth of the nation equitably shared
- developing a liberal society of diverse cultural traditions
- building a progressive society oriented towards modern science and technology.

14 Within the MoE are: the technical education department which is responsible for secondary technical and vocational schools as well as the polytechnics; the department for private education, which has oversight of private primary and secondary schools and post-secondary private colleges; the department of special education; and the department of higher education.

15 In its quest to become a fully developed country, Malaysia has recognised the importance of retraining and upgrading the skills of its workforce. In particular, there has been a recognition that, to evolve from a country largely dependent on natural resources to a sophisticated manufacturing economy, Malaysian workers have to be equipped with the specialist skills demanded by modern automated production techniques. This led in 1992 to the *Human Resource Development Act* (the Act) and the establishment of the human resources development fund, administered by the human resources development council which answers to the ministry of human resources. Under the Act, employers pay a training levy on their wage bill but then can apply to the fund for financial assistance in meeting the costs of training their workforce. The economic downturn in Malaysia and other countries in Southeast Asia at the time of the visit has led to the suspension of the levy. Although the development fund is steadily declining, employers who have paid the levy in the past are still able to apply for assistance in meeting training costs, particularly for workers who have been made redundant.

16 Another government ministry, the ministry of entrepreneurial development, plays a significant role in relation to skills training in Malaysia through its funding of MARA, the council of trust for the indigenous people. MARA was established in the 1960s to promote the educational and economic interests of the *Bumiputera*. MARA manages a range of colleges, training institutes and activity centres throughout the country.

17 Over the past 20 years, Malaysia has transformed itself industrially. From being a country dependent on the production of minerals, notably tin, and agricultural commodities, such as rubber and timber, its economy is now dominated by manufacturing industry. In 1986, manufacturing and agriculture accounted for roughly equal proportions of Malaysia's gross domestic product (GDP); by 1996, manufacturing was three times as important as agriculture. However, the country is still an important source of tin and rubber, and produces half the world's palm oil.

18 A feature of government in Malaysia has been a series of five-year plans covering all aspects of life in the country. The plans are produced by the economic planning unit of the prime minister's office and have the full force of government policy. In May 1996, parliament approved the seventh five-year plan, covering the period 1996 to 2000. Table 1 highlights key

Table 1. Malaysia's latest five-year plans

	Sixth plan 1991 to 1995		Seventh plan 1996 to 2000	
	Target	**Actual**	**Target**	**Actual**
Real GDP growth (%)	7.5	8.7	8.0	8.7
Inflation (%)	5.0	4.0	'low'	4.0
GNP per head - ringgit (RM)	9,947	9,786	14,788	9,786
Unemployment (%)	2.8	2.8	2.8	2.8
Budget balance (% of GNP)*	-3.2	0.4	0.2	0.4
Current account balance (% of GNP)*	1.6	-8.8	0.5	-8.8

Source: The Economist Intelligence Unit
**by end of period covered by plan*

targets in the two most recent national plans and Malaysia's actual performance in relation to the sixth plan.

19 Malaysia's overriding aim is to become a fully developed industrialised country by the year 2020. This aim was first articulated in a speech entitled 'Malaysia: The way forward', delivered by the prime minister at the inaugural meeting of the Malaysian business council in Kuala Lumpur in 1991. The sentiments contained in the speech have become known as Vision 2020.

20 The seventh five-year plan recognises that for high growth rates to be achieved, mainly through an expanding manufacturing sector, there must be a corresponding growth in the supply of skilled workers, which in turn presents a major challenge to Malaysia's system of education and training. This has led to a flurry of legislation covering all aspects of education and training, including:

- *The Education Act 1996*, which defines a national education system for schools
- *The Private Higher Educational Institutions Act 1996*, which makes provision for a broad range of higher education providers
- *The National Council on Higher Education Act 1996*, which provides for the setting up of a national body to determine policy and co-ordinate the development of post-school education in Malaysia
- *The National Accreditation Board Act 1996*, which provides for the establishment of a board to ensure that high standards are maintained in higher education institutions, particularly in the private sector.

21 After many years of high growth and rapid development, Malaysia, along with other Southeast Asian countries, is experiencing severe economic difficulties. Growth in GDP has slowed, and there has been a fall in share prices and property values. This has led to a slowdown in activity within the construction sector, hitherto one of the powerhouses of the Malaysian economy. The trade balance on current account has deteriorated and the value of the ringgit has fallen from around RM3.9 = £1 in 1996 to approximately RM6 = £1 in early 1998.

EDUCATION, TRAINING AND QUALIFICATIONS

22 Malaysia aims, through its education system, to produce citizens who are knowledgeable and competent, and who possess high moral values and an ability to contribute to the development of the country and its people. *The Education Act 1996* (the 1996 Act), replacing *The Education Act 1961*, aims to consolidate the national education system and to broaden the scope of education within Malaysia. The role of pre-school education, teacher education, education for special needs, private education and technical education is given greater prominence. The 1996 Act also emphasises the need for education to be relevant to the needs of the country and to be of high quality. The position of English as a second language is reaffirmed while the teaching of other foreign languages is promoted.

23 Broadly, the Malaysian school system comprises six years of primary education, three years of lower secondary and two years of upper secondary education. A further two or three years of post-secondary education is available in school sixth forms, public and private colleges and polytechnics. Universities and teacher training institutions offer higher education programmes lasting between three and six years. Annex A provides a diagrammatic representation of Malaysia's education system.

24 Primary and secondary education provided by the state is free but not compulsory. Most children start school at six years of age although the 1996 Act allows kindergartens to admit pupils at age five to encourage early completion. There is a small number of private primary schools and a larger number of private secondary schools, all of which have to be licensed and registered by the registrar of schools, the education department of the state in which the school is situated and the private education department of the MoE. The school year extends from January to November.

25 At the heart of the school system is the national language, Bahasu Malaysia, which is a compulsory subject in all primary and secondary schools and in teacher training institutes. Bahasu Malaysia is also the language of tuition at secondary level. At primary level, the language of tuition can be either Bahasu Malaysia, Chinese or Tamil depending on the nature of the school.

Pre-school Education

26 The 1996 Act formally includes pre-school education, for children aged between four and six, as part of the national education system. Pre-school education is provided primarily by the MoE, the ministry of rural development and the ministry of national unity and community. Some provision is made by non-governmental organisations and the private sector. All pre-school education is governed by curriculum guidelines established by the MoE. These guidelines emphasise the importance of the acquisition by children of basic communication and social skills which will enable them to progress more easily to primary school. The public and private sectors have both played an important role in expanding the provision of pre-school education in Malaysia. The private sector has been active in establishing pre-school centres in urban areas, while public sector agencies continue to provide facilities for children in rural areas and among the urban poor. Approximately 420,000 children aged five to six were enrolled in pre-school centres in 1995, almost half of them in rural areas.

Primary Education

27 Although education is not compulsory in Malaysia, the MoE estimates that virtually all children attend primary schools up to the age of 11. About 4% of children enrolled in primary schools do not complete their primary education. In 1997, there were 7,084 primary schools catering for 2,870,667 children and employing approximately 150,000 teachers. The impact of the private sector on primary

education is relatively limited; currently there are 55 private primary schools in Malaysia. There are three types of state primary school:

- the national school
- the national-type Chinese school
- the national-type Tamil school.

28 The integrated curriculum for primary schools comprises three broad themes. The communication theme includes language study and mathematics. The theme covering man and his environment focuses on moral and spiritual development, science and environmental issues. The individual self-development theme includes sport and the study of music and art. At the end of year 6, or year 5 in the case of children who have made accelerated progress, pupils sit the *ujian penilaian sekolah rendah* (UPSR), the primary school achievement test, in Bahasu Malaysia, English and mathematics. Children at national-type primary schools are also examined in Chinese or Tamil. In addition, Muslim pupils are tested on aspects of Islamic education.

Secondary Education

29 The aims of secondary education in Malaysia are to:

- promote the general development of students, prepare them for the challenges of adult life and to become useful, productive citizens
- develop a strong foundation for lifelong learning
- introduce students to specialised areas of study.

30 Overall, 1,794,515 students were enrolled in national secondary schools in 1997. The tuition language in national secondary schools is Bahasu Malaysia, with English as the second language. Following the 1996 Act, other foreign languages, such as Arabic, French and German, are being introduced into the secondary curriculum. The seventh five-year plan emphasises the need to improve the performance of secondary school students in mathematics and science. It recognises also the need for secondary education to address the critical shortage of engineers and other skilled workers. Secondary education in Malaysia is divided into lower secondary and upper secondary phases.

Lower secondary education

31 Children can progress automatically from primary to lower secondary school and 84% of children did so in 1995. In 1996, 1,124,910 pupils were enrolled at lower secondary level in national schools. Most of the children who have attended national-type Chinese or Tamil primary schools spend their first year at secondary level in a transition class to enable them to become proficient in Bahasu Malaysia. Core subjects of the lower secondary level integrated curriculum include Bahasu Malaysia, English, mathematics, Islamic studies or moral education, science, geography, history, living skills, art and physical education. In addition, students can study Chinese, Tamil or Arabic. At the end of their third year students sit for the *penilaian menengah rendah* (PMR), the lower secondary assessment examination.

Upper secondary education

32 Depending on their results in the lower secondary examination, students can enter an upper secondary academic, technical or vocational stream. In 1995, approximately 64% of children aged 14 to 16 participated in upper secondary education. The upper secondary phase lasts for two years until the age of 16. A variety of schools provide upper secondary education. Most are government-run academic schools providing both lower and upper secondary education. In addition, there are religious schools, secondary technical schools, secondary vocational schools, single-sex government residential schools, junior science colleges established by MARA, independent Chinese secondary schools, and other private schools. Private schools cater for approximately 85,000 students.

33 All upper secondary school students follow a common general education programme in addition to their technical, vocational or academic specialism. After two years students sit for either the *sijil pelajaran Malaysia* (SPM), the Malaysian certificate of education, or its vocational equivalent, the *sijil pelajaran vokasyenal Malaysia* (SPVM). SPM and SPVM grades are broadly equivalent, in terms of standards, to general certificate of secondary education (GCSE) grades in England. Students receive an overall grade 1 to 3 on the basis of their performance in their best six subjects. Performance in SPM or SPVM examinations to a large extent determines the possibilities for progression after leaving secondary school.

Secondary technical schools and vocational schools

34 Malaysia's secondary technical schools aim to produce students who excel in mathematics and science as well as in basic engineering subjects. Admission to the technical schools is based on PMR performance and students are expected to have performed strongly in mathematics and science. As well as allowing students to obtain their SPM or SPVM, the technical schools offer one-year or two-year training courses in areas such as refrigeration and air conditioning, welding, carpentry and joinery, dressmaking, food preparation, and hairdressing. Students are prepared for the *sijil kemahiran Malaysia* (SKM), a skills assessment accredited through *majlis lathihan vokasional kebangsaan* (MLVK), Malaysia's national vocational training council which is attached to the ministry of human resources. SKM levels 1, 2 and 3 correspond to national vocational qualification (NVQ) levels 1, 2 and 3 in England.

35 The secondary vocational schools provide general education courses and also the opportunity to enter either a vocational or technical stream. Students in the vocational stream take courses in broad vocational areas such as engineering, commerce and agriculture. The emphasis is more on acquiring generic skills that will stand students in good stead when they enter employment or more advanced vocational education than on acquiring high levels of technical competence in specific skills. The technical stream of vocational schools offers students broadly the same opportunities for skills development as the specialist technical schools.

36 In order to address the critical shortage of skilled labour identified in the seventh five-year plan, the country is in the process of converting all its secondary vocational schools into technical schools. In 1995, there were 69 vocational schools and only nine technical schools. By January 1997, 22 vocational schools had been upgraded to technical schools which were catering for 12,358 students. Enrolments in the remaining vocational schools totalled 14,211.

Independent Chinese secondary schools

37 The 60 independent Chinese secondary schools cater for some 60,000 students and form the largest group of non-government schools in Malaysia. They offer six years of secondary education: three years in a junior middle phase and three years at senior middle level. After six years, students sit the senior middle unified examination accredited by *Dong Jiao Zong*, the education body which administers the schools. The unified examination is regarded as being equivalent to Scottish Higher examinations.

MARA junior science colleges

38 MARA's extensive education programmes are aimed at facilitating the progression of *Bumiputera* students into industry and commerce. The junior science colleges provide students with a science-based education at lower secondary or upper secondary level, or both.

Post-secondary Education

39 A wide variety of publicly and privately funded institutions provide post-secondary

education and training in Malaysia for students aged 17 and over. Over 340 schools in Malaysia have sixth forms offering two-year courses leading to the *sijil tinggi pelajaran Malaysia* (STPM), the Malaysian higher schools certificate which is recognised to be equivalent to a general certificate of education advanced level (GCE A level) programme. Approximately 59,000 students are enrolled in school sixth forms. As well as the schools, major providers of post-secondary education in Malaysia include:

- polytechnics
- MARA institutes
- private colleges
- binational technical institutes
- state skills development centres.

40 A feature of post-secondary education in Malaysia, particularly vocational education, is the multiplicity of government departments responsible for different aspects of the provision. The ministries of education, human resources, and entrepreneurial development all play key roles in the overall provision of post-secondary education. A major challenge facing the country is to ensure that the efforts of the various government departments are co-ordinated and directed towards the aspirations enshrined in the Seventh Malaysia Plan and Vision 2020.

Polytechnics

41 Currently, there are seven polytechnics providing education and training for upper secondary school-leavers to enable them to become technicians or skilled technical assistants, mainly in engineering but also in the commercial and service sectors. The polytechnics cater for a combined student population of approximately 14,500, 80% of whom are taking a two-year certificate course with the remainder on diploma programmes, most of which last three years. Approximately 75% of the students are studying engineering. The polytechnics come under the control of the technical and vocational division of the MoE and a further five polytechnics are scheduled to be opened in the near future. One of the existing polytechnics, *Batu Pahat Polytechnic*, in Johore, has been designated a staff development centre for all the polytechnics. It also trains teachers for the new polytechnics, through degree and subdegree certificate programmes.

42 Polytechnic courses involve substantially more timetabled lessons than would be the case in comparable courses in England. Polytechnic students in Malaysia spend approximately 35 to 40 hours each week in lectures, tutorials or practical sessions. As well as courses in technical and commercial specialisms, students are required to take courses in English and moral education. Islamic students take a programme of Islamic studies. Courses designed to encourage entrepreneurship are also mandatory. Successful completion of a polytechnic diploma programme can provide entry to higher education courses. As is the case with other post-secondary educational institutions in Malaysia, most polytechnic students live away from home. The polytechnics have some hostel accommodation with priority being given to first-year students.

MARA institute of technology and vocational institutes

43 Institut Teknologi MARA (ITM) has a number of campuses across the country which offer *Bumiputera* students diploma and advanced diploma courses in technology, management and administration. They also provide matriculation courses for higher education, so-called, 'twinning' programmes in collaboration with overseas universities, and, since 1996, degree programmes in their own right.

44 MARA has also set up vocational institutes, Institut Kemahiran MARA, which offer intermediate-level skills programmes. Typically, courses last for three semesters of

approximately 20 weeks each, plus a one-semester work placement in some cases. Students attend for approximately 31 hours of timetabled lessons or practical sessions each week, with English, Islamic studies and entrepreneurship again figuring prominently. The level reached in most of the institute's programmes is broadly equivalent to NVQ level

Table 2. Example of an electrical engineering programme provided by a MARA vocational institute

Semester	Subject	Hours a week
1	**Technical subjects:**	
	Electrical installation practice 1	12
	Mechanical fitting	2
	Technical drawing	2
	Electrical installation 1	3
	Electro-technology 1	3
	Electrical act and regulation	1
	Computer application	2
	Mathematics	2
	General subjects:	
	English and communication studies 1	2
	Islamic studies	1
	Entrepreneurship	1
2	**Technical subjects:**	
	Electrical installation practice 2	10
	Electrical motor control 1	2
	Electrical drawing 1	2
	Analogue electronics	2
	Automation control 1	2
	Electrical installation 2	3
	Electro-technology 2	3
	Electrical act and regulation 2	1
	Mathematics 2	2
	General subjects:	
	English and communication studies 2	2
	Islamic studies 2	1
	Entrepreneurship 2	1
3	In-plant training	
4	**Technical subjects:**	
	Electrical installation practice 3	10
	Electrical motor control 2	2
	Electrical drawing 2	2
	Digital electronics	2
	Automation control 2	2
	Electrical installation 3	3
	Electro-technology 3	3
	Electrical act and regulation 3	1
	Mathematics 3	2
	General subjects:	
	English and communication studies 3	2
	Islamic studies 3	1
	Entrepreneurship 3	1

Source: MARA prospectus, 1998

2 or 3 in England. Many courses are accredited through MLVK. Table 2 provides an example of an electrical engineering programme provided by the vocational institutes.

Private colleges

45 The Malaysian government encourages the development of private educational institutions to supplement its own efforts in generating a rapidly growing pool of skilled and professional workers with degree, diploma and certificate qualifications. More than 300 private colleges have been established with the approval of the MoE. Each year, approximately 50,000 students go on to private colleges after completing their upper secondary education. Many such colleges offer GCE A level courses or matriculation programmes designed to provide access for students to higher education in countries such as the UK, the USA and Australia. Private colleges also offer certificates, diplomas and higher diplomas. Courses leading to the qualifications of United Kingdom awarding bodies, such as City and Guilds of London Institute (C&G), Pitmans, BTEC and the Association of Accounting Technicians, are offered widely in private colleges.

46 Private colleges are involved increasingly in degree-level work, usually in collaboration with higher education institutions in other countries, notably Australia, the UK and the USA. Degree-level programmes offered by private colleges have typically involved two year's study in Malaysia and one year spent at the overseas university which validates the degree qualification. Less common are twinning programmes involving students spending one year in Malaysia and two years overseas. There are approximately 7,000 students enrolled on degree programmes in private colleges. With the economic pressures being felt currently in Malaysia and Southeast Asia generally, Malaysian students who might have previously studied abroad are now obliged to study at home. This has led to pressure on private colleges to develop degree courses, in collaboration with overseas partners, which would be based entirely in Malaysia, the so-called '3+0' option. Such a development has been encouraged by *The Private Higher Educational Institutions Act 1996*, which allows the private sector to establish degree-granting colleges and overseas universities to set up branch campuses in Malaysia. By March 1998, 12 colleges had applied to the MoE to offer '3+0' degree programmes.

47 In the main, the private colleges are run as profit-making institutions. This has implications for the types of courses offered by the colleges. Overall, the private colleges focus on general education courses and vocational educational and training programmes which do not require extensive capital funding, particularly business and professional studies. Courses in capital intensive subjects, such as engineering, are less commonly encountered in private colleges.

48 A private college with a unique status in Malaysia is Kolej Tunku Abdul Rahman, which is strongly supported by the Chinese community and is the only private college which receives a government subsidy. With branches in Kuala Lumpur, Penang, Perak and Johore, it offers a range of general education courses leading to STPM and GCE A level qualifications, two-year certificate programmes in commercial and technical subjects which can enable students to progress to the first year of an English degree programme, and three-year diploma courses in business and technology. Grade A in the college's diploma is considered in Malaysia to be of equivalent standard to a degree.

Binational technical institutes

49 In co-operation with MARA, Germany and France have invested in the establishment and running of technical institutions which act as showcases for their respective advanced technical education systems (see annex C for an outline of the German Malaysian Institute). Jointly, the institutes cater for just over 1,000

full-time students. It is anticipated that another binational institute, developed in collaboration with the Japanese government, will be opened in Penang in 1998. The aim of the institutes is to train elite, highly skilled technicians to support the growth in Malaysia's manufacturing and engineering sectors. Students are taught by well-qualified staff and benefit from being able to work with state-of-the-art equipment. The standard of diplomas awarded by the binational institutes broadly corresponds to NVQ level 3 or 4. The institutes also offer part-time courses for employees of local firms to update their technical skills, and consultancy services for companies throughout the country.

50 In 1997, a memorandum of understanding was signed by the Malaysian and British governments to develop the British Malaysian Institute. Funds are being raised from British multinational companies which have substantial operations in Malaysia. The institute was opened formally by the Queen in September 1998 and will offer higher national diploma programmes in areas such as information technology (IT), computer engineering and communications engineering.

State skills development centres

51 Currently, skills development centres have been set up in nine of Malaysia's 13 states to address the specific skills training needs of local companies (see annex C for an outline of the Penang Skills Development Centre). Startup funds are provided by the federal government, supplemented by industrial sponsorship and state finance. The intention is that the centres should become largely self-funding, although the extent to which this is being achieved varies widely from state to state; currently some of the established centres still require substantial public funding.

52 To date, a good deal of the skills training undertaken by the employees of private sector companies has been financed through the human resources development fund. Anxiety has been expressed by skills development centre managers about the suspension of the training levy and the impact this might have on companies' training plans and the demand for training programmes offered by the centres.

Other institutions involved in skills training

53 There are a variety of other public and privately funded institutions engaged in skills training throughout Malaysia. These include:

- Institut Kemahiran Belia Negara, funded by the ministry of youth and sports and providing vocational training to young people with few academic qualifications
- Giat MARA, funded by the ministry of entrepreneurial development through MARA, to provide training in basic skills for those who have left the school system early. In addition to the 123 centres operating currently, there are plans to establish a further 72 centres
- advanced skill technology centres funded from a range of sources which seek to provide advanced technical training in areas such as mechatronics and IT (see annex B for an outline of one such centre, the Terengganu Advanced Technical Institute)
- institutions developed by particular companies to meet their own technical training needs, such as Telekom Training College, established by Telekom Malaysia, the national telecommunications company.

Provision for Students with Learning Difficulties and/or Disabilities

54 Provision for students with learning difficulties and/or disabilities is the responsibility of the special education department of the MoE. There are 31 special schools throughout the country, all of them catering either for students with hearing or visual impairments, mostly at primary level.

There is only one secondary vocational special school, which provides courses for hearing-impaired students (see annex C). Some students with learning difficulties have their needs addressed through special classes in primary and secondary schools and through inclusive programmes in which students are integrated with general classes. The special education department estimates that, although approximately 9,000 students with learning difficulties and/or disabilities are being catered for within the school system, the needs of a further 14,000 are not being addressed. There is very little vocational training for school students with learning difficulties and little provision of any kind beyond secondary school age for students with learning difficulties and/or disabilities. (However, annex C provides information on a training centre for the visually impaired.)

55 Government and state officials recognise the early stage of development of provision for students with learning difficulties and/or disabilities. Nevertheless, the establishment of the special education department in 1995 indicates a commitment to develop this aspect of provision. The department is fully aware of educational developments worldwide and the progress which Malaysia needs to make. In one of the states visited, a leading politician expressed his concern about the extent of the provision in the state for students with learning difficulties and/or disabilities and his determination to address the issue.

University Education

56 There are 10 public universities. Some, such as Universiti Malaya and Universiti Kebangsaan Malaysia, offer a wide range of subjects; others specialise in particular areas. For example, Universiti Sains Malaysia focuses on the sciences, Universiti Putra Malaysia offers specialist courses in agriculture and Universiti Utara Malaysia specialises in management programmes. Universiti Sains Malaysia has also developed a range of distance learning degree programmes. In 1995, there were almost 90,000 students enrolled on degree courses in the public universities. The Seventh Malaysia Plan envisages a doubling of this figure by 2000.

57 In addition to the public institutions, there are three private universities run by state owned companies:

- Universiti Telekom, run by Telekom Malaysia
- Universiti Tenaga, run by Tenaga, the national power generation company
- Universiti Petronas, run by Petronas, the national oil company.

58 There are plans to increase the number of universities in Malaysia, mainly through collaborative arrangements with overseas institutions. For example, a Commonwealth university is to be developed in Perak through collaboration between Cambridge University and a Malaysian company. A multimedia university is to be set up by two Malaysian companies and a Japanese university as part of the government's multimedia super corridor initiative. Another Malaysian company is upgrading its education and training subsidiary, Institut Tun Abdul Razak, into what is claimed will be the world's first virtual university with courses being delivered through the internet.

59 *The Private Higher Educational Institutions Act 1996* enables overseas universities to establish a campus in Malaysia. At the time of the study visit, it was announced that Monash University, based in Melbourne, Australia, was to establish the first foreign university branch campus in Malaysia and would enrol its first intake of 650 students in July 1998.

Links with Industry

60 The strength of links between colleges and employers varies very widely in the institutions visited. The links are strongest and have the most pronounced impact on the curriculum in the higher-level technical institutions. The German Malaysian Institute formally includes in

its mission a commitment to establish close relationships with Malaysian companies in order to identify and meet training needs. The institute provides a thriving range of short courses in production technology and industrial electronics for the employees of companies in the Kuala Lumpur area. Companies offer full-time students three-month work placements and the opportunity to work on projects arising out of technical issues faced by the companies. The institute benefits also from sophisticated equipment which is loaned by companies. The impact of employers is even more pronounced in the case of the Penang Skills Development Centre. The centre's 78 company members, who between them employ approximately 60% of Penang's workforce, provide support through subscriptions, gifts and loans of equipment. Each year, the centre draws up a training programme based on a training needs analysis of company members. Training plans are geared to the specific needs of the company and are delivered in a variety of locations, including employers' premises.

61 Institut Kemahiran MARA, in Kuala Lumpur, has developed some industrial links which benefit the *Bumiputera* students. Approximately 40 students are taking courses on employers' premises. There are well-subscribed evening courses in electrical engineering for employees of local firms. Students visit local companies to study production processes and working practices. The institute routinely monitors employers' perceptions of courses and employers are consulted about their training requirements. For their part, employers notify the institute of job vacancies.

62 Work placements for students are a notable feature of the Sekolah Menengah Pendidikan Khas Vokasional, a school for hearing-impaired students in Shah Alam. Some students undertake several placements which enable them to sample a variety of job possibilities. They also enable the students to supplement their training through using the sort of equipment which is beyond the reach of the school itself.

63 Relationships between employers and some of the private colleges visited are limited. The emphasis in these colleges is on full-time courses with externally set syllabuses which provides little scope for industrial project work or other learning activities with an employer input. There are few opportunities for students to undertake structured work placements.

FINANCE

64 The public and private sectors play important roles in financing vocational education and training in Malaysia. Public funds are channelled through a variety of ministries, each responsible for certain aspects of provision. The private sector plays a vital role in two respects. Firstly, private companies establish colleges to be run on a commercial basis. Secondly, private colleges and other training institutions, such as the skills development centres, rely greatly upon private funds to meet their operating costs. Many parents, particularly in the Chinese and Tamil communities, contribute substantially to the cost of their children's tertiary education in private colleges. The skills development centres rely heavily upon industrial sponsorship and fees from companies to maintain a relevant, up-to-date provision.

65 In addition to the MoE's funding of secondary technical and vocational schools, and the polytechnics, the ministry of human resources and ministry of entrepreneurial development play vital roles in the funding of vocational education and training in Malaysia. The extent to which the individual states of Malaysia contribute to the funding of vocational education and training varies widely, with Penang and Terengganu playing a particularly prominent role.

Human Resources Development Fund

66 The ministry of human resources has a responsibility to facilitate human resource development in industry mainly through its administration of the human resources development fund. Under the terms of the *Human Resources Act*, employers are required to pay into the fund a levy, currently suspended, of 1% of their total wage bill. When first implemented, the *Human Resources Act* covered only employers in the manufacturing sector with at least 50 employees. From 1995, the scope of the act was extended to employers with a minimum of 10 employees and paid-up capital of at least RM2.5 million.

67 Employers can claim from the fund a percentage of their retraining costs, the actual percentage depending on the type of training. Technical and craft training undertaken in Malaysia can attract grants of up to 80% of total training costs. To be eligible for training grants, trainees must be Malaysian citizens. There are various ways in which the human resources development fund is distributed, some of them designed specifically to assist small companies. The main Skim Bantuan Latihan (SBL) scheme involves employers applying to the human resources development council for financial assistance in mounting a retraining programme. Financial assistance is received retrospectively. The Programme Latihan Yang Diluluskan (PROLUS) scheme has been established whereby training providers can apply for approved training programme (ATP) status. Employers who make use of a training provider with ATP status are not required to obtain the prior approval of the human resources development council. Under the Pelan Latihan Tahunan (PLT) scheme, employers are encouraged, with help from consultants, to draw up annual training plans. The scheme is aimed particularly at organisations with small numbers of employees. Through the Perjanjian Latihan Dengan Penyedia (PERLA) scheme, employers who use the services of a training provider with ATP status are not required to pay the full fees and then claim from the human resources development fund retrospectively. Rather, they pay an amount equal to the total fees less the amount refundable from the fund; the training provider is left to claim from the fund the amount due. Since the establishment of the fund in 1993, over 1.7 million workers have benefited from retraining programmes.

MARA Funding

68 The importance of the ministry of entrepreneurial development for education and training in Malaysia arises principally from its funding of MARA, the body set up to promote the socio-economic status of the *Bumiputera*. MARA's vocational institutes, activity centres and other institutions are funded on the basis of student numbers and the varying resource needs of the courses and training programmes. All managers, teachers and support staff in the schools and other institutions are employed by MARA and salaries are paid centrally. Institutions are also allocated capital funds to update existing equipment and buy new items. In one of the MARA vocational institutes visited, these development funds amounted to RM1.7 million in 1997-98.

69 Most of the development costs of the binational technical institutes, which have been established under the auspices of MARA, have been met by the international sponsors. In the case of the German Malaysian Institute, over RM32 million has been invested by the German Agency for Technical Co-operation (GTZ) in high-tech equipment and training facilities. The bulk of the operating costs are met from fees and from the human resources development fund. From 1999, GTZ's financial and technical involvement will cease and MARA will assume sole responsibility for the institute.

Fees

70 Fees for full-time students in polytechnics and MARA vocational institutes are approximately RM200 each semester. In the

binational institutes, fees are much higher; RM2,000 per annum in the case of the German Malaysian Institute, in addition to an annual registration fee of RM200. The fees charged by private colleges vary widely and can be very high, particularly in relation to the average wage in Malaysia. For example, in one private college visited, the fees ranged from RM2,600 to RM11,000 a year; the fee for a non-medical degree course was RM8,000. In another private college visited, which specialises in science, construction and technology courses, students on two-year diploma courses were charged RM4,000 a year, higher national diploma students paid almost RM8,000 a year, while students on a degree programme in construction paid a total of RM83,000 in fees over four years. The degree programme included two years' study at the English university which validated the course.

Financial Assistance for Students

71 Courses in MARA institutions are generally free for *Bumiputera* students. *Bumiputera* students who attend private colleges can obtain subsidies towards the cost of fees. Generally, the amount of financial support available to Chinese and Indian students is less, although the MCA provides substantial help for Chinese students.

72 Students in need of financial assistance can apply for a variety of scholarships and loans provided by government agencies, private colleges, and local and multinational companies. In one of the private colleges visited, some 45 full-fee scholarships were available for highly-qualified students, and discounts could be obtained by other well-qualified students. In addition, loans were available from the college to meet accommodation costs and other living expenses, although the take-up of these was low, mainly because the parents of many of the Tamil students who formed the majority of the college's intake preferred to support their children's education themselves, often at considerable expense. Loans from MARA are also available to *Bumiputera* students. In general, the terms under which loans are granted take into account the applicant's financial circumstances, academic performance and personal character. In another private college visited, loan agreements stipulated that the loan had to be repaid no later than two years after the completion of the course. In the case of a student withdrawing from a course, the loan would have to be repaid within 12 months of the withdrawal date.

73 Some private companies offer scholarships under a bonding agreement whereby students are committed to a period of employment after their course has been completed. A typical bonding agreement can cost a company RM40,000 over a three-year training programme. MARA also offers scholarships to *Bumiputera* students who are not bonded to MARA and can take up any form of employment once they finish their course.

QUALITY ASSURANCE

74 The Seventh Malaysia Plan recognises the importance of monitoring and improving quality in all areas of the public and private sectors. The government has been keen to introduce a more pronounced culture of quality improvement into the public sector including those ministries which play a significant part in education and training. Total quality management (TQM) has been introduced as the standard model of quality management in the public sector and is intended to emphasise values such as timeliness, cost-effectiveness, innovation, meeting targets and responsiveness to customer needs. Amongst the priorities of government departments involved in vocational education and training, such as the MoE and the ministry of human resources, is the promotion of these values within the institutions they fund. It is envisaged that by the end of the period covered by the Seventh Malaysia Plan, all government departments will have adopted ISO 9000 quality standards. Malaysia is also

committed to develop centres of excellence in research, consultancy and training which accurately address the needs of the private sector in general and the manufacturing sector in particular. The binational institutes and the state skills development centres are an embodiment of this aspiration.

Schools Inspectorate

75 The MoE includes a federal inspectorate comprising full-time inspectors who report directly to the director general of education on the quality of provision in schools up to upper secondary level. As in England, the inspectorate focuses on the quality of teaching and learning, standards and the effectiveness of school management. The inspectorate produces a formal report for the minister four times a year. Although inspection findings are made known to the schools inspected, inspection reports are not published. In addition to carrying out inspections, the inspectorate also has an advisory role in spreading good practice and improving the quality of provision.

Post-secondary Quality Assurance

76 Compared with England, external quality control of post-secondary public sector institutions is limited. Malaysia has no system of inspection covering post-secondary education. It should be borne in mind, however, that the polytechnics and the institutions funded through MARA are subject to substantially more central control than colleges in England. The diploma and certificate courses offered by polytechnics have common syllabuses which, it is argued, facilitate the maintenance of common standards. The skills training carried out in MARA institutes and the state skills development centres is governed by the national occupation skills standards established through MLVK. MLVK has formed trade advisory committees to provide advice on the training needs of industry, and trade standard committees to formulate and review skills standards. National trade testing examiners oversee testing procedures and provide advice to public and private sector skills training centres on standards to be achieved. There are additional pressures on MARA institutes and state skills development centres to deliver relevant high-quality training because of the close relationships some of these institutions have with employers. In general, procedures within colleges to review and evaluate the quality of courses are less formal than in England.

Quality Assurance in Private Colleges

77 In order to meet the demanding agenda for growth outlined in Vision 2020 and articulated further in the Seventh Malaysia Plan, the private sector for education and training has a vital and expanding role to play. Private colleges operate in a fiercely competitive market with widely varying fee levels and considerable variations in quality. In view of the expanding role of private sector education and training, the government has recognised a need to strengthen the quality assurance arrangements to which private colleges are subject. All private colleges require a licence to operate which is granted by the private education department of the MoE. To obtain a licence, colleges have to meet minimum standards, mainly in relation to governance and management, and resources.

78 Until recently, quality control in private colleges has been exerted mainly through parental pressure and the demands of overseas examination bodies and educational institutions with which many private colleges have twinning arrangements. Education is valued highly in Malaysia and parents are often willing to make great sacrifices to ensure that their children are properly educated to an appropriate standard. For many parents, particularly in the Chinese and Indian communities, this involves paying substantial fees for which they expect high-quality provision. This has led to their demanding that their children are given the opportunity to obtain a recognised overseas

qualification which is moderated externally. Such qualifications are felt to carry more weight than a diploma or certificate validated internally by a college. Private colleges offering twinning programmes are generally required to conform to quality assurance arrangements laid down by their overseas partner.

National Accreditation Board

79 *The National Accreditation Board Act 1996* is an attempt by the government to strengthen quality assurance arrangements in private colleges, particularly in relation to self-validated diploma and certificate courses. The act led, in June 1997, to the establishment of the Lembaga Akreditasi Negara (National Accreditation Board) which will report to the MoE. The board is currently designing an accreditation framework for diploma and certificate courses in private colleges which will be used to review the quality of the curriculum, resources and management arrangements. The accreditation arrangements which are emerging bear some similarity to the FEFC's inspection framework in relation to the use of part-time assessors and the intention to award overall quality grades in 10 programme areas. A potential weakness of the accreditation scheme lies in its voluntary nature. However, board officials argue that because of the advantages to be gained, private colleges will be keen to seek accredited status. They envisage that colleges with accredited courses will gain a competitive advantage over other private college in the eyes of status-conscious students, parents and employers. They also point out that, once the accreditation scheme has become established, only colleges with accredited courses in a programme area will be able to enter into twinning agreements with other institutions.

TEACHING AND LEARNING

80 There were opportunities for members of the study group to observe a few lessons, mainly practical sessions, in some of the institutions visited. The structure of lessons and the styles of teaching observed bore a resemblance to practice observed in colleges in England. The size of classes varied quite widely, from 10 to 20 students. Teachers generally catered effectively for the needs of individual students. Relationships between staff and students were warm, although students were more deferential towards staff than would often be the case in England. Teachers used a variety of teaching methods to facilitate learning. In practical sessions, teachers demonstrated practical skills to small groups of students who were then required to practise the techniques themselves, individually or in pairs. There was an emphasis in a number of the institutions visited on the importance of working in teams.

81 A particularly impressive practical session was observed at the German Malaysian Institute. Production technology students were working in pairs on projects related to work they had carried out while on placement in local companies. Each pair of students was required to devise and assemble a piece of equipment which could be used to solve a production problem. The students had a good understanding of the theoretical principles underlying the practical work and were making good progress in reaching an appropriate solution. The students worked mainly on their own, calling on assistance from the teacher when needed. The teacher monitored the students' progress carefully but unobtrusively, encouraging students to be self-reliant and to seek help only when they had exhausted their own resources. The students kept detailed written records of progress being made. Attendance and punctuality were good, students were tidy in their work and there was a sound awareness of health and safety issues. In part, this may have been due to a novel system of fines imposed on students for certain minor transgressions. For example, students were fined RM0.5 for arriving five minutes late for a lesson, RM1 for leaving a laboratory in an untidy state or for mishandling equipment, and

RM5 for deliberately pressing an emergency button, without good reason.

82 Some productive practical sessions in hairdressing, engineering, art and ceramics were observed at the school for the hearing impaired, Sekolah Menengah Pendidikan Khas Vokasional, in Shah Alam. Staff at the school had created a happy, purposeful atmosphere. There were excellent relationships amongst staff and students, and teachers had a clear understanding of the difficulties the students faced in learning and acquiring practical skills. A variety of teaching methods were observed: teaching of the whole class; demonstrations of techniques by the teacher to groups of students; and individual tuition. Teachers made good use of signing to communicate with students. Overall, students worked with flair and imagination and produced good work despite the somewhat limited equipment available. Students on vocational courses could achieve NOSS level 1 but resource constraints prevented students achieving higher levels, though some appeared capable of this. Accreditation arrangements for students on the art and design programmes were less formal; students in these areas received a certificate of achievement issued by the school.

83 In a number of the institutions visited, there was evidence of the systematic development of students' IT skills and their use in a range of curriculum areas. Communication studies and mathematics also figure prominently in vocational course syllabuses. However, students' literacy and numeracy skills are generally not assessed at enrolment.

Equipment

84 The quality and availability of specialist equipment, IT and learning resources varied very widely amongst the institutions visited. The quality of the specialist equipment in the best institutions stands comparison with the very best to be found in England. Advanced manufacturing systems students at the Penang Skills Development Centre are able to develop knowledge and skills in robotics through working on a fully automated simulation of a process to manufacture three-pin plugs. The simulation, costing RM2.8 million, has been purchased with the assistance of a federal grant. Students at the centre have access also to the latest generation of personal computers, donated by a major multinational company with a base in Penang, and capable of running the most sophisticated design software. The specialist resources and computing equipment at the Terengganu Advanced Technology Institute were of a similar quality. In addition, the institute had developed high-quality computer-aided learning packages for its courses. Engineering equipment at the Institut Kemahiran MARA, whilst not of the quality found in the higher level technical institutes, enables students to acquire relevant skills in a range of aspects of engineering, including aircraft maintenance.

85 The resource position in some private colleges visited was less impressive. The library in one college visited contained relatively few books and other learning resources, despite the fact that higher education courses were offered by the college in collaboration with overseas universities. In addition, there was some old engineering equipment. In another private college, the number of computer workstations available for students was fewer than would be the norm in England, although the computers were modern, with industry-standard software.

Student Support

86 Recruitment practices varied in the institutions visited. Most institutions selected students mainly on the basis of SPM and SPTM results. Interviewing applicants was the exception rather than the rule. Similarly, formal tutorials or meetings with personal tutors were not a feature of student timetables in most of the colleges visited. However, there is an expectation in Malaysian colleges that teaching staff will counsel students who are experiencing difficulties. In one of the private colleges visited

such an expectation was incorporated into teachers' contracts. Many students are living away from home and although few of the colleges visited had extensive residential accommodation of their own, students received help in finding suitable accommodation. *Bumiputera* students often obtain free or subsidised accommodation.

87 Until recently, Malaysia has been a full-employment economy and the rapid growth in the manufacturing sector ensured that qualified students experienced little difficulty finding appropriate work. This goes some way to explain the relatively limited careers education and guidance which students receive in the institutions visited. Any guidance that students do receive is usually provided by their subject teachers.

Retention

88 Student retention is not a major issue in Malaysia. The culture of the country militates against students leaving their course without obtaining the desired qualification. Students see education as a vital step in securing a comfortable future and parental expectations are high. A powerful feature of Malaysian culture is a strong desire to maintain one's dignity and not to lose face. Discontinuing a course would be a sure way of losing face. Consequently, retention rates in the institutions visited were in excess of 90%, even in the private colleges where students and their families often expose themselves to considerable financial hardship in order to receive an education. In one of the private colleges visited, only 7% of students had withdrawn from their courses in 1996-97 despite annual fee levels of up to RM11,000.

LESSONS FOR MALAYSIA AND ENGLAND

89 The development of post-16 education and training in Malaysia is driven by the country's determination to become a major industrialised nation by the year 2020. Government, at federal and state levels, has recognised the critical importance of skills training in achieving this aim. The team which visited Malaysia were struck by many similarities in the way Malaysia and England approach skills training and vocational education. The team recognised also the extent to which Malaysia makes use of other countries' expertise and resources in developing the skills of its workforce. It was clear also that the culture and traditions of Malaysia have a profound impact on all aspects of education and training. There are features of Malaysian provision which appear to offer lessons for England, including:

- the all-pervasive role played by Vision 2020 and the Seventh Malaysia Plan in driving forward education generally and skills training in particular
- the wide-ranging contribution made by the private sector to vocational education and training
- the support received from overseas governments and multinational companies which clearly value their involvement in Malaysian skills training
- the establishment of centres of excellence to promote and deliver technical skills training of the highest quality
- the high status given to education by students, parents and employers
- the willingness of students and their families to make substantial sacrifices in pursuit of education and training opportunities
- the strong desire amongst Malaysians to succeed and not lose face which

contributes to generally high retention and achievement rates

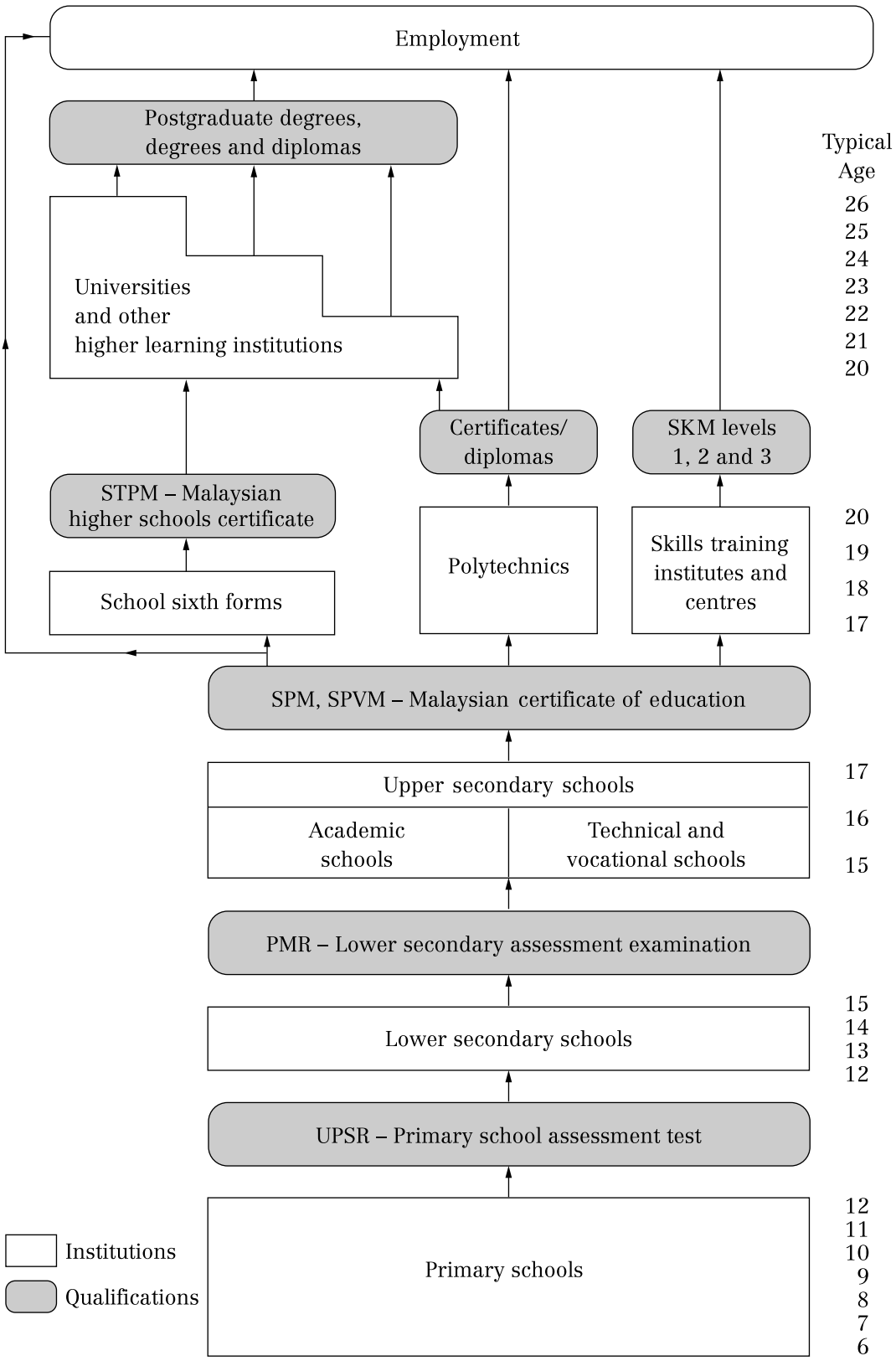
- the emphasis placed on students developing effective team-working skills.

90 The team did not visit Malaysia with the intention of commenting critically on the way the country addresses vocational education and training. Nevertheless, there are aspects of England's experience which it would be beneficial to share with Malaysia. These include:

- a unified further education sector which facilitates planning and promotes collaboration amongst institutions
- a standard qualifications framework for vocational education and skills training which assists progression and job mobility
- a national system for inspecting further education
- the promotion of a culture of rigorous self-assessment within colleges
- the development of detailed, accurate information on retention rates and pass rates which allows targets to be set and monitored and helps stakeholders in education and training build up a comprehensive picture of student achievements
- an emphasis on the needs of students with learning difficulties and/or disabilities to enable them to achieve their full potential
- further education which is free for full-time students aged 16 to 18
- the development of open and flexible learning arrangements which make extensive use of IT and which extend the opportunities students have to learn.

Annex A

EDUCATIONAL INSTITUTIONS AND QUALIFICATIONS IN MALAYSIA



Annex B

INSTITUTIONS AND ORGANISATIONS VISITED

Department of Education, Economic Planning and Information, Penang

Institute of Strategic International Studies

Lembaga Akreditasi Negara (LAN) (National Accreditation Board)

Majlis Lathihan Vokasional Kebangsaan (MLVK) (National Vocational Training Council)

Ministry of Education

- Technical Education Department
- Special Education Department

Ministry of Human Resources

COLLEGES

German Malaysian Institute, Kuala Lumpur

Gurney Training Centre for the Blind, Kuala Lumpur

Institut Kemahiran MARA, Kuala Lumpur

Institut Perkim-Goon, Penang

Kolej Tunku Abdul Rahman, Penang

Sekolah Menengah Pendidikan Khas Vokasional, Shah Alam (Vocational School for the Hearing Impaired, Shah Alam)

Stamford College, Petaling Jaya

State Skills Development Centre, Penang

Terengganu Advanced Technical Institute (TATI)

Workers Institute of Technology, Port Klang

Annex C

PEN PORTRAITS OF INSTITUTIONS VISITED

German Malaysian Institute, Kuala Lumpur

The German Malaysian Institute was established in 1992 as a joint venture project between the Malaysian and German governments. The institute is located in a six-storey building approximately five kilometres from the centre of Kuala Lumpur. Its aim is to train highly skilled technicians to support the growth in Malaysia's manufacturing and engineering sectors. There are full-time and part-time courses in production technology, industrial electronics and mechatronics. The institute's full-time diploma reaches a standard corresponding to NVQ level 3/4 in England.

In 1997-98, some 140 students were enrolled on the full-time diploma programme. Competition for places is strong and students are expected to have reached a good standard in their SPM or SPVM examinations. Approximately 60% of students are *Bumiputera* and 10% are women. The diploma programme is based on German syllabuses and is heavily weighted towards practical work, often carried out in collaboration with companies in the region. All diploma students undertake a three-month industrial placement in the second year of their three-year course. Pass rates and retention rates are very high, generally over 90%. The institute's graduates are much in demand and can command salaries substantially greater than the average for skilled workers in Malaysia.

Over RM32 million has been invested in the institute by the German Agency for Technical Co-operation. The standard of equipment and training facilities is very high. There is an excellent range of machine tools including many of the most advanced computerised models. The institute, which is administered through MARA, is able to draw on specialist support from four German advisers. German involvement in the institute ceases in 1999.

Gurney Training Centre for the Blind, Kuala Lumpur

The centre is administered under the auspices of the Malaysian Association for the Blind, whose headquarters are at the same site as the centre, in a suburb of Kuala Lumpur. The centre can cater for 50 adult students. Applications for training places are declining and at the time of the visit only 35 students were attending courses. Approximately 80% of the students had been referred to the centre by government welfare and social security departments, or by employers. The remainder had applied directly to the centre.

Courses are offered in a range of vocational areas, including computer programming, telephony, woodwork and massage. In addition, students participate in programmes designed to develop their independent living skills. Courses last between five and 15 months depending on the nature of the course and the needs of the student. Successful students are awarded certificates accredited by external organisations.

Students at the centre can benefit from some of the facilities of The Malaysian Association for the Blind. The association has three placement officers who help students to find work placements or to secure jobs after they qualify. The placement officers also provide after-care services for students once they leave the centre. Centre students make use of the association's Braille resources and low-vision resource centre.

Institut Kemahiran MARA, Kuala Lumpur

The institute is located on a five acre site in a mixed residential and commercial area some nine kilometres from the centre of Kuala Lumpur. It was built in 1974 and is one of a number of vocational training institutions, managed nationally through MARA, which aim to address the training needs of the *Bumiputera*.

The institute offers courses in electrical engineering, refrigeration and air conditioning, fabrication and welding. All courses last for 18

months and most are accredited to NOSS levels 2 and 3. An exception is the aircraft body repair training for which there is no nationally recognised accreditation available. The syllabus for the course has been developed jointly by the institute and a local company. At the time of the visit, 488 students were enrolled at the institute. Students apply centrally through MARA which then allocates students to its various institutes throughout the country. Overall, courses in MARA colleges are over-subscribed.

The equipment and facilities available at the institute for skills training compare well with those found in further education colleges in England.

Institut Perkim-Goon, Penang

The institute is a private college situated on a pleasant site in a residential area about two kilometres from the centre of Georgetown, the capital of Penang. It was established as a charitable foundation in 1981. In 1996, the institute joined the United Group of Colleges in anticipation that this would facilitate some rationalisation of courses and enable capital funds to be obtained more readily.

Some 2,600 students are enrolled at the institute, most of them from the north of the country. There are courses in business and administrative studies, computing, law and professional studies. Courses are offered at certificate, diploma and higher diploma levels. External University of London degree programmes are available in a range of subjects, including economics, information systems and management. There are 83 full-time teachers and a large pool of part-time staff. The college has developed a quality assurance process which has similarities with quality assurance systems used by colleges in England. The process is administered by a management group which includes the college's president, the principal, the vice-principal, a head of department and three representatives from industry, commerce and the public sector. The management group and its subcommittee, comprising heads of department and teachers, monitor the quality of courses and provide advice on how the institute's resources should be developed to reflect industry standards.

The accommodation includes 45 classrooms and two large auditoriums all of which are air-conditioned. The library contains approximately 7,500 books and periodicals and has space for 200 students to study privately. There are CD-ROM facilities and two internet terminals. The institute has 72 networked computers. Other facilities include a training office in which business, administrative and secretarial skills can be developed and assessed.

Kolej Tunku Abdul Rahman, Penang

The college, which was founded in 1969, has its main campus in Kuala Lumpur and smaller sites in Perak, Johore and Georgetown in Penang. It is unique in that it is the only private college in Malaysia which receives public funds. The college is supported strongly by the Malaysian Chinese Association, a member of the Barisan National Party coalition.

Approximately 7,000 students, drawn from all over Malaysia, are enrolled at the college. The main campus in Kuala Lumpur offers a broad range of diploma and certificate courses in technology, computing and business. Certificate courses in computing in business are offered at the Perak and Johore sites. The Penang site, the one visited by the team, offers two-year diploma courses in accounting and business administration. Approximately 90% of the Penang students are of Chinese origin and 70% are women. The students come from all over the country and many progress to university degree programmes when they complete their course in Penang. Most of the teachers at the Penang site are women.

The accommodation in Penang is compact and is used intensively, with three semesters each year. Classrooms are well furnished and adequately equipped. There are several computer rooms on site but the library is small.

Annex C

Facilities for students include a common room and a basic refectory. Careers guidance and information about opportunities for further study is provided by course tutors. A student welfare co-ordinator is readily available to give students more general advice.

Sekolah Menengah Pendidikan Khas Vokasional, Shah Alam

This is a vocational secondary school for students with hearing impairments. It was established in 1988 on its current site in Shah Alam, near Kuala Lumpur. At the time of the visit there were approximately 300 students, 50% male and 50% female, and 50 teachers. Almost all of the students live on site and come from all over Malaysia, including Sarawak and Sabah. The motto of the school is 'strive, succeed, serve'. The school's charter aims to establish an effective environment for teaching and learning and to ensure that the school is always sensitive to the needs of its students. Tuition and accommodation are free to the students.

All students take a two-year programme, 70% of which comprises vocational subjects or art and design, and the remaining 30% general education in areas such as English and Islamic studies. The vocational courses develop students' competences in line with national occupational skills standards. Art students work towards a certificate of achievement awarded by the school. The certificate is not accredited externally. Local employers provide students with work experience opportunities and students and staff are optimistic about the prospects of students finding work when they leave the school.

Teachers and instructors are appropriately qualified. They possess signing skills to facilitate communications with students. The school's accommodation and equipment are basic and this limits the extent to which students can develop higher level skills.

Stamford College, Petaling Jaya

Stamford College is one of the oldest and largest private colleges in Malaysia. It was founded in 1950 and now has 17 sites throughout the country offering over 50 courses. Each year, some 14,000 students enrol at the college, which has 647 full-time and 112 part-time staff.

The college's provision includes internally moderated certificate and diploma courses, external University of London degree programmes, degree courses franchised from, or twinned with, foreign universities, courses leading to the qualifications of professional bodies and programmes through which students can gain credits for degree programmes at universities in the United States of America. Most of the college's courses are in business studies and business-related subjects, such as marketing, accounting, economics and administrative studies. There are also courses in other areas, including law, computer science, hospitality and tourism, and media studies. The college has established a systematic approach to some aspects of quality assurance, including the evaluation of courses and the grading of teachers by students.

The campus visited by the team is situated in Petaling Jaya, approximately 12 kilometres south west of Kuala Lumpur. The accommodation comprises a single, two-storey purpose-built block and the layout and facilities are similar to those found in a typical small college in England. Most classrooms can accommodate 15 to 20 students. Computing facilities are good; hardware and software is up to date and there is approximately one computer terminal for every five students. The science laboratories are older and have furniture in fixed positions, which would restrict some styles of learning.

Annex C

State Skills Development Centre, Penang

The Skills Development Centre in Penang, the first of its kind in Malaysia, was established in 1989 as a result of close collaboration between the state government of Penang, the Penang Development Corporation and industry, particularly multinational companies based in the state. The centre is based in the Bayan Lepas free industrial zone, approximately seven kilometres south of the state capital, Georgetown.

As well as offering full-time BTEC higher national diploma courses in engineering for school-leavers, the centre aims to meet the training needs of its 78 corporate members, including companies such as Motorola, Siemens, Sony and Robert Bosch. Much of the training offered aims to develop technical, manufacturing and managerial skills to NOSS level 3. By March 1998, over 2,000 training programmes had been provided through the centre, involving over 37,000 participants. Relatively little of the training is delivered by the centre's core staff of 25. Although the centre organises the courses, the training itself is usually provided by consultants under contract.

The buildings occupied by the centre are owned by the state of Penang and leased to the centre for a nominal amount. Approximately one-third of the centre's operating costs are met by the state with the balance coming from fees. The accommodation and facilities are of high quality. There are seven laboratories and workshops providing opportunities for practical training in areas such as industrial automation technology, advanced manufacturing technology, electronics, precision machining and mechatronics. The centre is governed by a management council which includes representatives from the state government and the Penang Development Corporation and representatives elected from the centre's industrial members.

Terengganu Advanced Technical Institute

The institute was established in 1996 by the north-eastern state of Terengganu in collaboration with the Swiss government. It is located on a 30-acre site in the extreme south of the state, some 80 kilometres south of the state capital, Kuala Terengganu. A further 370 acres adjoining the existing site has been earmarked for future development. Until relatively recently, north-east Malaysia was less developed than other parts of the country. However, substantial offshore oil and gas reserves have economically transformed the state of Terengganu and enabled it to fund showcase projects such as the institute.

Currently, the institute offers three-year, full-time diploma programmes in tool and die design and manufacture, mechatronics and IT. It also offers four-year degree programmes in chemical engineering, electrical and electronic engineering and mechanical engineering. Rather than focusing just on the needs of the region's established petro-chemical industry, the state hopes that the institute's programmes will act as a magnet for manufacturing firms contemplating moving to Terengganu. At the time of the visit, there were only 200 students enrolled on diploma courses and a further 100 on the degree programmes. Residential accommodation is provided on site. The institute anticipates that 6,000 students will be following degree programmes by 2005. By 2010, the institute hopes to achieve the status of a technical university serving the needs of the whole country

The institute's accommodation and equipment is of the highest quality. Practically all the institute's capital costs and operating costs are met by the state. The institute is governed by a board of directors which is chaired currently by the state minister for science and technology.

Annex C

Workers Institute of Technology, Port Klang

The institute' main campus is based on a 10-acre site in Port Klang, in the state of Selangor, approximately 33 kilometres south west of Kuala Lumpur. There is a smaller branch campus in Ipoh. The institute was established in 1977 by the Transport Workers Union which anticipated a need to upgrade the skills of the Malaysian workforce if the country was to advance industrially. It is now owned jointly by the Transport Workers Union and Sateras Resources (Malaysia) Berhad, a publicly listed company with major interests in the property, plantation and manufacturing sectors.

Approximately 2,600 students enrol at the institute each year. Full-time and part-time courses at certificate, diploma, higher diploma and degree level are available in a variety of technological subjects including electrical and electronic engineering, mechanical engineering, motor vehicle engineering and building services engineering.

Degree programmes and BTEC higher national diploma courses are offered in collaboration with a number of universities in England and Australia. Scholarships from four English universities are available for students who register for engineering degree courses. To complement its formal requirements for entry to courses, the institute has systems in place to assess and accredit non-standard qualifications.

The main campus includes a variety of teaching rooms ranging from lecture theatres to smaller seminar rooms. In addition, there is a range of workshops and laboratories covering all the relevant technological areas. There are three computing laboratories to meet general computing needs and the needs of students studying computer-aided design and manufacture. The library is relatively small but students are encouraged to make use of the public library situated nearby in Port Klang.

Annex D

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