BASELINE SURVEY ON MALAYSIAN POLICY ON INDUSTRIAL HRD FOCUSING ON VOCATIONAL TRAINING INSTITUTIONS

Final Report: Volume 1

PE Research Sdn Bhd
133B Jalan SS25/2, Taman Mewah,
47301 Petaling Jaya,
Selangor Darul Ehsan, Malaysia

February 2005

JICA

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Volume 1

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Preface

This report is outcome of a Baseline Survey commissioned by JICA Malaysia Office to PE Research Sdn. Bhd. This report is divided into two volumes. **Volume 1** contains the following information:

- Malaysian policies and programmes concerning human resource development for the industrial sector.
- The main institutional stakeholders that are involved in the provision of vocational training.
- A synthesis of the issues pertaining to vocational training drawn from the workshops findings and the various surveys carried out as part of the baseline study.

Volume 2 of this report is divided into four Sections:

- Section A contains the full report from the three PCM workshops that were conducted in January 2005.
- Section B contains the findings and statistical tabulations from the various surveys that were carried out as part of this baseline study. These include the Survey of Institutions, Industry Survey and the Survey of Senior Volunteers. A summary of the in-depth interview findings as well as background information on the state skills development centres are also included in this section. Included too are the questionnaires used all the surveys.
- Section C contains the listings of information and database required to support the baseline study. This includes the coordinates of the public sector VTIs as well as the list of courses offered. The profiles of the VTIs that were interviewed as part of this study as well as information on courses, lecturers and equipment/facilities are included in this section of the report. The list of industries surveyed is compiled in this section too.
- Section D is a compilation of the institutional interview notes.

PE Research would like to thank all the various government ministries and agencies, vocational training institutes as well as industry and industry associations that have assisted us in this study. Special mention goes to the industry representatives and Senior Volunteers who have provided us with their views and insights thus enriching the information in this baseline study.

We hope that the information compiled in the two volumes of the Baseline Study will be useful for identifying appropriate areas and the roles for Senior Volunteers in the area of vocational training.

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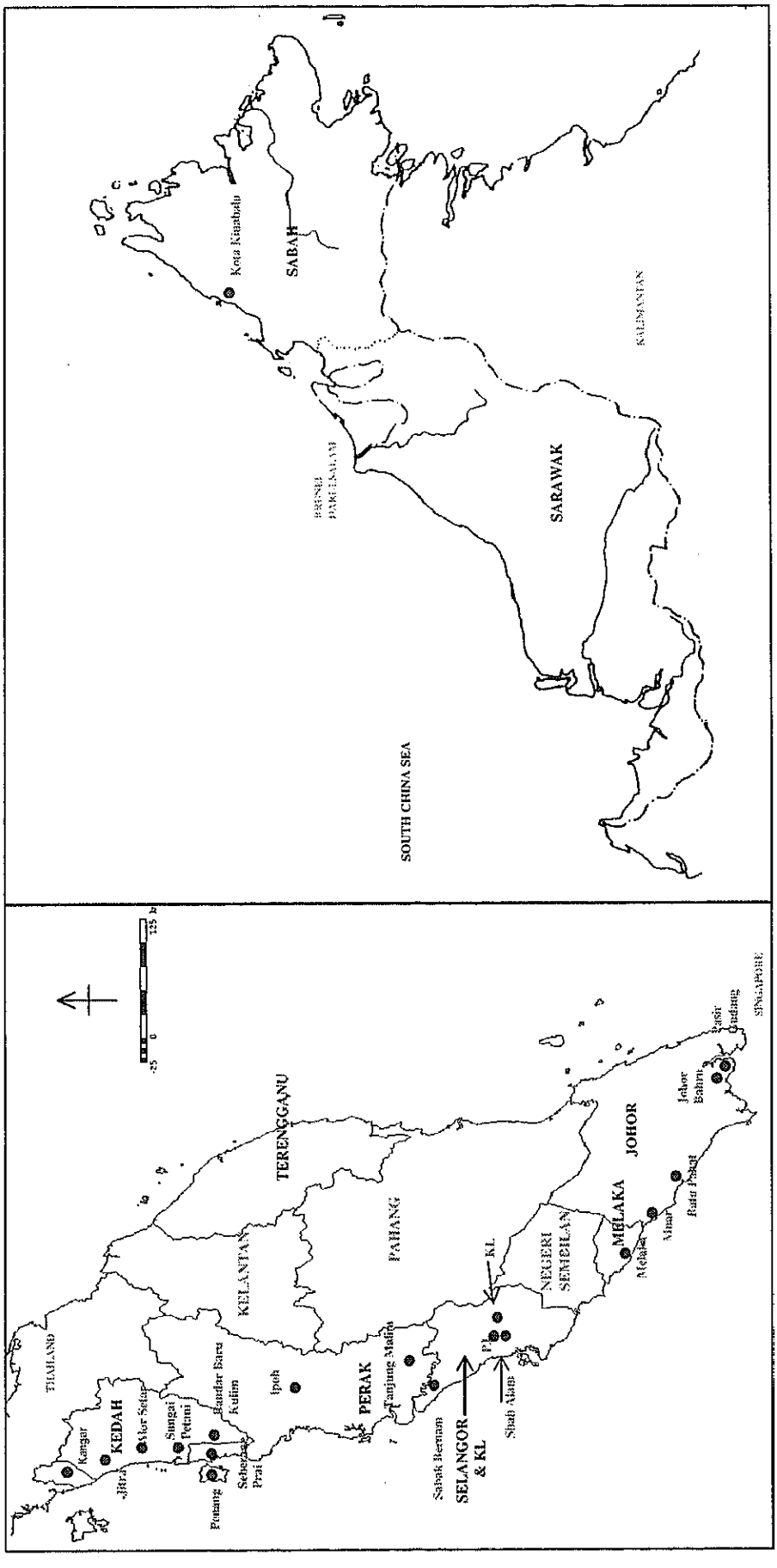
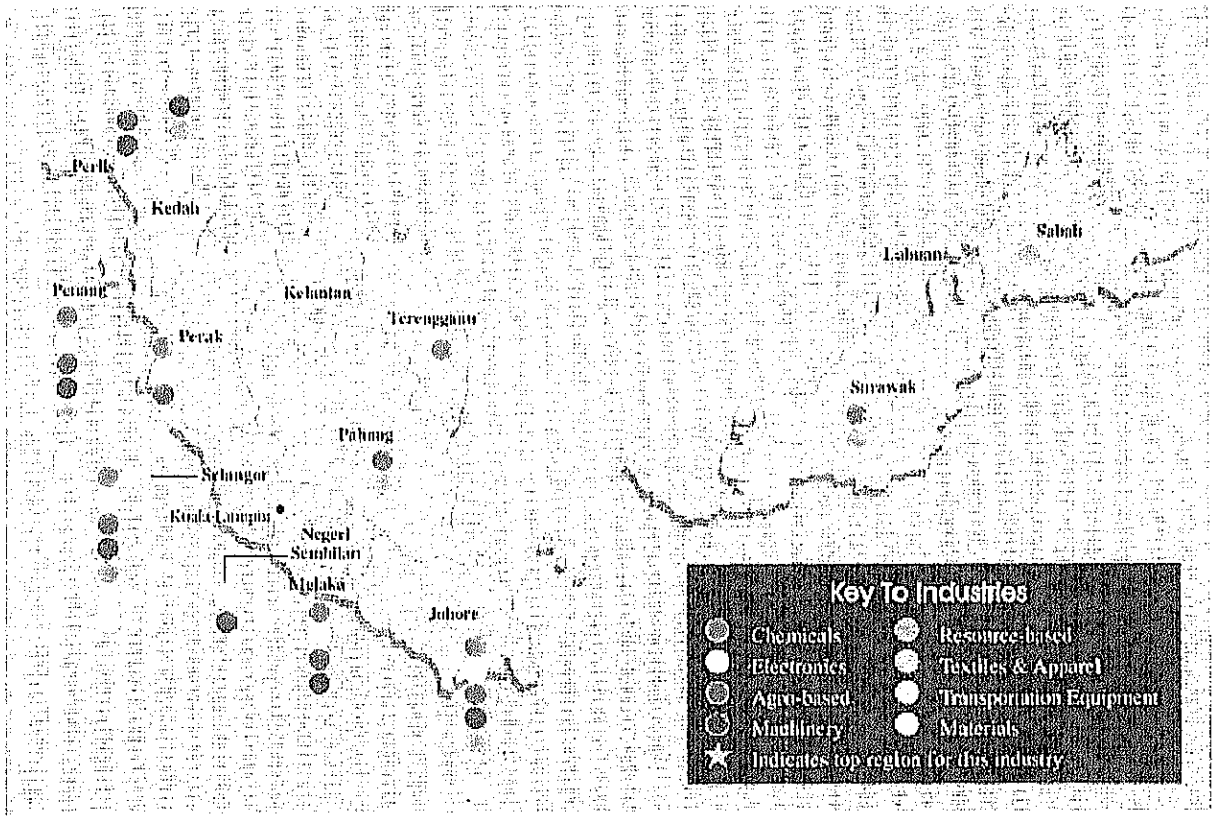
Location Map of Study Area



Regional Distribution of Industry Clusters in Malaysia



Source: Second Industrial Master Plan

Malaysia Fact Sheet

Area (in square kilometers)		330,252
Total Population (2004 estimates) [1]		25.58 million
Average annual population growth rate, 1991 – 2000 (%)[2]		2.6
Male/Female ratio[2]		1.04
Urban Population (%)[2]		62.0
Ethnic group composition of Malaysian citizens (%)[2]	*Bumiputera*	65.1
	▪ Malays	53.4
	▪ Other *Bumiputera*	11.7
	Chinese	26.0
	Indian	7.7
	Others	1.2
Age Structure[2]	Median Age	23.6
	Population aged 0 – 14 years old (%)	33.3
	Dependency ratio (%)	59.2

Economic (2004 estimates) [1]	RM Million	% Growth
Gross Domestic Product (1987 real prices)	**248,880**	**7.0**
▪ Agricultural, livestock, forestry and fishing	20,693	2.8
▪ Mining and quarrying	17,528	5.0
▪ Manufacturing	78,828	10.5
▪ Construction	7,451	0.5
▪ Services	141,534	6.0

Labour Force (2004 estimates) [1]	
Labour force	10.9 million
Labour Force Participation Rate	68.2%
Unemployment	379,600

Employment by Sector (2004 estimates) [1]	**10,545,600**	**100.0%**
▪ Agricultural, livestock, forestry and fishing	1,400,300	13.3%
▪ Mining and quarrying	43,400	0.4%
▪ Manufacturing	3,064,500	29.0%
▪ Construction	798,200	7.6%
▪ Services	5,239,200	49.7%

[1] Source: Ministry of Finance, Economic Report 2004/2005

[2] Source: Department of Statistics Census 2000

Acronyms

6MP	Sixth Malaysia Plan
7MP	Seventh Malaysia Plan
8MP	Eighth Malaysia Plan
ADB	Asian Development Bank
ADTEC	Advanced Technology Training Centre
AMCHAM	American Malaysian Chamber of Commerce
APITD	Action Plan for Industrial Technology Development
BME	Benefits Monitoring and Evaluation
BMI	British-Malaysian Institute
BTEC	Business and Technology Education Council
CAD-CAM	Computer Aided Design-Computer Aided Manufacturing
CADD	Computer Aided Design and Drafting
CC	Community College
CGPA	Cumulative Grade Point Average
CIAST	Centre for Industrial and Advanced Skill Training
CIDB	Construction Industry Development Board
CISWP	Certified Inspection Scheme of Welding Personnel
CNC	Computer Numeric Control
DACUM	Developing A Curriculum
DMCs	Developing Member Countries
EPU	Economic Planning Unit
ESDC	Entrepreneur and Skills Development Centre
FASID	Foundation for Advanced Studies on International Development
FAWOAM	*Persatuan Pemilik Bengkel Kereta Malaysia Persekutuan*/ Federation of Automobile Workshop Owners Association of Malaysia
FELCRA	Federal Land Consolidation and Rehabilitation Authority
FMM	Federation of Malaysian Manufacturers
FMM-IM	Federation of Malaysian Manufacturers – Institute of Manufacturing
FTZ	Free Trade Zone
GCE	General Certificate of Education
GDP	Gross Domestic Products
GMI	German-Malaysian Institute
GSP	Global Supplier Programme
HECS	Higher Education Contribution Scheme
HICOM	Heavy Industries Corporation Berhad

HND	Higher National Diploma
HR	Human Resource
HRD	Human Resource Development
HRDB	Human Resource Development Berhad
HRDF	Human Resource Development Fund
ICT	Information Communications Technology
IIA	Investment Incentives Act
IKB	*Institut Kemahiran Belia* / Youth Skills Institute
IKBN	*Institut Kemahiran Belia Negara* / National Youth Skills Institute
IKM	*Institut Kemahiran MARA* / MARA Skills Institute
IKTBN	*Institut Kemahiran Tinggi Belia Negara* / National Youth Advanced Skills Institute
IKTM	*Institut Kemahiran Tinggi MARA* / MARA Advanced Skills Institute
ILO	International Labour Organisation
ILP	*Institut Latihan Perindustrial* / Industrial Training Institute
IMP1	First Industrial Master Plan
IMP2	Second Industrial Master Plan
ISCED	International Standard for Classification of Education
ISIS	Institute of Strategic and International Studies
ISMTAS	Industrial Sewing Machine Technicians Apprenticeship Scheme
IT	Information Technology
ITDAP	Information Technology Development Action Plan
ITI	Industrial Training Institute
JACTIM	Japanese Chamber of Trade and Industry, Malaysia
JICA	Japan International Cooperation Agency
JMTI	Japan-Malaysia Technical Institute
JPA	*Jabatan Perkhidmatan Awam*/ Public Services Department
KISMEC	Kedah Industrial Skills & Management Centre
KKTM	*Kolej Kemahiran Tinggi MARA*/ MARA Advanced Skills Colleges
LAN	*Lembaga Akreditasi Negara*/ National Accreditation Board
LG	Learning Guides
MAMPU	Malaysian Administration Modernisation and Management Planning Unit
MARA	*Majlis Amanah Rakyat*/ Council of Indigenous People
MATAC	Malaysian Textile and Apparel Centre
MCE	Malaysian Certificate of Education
MDB	Manpower Development Board
MECD	Ministry of Entrepreneur and Co-operative Development

MFI	Malaysia-France Institute
MGCCI	Malaysian German Chamber of Commerce and Industry
MIAT	Malaysian Institute of Aviation Technology
MICET	Malaysian Institute of Chemical & Bioengineering Technology
MIGHT	Malaysia Industry – Government High Technology
MIMET	Malaysian Institute of Marine Engineering Technology
MINT	Malaysian Institute for Nuclear Technology Research
MIPTTC	Malaysian – Italian Plastic Technology Training Centre
MISDC	Melaka Industrial Skills Development Centre
MITI	Ministry of International Trade & Industry
MLVK	*Majlis Latihan Vokasional Kebangsaan*/ National Vocational Training Council
MNC	Multinational Corporation
MOE	Ministry of Education
MoHEd	Ministry of Higher Education
MOHR	Ministry of Human Resources
MOU	Memorandum of Understanding
MP	Malaysia Plan
MPMA	Malaysian Plastics Manufacturers Association
MPOB	Malaysian Palm Oil Board
MRRD	Ministry of Rural and Regional Development
MSC	Multimedia Super Corridor
MSI	Malaysian Spanish Institute
MTDC	Malaysian Technology Development Corporation
MTIB	Malaysian Timber Industry Board
MTMA	Malaysian Textile Manufacturers Association
MTR	Mid Term Review
MYS	Ministry of Youth & Sports
NAC	National Accreditation Council
NACIT	National Advisory Council on Industrial Training
NAS	National Apprenticeship Scheme
NDP	National Development Policy
NEB	National Electricity Board
NEP	New Economic Policy
NIE	Newly Industrialised Economics
NIOSH	National Institute of Occupational Safety and Health
NITA	National Information Technology Agenda

NITTCB	National Industrial Training and Trade Certification Board
NOSS	National Occupational Skill Standards
NPC	National Productivity Corporation
NSSDC	Negeri Sembilan Skills Development Centre
NVP	National Vision Policy
NVTC	National Vocational Training Council
OPP1	First Outline Perspective Plan
OPP2	Second Outline Perspective Plan
OPP3	Third Outline Perspective Plan
OTJ	On-the-job
PCM	Project Cycle Management
PCR	Project Completion Report
PDC	Penang Development Corporation
PDM	Project Design Matrix
PESDC	Perak Entrepreneur and Skills Development Centre
PIKOM	*Persatuan Industri Komputer Malaysia*
PIMAS	Plastic Injection Moulding Apprentice Scheme
PIO	Pioneer Industries Ordinance
PMR	*Penilaian Menengah Rendah*/ Lower Secondary Evaluation
POLIMAS	Polytechnic Sultan Abdul Halim Mu'adzam Shah
POLISAS	Polytechnic Sultan Haji Ahmad Shah
PPKS	*Pusat Pembangunan Kemahiran Sarawak*/ Sarawak Skills Development Centre
PSA	Politeknik Shah Alam
PSD	Public Services Department
PSDC	Penang Skills Development Centre
PTTC	Plastics Technology Training Centre
PUO	Politeknik Ungku Omar
PUSPATRI	Johor Skills Development Centre
QA	Quality Assurance
RISDA	Rubber Industry Smallholder Development Authority
RM	Ringgit Malaysia
R&D	Research and Development
S&T	Science and Technology
SAC	Skills Advisory Committee
SDF	Skills Development Fund
SEDC	State Economic Development Corporation

SHRDC	Selangor Human Resource Development Centre
SKM	*Sijil Kemahiran Malaysia/* Malaysian Skill Certificate
SME	Small and Medium Enterprise
SMIs	Small and Medium Industries
SMIDEC	Small and Medium Industries Development Corporation
SMILE	SMI Learning Academy
SPM	*Sijil Pelajaran Malaysia/* Malaysian Certificate of Education
SSDC	State Skills Development Centre
SSTC	Sabah Skills and Technology Centre
STPM	*Sijil Pelajaran Tinggi Malaysia/* Malaysian Higher School Certificate
STS	Secondary Technical Schools
SV	Senior Volunteer
SVS	Secondary Vocational Schools
T&V	Technical and Vocational
TATI	Trengganu Advanced Training Institute
TAVED	Technical and Vocational Education Division
TED	Technical Education Department
TEST	Technical Education and Skills Training
TOR	Terms of Reference
TPM	Technology Park Malaysia
TVE	Technical and Vocational Education
TVET	Technical and Vocational Education Training
UniKL	University of Kuala Lumpur
UPSR	*Ujian Penilaian Sekolah Rendah* / Primary School Evaluation Test
VET	Vocational Education and Training
VDP	Vendor Development Programme
VTE	Vocational and technical Education
VTI	Vocational Training Institutes
VTRD	Vocational Training Research Division
WIM	Written Instructions Material
WISDEC	Wood Industry Skills Development Centre
WIT	Workers Institute of Technology
WPKL	*Wilayah Persekutuan Kuala Lumpur* / Kuala Lumpur Federal Territory
WPL	*Wilayah Persekutuan Labuan* / Labuan Federal Territory

Executive Summary

1. Key Features of Malaysian HRD

The national policies relating to human resource development in Malaysia are spelt out in various official government documents. The main HRD policy highlights from these documents are summarised in the following table.

Topic/Subject	Key Policy Highlights
Vision 2020	Promotion of scientific and progressive society
Outline Perspective Plan (OPP3) (2001 – 2010)	Upgrading of skills Dual Training Approach through Apprentice Schemes
Eighth Malaysia Plan, 2001-2005: HR Policy Thrusts	• Expanding the supply of highly skilled and knowledge manpower through the expansion of education and training. • Increasing the accessibility to quality education and training through construction of centralised schools in remote areas & provision of adequate facilities, infrastructure and trained teachers. • Improving the quality of education and training delivery system to meet market demand. • Promote lifelong learning through training and retraining. • Optimising the utilisation of local labour including increasing female labour force participation rate. • Increasing the human resource supply in S&T
Mid-term Review of Eighth Malaysia Plan - Targets for VET	• To increase total enrolment in polytechnics to 71,950 • To increase intake in Community Colleges to 14,310 • To upgrade GiatMARA Centres to Community Colleges • To increase participation rate in tertiary education of 17-23 cohort to 30% • To increase output of public training institutions to reach 42,060 with 68.9% in engineering trades • To increase output of private training institutions to reach 33,110 with 52.4% in engineering trades
Second Industrial Master Plan (IMP2) HRD Initiatives and Strategies	• Focus on enhancing skills formation and skills upgrading on a continuous basis; • Re-orientate industrial training system will to allow greater flexibility and autonomy among training institutes to be more market-driven and flexible to adjust to changing demand; • More flexible and proactive HR supply system to meet the cluster-based manpower needs; • Focused training strategy to support the regional needs of industrial clusters.
K-economy Master Plan	• To create knowledge workers

2. Progress of Vocational and Technical Education and Skills Development

2.1 Institutional Development

Starting with the import substitution programmes, Malaysia's industrialisation soon took on an export-oriented approach. The industrialisation programme then went through a decade of industrial deepening before adopting the thrust of transforming from a production-based economy into a knowledge-based economy. Through the various industrial periods, the institutional development of vocational and technical education and skills development has evolved together with the national industrialisation programmes as tabulated below:

Theme	HRD Milestones	Objectives
Import Substitution Strategy (1957–1967)	• Agriculture Institutes	• To produce agriculture extension workers and agriculture technicians
	• Skills Training Institutes	• To produce skilled workers for industrial sector
	• Establishment of MARA Skills Institutes for *bumiputeras* (1966)	• To provide opportunities for *bumiputeras* to acquire skills • To ensure that *bumiputera* participation in industry reflects Malaysia's ethnic composition
Export Oriented Strategy (1968–1985)	• First Polytechnic: Polytechnic Ungku Omar (1969)	• To enable school leavers to acquire skills to become technicians and junior/middle-level executives
	• National Industrial Training & Trade Certification Board (1971) replaced by National Vocational Training Council – NVTC (1989)	• To assess training needs • To develop, assess and certify National Occupational Skill Standards (NOSS) • To implement the National Skills Certification Programme • To promote skills training system • To assist and develop individual skills capability • To support and advice on the education/ research related to skills training
	• National Advisory Council on Industrial Training (1972) replaced by Manpower Development Board (1979)	• To address specific manpower development problems
	• Centre for Instructor and Advanced Skills Training (CIAST) (1984)	• To provide training for instructors to meet the needs of the vocational training institutes • To provide supervisory and advanced skills training
Industrial Deepening (1986–1996)	• First Skills Development Centre – Penang Skills Development Centre (1989)	• To address the skilled labour shortage problem • To cater for industry immediate training needs
	• Human Resource Development Fund -HRDF (1993)	• To encourage employers in the private sector to retrain and upgrade the skills of their employees in line with their business' needs and the economy of the country

Theme	HRD Milestones	Objectives
Transformation into the K-Economy (1997 and onwards)	• Skills Development Fund (2001	• To increase the number of skilled workers, in line with the need for K-workers in the K-economy
	• Community Colleges (2001)	• To offer alternative routes for secondary school leavers • To provide a life-long education in the development of learning communities • To provide training by up-skilling and re-skilling to fulfil the needs of local workforce
	• Dual TVET system (2002)	• To strengthen the training delivery system

2.2 Funding for Vocational Training & Skills Development

Over the last 15 years, the Government of Malaysia has increased its budget allocation and expenditure for vocational training and skills development more than ten times as summarised below:

	Sixth Malaysia Plan		Seventh Malaysia Plan		Eighth Malaysia Plan	
	Budget Allocation	Expenditure	Budget Allocation	Expenditure	Original Budget Allocation	Revised Budget Allocation
Total Education and Training Budgets (RM million)	**8,025.2**	**7,561.1**	**20,185.8**	**19,724.1**	**22,660.0**	**40,165.1**
of which: Technical & Vocational Colleges and Industrial Training (RM million)	806.4	774.9	2,636.1	2,583.6	7,760.3	9,544.5
As a % of Total Education & Training Budgets	10.0%	10.2%	13.1%	13.1%	34.2%	23.8%

While vocational training in pre-employment skills at public vocational training institutions (VTIs) is largely funded by the Malaysian Government with most of the trainees paying very low fees, trainees at private training institutions usually have to bear the cost of training themselves. To assist them, the **Skills Development Fund** was set up to provide financial loans for Malaysians interested in undertaking skills training.

In the case of training of workers, the cost of training usually falls on the firms. To encourage firms to invest in training of workers, during its early years of industrialisation, Malaysia has introduced various training incentives. Unfortunately they were inadequate to meet the demand for skilled labour. To address the inadequacy of the training incentives the **Human Resources Development Fund** was introduced.

Fund	Human Resource Development Fund (since 1993)	Skills Development Fund (since 2000)
Agency Responsible	Human Resource Development Berhad – Ministry of Human Resources	Skills Development Fund Division – Ministry of Human Resources
Target Group	For the **Manufacturing Sector**: All employers with 50 or more employees; Employers with 10 or more but less than 50 employees and with a paid-up capital of RM2.5 million and above. For selected **Service Sectors**: Employers with 10 or more employees.	For students pursuing technical and vocational courses in public and private institutions, and those taking courses accredited by the NVTC.
Source of Funds	Payroll levy of 1% for those that are liable to contribute; Payroll levy of 0.5% for other classes of manufacturing employers that opt to contribute; Government contribution of RM2 for every RM1 contributed for selected classes of employers.	Government funds

2.3 Infrastructure for Vocational Training & Skills Development

2.3.1 Government Providers of VET

The main government providers of VET for the industrial sector are the Ministry of Human Resources (Manpower Department), the Ministry of Higher Education (Technical Education Department) and the Ministry of Entrepreneurial & Cooperative Development (through MARA).

Ministry of Human Resources (MOHR)		
Overall Objectives of VTIs under MOHR	To provide pre-employment skills training programmes to meet the needs of the industrial sector To upgrade the skills level of workers required by the industrial sector	
Main Characteristics of VTIs under MOHR	NVTC accreditation Competence-based training with 70-75% practical sessions and 25-30% theory sessions	
VTI	**Objective**	**Programmes Offered**
Industrial Training Institutes (ITIs) (14)	To provide formal skill training for school leavers and industrial workers to enable them to acquire skills in specialised fields as well as to upgrade the skills of industrial workers	Basic trade skills (1-1.5 yrs leading to SKM Level 1 or 2 Certification) Short Courses
Advanced Technology Training Centres (ADTECs) (4)	To provide advanced vocational training that meets to the latest developments in industrial technology	Diploma in Technology (2-3 yrs)
CIAST	To provide training for instructors To provide supervisory and advanced skills training	a) 3 yrs instructor training diploma b) Short Courses
Japan Malaysian Training Institute (JMTI)	To produce skilled industrial technologists To assist in the development of local industries, especially SMIs	Diploma in Technology (2-3 years)

Ministry of Higher Education (MoHEd)		
Overall Objectives of VTIs under MoHEd	To provide an option for students more inclined towards non-academic studies to further their education	
Main Characteristics of VTIs under MoHEd	Public Services Department (PSD) Accreditation Academic training with 50-60% practical sessions and 40-50% theory sessions	
VTI	**Objective**	**Programmes Offered**
Polytechnics (19)	To provide broad-based education and training for upper secondary school leavers to enable them to acquire the necessary skills to become technicians and technical assistants or junior and middle–level executives To provide relevant technological or entrepreneurial education and training to upgrade the basic skills. To promote the collaboration between polytechnics and private sectors as well as public sectors	Full-time Technician Certificate (2 yrs) / Diploma (3 yrs) except Marine Engineering Diploma (4 yrs)
Community Colleges (34)	To create alternative routes for secondary school leavers To provide a life-long education in the development of learning communities To provide training by up-skilling and re-skilling to fulfil the needs of local workforce	Certificate (2 yrs) / Diploma (3 yrs)

Ministry of Entrepreneurial and Cooperative Development (MECD)		
Overall Objectives of VTIs under MECD	To increase the number of trained *bumiputera* manpower at all levels and in various fields to cater to the needs of the nation's commercial and industrial sectors.	
Main Characteristics of VTIs under MECD	Accredited to NVTC (for certificate & diploma courses) and PSD (for diploma courses) Accredited to Energy Commission (for selected courses) For those that are NVTC accredited: Competence-based training with 70-75% practical sessions and 25-30% theory sessions For those that are PSD accredited: Academic training with 50-60% practical sessions and 40-50% theory sessions	
VTI	**Objective**	**Programmes Offered**
MARA Skills Institute (IKM) (13)	To provide skills training to ensure that the number of *bumiputera* participation in industry reflects the ethnic composition of Malaysia.	Malaysian Skills Certificate (SKM) Levels 1-3 (18–24 months):
GiatMARA Centres	To provide trade certificate courses for *bumiputera* school leavers	Trade Certificate (6-12 months)

Ministry of Entrepreneurial and Cooperative Development (MECD)		
German Malaysian Institute (GMI)	To support Malaysia's industry by supplying highly skilled and competent technicians/technologists in the manufacturing and engineering industries.	Diploma (3 yrs): Production technology and industrial electronics specialising in the fields of mould, tool & die, mechatronics, process instrumentation & control and electronics & IT
British Malaysian Institute (BMI): Branch campus of Universiti Kuala Lumpur since 2003	To train students to become technologists who will be able to fulfil the manpower requirements of the country To provide students with the necessary background knowledge and skills to pursue degree level education in the relevant fields.	Diploma of Engineering Technology programmes (3 yrs): electronic, electrical, medical electronics, telecommunication engineering; engineering & computing; engineering & business IT
Malaysian French Institute (MFI): Branch campus of Universiti Kuala Lumpur since 2003		Diploma of Engineering Technology programmes (3 yrs): automation, electrical, mechanical and maintenance
Malaysian Spanish Institute (MSI): Branch campus of Universiti Kuala Lumpur since 2003		Diploma of Engineering Technology programmes (3 yrs): mechanical design & development; mould & die manufacturing; production engineering; automated regulation & control; electro-mechanical Installation & maintenance

2.3.2 State Skills Development Centres

The various state governments are also involved in VET for the industrial sector mainly through the skills development centres. Although generally referred to as State Skills Development Centres (SSDC), all the 12 SSDC are incorporated as non-profit organisations and are thus not public sector vocational training institutions. Furthermore, while all the SSDC have representatives from the government, industry and academia, their operations are more akin to private sector.

General Objectives	Programmes Offered
To organise, develop and implement training curriculum to fulfil the immediate requirements of industries in the respective states To provide industrial training to school leavers	Certificates and Diploma in various fields Short Courses

2.3.3 Private Providers of VET

Category	VTI/Programmes Offered
Industry Associations	FMM Institute of Manufacturing: Certificates and Diploma (2-3 yrs) in various fields. Short Courses.
	Malaysian Plastics Manufacturers Association (MPMA) Plastics Technology Technical Training Centre
	Malaysian Textile and Apparel Centre (MATAC): Skills Certificates. Apprenticeship scheme
Private Training Institutions	1,301 NVTC accredited institutions and 4,476 NVTC accredited courses (as at December 2004)

3. Comparative Characteristics of Public Sector VTIs, State Skills Development Centres and Private Sector VTIs

While the main target group of both public and private sector VTIs are school leavers, private sector VTIs are also largely geared towards providing training for existing employees in industry as is the case of the SSDCs. A comparison of the basic characteristics of these three groups of VTIs is summarised in the following table.

Basic Characteristics	Public Sector VTIs	State Skills Development Centres	Private Sector VTIs
Organisational Setup	Government agency; staff are government employees.	Non-profit organisation registered with the Registrar of Societies.	Registered with Companies Commission of Malaysia; or Non-profit organisation registered with the Registrar of Societies.
Management	Government setup with Principal/Director of VTIs reporting to respective department in line Ministry. Industrial Advisory Committees with representation from industry.	Management Council comprising members from industry, academia and government are responsible for policy matters. Management by small core staff. Training Committee prepares yearly training programme. Regular training needs analysis.	Board of Directors usually with academic principal or director.
Target Groups	Mainly school leavers. Existing employees in industry.	Existing employees in industry. School leavers. Retrenched workers. Unemployed graduates.	Existing employees in industry. School leavers.
Sources of Funds	Government funding for capital and operational expenditures. Training fees (for ADTECs and ITKM) but revenue goes to Treasury. Trainees can take a loan from Skills Development Fund (if needed).	Membership fees Training fees: Most firms sending trainees can claim back the training expenses from their HRDF contributions. Capital expenditure mainly from Government (under the Malaysia Plans) channelled through respective State Economic Development Corporations. Federal Government: for Graduate Reskilling Scheme and the newly-launched Industrial Skills Enhancement Programme (INSEP)	Training fees: Most firms sending trainees can claim back the training expenses from their HRDF contributions. Trainees can take a loan from Skills Development Fund (if needed). Capital expenditure from private sources (e.g. shareholders' funds)

Basic Characteristics	Public Sector VTIs	State Skills Development Centres	Private Sector VTIs
Curriculum	Developed by respective Curriculum development committees at line Ministry with inputs from VTIs. Vocational Training Research & Development (VTRD) Division in CIAST for MOHR, using NOSS as reference guide.	Determined by industry members through training needs analysis. Majority are short courses tailored to needs of industry: hard skills and soft skills. Joint courses with industry associations e.g. Plastics Higher Diplomas, Degree and Postgraduate programmes usually in collaboration with private colleges and universities.	Determined by market demand; Higher Diplomas, Degree and Postgraduate programmes usually in collaboration with private colleges and universities.
Training Methodology	Classroom and practical training (laboratories and workshops).	Classroom and practical training (laboratories and workshops). Part-time classes during weekends and evening to accommodate workers. Increasing use of e-learning.	Classroom and practical training (laboratories and workshops). Part-time classes during weekends and evening to accommodate workers.
Lecturers	Full-time lecturers – all considered as government employees.	Small number of full-time lecturers; majority are part-time drawn from industry and other private sector organisations.	Mix of full-time and part-time lecturers.
Equipment	Mostly government funded; central purchasing controlled at ministry for those above RM200,000.	Mostly donated by industry and other donor agencies, including foreign governments	-
Other Special Features	Accredited to PSD (for VTIs under MoHEd and some MARA VTI programmes). Accredited to NVTC for the rest. Well-designed campus; mostly with hostel facilities for trainees.	Accredited to NVTC. Approved training centres for HRDF. Appointed by SMIDEC as training providers to provide training for SMEs under the Skills Upgrading Programme. Well-designed campus.	Accredited to NVTC. Mostly located in urban areas.

4. Comparative Characteristics of NVTC and PSD Accreditations

	NVTC Accreditation	PSD/LAN* Accreditation
Levels	5 levels of competence-based training referred to as SKM (Sijil Kemahiran Malaysia/Malaysian Skills Certificate)	Certificate (1.5 – 2 years) Diploma (3 years)
Training Programmes conducted by	Industrial Training Institutes ADTECs State Skills Development Centres IKM (Certificate courses) IKTM (Certificate/Diploma courses)	Polytechnics Community Colleges IKM (Diploma courses) IKTM (Diploma courses)
Profile	VTIs under MOHR Competence-based training with 70-75% practical sessions and 25-30% theory sessions. PSD has audited all available courses, and NVTC has already outlined a CGPA system, but it is still being finalised. Currently NVTC accreditation is not recognised by PSD. NVTC graduates cannot proceed for further studies in local universities and is also not recognised for government positions. Some institutes which issue NVTC diplomas also have direct MOUs with foreign universities for students to pursue degree education.	VTIs under MoHEd Academic training with 50-60% practical sessions and 40-50% theory sessions With PSD/LAN accreditation further studies in local universities to degree level and/or joining the public sector is made possible.
Possible Next Steps	Private universities	Public and private universities
Job Opportunities	Private sector	Public and private sectors
* LAN = *Lembaga Akredatasi Negara* / National Accreditation Board		

5. Key Statistics of Public Sector VTIs

		Total Number of Institutes	Total Number of Courses	Total Estimated Enrolment
MOHR	ITIs	14	45	6,838 [1]
	ADTEC	4	19	2,406 [1]
	CIAST	1	10	940 [1]
	JMTI	1	4	650 [1]
MoHEd	Polytechnics	19	84	51,433 [1]
	Community Colleges	34	17	8,051 [1]
MECD	MARA Skills Institute (IKM)*	13	41	5,500 [2]
	MARA Advanced Skills Institute (IKTM)	7	n.a.	2,327** [3]
	GiatMARA Centres*	160	33	11,536 [2]
MYS	Youth Skills Institute (IKB)	14	45	5,058 [2]
	Total			**94,739**

** Based on estimates given by MARA*
*** for BMI, GMI, MFI and MSI only*
Note: [1] Year 2003, [2] Year 2004; and [3] Year 2002-2003

6. Key Issues of Public Sector VTIs

From the three PCM workshops, in-depth interview surveys and mail surveys to VTIs, Industries and Senior Volunteers, five key issues, namely, "Lecturers", "Curriculum", "Equipment", "Trainees", and "Relationship with industries" have emerged.

Key Issues		Situation
Lecturers	Inexperienced lecturers	Most of the VTIs interviewed cited inexperienced lecturers has affected the capacity and capability of the VTIs. More than half of the lecturers in public VTIs have less than 5 years' teaching experience. Industry felt that the trainers from VTIs lack industry/practical experience.
	Shortage of qualified lecturers	Feedback from the in-depth interviews with VTIs indicated that only less than half of the institutes have qualified and experienced lecturers. They are also facing shortage of lecturers.
	Mismatch of skills / qualifications	Findings from the survey of VTIs show that some of the lecturers are teaching subjects not related to their qualifications.
Curriculum	Rapid Changing Technology	Curriculum of VTIs lags behind technology employed by industry. Training is not related to current industry needs. Need to upgrade and revise curriculum to meet industry requirements.
	Reference Materials	Lack of written instruction material and learning guides. Lack of textbooks
Equipment	Lack of Equipment	More than half of the public VTIs interviewed indicated equipment shortage.
	Equipment need regular maintenance	Although the SVs and PCM workshops raise this concern, the majority of the VTIs interviewed indicated that the downtime of equipment is low.
	Equipment need upgrading	Feedback from the industry indicated that the VTIs lack advanced / latest equipment. This affects their ability to keep up with technological changes.
Trainees	Low qualifications & communication skills	Feedback from the industry survey concurs with these problems which were raised at the PCM workshops.
	Lack practical knowledge	
Relationship with Industry	Poor demand for training courses	Feedback from interviews with some ITIs, Polytechnics and SSDCs indicated that there is some reluctance of SMIs to train workers.
	Reluctance to provide OJT	While some institutes indicated that they receive good support from industries, some ADTECs complained of "lack of co-operation from industries for student placement". Polytechnics and Community Colleges however indicated that they had government support and were hassle-free with respect to student placement in industries for on the job training.
	Public VTI training not meeting current needs	Some of the industries (mainly local firms) indicated that the public VTIs are not meeting their current needs.

However, although the Senior Volunteers and PCM workshops were concerned about equipment at VTIs being not fully utilised, the VTIs interviewed indicated otherwise. This issue will need to be further examined.

The following figures are the results of PCM workshops.

Figure 1: Core Problem, Direct Effects and Direct Causes (PCM Workshop 1) (Participants: Directors of VTIs under Ministry of Human Resources, 27 participants)

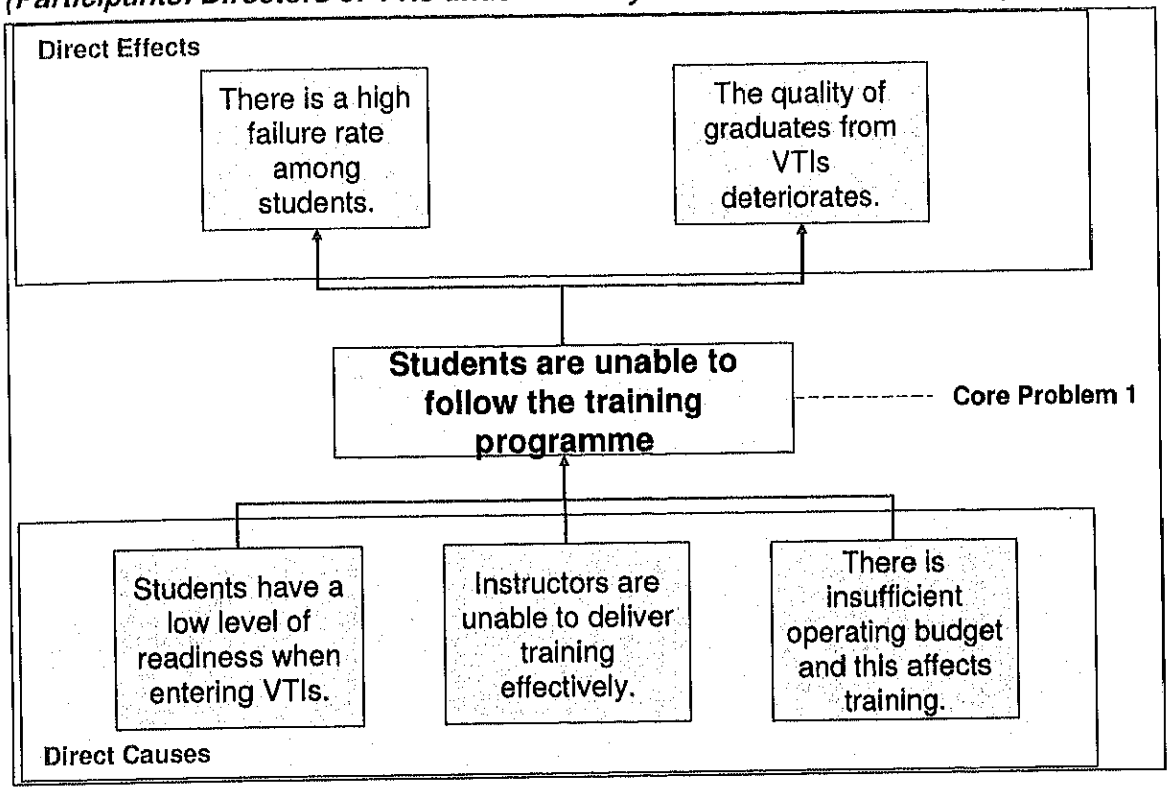


Figure 2: Core Problem, Direct Effects and Direct Causes (PCM Workshop 2) (Participants: Lectures of VTIs under Ministry of Human Resources, 54 participants)

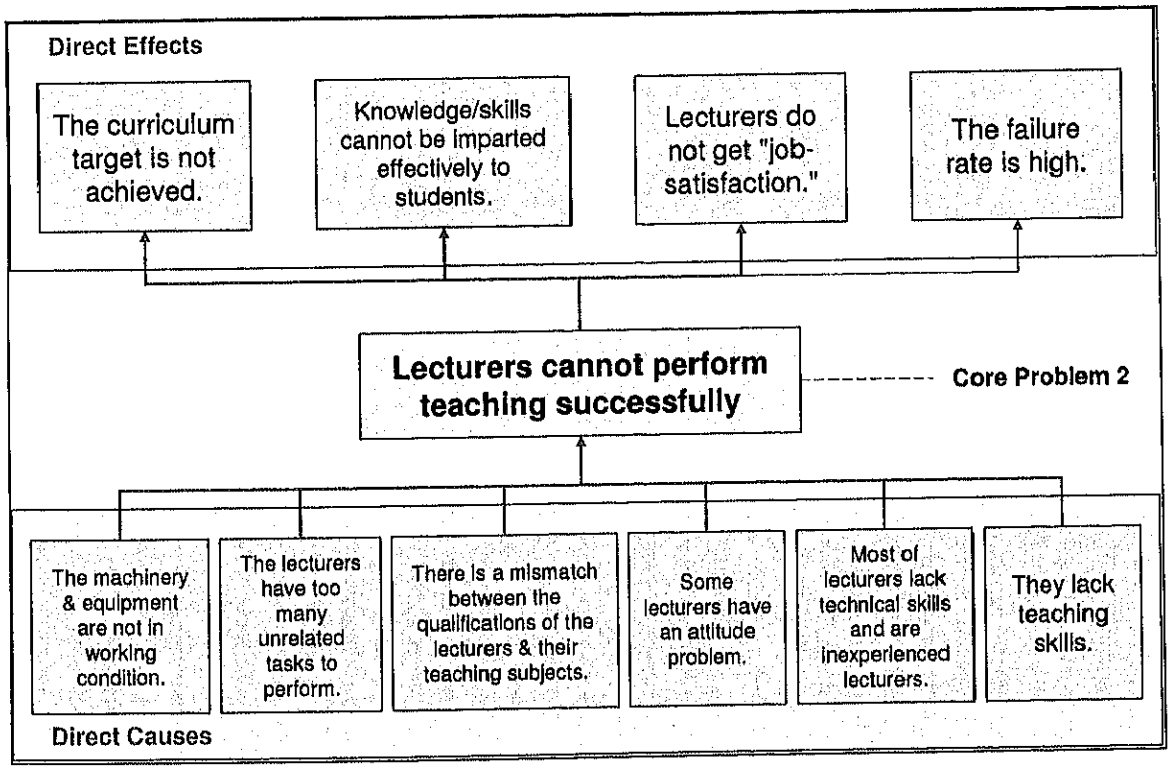
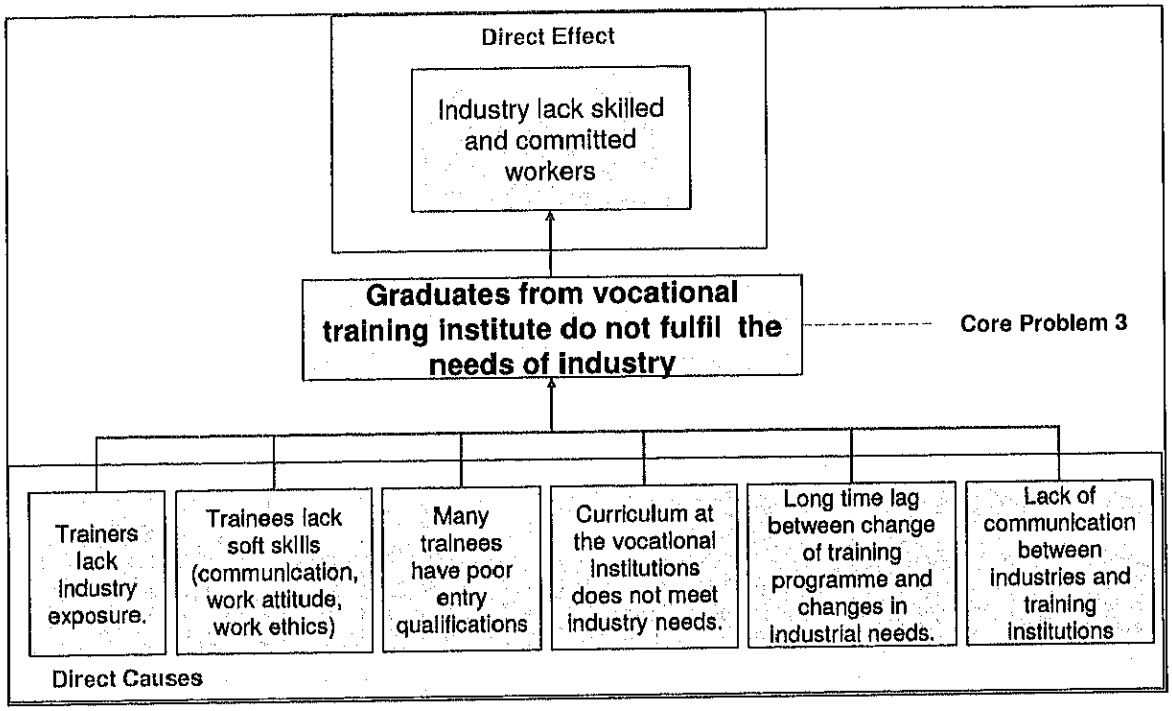


Figure 3: Core Problem, Direct Effects and Direct Causes (PCM Workshop 3) (Participants: Industries (Multinationals & SMEs) Staff of VTIs under Ministry of Higher Education and Ministry of Human Resources and Skills Development Centre, 17 participants)



1. Introduction

1.1 Background

Malaysia has made the transition from an essentially primary commodity producing economy to a manufacturing-based economy. In 1970 the manufacturing sector accounted for only 14% of the economy while manufactured goods were 15% of total exports. Thirty odd years later, manufacturing contributes 32% of Gross Domestic Product (GDP) and 82% of total exports (2004 estimates[1]). In terms of employment, the manufacturing provides employment for more than 3 million workers or 29% of total employed.

During the 1960s, Malaysia's industrialisation programme catered for the domestic market. But with the shift towards export-oriented industrialisation in the 1970s, Malaysia to attracted export-oriented industries to set up off-shore production locations, including the electronics industry. Initially the manufacturing activities were concentrated in labour intensive production activities, utilising imported raw materials, intermediate components and capital equipment. By the 1990s, the scenario has changed. As firms moved to more value-added activities, outsourcing and virtual manufacturing, the opportunities and potential for local vendors, suppliers, subcontractors and original equipment manufacturers has increased. At the same time demand for skills has also changed. The tight labour market and demand for higher skills has resulted in an upward movement of wages and competition for skilled manpower in all economic sectors. This has put pressure on both public as well as private training institutions to provide the skills training and upgrading to meet the demand.

Furthermore as the Malaysian industrialisation programme moves towards higher value-added activities and as the country strives towards knowledge-based activities, a natural corollary of this is to ensure that human resources are adequately equipped too. Suffice to mention here that the Malaysian Second Industrial Master Plan (1996 – 2005), stressed on "efforts to enhance skills formation and skills upgrading on a continuous basis". The importance of human capital is also highlighted in the Third Outline Perspective Plan (OPP3) which stressed that "the nucleus of the knowledge-based economy will be human capital".

The expansion in the economy has enabled Malaysia to keep its unemployment rate at between 3-4% for many years. However new labour market challenges have appeared. Currently, Malaysia's population is 25.6 million and is growing at just under 3% per annum. The labour force which grew by 3.4% in 2004 is estimated at 10.9 million while the overall labour force participation rate is stands at 68.2% in 2004[2]. It is estimated that more than 50% of the total labour force has attained secondary school education while those with tertiary education are estimated to account for 18% of the total labour force. Yet there are unemployed graduates while at the same time employers have to engage foreign professional and skilled workers.

In November 2001, it was estimated that there were 40,400 unemployed graduates[3] the majority being Arts graduates. To address the situation of unemployed graduates, the Malaysian government set up various schemes to retrain the unemployed graduates[4] to meet the needs of the labour market.

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[1] Ministry of Finance Malaysia. Economic Report 2004/2005.
[2] ibid
[3] UKM Pakarunding (2002). Study on the Unemployment Situation in Malaysia.
[4] Approximately RM266 million was spent on training some 27,000 unemployed graduates under the Attachment and Training Scheme.

1.2 Objectives and Approach

In September 2004, JICA Malaysia Office commissioned PE Research Sdn Bhd to carry out a Baseline Study on Malaysian Industrial Human Resource Development Policy – Focusing on Vocational Training Institutions[5]. The objective of the Baseline Study is to gather comprehensive information and data relating to HRD policy and programmes on industrial development as well as information training institutes as inputs for future Japanese Technical Cooperation in the area. This will be useful to identify appropriate areas and the TOR for Senior Volunteers in the area of vocational training.

This study aims to:

- gather basic information of policy and program on industrial development from related ministries;
- gather basic information of vocational training institutes by documental and interview survey;
- analyse curriculum and text books of vocational training institutes by documental and interview survey;
- gather information of facilities and equipment in vocational training institutes by documental and interview survey;
- gather information of lecturers in vocational training institutes by documental and interview survey;
- analyse needs and request from industry by interview and questionnaire survey; and
- analyse present situations of vocational training institutes through PDM workshop discuss on future direction for vocational training.

An overview of the work plan and approach of the tasks is illustrated in **Figure 1.1**.

As part of the tasks for the baseline study several surveys and interviews were carried out:

Survey of Institutions: Survey questionnaires were sent out to 119 vocational training institutes, and face-to-face interviews were conducted with 49 institutes.

Survey of Industries: Interview questionnaires were sent to more than 100 manufacturing industries, both MNCs as well as Malaysian-owned Firms. JICA also assisted the study team to send out interview questionnaires to Japanese MNCs.

Interviews with Agencies: The study team carried out interviews with the key agency stakeholders. These include the following:

- Ministry of Human Resources: Manpower Department, National Vocational Training Council and Human Resource Development Council Berhad.
- Ministry of Higher Education: Technical Education Department and Community Colleges Department.
- Economic Planning Unit: Human Resource Section.
- Ministry of Entrepreneurial and Cooperative Development: MARA Skills Training Division.

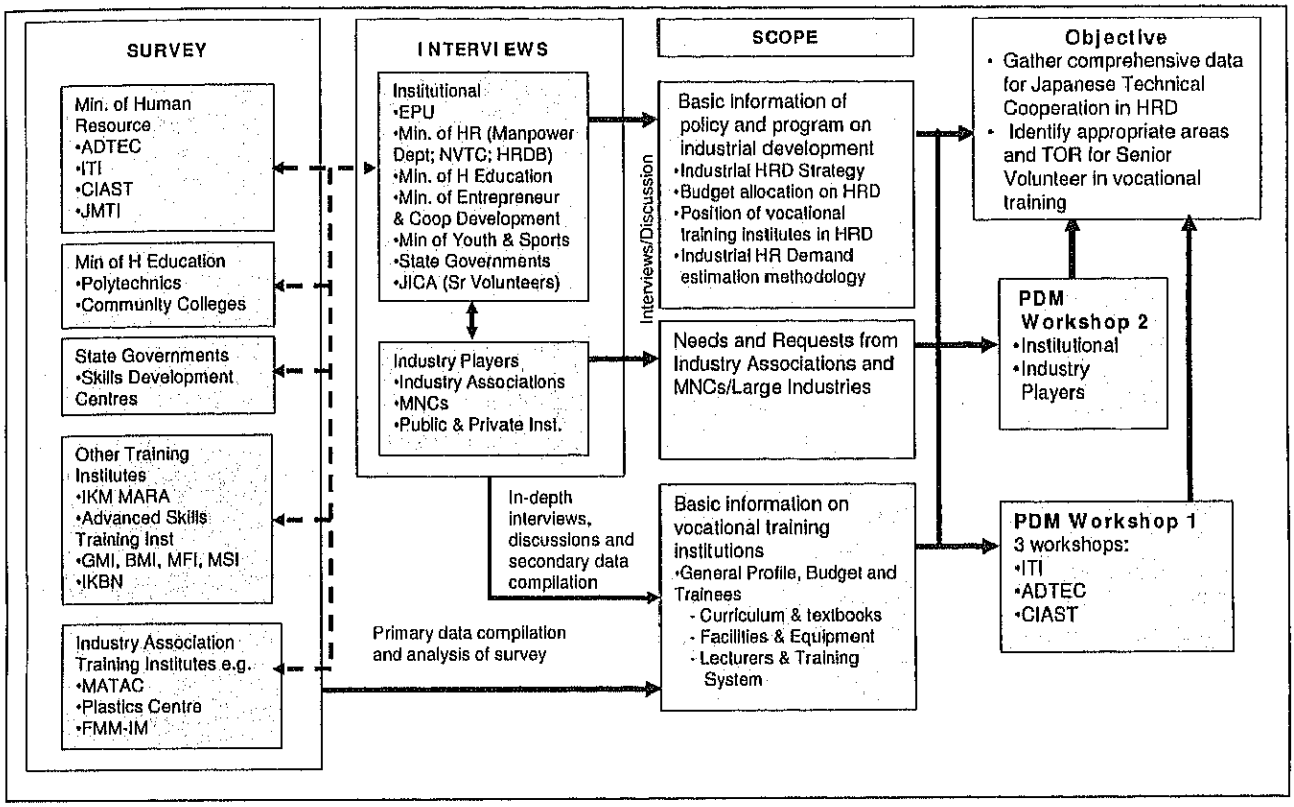
[5] This baseline study was carried out by Ms Lim Pao Li (Leader), Mr Lee Shok Mee (Researcher), Ms Lim Wei Chen (Researcher), and Mr T Rajavijayan (Data Analyst) with assistance from Mr Greg P Lopez, Ms Kwan Yin Kuan and Mr Tan Seng Keat.

- Ministry of Youth and Sports: Skills Training Division

Interviews with Industry Associations: Interviews were also conducted with industry associations.

The list of persons and institutions met is compiled in **Annex 2.**

Figure 1.1: Overview of Work Plan and Approach



1.3 Definition

Historically, **vocational training** is related to the apprenticeship system of learning which prepares students for careers which are traditionally non-academic and directly related to a trade, occupation or vocation. In fact it is defined as training for a specific vocation in industry, agriculture or trade. It is usually considered as a form of secondary or post-secondary education and does not fall under the traditional definition of "higher education".

Thus vocational skills can be defined as "non-academic skills that fulfil the needs of a skilled workforce in today's increasingly high tech industry"[6]. While vocational skills can also be acquired through "on-the-job" training, in Malaysia these skills are usually acquired through various technical schools, skills training institutions or polytechnics available throughout the country.

As the labour market becomes more specialised and economies are demanding more skills, governments and business are increasingly investing in the vocational education through public-funded training organisations and subsidised apprenticeship or traineeship initiatives for businesses. Vocational education has diversified over time and now exists in industries such as retail, tourism, IT and personal services (e.g. hair dressing and cosmetics).

[6] Training Guide Malaysia 2003.

Notwithstanding the wide range of vocational education and training, for this baseline study, the focus will be on vocational training institutes that cater for industrial human resource development.

1.4 Structure of Report

This report is divided into two volumes.

Volume 1 of the Final Report is divided into seven chapters.

Chapter 1 presents the background on the Malaysian economic development, objectives and approach of the study.

Chapter 2 reviews the secondary documents relevant to this study.

Chapter 3 gives an overview of the Malaysian education system.

Chapter 4 presents the Malaysian policies on HRD as extracted and compiled from the various Malaysian policy documents including the Outline Perspective Plans and the various Malaysian Plans. Included in this chapter are the key policy recommendations from the (draft) Human Resource Development Master Plan.

Chapter 5 highlights the role and involvement of the various institutional stakeholders in the provision of vocational training for the industrial sector.

Chapter 6 presents the current situation on technical and vocational education based on findings from the three PCM Workshops, feedback from the Senior Volunteers, analyses of the institutional survey as well as the industry survey.

Volume 2 of the Final Report contains detailed notes and information compiled as inputs for the study. Also included in this volume are the supporting documents (including questionnaires used) and the statistical tabulations from the various surveys. The full report from the three PCM workshops that were conducted in January 2005 is also included.

2. Review of Secondary Documents

Over the last decade, there has been significant studies and research carried out on vocational education and training (VET) in Malaysia. While it is not the objective of this baseline study to discuss in depth the contents of these documents, the following table highlights the main issues discussed as well as the findings from the various documents.

No	Documents	Subject/Topic	Main Issues Discussed/Findings
1	Training in Malaysia (6th Edition) (2003)	Training Directory Guide – reference on training institutions and courses offered in Malaysia	Comprehensive directory of training facilities throughout the country. Information also available in website: www.trainingmalaysia.com
2	Project Completion Report on the Technical and Vocational Education Project in Malaysia (2004) Asian Development Bank	Loan project to support Government of Malaysia's efforts to address shortages in skilled and technical labour due to rapid industrialisation and technological development. Objectives of project to improve quality of TVE, increase access to TVE, and enhance internal efficiency and cost effectiveness.	PCR evaluated performance of Project: Relevance – relevant to overall TVE development and policy; significant enrolment increases. Efficacy – contributed towards meeting increased demand for all categories of skilled workers, technicians and professional engineers. Efficiency – achieved partial low internal efficiency because enrolment was lower than capacity; achieved high internal efficiency due to highly trained and qualified professional teachers. Achieved high external efficiency - enabled more students to enter institutions of higher education & polytechnics, relevance of curricula & skills for market needs as perceived by employers, improved quality of TVE resulting in higher employment levels. Sustainability – operational budget allocation for TVE increasing and expected to be sustainable. Other Impacts – socio-economic impacts; increase in female enrolment. Overall – Major increase in STS/SVS graduates. Project rated successful.

No	Documents	Subject/Topic	Main Issues Discussed/Findings
3	Executive Summary of Draft Human Resource Development Master Plan (2004)	A set of HRD policies to springboard Malaysia into the k-economy.	Need to improve education's foundations and achievements; Need to improve Malaysia's workforce position; Need to improve collaboration between government, industry and education. (Please see **Section 3.5** for key policy recommendations for VET Sector)
4	Benefit Monitoring and Evaluation Report for Internal Efficiency, External Efficiency and Benefit, Monitoring and Evaluation System of Technical and Vocational Education in Malaysia (2002) ISIS Malaysia	Tracer study of workers that had graduated from vocational and technical schools before 2000.	Selected indicators of Employability[7]: Average months waiting for 1st job – 7.85 % of graduates working as technical workers – 45.2 % graduate claim that job is matching – 79.8 % graduate claim to have rightly chosen technical/vocational field – 79.6 Selected employers' good perceptions of strengths of graduates[8]: Having satisfactory skills – 81.9% Easy to retrain in other skills – 75.0% Having teamwork skills – 76.4% Reliability and efficiency – 79.2% High adaptability – 83.4% STS/SVS courses suitable to job required – 70.8%
5	Vocational Education and Training Reform: Matching Skills to Markets and Budgets (Chapter 8 – Malaysia) A World Bank and ILO Study (2000)	Discusses vocational education and training policy in Malaysia with focus on cost and relevance.	Surveys show that about one-third of firms in Malaysia provide no training for workers, about half rely on informal training alone, and only a fifth provides formal training. Private providers are the most common external source for employer-sponsored training. Employer surveys indicate that in-house and private external training have the highest payoffs and that training in government institutions has the lowest productivity. The most popular choices among firms are private institutes and joint venture skill development centres. The least popular external sources used for employer training are youth training centres and vocational and technical schools.
6	Lifelong Learning in Malaysia (2003) by Dr Mohamed Rashid Navi Bax & Dr Mohd Nasir Abu Hassan	Presents an overview of the lifelong learning policies, education and training pathways, initiatives and practices in Malaysia	Many different players providing different and sometimes similar initiatives and forms of lifelong learning to the various stakeholders. Not an optimum allocation of resources. Challenges facing the implementation of lifelong learning in Malaysia include the (i) need for developing a Malaysian qualifications framework, (ii) changing mindsets to create a learning society and better coordination and (iii) collaboration between ministries/ agencies and other stakeholders. Needs to be aggressively promoted and widely shared.

[7] Source: BME (2002), Table 6.2.
[8] Source: BME (2002), Table 5.8.

No	Documents	Subject/Topic	Main Issues Discussed/Findings
7	Aspects of Vocational Education and Training in Malaysia – International Report from the Inspectorate (1998) The Further Education Funding Council, England	Surveyed VET including curriculum and how education and training respond to needs of employers; Explored role of private sector in provision of VET including aspects of funding, resourcing and quality assurance	Role of Vision 2020 and 7th Malaysia Plan in driving forward technical education and skills training. Contribution of private sector to VET. Support from overseas governments as well as MNCs especially in skills training. Establishment of centres of excellence to promote and deliver technical skills training.
8	Malaysia Meeting Labor Needs: More Workers and Better Skills – Chapter IV (1995) World Bank document	Discusses supply-side issues in industrial skills training as well as demand-side incentives for training	Need to strengthen coordination among training institutions to avoid duplication; need for ongoing analysis of internal and external efficiency in training provision; considerable variation in performance of public training institutions; need for streamlined reporting and monitoring of private training institutes.
9	Training and Skills Development in the East Asian Newly Industrialised Countries: a comparison and lessons for developing countries (1997) By Zafris Tzannatos & Geraint Johnes in Journal of Vocational Education and Training, Volume 49, No. 3	Examined organisation and funding of training in a sample of NIEs (with one section on Malaysia)	Lends support to the argument that there is no single training system appropriate for all countries; depends on country's developmental stage and characteristics. Section on Malaysia highlighted flaws in VET system: old VET system had low pass rates and weight attached to marks in vocational subjects was low relative to time spent; very limited practical experience in the form of OTJ training or company visits. Despite increases in output from MARA VTIs and polytechnics, they are not the major providers of in-service training as firms prefer training in-house. Local market outcomes of public training institutions are inferior to those of corresponding private sector institutes.
10	Malaysia: Firm Competitiveness, Investment Climate and Growth (2003) World Bank	Report explored firm competitiveness, investment climate and growth in Malaysia through a survey of 1,300 firms. The objective is to identify the key constraints to competitiveness as perceived by the firms.	Four key constraints: • Significant regulatory burden; • Onerous regulation (especially for services sector); • **Severe skills shortage;** • Weak innovators.

No	Documents	Subject/Topic	Main Issues Discussed/Findings
11	Impact Evaluation Study of the Technical and Vocational Education Projects in **Malaysia**, Pakistan, PNG and Sri Lanka (1999) Asian Development Bank	To assess the long-term impact of the assistance provided by ADB to TEVT in targeted developing member countries (DMCs).	Projects had significant development impacts in all countries but have not been sustained except in Malaysia as the T&V schools continue to be well-provided in terms of facilities, equipment, teachers and consumable and other support materials. However, like the other DMCs, they have little linkage with industries. For Malaysia the study recommends that there is a need to upgrade the science, mathematics and English proficiency programmes of the upper secondary academic schools in support of the country's drive to develop high-technology industries as well as upgrading the VTIs to directly supply skilled workers to industry.
12	Strategic Review of Technical Education and Skills Training (TEST) in Malaysia – Strategic Options Paper (1998) By Deetya International Services	Analyses profile of Malaysian public TEST system: Small, providing access for only 10% of youth cohort; Individual institutions are small with less than 1,000 enrolments – many operating well below maximum capacity; Not able to change quickly to meet emerging needs due to size, nature of the facilities and rigidity of system; Four ministries involved in public provision of TEST – some coordination but fails to produce the efficiencies and effectiveness required. High cost both in terms of capital and operation.	Challenges and Priorities: Tightening job market puts youths without skills and adults without access to upskilling and retraining at risk – strong equity & economic arguments to expand TEST. Restricted opportunities for early school leavers and those without good SPM results. Jobs for skilled operatives expected to grow – provide entry points to careers. Role of GiatMARA essential and should be upgraded. System must be flexible – must have rapid response capability to meet industry needs. Strategic Options: Supports moves to provide NVTC with legislative status to enhance its role as principal link with industry and as the regulator and facilitator of private sector institutions. Series of options for improvement of public TEST – sets out measures which can be taken to improve efficiency, effectiveness and coordination of public system
13	National IT Agenda (1996)	Provides the framework for a co-ordinated and integrated approach to enable Malaysia to develop into an information and knowledge-based society by 2020	NITA focuses on the development of people, infostructure and applications to create value, to provide equity and access to all Malaysians, and to qualitatively transform our society into a values-based knowledge society by the year 2020.

No	Documents	Subject/Topic	Main Issues Discussed/Findings
14	K-Economy Master Plan (2002) ISIS Malaysia	This Master Plan charts the course for the development of Malaysia from an input-driven economy to a knowledge-based economy in order to fulfil the goals of Vision 2020.	A total of 136 recommendations to be undertaken in seven critical areas, of which HRD has been identified as the most important. The 7 critical areas are: 1. To cultivate and secure the necessary human resources. 2. To establish the institutions necessary to champion, mobilise and dive the transition to a K-based economy. 3. To ensure the incentives, infrastructure and infostructure necessary to prosper the optimal and ever-increasing application of knowledge in all sectors of the economy and the flourishing of knowledge-enabling, knowledge-empowering and knowledge-intensive industries. 4. To dramatically increase capacity for the acquisition and application of science and technology (including ICT) in all areas. 5. To ensure that the private sector is the vanguard of the K-based economy's development. 6. To develop the public sector into a K-based Civil Service. 7. To bridge the knowledge and digital divide.

3. Malaysian Education System

3.1 An Overview

This chapter[9] of the report presents an overview of the Malaysian Education System and describes the various routes to attain various qualifications (**Figure 3.1**). The Malaysian **formal school system** is divided into the primary (6 years), lower secondary (3 years), upper secondary (2 years) and sixth form (2 years) levels. At the end of two years of upper secondary education all students sit for the *Sijil Pelajaran Malaysia*[10] (SPM) examination. After SPM, qualified students can seek proceed for pre-university education at matriculation colleges (1 year) or to Form 6 (2 years). At the end of the Sixth Form, students sit for the *Sijil Pelajaran Tinggi Malaysia*[11] (STPM) which is the main qualification needed for entry into universities. Other options include proceeding to other forms of tertiary education at community colleges, polytechnics, or other training institutions and universities.

Under the Ministry of Education the **formal technical and vocational education system** starts at the upper secondary level, which consists of secondary technical and secondary vocational schools. These schools offer courses in three streams:

- technical education stream;
- vocational education stream; and
- skills training stream.

The course structure of the technical and vocational streams covers the same core subjects as in other upper secondary academic schools. In addition, the vocational stream student selects a package of vocational subjects in accordance with the vocational course chosen. In the technical stream, the subject offerings are more science and mathematics based while technical subjects offered are less practical in nature. In the skills training stream, more emphasis is given to practical work to develop competency in trade skills as required by related industries.

At the **post secondary** level the training activities at both technician/sub-professional and craft levels are carried out mainly by the Ministry of Higher Education[12], Ministry of Human Resources, Ministry of Youth and Sports, Ministry of Entrepreneurial and Cooperative Development and others. In addition, the State Governments and industry are also involved in training (**Table 3.1**).

At the **public tertiary education** level there are currently 11 public universities[13] and 6 university colleges that offer courses at the diploma, degree and post-graduate levels. Entry to diploma courses is based on the SPM while the entry to degree courses is based on the STPM.

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[9] The section of the report draws heavily from the working document on Lifelong Learning in Malaysia prepared by Dr Mohd Rashid Navi Bax and Dr Mohd Nasir Abu Hassan for the International Policy Seminar co-organised by IIEP/UNESCO and KRIVET (2003) as well as from Education Indicators in Malaysia – An International Comparison by the Ministry of Education (2003).

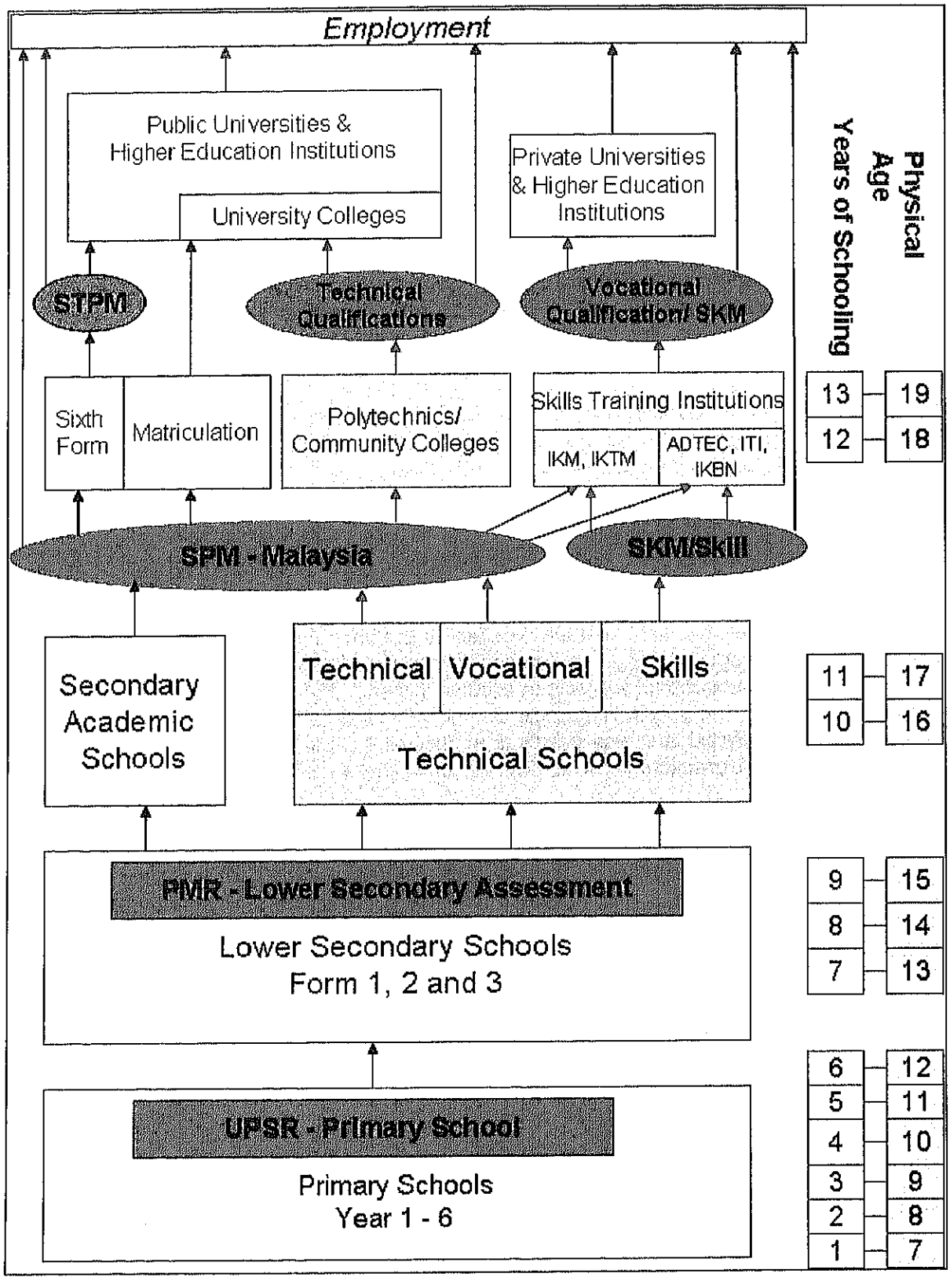
[10] Malaysia Certificate of Education.

[11] Higher School Certificate.

[12] Previously it was carried out by the Ministry of Education.

[13] The 11 public universities are: Universiti Malaya (UM), Universiti Sains Malaysia (USM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Teknologi Malaysia (UTM), International Islamic Univiersity Malaysia (IIUM), Universiti Utara Malaysia (UUM), Universiti Malaysia Sarawak (UNIMAS), Universiti Malaysia Sabah (UMS), Universiti Pendidikan Sultan Idris (UPSI), MARA University of Technology (UiTM).

Figure 3.1: Pathways in the Malaysian Education System



Source: Adapted from Figure 1 in working document on Lifelong Learning in Malaysia prepared by Dr Mohd Rashid Navi Bax and Dr Mohd Nasir Abu Hassan for the International Policy Seminar co-organised by IIEP/UNESCO and KRIVET (2003).

Table 3.1: Provision of TVET - Ministries, Institutions and Qualifications

Ministry/Agency	Institutions	Qualifications
Ministry of Education/ Ministry of Higher Education	Secondary Technical/Vocational schools	Malaysian Certificate of Education (MCE)
	Technical Teachers Training College	Technical Teachers Teaching Diploma (3 yrs)
	Polytechnics	Full-time Technician Certificate (2 yrs) / Diploma (3 yrs) except Marine Engineering Diploma (4 yrs)
	Community College	Certificate (2 yrs) / Diploma (3 yrs)
Ministry of Human Resources	Industrial Training Institutes (ITI)	Basic trade skills (1-1.5 yrs leading to SKM Level 1 or 2 Certification. Short Courses
	Advanced Technology Training Centres (ADTEC)	Diploma in Technology (2-3 yrs)
	Centre for Instructor and Advanced Skill Training (CIAST)	a) 3 yrs instructor training diploma b) Short Courses
	All Institutions registered with National Vocational Training Council (NVTC)	National Occupation Skills Standards-Malaysia Skill Certificate (SKM) Levels 1-3
Ministry of Youth & Sports	National Youth Training Institute	Skill Certificate (SKM) Levels 1-3 (18-24 months)
	National Youth Advanced Skill Training Institute	Skill Certificate (SKM) Level 3
Ministry of Entrepreneurial and Cooperative Development	Mara Skill Training Institutes	Skill Certificate (SKM) Levels 1-3 (18 months)
	Giat Mara Centres	Trade Certificate (6-12 months)
	Mara Business Institute	Certificate, Diploma, Advanced Diploma
	German Malaysia Institute	Diploma (3 yrs)
	British Malaysia Institute	Higher National Diploma (HND)
	Malaysia France Institute	Diploma (3 yrs)
	Malaysia Spanish Institute	Diploma (3 yrs)
Ministry of Agriculture	Agriculture Institutes	Certificate in Agriculture (3 yrs)
Ministry of Health	Various Colleges and Institutions	Certificate (2 yrs) and Diploma (4 yrs) in various health related occupations
Federation of Malaysian Manufacturers	FMM Institute of Manufacturing	Certificates and Diploma (2-3 yrs) in various fields. Short Courses.
States	State Skill Development Centres	Certificates and Diploma in various fields. Short Courses.

Source: Adapted and updated from Table 2 in working document on Lifelong Learning in Malaysia prepared by Dr Mohd Rashid Navi Bax and Dr Mohd Nasir Abu Hassan for the International Policy Seminar co-organised by IIEP/UNESCO and KRIVET (2003).

The operational definition for the Malaysian education system corresponding to the definitions developed in the 1997 revision of the International Standard for Classification of Education (ISCED) is shown in the table below.

Table 3.2: Operational Definition of Malaysian Education System and ISCED

Malaysian Level	ISCED Code	Definition in Malaysian Context
Pre-primary education	ISCED 0	Corresponds to Pre-school, includes programmes of education for children at least four years of age that involved organised, centre-based instructional activities. At this level in most countries, education is not compulsory.
Primary education	ISCED 1	Includes programmes that are designed to give students a sound basic education in reading, writing and mathematics, along with an elementary understanding of other subjects such as science, art, music, Islamic education, moral studies and local studies. This programme has a theoretical starting age of six and a theoretical duration of six years.
Lower secondary education	ISCED 2	Corresponds with Lower Secondary Education (Forms 1 – 3) and the Remove Class. Pupils from national primary schools enter Form 1 whereas pupils from Chinese and Tamil medium schools proceed to a transition year (Remove Class) before entering Form 1. However, pupils who have performed well in the Primary School Achievement Test are allowed to proceed directly to Form 1. Lower secondary education has a theoretical starting age of 12 and a theoretical duration of three years. The Remove Class has a theoretical starting age of 12 years and a theoretical duration of one year. After Remove Class students proceed to Form 1.
Upper secondary education	ISCED 3C	Corresponds to Upper Secondary Education: Academic Streams (Forms 4 – 5) and Technical and Vocational Skills Education (Forms 4 – 5). These programmes have a theoretical starting age of 15 and a theoretical duration of two years.
	ISCED 3A	Corresponds to Pre-university Education (sixth form, GCE A-Level and matriculation). These programmes have a theoretical starting age of 17 and a theoretical duration of two years.
Post-secondary non-tertiary education	ISCED 4C	Corresponds to the Skill Training Programme conducted by other ministries such as Ministry of Human Resource, Ministry of Agriculture, Ministry of Youth and Sports, and in private institutions. These programmes have a theoretical starting age of 17 and a theoretical duration of one to two years.
Tertiary education	ISCED 5B	Includes programmes in Teacher Training Colleges and Polytechnics. These programmes have a theoretical starting age of 18 and a theoretical duration of two to four years.
	ISCED 5A	Includes programmes that lead to a bachelor's degree, other professional degrees in medicine, dentistry and veterinary science and master's degree. The bachelor's degree programmes have a theoretical starting age of 20 and theoretical duration of three years. These professional degree programmes have a theoretical starting age of 20 and theoretical duration of five to six years. These master's degree programmes have a theoretical starting age of 23 and theoretical duration of one to 2 years.
	ISCED 6	Includes Doctoral programmes and Post Doctoral programmes. The theoretical starting age for the Doctoral programme is 24 years with a minimum duration of three years, while the theoretical starting age for the Post Doctoral programme is 27 with a theoretical duration of one year.

Source: Education Planning and Research Division, Ministry of Education

3.2 Education Statistics

Malaysia has achieved remarkable progress in education. From 1970 to 2000 primary school enrolment ratios rose from 88% to more than 98% while secondary school enrolment ratios has more than doubled. All these efforts in promoting education are reflected in the following indicators[14]:

Literacy Rate for 10 years and above:	91.0%
Literary Rate for 10 to 64 years:	93.5%
Person aged 6 years and over who have attended school:	90.2%
Persons aged 20 years and over with higher education:	16.0%

Available education data from the Census are limited to four levels i.e., pre-school (aged 5+), primary (aged 6+ to 11+), secondary (aged 12+ to 16+) and tertiary (aged 17+ to 23+) as shown in the table below.

Table 3.3: Population Growth Rate by Age Cohort, 1991 and 2000

	Pre-School	Primary	Secondary	Tertiary
	Aged 5+	Aged 6+ to 11+	Aged 12+ to 16+	Aged 17+ to 23+
1991	479,700	2,459,700	1,878,100	2,439,400
2000	511,700	3,004,100	2,435,200	3,139,300
Compounded Average Annual Growth Rate (CAGR)	0.7%	2.2%	2.9%	2.8%

Source: Department of Statistics

In terms of enrolment rate in comparison with total population in the respective age cohorts, there has improvements between 1991 and 2000 for all categories except for primary enrolment rate which registered a small decline. Pre-school enrolment rate increased from 74.3 per cent (1991) to 80.1 per cent (2000). Secondary school enrolment also increased from 69.7 per cent to 80.0 per cent. The most significant achievement was noted in upper secondary school enrolment which showed a significant 50 per cent increase during the same period. This was largely due to the removal of the education system bar after the lower secondary education (PMR – lower secondary evaluation) in the early 1990s.

In terms of tertiary education, the proportion of post-secondary and college enrolment increased from 18.9% to 24.1% whereas higher education has tripled. **Table 3.4** shows the total population for the relevant age cohorts and enrolment rates by the various levels for the year 1991 and 2000.

The increase in enrolment is reflected in the absolute numbers of student candidates for the primary, lower secondary and upper secondary qualifying examinations which have been increasing for the last 5 year period consistent with the population growth rate (**Table 3.5**).

[14] Source: Department of Statistics, Census 2000.

Table 3.4: Enrolment by Educational Level

Level	Age Category	Total Population		Enrolment Rate (% over total population)	
		1991	2000	1991	2000
Pre-School	5+	506,300*	509,250	74.3%*	80.1%
Primary	6+ to 11+	2,459,700	3,051, 400	99.7%	98.5%
Secondary	12+ to 16+	1,870,800	2,488,800	69.7%	80.0%
Lower	12+ to 14+	1,135,300	1,492,100	83.0%	84.4%
Upper	15+ to 16+	735,500	996,700	49.1%	73.5%
Tertiary	17+ to 24+	2760,200	3,833,800	7.1%	13.6%
Post-Secondary, College	17+ to 18+	732,100	992,200	18.9%	24.1%
Higher Education	19+ to 24+	2,028,100	2,841,600	2.9%	9.9%

** Data is for the year 1997*

Source: Department of Statistics, Census 1991 and Census 2000.

Table 3.5: Results of PMR, SPM and STPM Examinations (Ministry of Education Schools only)

	1999	2000	2001	2002	2003
PMR Candidates	371,508	392,962	395,578	388,622	406,306
% PMR with minimum results	54.8%	53.2%	55.8%	62.7%	61.5%
SPM Candidates	293,476	341,842	322,789	350,015	357,793
% SPM Passes	70.0%	86.8%	89.8%	90.3%	90.9%
STPM Candidates	26,169	29,723	29,341	35,131	43,202
% STPM Passes	95.4%	94.3%	94.8%	94.5%	95.2%

PMR = Penilaian Menengah Rendah / Lower Secondary Evaluation (Lower Secondary public examination)
SPM = Sijil Pelajaran Malaysia / Malaysian Certificate of Education (Upper Secondary public examination)
STPM = Sijil Tinggi Pelajaran Malaysia / Malaysian Higher Certificate of Education
Source: Ministry of Education

Although post-secondary skills achievement (those with certificate, diploma or degree qualifications) was 8.5 per cent, those with engineering and skills qualification accounted for only 1.25 per cent (**Table 3.6**). The main fields of tertiary education for overall population with tertiary qualification are still social science, business and law studies (35 per cent) while engineering, construction and skills training comprising 23 per cent (**Figure 3.2**).

Table 3.6: Post Secondary Skills Achievement, 2000

	Total	Male	Female
Total 15 – 64 Population	14.62 million	7.45 million	7.17 million
15 - 64 Population with Post Secondary Qualifications	1.25 million	0.71 million	0.54 million
As % of Total 15-64 Population	*8.5%*	*9.5%*	*7.5%*
15-64 Population with Engineering & Skills Qualifications	0.18 million	0.16 million	0.02 million
As % of Total 15-64 Population	*1.25%*	*2.10%*	*0.38%*
As % of 15-64 Population with Post-Secondary Qualifications	*14.7%*	*22.1%*	*5.1%*

Source: Department of Statistics, Census 2000.