Most of the respondents conduct worker training in house using internal staff (78%) while 71% use external trainers but conduct the training internally. 60% of the respondents send workers to VTIs for training. The survey shows that more non-Japanese MNCs tend to send workers to VTIs for training (83% compared to 58%) as showed in the table below.

Table B1.30: Approaches for Worker Training (Multiple Answers)

	N=58	Send worker to VTIs	Conduct internally with external trainers	Conduct internally with internal staff
Local Companies	**14**	**57.1%**	**78.6%**	**85.7%**
SMIs	9	44.4%	66.7%	88.9%
Large Firms	5	80.0%	100.0%	80.0%
Non-Japanese MNCs	**6**	**83.3%**	**83.3%**	**83.3%**
SMIs	1	100.0%	-	-
Large Firms	5	80.0%	100.0%	100.0%
Japanese MNCs	**38**	**57.9%**	**65.8%**	**73.7%**
SMIs	9	11.1%	55.6%	66.7%
Large Firms	29	72.4%	69.0%	75.9%
All Firms	**58**	**60.3%**	**70.7%**	**77.6%**

Source: Industry Survey by PE Research & JICA

Table B1.31 summarises the types of industrial training that are currently relevant to industry as well as those that will be relevant in the next three years.

Table B1.31: Types of Industrial Training Relevant to Industry

Type of Industrial Training	Relevant Currently		Relevant In Next 3 years	
	Local Firms	Non-Japanese MNCs	Local Firms	Non-Japanese MNCs
Agricultural Science	5		1	1
Mechatronics	3	1	2	1
Electrical Engineering	1	2		1
Electronics Engineering	3		1	
Automated Assembly Process	1	1		
Injection Moulding		2		
Mechanical Engineering	2			2
Information Technology	1		1	
Business Management		1		
Tooling and Fabrication	1		1	
Production Technology	1			
Product Designing	1			
RF Technology	1		1	

Source: Industry Survey by PE Research

Most of the respondents indicated that the training relevant to their industry is available either in public or private VTIs (**Table B1.32**).

Table B1.32: Industry Response to Availability of Training Relevant to their Industry

	Local Companies	Non-Japanese MNCs	Overall
Number of Respondents	14	6	20
Industrial Training Relevant to Current Industrial Needs Available in Malaysia?			
Yes, available in Public VTIs	85.7%	100.0%	90.0%
Yes, available in Private VTIs	71.4%	83.3%	75.0%
Industrial Training Relevant to Current Industrial Needs Available in your Area?			
Yes, available within my District	42.9%	33.3%	40.0%
Yes, available within my State	85.7%	83.3%	85.0%
Industrial Training for Future Industrial Needs Available in Malaysia?			
Yes, available in Public VTIs	78.6%	83.3%	80.0%
Yes, available in Private VTIs	78.6%	83.3%	80.0%

Source: Industry Survey by PE Research

Despite the average perception regarding the ability of their employees from VTIs, some of the respondents indicated their assessment on the strengths and weaknesses of VTIs. This assessment is largely based on the firms' experiences in employing technical and vocational graduates. A summary of the strengths and weaknesses of public and private VTIs is shown in the following table.

Table B1.33: Assessment of Strengths and Weaknesses of Public and Private VTIs

	Local Companies		Non-Japanese MNCs		Overall	
	Public VTI	Private VTI	Public VTI	Private VTI	Public VTI	Private VTI
Strengths						
Full range of equipment/facilities	✓				✓	
Cover various technical fields	✓				✓	
Graduates willing to learn new technology	✓	✓			✓	✓
Graduates independent/resourceful	✓	✓			✓	✓
Graduates have strong theoretical base	✓	✓	✓	✓	✓	✓
Graduates have strong practical base	✓	✓	✓	✓	✓	✓
Experienced/Qualified Trainers		✓		✓		✓
Understand industry needs/market driven		✓				✓
Reasonable cost for training	✓				✓	

	Local Companies		Non-Japanese MNCs		Overall	
	Public VTI	Private VTI	Public VTI	Private VTI	Public VTI	Private VTI
Weaknesses						
Lack advanced/latest equipment and facilities	✓	✓			✓	✓
Graduates lack work commitment	✓		✓	✓	✓	✓
Graduates lack practical knowledge	✓		✓	✓	✓	
Graduates lack communication skills	✓		✓	✓	✓	✓
Trainers lack industry/practical experience	✓	✓			✓	✓
Training are more towards theoretical	✓				✓	
Training not related to current industry needs	✓		✓		✓	
High cost for training		✓		✓		✓

Source: Industry Survey by PE Research

To wrap up the industry survey, the respondents were asked to indicate their most preferred VTI in Malaysia. In the case of local companies, two thirds of them indicated that the most preferred VTIs are GMI and the State Skills Development Centres. For non-Japanese MNCs, 83% indicated that their preferences are polytechnics.

B1.3 Survey of Senior Volunteers in VTIs

Since the Senior Volunteers programme started in 1990, around 700 Senior Volunteers have been dispatched to countries in Asia, Middle East, South America and the Pacific. Among them, Malaysia tops the list in the number of volunteers received. According to JICA records, for the period 1991 – 2001, Malaysia has received 89 Senior Volunteers.

Senior Volunteers are selected experts who work on voluntary basis to collaborate with the receiving institutions. Their status is, therefore, different from that of JICA Experts who work for specific project being paid salary and other allowance, or from JICV youth volunteers who are dispatched for co-operation at grass-root level, aiming at self-development.

The assignment period of the Senior Volunteers is basically one or two years, but it may be extended for another one year if the receiving institute through its government officially requests it. The maximum total period is limited to three years.

Senior Volunteers, as expert, will provide professional advice or consultancy service to their counterpart and institution, and pursue transfer of technology in specific technical field or general aspect of work which is required by the receiving institution[4].

B1.3.1 Dispatch of Senior Volunteers

Currently, JICA has assigned a total of 21 Senior Volunteers to various vocational training institutions throughout the country as shown in **Table B1.34**. The assignments of the SVs are for a period of 2 years.

Out of these 21 SVs, 16 SVs are assigned to the training institutions under the Manpower Department of the MOHR; two are assigned to Community Colleges under the Ministry of Higher Education, one each to the KISMEC, TATI and a MARA Skills Institute.

Table B1.34: Senior Volunteers Presently Assigned To Vocational Training Institutions

No	Name	Field of Service	Assignment Place	Duration	
				From	To
1	Seiji Kato	Telecommunication Technology	ADTEC Melaka	4-Apr-03	3-Apr-05
2	Iwano Maruyama	Mechatronic Engineering Technology	ADTEC Melaka	24-Nov-03	23-Nov-05
3	Tadahiko Wada	Advanced Material Technology (Plastic)	ITI Melaka	8-Apr-04	7-Apr-06
4	Junichiro Nakamura	Electronic Engineering Technology	ADTEC Shah Alam	4-Apr-03	3-Apr-05
5	Takahisa Kusumoto	Japanese Language Training	CIAST	4-Apr-03	3-Apr-05
6	Yasuhiro Kida	Electrical Engineering Technology (Power)	ADTEC Shah Alam	22-Nov-03	21-Nov-05
7	Akira Takano	Integrated Manufacturing Technology	College Community Management Division	4-Apr-03	3-Apr-05
8	Akihiko Takeda	Electric Technology	College Community Management Division	22-Nov-03	21-Nov-05

[4] Source: www.jica.org.my

No	Name	Field of Service	Assignment Place	Duration	
				From	To
9	Shinichi Okada	Foundry Technology	ITI Ipoh	4-Apr-03	3-Apr-05
10	Shigeharu Achiha	Automotive Engineering	IKM Lumut	2-Nov-04	2-Nov-06
11	Hiroshi Maruyama	CNC Machining Technology	ITI Kota Samarahan	4-Apr-03	3-Apr-05
12	Yoshio Kiuchi	Welding Technology	ITI Kota Samarahan	22-Nov-03	21-Nov-05
13	Katsuhiko Suyana	Electronic Engineering Technology	ADTEC Kulim	8-Apr-04	7-Apr-06
14	Michio Kobayashi	Plastic Technology Advisor	Kedah Industrial Skills & Management Centre (KISMEC)	8-Apr-04	7-Apr-06
15	Shoichi Kasaya	Industrial Electronics	ITI Kangar	8-Apr-04	7-Apr-06
16	Mizune Sakato	CADD Mechanical	ITI Kota Kinabalu	8-Apr-04	7-Apr-06
17	Katsuya Hamamoto	Industrial Design	ITI Kota Kinabalu	2-Nov-04	1-Nov-06
18	Takehisa Harako	CADD Mechanical	ITI Pedas	8-Apr-04	7-Apr-06
19	Yasuhisa Kanai	Electronics	ADTEC Batu Pahat	2-Nov-04	1-Nov-06
20	Yoku Yamagami	Mechatronics	ADTEC Batu Pahat	2-Nov-04	1-Nov-06
21	Yoshimi Koya	Polymer & Plastic Technology	Trengganu Advanced Training Institute	2-Nov-04	1-Nov-06

B1.3.2 Feedback from Senior Volunteers

In order to get the views of the Senior Volunteers assigned to the various VTIs, a questionnaire survey was designed and with the assistance of JICA, the questionnaires (in Japanese) were distributed to the Senior Volunteers. By the end of December 2004, 14 completed questionnaires were submitted to JICA.

Analysis of the respondents shows that 11 of the respondents are assigned to VTIs under the Manpower Department of MOHR, one at KISMEC while two are at the Management of Community Colleges Division of MoHEd. The areas of specialisation/expertise are: Civil Engineering (2), Mechanical Engineering (3), Electronics Engineering (3), Electrical Engineering (2), Industrial/Production Engineering (2) and Plastics Technology (2).

Role and Activities of Senior Volunteers

An analysis of the activities of Senior Volunteers show that while their current activities generally concur with their preferred activities (as shown in **Table B1.35**), the SVs indicated that they would like to have a larger role in the following activities:

- textbook creation;
- promoting co-operation and strengthening relationship with the industrial community;
- giving advice on textbooks; and
- advising the management of the institution.

Furthermore, while SVs are quite contented with their roles in giving selective lectures for lecturers (both theoretical and practical), they prefer to have a reduced role when it comes to giving theoretical instructions to students.

Table B1.35: Comparison of Current Roles and Preferred Roles of Senior Volunteers

Activity	Current Roles	Preferred Roles
Selective lectures for lecturer (practical skills)	71.4%	78.6%
Selective lectures for lecturer (theory)	57.1%	57.1%
Instructions for student (practical skills)	42.9%	35.7%
Instructions for student (theory)	28.6%	14.3%
Textbook Creation (model textbook creation, etc)	64.3%	78.6%
Advice for textbook (only advice)	50.0%	64.3%
Promoting cooperation and support with Industry	57.1%	71.4%
Advice to institution management	35.7%	64.3%
Others	50.0%	35.7%

Source: JICA SV Survey, 2004.

Perception on their Place of Attachment

Regarding their place of attachments, the SVs were asked to give their perception on four aspects - the organisation, the course contents of lectures, the equipment, and others - that need to be addressed as they have impacts on vocational training institutes **(Table B 1.36)**.

Organisation: While most SVs rated the number of management officers as no problem, more than 72% of them felt that the there are some problems with respect to the number of lecturers. However most of the SVs felt that the level of lecturers needs improvement (58% indicating that it is a serious problem and can have impacts on the VTIs).

Course Content and Lectures: Most SVs expressed the need for drastic improvement in textbooks, contents of lectures (both practical and theoretical) and curriculum as having a serious impact on VTIs.

Equipment: Although 81% of SVs consider equipment at VTIs as sufficient, almost three-quarters of them indicated there are problems regarding equipment maintenance management. They are also concerned with the degree of practical utilisation of the equipment as well as the budget of the VTIs.

Others: The SVs considered that issues on co-operation with industry need to be addressed too.

Table B1.36: SVs' Perceptions on Issues

SVs' Perceptions of Issues		Serious Problems	Some Problems	No Problem/ Good
Organisational Issues	Number of officers (mgt)	8.3%	25.0%	66.7%
	Organisation composition	9.1%	54.5%	36.4%
	Number of lecturers	-	72.7%	27.3%
	Level of lecturers	58.3%	25.0%	16.7%
Issues pertaining to Course and content of lecture	Course type	-	18.2%	81.8%
	Curriculum	38.5%	38.5%	23.1%
	Contents of lecture (theory)	18.2%	63.6%	18.2%
	Contents of lecture (practical)	40.0%	40.0%	20.0%
	Textbook	38.5%	46.2%	15.4%
	Internship system (OJT)	9.1%	27.3%	63.6%
Equipment Issues	Degree of sufficiency	-	18.2%	81.8%
	Degree of practical use	27.3%	63.6%	9.1%
	Maintenance management	18.2%	54.5%	27.3%
	Budget	-	50.0%	50.0%
Others	Cooperation with private firms	16.7%	41.7%	41.7%

Comments and Suggestions from SVs

In order to deal with the problems, the SV provided comments and suggestions and these are summed up below.

Table B1.37: Comments and Suggestions from Senior Volunteers

	For improvement of all VTIs
Organisation	Institute expansion must include increase in lecturer recruitment Technical knowledge sharing is required Insufficient number of lecturers Insufficient industry/business experience among lecturers Insufficient commitment by lecturers Lecturers for technology transfer must have practical experience
Course and Contents of Lectures	Implementation, purpose and objectives of courses not defined Amendment in NOSS required Training courses should look into both synthesis and specific nature Details on the contents of instruction need evaluation Development and usage of teaching materials in VTIs need evaluation
Equipment	Many unutilised equipment Purpose of equipment introduction not defined Scheduled inspection of equipment required

	For Improvement of all VTIs
	Specification on qualification for person in charge of equipment required Budget insufficient for equipment maintenance management

Necessity for Continuation of Dispatch of Senior Volunteers

More than 90% of the respondents indicated that it is still necessary to continue with the dispatch of SVs to their current place of attachment. However, to do so, they have indicated some conditions that will need to be addressed.

- Improvement in knowledge and skills of lecturers;
- Improvement in the NOSS curriculum and in the preparation of a national unified textbook;
- SVs need to be aware of the goals of VTIs rather than just being involved in technical instructions;
- SVs need to understand the educational level the VTIs are aiming;
- SVs need to understand the level required of the VTI staff;
- Need support from counterparts (SVs need to feel accepted by the organisation); and
- SVs dispatched must be experienced in vocational training management, instruction and production.

Other Comments

Some SVs have been providing suggestions on revision of curriculum, textbooks and how to improve the level of lecturers to handle new subjects. This will entail more co-operation been the VTIs and the SVs as well as co-operation been the line ministry and VTIs. Co-operation with industry is also essential.

Section B 2 Statistical Tabulations of VTI Interviews & Survey

A two-pronged approach was undertaken to compile both qualitative and quantitative data. The 119 vocational training institutes covered by the study are shown in the table below. In-depth interviews was conducted with 49 selected institutes to capture qualitative information on their issues, training and curriculum formulation and implementation, capacity and capability as well as strengths and weaknesses (sample interview questionnaire is in **Section B7**). In addition a mail survey questionnaire was sent to all 119 institutes to obtain quantitative data on courses offered, number of students, lecturers and available facilities (sample mail survey questionnaire is in **Section B7**).

In the case of the in-depth interviews, the selection of institutes for face-to-face interview sessions was made in the following manner.

- Institutes under the Ministry of Human Resources
  - All 4 Advanced Technology Training Centres (ADTEC)
  - 7 Industrial Training Institutes out of a total of 14, focussing in the states that were highlighted in the TOR.
  - CIAST and JMTI
- Institutes under the Ministry of Higher Education
  - 11 Polytechnics out of a total of 19, focussing in the states that were highlighted in the TOR.
  - 8 Community Colleges out of a total of 34, focussing in the states that were highlighted in the TOR.
- Institutes under the Ministry of Entrepreneur and Co-operative Development
  - 7 MARA Skills Institute (IKM) out of a total of 13, focussing in the states that were highlighted in the TOR.
  - 2 MARA Advanced Skills Institute (IKTM) out of a total of 7. The two interviewed were MSI and MICET. As per JICA's request the other institutes were not interviewed as they have been covered by an earlier study (2003) by JICA.
- Ministry of Youth and Sports
  - 1 Youth Skills Institute interviewed out of a total of 14 such institutes nationwide.
- State Skills Development Centres
  - 7 out of the 12 State Skills Development Centres, focussing in the states that were highlighted in the TOR.

The in-depth interviews were carried out between 12 October and 9 December 2004. **Annex 3** in **Volume 1** of the report lists the institutes interviewed during this period.

B2.1 Tabulation of In-Depth Interview Responses

Q1 Have the main role and objectives of this institute changed over time, i.e., change in courses etc, compared to when first started, what were the main objectives then?

Have the main role and objectives of institute changed? (missing case)				
Institution	**Institute**	**% Yes**	**% No**	**N**
Ministry of Human Resource	ITIs	-	100.0%	7
	ADTECs	-	100.0%	4
	CIAST	100.0%	0.0%	1
	JMTI	-	100.0%	1
Ministry of Higher Education	Polytechnics	9.1%	90.9%	11
	Community Colleges	-	100.0%	8
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	28.6%	71.4%	7
	MARA Advanced Skills Institutes	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	100.0%	-	1
State	Skill Development Centres	16.7%	83.3%	6 (1)
Total		**12.5%**	**87.5%**	**48 (1)**

Changes in Institutes Role and Objectives (for those that answered Yes in the table above)	
Institute	**Type of Changes**
CIAST	Changed considerably from an Instructor Training Centre with the establishment of VTRD (Vocational Training Research Division). VTRD currently undertakes the following: ▪ review of all MoHR training courses; ▪ facilitates the development and implementation of new curriculum; ▪ undertake research and tracer studies to evaluate the effectiveness of training courses and programs; and ▪ study new technology areas for future training needs.
Polytechnic Shah Alam	Indication that the polytechnic will focus only on Diploma level courses with their Certificate courses transferred to Community Colleges
MARA Skills Institute (IKM Petaling Jaya)	Started with NVTC programs, but currently changed to Business and Technology Education Council programs from United Kingdom (BTEC).
MARA Skills Institute (IKM Johor Bahru)	Additional courses introduced based on industry and technology change in Johor Bahru
National Youth Skills Training Institute (Sepang)	Initially started by offering Level 3 courses. Currently are offering Level 4 Courses under NVTC and Diploma Courses in collaboration with UiTM.
KISMEC	Initially only assisted industries by training technical and vocational skilled workers. Have expanded to offer NVTC accredited programmes.

Q2 Has the institute achieved its objectives? What are the impediments faced by your institute for not fully achieving your objectives?

Have the Institutes achieved its objectives? (missing cases)					
Institution	**Institute**	**Fully Achieved**	**Partly Achieved**	**Not Achieved**	**N**
Ministry of Human Resource	ITIs	85.7%	14.3%	-	7
	ADTECs	25.0%	75.0%	-	4
	CIAST	100.0%	-	-	1
	JMTI	100.0%	-	-	1
Ministry of Higher Education	Polytechnics	85.7%	14.3%	-	7 (4)
	Community Colleges	80.0%	20.0%	-	5 (3)
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	71.4%	28.6%	-	7
	MARA Advanced Skills Institutes	-	50.0%	50.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	100.0%	-	-	1
State	Skill Development Centres	50.0%	50.0%	-	6 (1)
Total		**70.0%**	**27.5%**	**5.0%**	**40 (9)**

Impediments faced by Institute (for those not fully achieving their objectives)	
Institute	**Impediments**
ITI Pasir Gudang	Established 20 years ago and equipment and facilities need serious upgrading. Annual upgrading budget is insufficient.
ADTEC Kulim	Institute located far from industry and almost all staff are fresh graduates.
ADTEC Batu Pahat	Employment ratio of their graduates not satisfactory. Most of their graduates are employed in areas not related to their training.
ADTEC Melaka	Poor location and poor marketing has created low demand for courses offered.
Polytechnic Kulim	Recently established and thus has yet to fully achieve their objectives
CC Chenderoh	Poor response and/or involvement from local community.
MARA Skills Institute Petaling Jaya	Technology in electronics industry changes rapidly. However, the curriculum change is slower than industry change.
MARA Skills Institute Kota Kinabalu	The NEP policy of 30 per cent Bumiputera entrepreneurs is still not met, and thus the objective of MARA is not met.
MARA Advanced Skills Institute –MSI	Recently established and has yet to start full operation
PESDC	SMIs have yet to fully capitalise on the facilities and training offered by the centre.
SSTC	Still in the stage of growing and developing directions for the training centre.
MISDC	SMIs not responsive to training of their workers.

Q3 How would you rate the institute's contribution to the needs of industry?

Self rating on contribution to industry need for skilled workforce (percentage over N)							
Institution	Institutes	Low				High	N
		1	2	3	4	5	
Ministry of Human Resource	ITIs	-	-	-	14.39%	85.7%	7
	ADTECs	-	-	50.0%	50.0%	-	4
	CIAST	-	-	-	100.0%	-	1
	JMTI	-	-	-	-	100.0%	1
Ministry of Higher Education	Polytechnics	-	-	16.7%	33.3%	50.0%	6
	Community Colleges	-	-	-	20.0%	80.0%	5
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	-	-	14.3%	14.3%	71.4%	7
	MARA Advanced Skills Institutes	-	-	-	-	100.0%	1
Ministry of Youth & Sport	Youth Skills Institutes	-	-	100.0%	-	-	1
State	Skill Development Centres	-	-	14.39%	14.39%	71.4%	7
Total		-	-	**15.0%**	**22.5%**	**62.5%**	**40**

Self rating on contribution to industry need for technology transfer (percentage over N)							
Institution	Institutes	Low				High	N
		1	2	3	4	5	
Ministry of Human Resource	ITIs	-	-	50.0%	33.3%	16.7%	6
	ADTECs	-	-	100.0%	-	-	3
	CIAST	-	-	-	100.0%	-	1
	JMTI	-	-	-	-	100.0%	1
Ministry of Higher Education	Polytechnics	-	-	33.3%	16.7%	50.0%	6
	Community Colleges	-	-	40.0%	40.0%	20.0%	5
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	-	-	50.0%	33.3%	16.7%	6
	MARA Advanced Skills Institutes	-	-	-	-	-	-
Ministry of Youth & Sport	Youth Skills Institutes	-	-	100.0%	-	-	1
State	Skill Development Centres	-	-	14.3%	42.9%	42.9%	7
Total		-	-	**41.7%**	**30.6%**	**27.8%**	**36**

Self rating on contribution to industry need for industry growth (percentage over N)							
Institution	**Institutes**	**Low**				**High**	**N**
		1	**2**	**3**	**4**	**5**	
Ministry of Human Resource	ITIs	-	-	28.6%	28.6%	42.9%	7
	ADTECs	25.0%	25.0%	-	25.0%	25.0%	4
	CIAST	-	-	-	100.0 %	-	1
	JMTI	-	-	-	-	100.0%	1
Ministry of Higher Education	Polytechnics	-	-	20.0%	80.0%	-	5
	Community Colleges	-	-	33.3%	33.3%	33.3%	3
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	-	16.7%	33.3%	33.3%	16.7%	6
	MARA Advanced Skills Institutes	-	-	-	-	-	-
Ministry of Youth & Sport	Youth Skills Institutes	-	-	-	-	-	-
State	Skill Development Centres	-	-	20.0%	60.0%	20.0%	5
Total		**3.1%**	**6.3%**	**21.9%**	**43.8%**	**25.0%**	**32**

Q4 What are the internal factors that affect the institute's capacity and capability?

Internal Positive Factor (multiple answer)	ITIs	ADTEC/CIAST/ JMTI	Polytechnics	Community Colleges	MARA Skills Centres	Youth Skills Institutes	State Skills Training Centres
Number of Cases	7	6	11	8	9	1	6
Equipment & Facility	57.1%	100.0%	45.5%	62.5%	77.8%	-	50.0%
Experienced Lecturers	42.9%	33.3%	54.5%	87.5%	33.3%	100.0%	33.3%
Committed Management & Staff	-	16.7%	36.4%	50.0%	33.3%	-	16.7%
Dev & Operational Costs Sufficient	28.6%	16.7%	18.2%	12.5%	-	-	16.7%

Internal Negative Factor (multiple answer)	ITIs	ADTEC/CIAST/ JMTI	Polytechnics	Community Colleges	MARA Skills Centres	Youth Skills Institutes	State Skills Training Centres
Number of Cases	**7**	**6**	**11**	**8**	**9**	**1**	**6**
Inexperienced Lecturers/Fresh Graduates	57.1%	83.3%	45.5%	-	22.2%	-	16.7%
Shortage of Instructors	14.3%	33.3%	45.5%	50.0%	22.2%	-	33.3%
Equipment & Facilities Need Upgrading	28.6%	16.7%	27.3%	-	33.3%	100.0%	-
Limited funding	-	16.7%	-	12.5%	44.4%	-	16.7%
Shortage of Equipments	14.3%	-	18.2%	25.0%	11.1%	-	-
Lecturer Upgrading Poor	28.6%	-	9.1%	-	11.1%	-	16.7%
Lecturers Posted Not Relevant to Field	28.6%	33.3%	-	-	-	-	-
No autonomy in hiring & firing	-	16.7%	-	-	11.1%	-	-
Equipment Upgrading Costly	--	-	-	-	11.1%	-	-

Q5 What are the external factors that affect the institute's capacity and capability?

External Positive Factor (multiple answer)	ITIs	ADTEC/CIAST/ JMTI	Polytechnics	Community Colleges	MARA Skills Centres	Youth Skills Institutes	State Skills Training Centres
Number of Cases	**7**	**6**	**11**	**8**	**9**	**1**	**6**
Industry Support Good	71.4%	66.7%	27.3%	50.0%	22.2%	-	83.3%
Govt/Ministry Support Good	42.9%	66.7%	27.3%	75.0%	-	-	66.7%
No problem with Student Placements for On-Job-Training	28.6%	-	54.5%	25.0%	22.2%	-	-
Develop training for local needs	-	-	9.1%	-	-	-	33.3%
Location good	14.3%	16.7%	-	-	11.1%	-	-
Graduates able to get occupation	-	16.7%	9.1%	-	11.1%	-	-

External Negative Factor (multiple answer)	ITIs	ADTEC/CIAST/ JMTI	Polytechnics	Community Colleges	MARA Skills Centres	Youth Skills Institutes	State Skills Training Centres
Number of Cases	**7**	**6**	**11**	**8**	**9**	**1**	**6**
Poor Demand for Training	28.6%	16.7%	27.3%	25.0%	11.1%	-	33.3%
Located far or outside industry area	14.3%	16.7%	27.3%	-	22.2%	-	-
Industry support weak	14.3%	-	9.1%	-	33.3%	-	-
No space for expansion	-	16.7%	-	50.0%	0.0%	-	-
Industry don't cooperate for student placements	14.3%	33.3%	-	-	11.1%	-	-
Physical Infrastructure need Upgrading	-	16.7%	27.3%	-	0.0%	-	-

Q6 Does the institute face any issues or problems regarding the following parameters?

	Percentages indicating issues (multiple answer)						
	ITIs	ADTEC, CIAST, JMTI	Polytechnics	Community Colleges	MARA Skills Institutes	State Skills Development Centres	Overall
Number of Respondents	7	6	11	8	9	7	48
Approval for teaching and technical staff	42.9%	33.3%	-	50.0%	22.2%	28.6%	27.1%
Recruitment of teaching and technical staff	57.1%	66.7%	9.1%	25.0%	44.4%	28.6%	35.4%
Approval/budget for acquiring equipment and facility needs	-	16.7%	9.1%	-	22.2%	-	8.3%
Utilization of equipment and facility	14.3%	16.7%	9.1%	12.5%	44.4%	-	16.7%
Funding (for programs, operational and development costs)	-	-	-	-	33.3%	28.6%	10.4%
Changing trends in industrial technologies	42.9%	66.7%	9.1%	-	44.4%	28.6%	29.2%
Co-operation from government agencies	-	-	-	-	22.2%	-	4.2%
Co-operation from industries	14.3%	33.3%	9.1%	12.5%	33.3%	28.6%	20.8%

Q7 What are the criteria used to formulate and implement a training course?

All institutes indicated that industry need and government policies are the criteria used to formulate full time courses. In the case of the Institutes under the MOHR, MoHEd, MARA and Ministry of Youth and Sports, formulation and implementation is centralised in the respective ministries. For the state skills centres, they follow the policies of the State Economic Planning Units. Short-term courses on the other hand are determined more by localised demand whereby institutes will run them if sufficient students or industries demand it.

Q8 Do the parameters indicated below influence the formulation and implementation of training course?

	Percentage of VTIs indicating "yes" (multiple answer)						
	ITIs	ADTEC, CIAST, JMTI	Polytechnics	Community College	MARA Skills Institutes	State Skills Development Centres	Overall
Number of Respondents	7	6	11	8	9	7	48
Equipment and Facility	85.7%	66.7%	81.8%	87.5%	100.0%	100.0%	87.5%
Lecturers and Trainers	85.7%	100.0%	63.6%	87.5%	100.0%	100.0%	87.5%
Co-operation from Industries	57.1%	66.7%	72.7%	87.5%	88.9%	100.0%	79.2%
Industry Trend Changes	71.4%	100.0%	63.6%	37.5%	88.9%	100.0%	75.0%
Government's Policy Change	57.1%	66.7%	72.7%	75.0%	77.8%	85.7%	72.9%
Textbooks and Reference Materials	42.9%	66.7%	36.4%	62.5%	88.9%	71.4%	60.4%
Co-operation from other Government Agencies	28.6%	50.0%	54.5%	75.0%	77.8%	71.4%	60.4%
Co-operation from Donor Agencies	-	50.0%	9.1%	-	33.3%	42.9%	20.8%

Q9 What are the processes and conditions that need to be fulfilled for accreditation?

- Institutes under the MOHR (Industrial Training Institutes, ADTECs, CIAST and JMTI) have NVTC accredited courses.
- Polytechnics and Community Colleges, their courses are recognised by the Public Service Department (LAN)
- MARA Institutes have both, i.e., certificate courses accredited by NVTC and diploma courses recognised by PSD.
- All other institutes have pre-dominantly NVTC accredited courses.

Accreditation of courses by NVTC and PSD involves annual audits of the respective curriculum, equipment, facility and teaching staff. The audit is undertaken by NVTC for competency-based training or PSD for academic based training.

Q10 What are the effects of accredited programs vis-à-vis non-accredited programs?

In most cases institutes could not identify significant differences between accredited and non-accredited programs. There are many cases where PSD does not recognise NVTC accredited courses for public sector employment and/or enrolment in public universities. However, NVTC accredited courses are accepted by the private sector, notably the SMIs due to the output of skilled workers.

Q11 How many of the courses are accredited internationally?

Are your courses accredited internationally?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	-	100.0%	7
	ADTECs	-	100.0%	4
	CIAST	-	100.0%	1
	JMTI	-	100.0%	1
Ministry of Higher Education	Polytechnics	33.3%	66.7%	9
	Community Colleges		100.0%	8
Ministry of Entrepreneurial & Co-operative Development	MARA Skills Institutes	14.3%	85.7%	7
	MARA Advanced Skills Institutes	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	1
State	Skill Development Centres	57.1%	42.9%	7
Total		21.3%	78.7%	47

Type	**Institute**	**Description**
Polytechnic	Polytechnic Seberang Perai	All Diploma Courses offered recognised by foreign universities.
	Polytechnic Sultan Abdul Halim Mu'adzam Shah	
	Polytechnic Tanjung Malim	
MARA Skills Institute*	IKM Petaling Jaya	Electronics Diploma Course accredited by United Kingdom through BTEC (Business and Technology Education Council)
State Skills Development Centres	Selangor Human Resource Development Centre	Diploma Courses in collaboration with Box Hill College, Australia
	Johor Skills Development Centre	Fabrication Technology accredited with India; Welding Technology accredited with United Kingdom
	Perak Entrepreneur & Skills Development Centre	Welding Courses recognised by CISWP a certificate scheme for welding and inspection personnel from United Kingdom which is recognised world-wide
	Kedah Industrial Skills and Management Development Centre	Diploma Courses recognised for credit transfer in Australia and Japan
* In the case of MARA Advanced Skills Institute, all 7 have collaborative programs with foreign universities.		

Q12 Are there any issues or problems that this institute face in relation to accreditation of conducted courses?

Are there any issues or problems you face in relation to accreditation?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	14.3%	85.7%	7
	ADTECs	50.0%	50.0%	4
	CIAST	-	100.0%	1
	JMTI	100.0%	-	1
Ministry of Higher Education	Polytechnics	22.2%	77.8%	9
	Community Colleges	12.5%	87.5%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	-	100.0%	7
	MARA Advanced Skills Institutes	-	100.0%	2
MYS	Youth Skills Institutes	-	100.0%	1
State	Skill Development Centres	-	100.0%	7
Total		**14.9%**	**85.1%**	**47**

The main reasons that institutes face in relation to accreditation are as follows:

- MoHR institutes indicate that NVTC accredited courses are not recognised by PSD thus restricting their graduates who wish to pursue further education in public universities or those that wish to join public service.
- MoHE institutes indicate that some of their short courses are not accepted for accreditation by PSD as well as NVTC.

Q13 How frequently is the curriculum updated?

Curriculum is updated every 3 – 5 years by the respective agencies responsible. There is no significant variation between ministries and courses.

Q14 Does your institute have courses and facilities by e-learning?

Have courses and facilities by e-learning?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	57.1%	42.9%	7
	ADTECs	100.0%	-	4
	CIAST	-	100.0%	1
	JMTI	-	100.0%	1
Ministry of Higher Education	Polytechnics	9.1%	90.9%	11
	Community Colleges	12.5%	87.5%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	-	100.0%	7
	MARA Advanced Skills Institutes	50.0%	50.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	1
State	Skill Development Centres	42.9%	57.1%	7
Total		**28.6%**	**71.4%**	**49**

Q15 How does the institute identify current industrial needs?

	Percentages indicating "yes" (multiple answer)						
	Industrial Training Institute	ADTEC, CIAST, JMTI	Polytechnic	Community College	MARA Skills Institute	State Skills Development Centres	Overall
Number of Respondents	7	6	11	8	9	7	48
Government guidelines/directives	85.7%	66.7%	90.9%	75.0%	88.9%	85.7%	83.3%
Regular discussion with industries	100.0%	83.3%	54.5%	75.0%	66.7%	85.7%	75.0%
Keep track of industrial trends	85.7%	33.3%	54.5%	37.5%	44.4%	85.7%	56.3%
Dialogue with Industry Associations	71.4%	33.3%	27.3%	25.0%	11.1%	57.1%	35.4%
Internal research and studies	57.1%	66.7%	36.4%	12.5%	22.2%	28.6%	35.4%
External research and studies	42.9%	16.7%	27.3%	12.5%	11.1%	28.6%	22.9%

Q16 Do you receive co-operation and inputs from industries in formulating new training courses?

Receive co-operation and inputs?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	57.1%	42.9%	7
	ADTECs	25.0%	75.0%-	4
	CIAST	100.0%	-	1
	JMTI	100.0%	-	1
Ministry of Higher Education	Polytechnics	27.3%	72.7%	11
	Community Colleges	62.5%	37.5%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	14.3%	85.7%	7
	MARA Advanced Skills Institutes	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	1
State	Skill Development Centres	100.0%	-	7
Total		46.9%	53.1%	49

Q17 Are there programs to upgrade skills and knowledge of your lecturers, trainers and technical staff?

All institutes indicated that they have internal programs to upgrade skills and knowledge of the lecturers and technical staff. Internal programs are conducted annually with both internal skilled staff as well as external staff. A portion of the management budget is allocated for the

internal training programs. At the institutional level, each ministry also provides grants and scholarships for lecturers and technical staff to upgrade skills and knowledge both locally as well as overseas.

Q18 What are the factors that determine purchase of equipment for training courses?

All institutes indicated need and budget as the factors that determine purchase of equipment. However, even if the need is evident, they still have to apply for specific budgets and approval from the respective ministries for purchase of equipment.

Q19 Do you have any equipment that are donated by industries or donor agencies?

Any Equipment Donated by Donor Agencies?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	-	100.0%	7
	ADTECs	25.0%	75.0%	4
	CIAST	100.0%	-	1
	JMTI	100.0%	-	1
Ministry of Higher Education	Polytechnics	18.2%	81.8%	11
	Community Colleges	-	100.0%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	42.9%	57.1%	7
	MARA Advanced Skills Institutes	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	1
State	Skill Development Centres	42.9%	57.1%	7
Total		**22.4%**	**77.6%**	**49**

Any Equipment Donated by Industries?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs		100.0%	7
	ADTECs	100.0%		4
	CIAST	57.1%	42.9%	1
	JMTI	14.3%	85.7%	1
Ministry of Higher Education	Polytechnics		100.0%	11
	Community Colleges		100.0%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	25.0%	75.0%	7
	MARA Advanced Skills Institutes	28.6%	71.4%	2
Ministry of Youth & Sport	Youth Skills Institutes			1
State	Skill Development Centres	18.2%	81.8%	7
Total		**24.5%**	**75.5%**	**49**

Q20 Do you have a standard system/procedure for maintenance of equipment?

Have Standard System/Procedure for Maintenance of Equipment?				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	71.4%	21.6%	7
	ADTECs	25.0%	75.0%	4
	CIAST	100.0%	-	1
	JMTI	-	100.0%	1
Ministry of Higher Education	Polytechnics	81.8%	18.2%	11
	Community Colleges	75.0%	25.0%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	100.0%	-	7
	MARA Advanced Skills Institutes	50.0%	50.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	100.0	-	1
State	Skill Development Centres	71.4%	28.6%	7
Total		**73.5%**	**26.5%**	**49**

In most cases, suppliers will be responsible for periodic servicing of equipment within the first 1-3 years of purchase depending on the sales and purchase agreements. After the warranty period, most institutes depend on their internal technical personnel to handle regular servicing as well as minor repairs. However only two-thirds of the institutes indicated that they have standard operating procedures for maintenance of equipment. In most institutes, the lecturer handling the equipment is the person in charge of the equipment and there are no specific personnel in charge of all equipment.

Q21 How would you rate the frequency of usage of the equipment in your institution?

Rate the frequency of usage of equipment (percentage over total response)					
Institution	**Institutes**	**High**	**Average**	**Low**	**N**
Ministry of Human Resource	ITIs	85.7%	14.3%	-	7
	ADTECs	75.0%	25.0%	-	4
	CIAST	100.0%	-	-	1
	JMTI	100.0%	-	-	1
Ministry of Higher Education	Polytechnics	81.8%	9.1%	9.1%	11
	Community Colleges	62.5%	37.5%	-	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	57.1%	42.9%	-	7
	MARA Advanced Skills Institutes	-	100.0%	-	2
Ministry of Youth & Sport	Youth Skills Institutes	100.0%	-	-	1
State	Skill Development Centres	42.9%	42.9%	14.3%	7
Total		**67.3%**	**28.6%**	**4.1%**	49

Q22 How would you rate the relevance of the equipment in your institution?

Relevance of the equipment (percentage over total response)					
Institution	**Institutes**	**High**	**Average**	**Low**	**N**
Ministry of Human Resource	ITIs	71.4%	21.6%	-	7
	ADTECs	75.0%	25.0%	-	4
	CIAST	-	100.0%	-	1
	JMTI	100.0%	-	-	1
Ministry of Higher Education	Polytechnics	100.0%	-	-	11
	Community Colleges	100.0%	-	-	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	85.7%	14.3%	-	7
	MARA Advanced Skills Institutes	100.0%	-	-	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	-	1
State	Skill Development Centres	71.4%	21.6%	-	7
Total		**83.7%**	**16.3%**	**-**	49

Q23 How would you rate the breakdown/downtime of the equipment in your institution?

Frequency of usage of equipment (percentage over total response)					
Institution	**Institutes**	**High**	**Average**	**Low**	**N**
Ministry of Human Resource	ITIs	14.3%	42.9%	42.9%	7
	ADTECs	-	50.0%	50.0%	4
	CIAST	-	100.0%	-	1
	JMTI	-	100.0%	-	1
Ministry of Higher Education	Polytechnics	-	9.1%	90.1%	11
	Community Colleges	-	-	100.0%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	-	71.4%	28.6%	7
	MARA Advanced Skills Institutes	-	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	-	100.0%	-	1
State	Skill Development Centres	14.3%	14.3%	71.4%	7
Total		**4.1%**	**30.6%**	**65.3%**	**49**

Q24 Is there a shortage of equipment to support the vocational programmes?

Shortage of equipment in your institution (percentage over total response)				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	71.4%	28.6%	7
	ADTECs	50.0%	50.0%	4
	CIAST	100.0%	-	1
	JMTI	100.0%	-	1
Ministry of Higher Education	Polytechnics	30.0%	70.0%	10
	Community Colleges	37.5%	62.5%	8
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	71.4%	28.6%	7
	MARA Advanced Skills Institutes	-	100.0%	2
Ministry of Youth & Sport	Youth Skills Institutes	100.0%	-	1
State	Skill Development Centres	14.3%	85.7%	7
Total		**45.8%**	**54.2%**	**48**

Institutes Indicating Shortage	**Courses that have equipment shortage (valid response)**
ITI Pasir Gudang	Tool & Die, Mechatronics, Machining & Production
ITI Ipoh	Foundry Technology
ITI Muar	CNC, Plastic Technology
ITI Bukit Katil	EDM Machinery
ITI Kuala Lumpur	Welding Technology, Mechanical Engineering
ADTEC Batu Pahat	Machining Technology, Production Technology
ADTEC Kulim	Electronics Technology
CIAST	Machining Technology, Welding Technology, Plastics Technology, Automotive Technology, Electrical Engineering
JMTI	No details provided
Polytechnic Sabak Bernam	Electrical Engineering, Civil Engineering
Polytechnic Seberang Perai	No details provided
Polytechnic Ungku Omar	No details provided
Community College Chenderoh	Hospitality
Community College Sg Petani	No details provided
Community College Kepala Batas	Automotive Engineering
IKM Kuala Lumpur	No details provided
MARA Skills Institute Jasin	No details provided
MARA Skills Institute Johor Bahru	Manufacturing Technology, Waste Treatment Technology
MARA Skills Institute Petaling Jaya	Telecommunications Engineering
MARA Skills Institute Sg Petani	No details provided
Youth Skills Institute Sepang	No details provided
Penang Skills Development Centre	No details provided

B2.2 Tabulation of Mail Survey Responses

Q1 to Q3 are basic background information on the institutes, i.e., name, address, mission and vision.

Q4 Does your institution help trainees to secure employment?

Do you help your trainees to secure employment (percentage over total response)				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	90.9%	9.1%	4
	ADTECs	100.0%	-	11
	CIAST	-	100.0%	1
	JMTI	100.0%	-	1
Ministry of Higher Education	Polytechnics	85.7%	14.3%	7
	Community Colleges	66.7%	33.3%	12
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	100.0%	-	7
Ministry of Youth & Sport	Youth Skills Institutes	71.4%	28.6%	7
State	Skill Development Centres	87.5%	12.5%	8
Total		**82.8%**	**17.2%**	**58**

Percentage of institute use the following methods (multiple answer)	**ITIs**	**ADTECs**	**CIAST**	**JMTI**	**Polytechnics**	**Community Colleges**	**MARA Skills Centres**	**Youth Skills Institutes**	**SSDC**	**Overall**
Number of Cases	7	6	1	1	11	8	9	1	6	58
Trainee attachment at industry	90.9%	100.0%	-	100.0%	71.4%	58.3%	85.7%	71.4%	87.5%	77.6%
Career fair	45.5%	75.0%	-	100.0%	42.9%	41.7%	71.4%	28.6%	25.0%	44.8%
Open interviews for industry at campus	54.5%	50.0%	-	-	42.9%	16.7%	85.7%	14.3%	12.5%	36.2%
Advertise vacancies in industry	45.5%		-	100.0%	57.1%	16.7%	57.1%	14.3%	12.5%	31.0%
Others*	18.2%	50.0%	-	-	-	16.7%	28.6%	-	-	13.8%

Note for Others

Institutes	**Other Methods**
ITI	Online application through Electronic Labour Exchange
ADTECs	Recommendations to member industries in the Advisory Committee
Community Colleges	Through visits to industries
MARA Skills Institute	

Q5 Do you have an alumni association?

Do you have an alumni association (percentage over total response)				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	18.2%	81.8%	11
	ADTECs	-	100.0%	4
	CIAST	-	100.0%	1
	JMTI	-	100.0%	1
Ministry of Higher Education	Polytechnics	42.9%	57.1%	7
	Community Colleges	-	100.0%	12
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	71.4%	28.6%	7
Ministry of Youth & Sport	Youth Skills Institutes	57.1%	42.9%	7
State	Skill Development Centres	-	100.0%	8
Total		**24.1%**	**75.9%**	**58**

Q6 Does your institution hold discussions with industry regarding their skill needs?

Do you hold discussions with Industry to identify skill needs? (percentage over total response)				
Institution	**Institutes**	**Yes**	**No**	**N**
Ministry of Human Resource	ITIs	81.8%	18.2%	11
	ADTECs	75.0%	25.0%	4
	CIAST	100.0%		1
	JMTI	100.0%		1
Ministry of Higher Education	Polytechnics	85.7%	14.3%	7
	Community Colleges	58.3%	41.7%	12
Ministry of Entrepreneurial & Co-operative Devt.	MARA Skills Institutes	85.7%	14.3%	7
Ministry of Youth & Sport	Youth Skills Institutes	100.0%		7
State	Skill Development Centres	87.5%	12.5%	8
Total		**81.0%**	**19.0%**	**58**

Percentage of Institute Identifying the following issues in discussion with industries (multiple answer)	ITIs	ADTECs	CIAST	JMTI	Polytechnics	Community Colleges	MARA Skills Centres	Youth Skills Institutes	State Skills Training Centres	Overall
Number of Cases	7	6	1	1	11	8	9	1	6	58
Continuous training of lecturers with industries	54.5%	25.0%	100.0%	100.0%	71.4%	41.7%	57.1%	42.9%	50.0%	51.7%
Curriculum needs to be revised	45.5%	50.0%	100.0%	-	57.1%	33.3%	71.4%	57.1%	37.5%	48.3%
Longer period of industrial attachment	72.7%	50.0%	100.0%	100.0%	85.7%	16.7%	14.3%	42.9%	25.0%	44.8%
Equipment used are out of date	9.1%	-	100.0%	-	28.6%	-	71.4%		12.5%	17.2%
Others*	9.1%	-	-	-	-	8.3%	42.9%	42.9%	25.0%	17.2%

Note for Others

Institutes	Other Issues Identified
ITIs	Technical advice and strategic alliance in training programs
Polytechnics	Time Sector Privatisation (TSP) Program
Community Colleges	Information on current needs from industry and community perspective
MARA Skills Institutes	Staff and student attachment for specialised skills; technology transfer
Youth Skills Institutes	Staff attachment programs; improvement in training; development of new courses
State Skills Development Centres	Specific training programs; student attachment for specialised skills training

Statistics Section (Mail Survey Questionnaire)

Budget Statistics (for valid response only)

Institution		Budget Allocation (RM)		Actual Expenditure (RM) 2003	Tuition Income (RM)		Other Income (RM)	
		2004	2003		2004	2003	2004	2003
ITIs	Mean	5,696,085	5,469,692	5,784,879	23,530	22,180	77,272	15,101
	N	9	9	9	3	3	2	2
ADTECs	Mean	5,857,469	4,454,329	5,062,057	2,502,512	1,926,652	17,968	33,987
	N	4	3	3	3	3	2	1
JMTI	Mean	6,725,460	6,386,637	7,103,467	-	-	-	-
	N	1	1	1	-	-	-	-
Polytechnics	Mean	13,350,000	16,657,854	21,039,113	1,128,478	1,159,339	-	497,100
	N	1	3	2	1	2	-	2
Community Colleges	Mean	2,400,313	1,585,644	1,496,345	41,808	20,083	54,673	28,162
	N	6	6	6	4	4	3	3
State Skills Development Centres	Mean	1,435,025	1,253,065	1,659,860	1,286,155	1,721,097	288,272	155,241
	N	3	3	4	4	4	2	2
MARA Skills Institutes	Mean	2,473,013	2,807,749	3,504,027				
	N	5	4	4				
Youth Skills Institutes	Mean	3,318,556	3,599,119	3,499,920	9,480,000	9,480,000	787,980	787,980
	N	6	7	6	1	1	1	1
Overall	Mean	4,164,384	4,684,675	4,773,283	1,468,653	1,447,641	171,902	203,758
	N	35	36	35	16	17	10	11

Student Intake Statistics (for valid response only)

Institutes		New Intake		Total Graduated	
		2004	**2003**	**2004**	**2003**
ITIs	Mean	448	507	383	496
	N	10	10	8	10
ADTECs	Mean	232	306	126	195
	N	4	4	4	3
CIAST	Mean	120	255	431	177
	N	1	1	1	1
JMTI	Mean	227	196	98	115
	N	1	1	1	1
Polytechnics	Mean	897	1,591	1,014	1,965
	N	2	2	2	1
Community College	Mean	118	162	125	184
	N	11	11	4	4
MARA Skills Institutes	Mean	354	378	400	380
	N	7	6	7	5
Youth Skills Institute	Mean	201	125	180	88
	N	6	4	5	3
State Development Centres	Mean	411	270	480	788
	N	3	4	4	4
Overall	Mean	310	364	338	441
	N	44	42	35	31

Human Resource Statistics (for valid response only)

INST		Lecturers & Trainers		Laboratory Staff & Technicians		Admin, Mgmt and Clerical Staff		Total Staff	
		2004	2003	2004	2003	2004	2003	2004	2003
ITIs	Mean	68	63	-	-	17	17	85	79
	N	10	9	-	-	10	9	10	9
ADTECs	Mean	58	49	4	4	16	17	79	62
	N	5	4	2	2	5	4	5	4
CIAST	Mean	163	157	8	14	28	40	199	207
	N	1	1	1	1	1	1	1	1
JMTI	Mean	47	n.a.	35	n.a.	21	n.a.	103	n.a.
	N	1	n.a.	1	n.a.	1	n.a.	1	n.a.
Polytechnics	Mean	223	339	16	23	64	76	302	438
	N	2	3	2	3	2	3	2	3
Community Colleges	Mean	25	17	4	11	11	4	32	26
	N	12	12	12	6	12	12	12	12
MARA Skills Institutes	Mean	76	87	8	10	28	30	112	127
	N	7	5	7	5	7	5	7	5
Youth Skills Institute	Mean	45	33	1	1	34	31	81	64
	N	6	5	3	2	6	5	6	5
State Development Centres	Mean	15	14	2	2	14	14	30	28
	N	6	6	4	3	6	6	6	6
Overall	Mean	54	61	6	9	21	20	77	84
	N	49	44	31	21	49	44	49	44

Lecturer & Student Statistics (for valid response only)

Institutes	Valid Responses	Average Lecturers per Institute	Average Students Enrolment per Institute	Student Lecturer Ratio
Industrial Training Institutes	10	68	717	11
ADTECs	4	58	675	12
CIAST	1	163	940	6
JMTI	1	47	650	14
Polytechnics	2	223	3,509	16
Community Colleges	12	25	152	6
MARA Skills Institutes	7	75	1,175	16
Youth Skills Institutes	6	45	337	7
State Skills Devt. Centres	6	15	775	52
Total	49	54	990	18

Lecturer & Course Statistics (for valid response only)

There are certain limitations that need to be taken into consideration with regards to the survey findings on lecturers and courses. While the findings on academic qualification and teaching experience of lecturers are based on 2,755 lecturers from 58 VTIs responses to the mail survey, the findings on courses are from 48 VTIs covering 66 courses and 1,600 lecturers as not all the VTIs provided details on all courses taught by them. Neither did they provide details on all the lecturers. The statistical findings thus have to be taken in the context of these limitations and should be regarded as indicative of the current situation.

Distribution of lecturers by qualification and type of institutes

Institutes	Row Percentage on Lecturer's Qualification				
	Post-graduate	Degree	Diploma	Certificate	Total
Industrial Training Institutes	0.4%	12.1%	60.6%	26.9%	677
ADTECs, CIAST and JMTI	1.7%	36.3%	60.9%	1.1%	350
Polytechnics	26.1%	48.8%	22.3%	2.9%	449
Community Colleges	10.1%	65.6%	20.8%	3.5%	346
MARA Skills Institutes	0.7%	18.0%	30.7%	50.5%	566
Youth Skills Institutes	-	10.1%	58.3%	31.7%	278
State Skills Devt. Centres	1.1%	33.7%	29.2%	36.0%	89
Total	6.0%	29.6%	42.0%	22.4%	2,755

Distribution of lecturers by teaching experience and type of institutes

Institutes	Row Percentage on Lecturer's Teaching Experience				
	> 10 years	5 - 10 years	3 - 4 years	1 - 2 years	Total
Industrial Training Institutes	22.8%	19.2%	41.1%	17.0%	672
ADTECs, CIAST and JMTI	24.1%	17.0%	38.9%	20.1%	324
Polytechnics	18.7%	30.7%	34.3%	16.3%	449
Community Colleges	17.1%	3.4%	15.8%	63.7%	234
MARA Skills Institutes	37.3%	32.9%	20.0%	9.9%	566
Youth Skills Institutes	15.9%	13.9%	23.4%	46.8%	252
State Skills Devt. Centres	11.8%	12.9%	36.6%	38.7%	93
Total	23.8%	21.7%	30.8%	23.6%	2,590

Distribution of lecturers by course and gender

	Male	Female	Total
Textile & Garments	5.6%	94.4%	18
Art & Design	55.0%	45.0%	40
Electronics Engineering	55.9%	44.1%	354
Hospitality	59.1%	40.9%	22
Information Technology	61.6%	38.4%	86
Civil Engineering	77.6%	22.4%	205
Plastics Technology	77.8%	22.2%	18
Electrical Engineering	78.5%	21.5%	200
Production & Manufacturing	79.8%	20.2%	163
Mechanical Engineering	89.8%	10.2%	325
Furniture Technology	91.3%	8.7%	23
Automotive & Marine	96.6%	3.4%	146
Overall	75.1%	24.9%	1,600

Distribution of lecturers by course and qualification

	Certificate	Diploma	Degree & Post Graduate	Total
Hospitality	13.6%	22.7%	63.6%	23
Textile & Garments	33.3%	16.7%	50.0%	18
Information Technology	4.7%	51.2%	44.2%	88
Electronics Engineering	13.2%	61.9%	24.8%	326
Art & Design	27.5%	50.0%	22.5%	41
Production & Manufacturing	24.1%	59.9%	16.0%	166
Civil Engineering	33.7%	53.7%	12.7%	210
Automotive & Marine	39.7%	50.0%	10.3%	149
Electrical Engineering	38.5%	53.0%	8.5%	205
Mechanical Engineering	31.1%	61.8%	7.1%	333
Plastics Technology	11.1%	83.3%	5.6%	18
Furniture Technology	69.6%	30.4%	0.0%	24
	427	744	245	1,600

Distribution of lecturer's qualification by level of courses taught

Qualification of Lecturer	Level of Course Taught			Total
	Certificate	Diploma	Advanced Diploma	
Certificate	91.4%	5.4%	3.3%	429
Diploma	78.3%	18.7%	2.9%	780
Advanced/Higher Diploma	58.9%	40.3%	0.8%	129
Degree	50.4%	48.5%	1.1%	262
Overall	75.7%	21.8%	2.6%	1,600

Distribution of Lecturer's Academic Qualification versus Subjects Taught by Institutes

Institutes	Lecturer's Academic Qualification Related to Subjects Taught		Total
	Yes	No	
ADTECs, CIAST and JMTI	80.3%	19.7%	238
Industrial Training Institutes	88.4%	11.6%	527
Polytechnics	85.4%	14.6%	48
Community Colleges	78.3%	21.7%	138
MARA Skills Institutes	87.7%	12.3%	308
Youth Skills Institutes	90.4%	9.6%	270
State Skills Devt. Centres	87.3%	12.7%	71
Overall	86.4%	13.6%	1,600

Distribution of Lecturer's Academic Qualification versus Subjects Taught by Course

Course	Lecturer's Academic Qualification Related to Subjects Taught		Total
	Yes	No	
Plastics Technology	61.1%	38.9%	18
Information Technology	65.1%	34.9%	86
Furniture Technology	69.6%	30.4%	23
Art & Design	75.0%	25.0%	40
Electronics Engineering	79.1%	20.9%	354
Electrical Engineering	88.0%	12.0%	200
Textile & Garments	88.9%	11.1%	18
Automotive & Marine	89.0%	11.0%	146
Hospitality	90.9%	9.1%	22
Production & Manufacturing	92.6%	7.4%	163
Civil Engineering	93.2%	6.8%	205
Mechanical Engineering	93.8%	6.2%	325
N	86.4%	13.6%	1,600

Detailed Percentage Distribution by Lecturer's Qualification, Institute, Level and Course

Course	Level	Institute	Qualification of Lecturers (% Distribution)				
			Certificate	Diploma	Adv. Diploma	Degree	Total
Automotive & Marine	Certificate Courses	ITI	22.2	77.8	-	-	100.0
		Community College	-	45.0	-	55.0	100.0
		MARA Skills Institute	59.6	14.0	21.1	5.3	100.0
		Youth Skills Institute	38.9	61.1	-	-	100.0
		State Skills Devt. Centre	100.0	-	-	-	100.0
		Total	41.1	40.4	8.5	9.9	100.0
Civil Engineering	Certificate Courses	ITI	31.8	62.1	1.5	4.5	100.0
		Community College	-	41.2	29.4	29.4	100.0
		MARA Skills Institute	61.5	26.9	11.5	-	100.0
		Youth Skills Institute	35.0	65.0	-	-	100.0
		State Skills Devt. Centre	-	100.0	-	-	100.0
		Total	38.5	48.7	7.7	5.1	100.0
	Diploma Courses	ITI	27.8	55.6	-	16.7	100.0
		Polytechnic	7.4	37.0	-	55.6	100.0
		Total	15.6	44.4		40.0	100.0
	Advanced Diploma Courses	State Skills Devt. Centre	50.0	25.0	25.0	-	100.0
		Total	50.0	25.0	25.0		100.0
Mechanical Engineering	Certificate Courses	ITI	26.3	71.7	2.0	-	100.0
		Polytechnic	50.0	-	-	50.0	100.0
		MARA Skills Institute	63.0	22.2	13.0	1.9	100.0
		Youth Skills Institute	20.0	74.5	-	5.5	100.0
		State Skills Devt. Centre	71.4	28.6	-	-	100.0
		Total	33.9	59.9	3.6	2.6	100.0
	Diploma Courses	ADTEC, JMTI	4.5	50.0	13.6	31.8	100.0
		Polytechnic	16.7	-	-	83.3	100.0
		MARA Skills Institute	-	33.3	-	66.7	100.0
		Youth Skills Institute	83.3	16.7	-	-	100.0
		Total	17.5	35.0	7.5	40.0	100.0
Production & Manufacturing	Certificate Courses	ITI	34.7	57.1	6.1	2.0	100.0
		Community College	-	16.7	-	83.3	100.0
		MARA Skills Institute	28.6	28.6	42.9	-	100.0
		Youth Skills Institute	40.7	59.3	-	-	100.0
		State Skills Devt. Centre	62.5	25.0	-	12.5	100.0
		Total	36.1	50.5	6.2	7.2	100.0
	Diploma	ADTEC, JMTI	-	25.0	31.8	43.2	100.0

Course	Level	Institute	Qualification of Lecturers (% Distribution)				
			Certificate	Diploma	Adv. Diploma	Degree	Total
	Courses	Youth Skills Institute	80.0	20.0	-	-	100.0
		Total	8.2	24.5	28.6	38.8	100.0
	Advanced Diploma Courses	ITI	-	100.0	-	-	100.0
		Total	-	100.0	-	-	100.0
Electronics Engineering	Certificate Courses	ITI	25.3	73.5	-	1.2	100.0
		Community College	-	10.0	-	90.0	100.0
		MARA Skills Institute	25.6	23.3	39.5	11.6	100.0
		Youth Skills Institute	20.0	66.7	3.3	10.0	100.0
		State Skills Devt. Centre	5.3	63.2	10.5	21.1	100.0
		Total	20.0	53.8	10.3	15.9	100.0
	Diploma Courses	ADTEC, JMTI	2.2	52.8	13.5	31.5	100.0
		MARA Skills Institute	-	11.1	-	88.9	100.0
		Youth Skills Institute	5.6	38.9	5.6	50.0	100.0
		Total	2.6	47.4	11.2	38.8	100.0
	Advanced Diploma Courses	State Skills Devt. Centre	-	57.1	-	42.9	100.0
		Total	-	57.1	-	42.9	100.0
Electrical Engineering	Certificate Courses	ITI	39.4	60.6	-	-	100.0
		Community College	-	54.5	-	45.5	100.0
		MARA Skills Institute	52.8	13.9	27.8	5.6	100.0
		Youth Skills Institute	56.3	40.6	-	3.1	100.0
		State Skills Devt. Centre	100.0	-	-	-	100.0
		Total	40.8	44.6	6.4	8.3	100.0
	Diploma Courses	ADTEC, JMTI	6.7	80.0	-	13.3	100.0
		MARA Skills Institute	-	20.0	40.0	40.0	100.0
		Total	5.0	65.0	10.0	20.0	100.0
	Advanced Diploma Courses	ITI	23.1	76.9	-	-	100.0
		MARA Skills Institute	83.3	16.7	-	-	100.0
		State Skills Devt. Centre	100.0	-	-	-	100.0
		Total	52.2	47.8	-	-	100.0
Furniture Technology	Certificate Courses	ITI	83.3	16.7	-	-	100.0
		MARA Skills Institute	62.5	25.0	12.5	-	100.0
		Youth Skills Institute	100.0	-	-	-	100.0
		Total	69.6	21.7	8.7	-	100.0
Plastics Technology	Certificate Courses	ITI	11.1	77.8	5.6	5.6	100.0
		Total	11.1	77.8	5.6	5.6	100.0
Information Technology	Certificate Courses	ITI	7.5	87.5	-	5.0	100.0
		Community College	-	7.7	-	92.3	100.0

Course	Level	Institute	Qualification of Lecturers (% Distribution)				
			Certificate	Diploma	Adv. Diploma	Degree	Total
		State Skills Devt. Centre	14.3	57.1	-	28.6	100.0
		Total	5.5	56.2	-	38.4	100.0
	Diploma Courses	ADTEC, JMTI	-	16.7	33.3	50.0	100.0
		State Skills Devt. Centre	-	-	-	100.0	100.0
		Total	-	7.7	15.4	76.9	100.0
Art & Design	Certificate Courses	Community College	-	45.5	-	54.5	100.0
		MARA Skills Institute	58.8	29.4	11.8	-	100.0
		Youth Skills Institute	-	66.7	11.1	22.2	100.0
		State Skills Devt. Centre	33.3	33.3	-	33.3	100.0
		Total	27.5	42.5	7.5	22.5	100.0
Textile & Garments	Certificate Courses	Community College	-	22.2	-	77.8	100.0
		Youth Skills Institute	71.4	-	-	28.6	100.0
		State Skills Devt. Centre	50.0	50.0	-	-	100.0
		Total	33.3	16.7	-	50.0	100.0
Hospitality	Certificate Courses	Community College	-	28.6	-	71.4	100.0
		Youth Skills Institute	50.0	50.0	-	-	100.0
		Total	23.1	38.5	-	38.5	100.0
	Diploma Courses	Polytechnic	-	-	-	100.0	100.0
		Total	-	-	-	100.0	100.0

Detailed Distribution of Lecturer's Qualification versus Subjects Taught by Institute, Level and Course

Course	Level	Institute	Lecturer's Academic Qualification Related to Subject Taught		
			Related to Subject	Not Related to Subject	Total
Automotive & Marine	Certificate Courses	ITI	100.0	0.0	100.0
		Community College	90.0	10.0	100.0
		MARA Skills Institute	87.7	12.3	100.0
		Youth Skills Institute	87.0	13.0	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	88.7	11.3	100.0
Civil Engineering	Certificate Courses	ITI	98.5	1.5	100.0
		Community College	64.7	35.3	100.0
		MARA Skills Institute	98.1	1.9	100.0
		Youth Skills Institute	90.0	10.0	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	93.6	6.4	100.0
	Diploma Courses	ITI	94.4	5.6	100.0
		Polytechnic	88.9	11.1	100.0
		Total	91.1	8.9	100.0
	Advanced Diploma Courses	State Skills Devt. Centre	100.0	0.0	100.0
		Total	100.0	0.0	100.0
Mechanical Engineering	Certificate Courses	ITI	97.4	2.6	100.0
		Polytechnic	66.7	33.3	100.0
		MARA Skills Institute	90.7	9.3	100.0
		Youth Skills Institute	94.5	5.5	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	94.9	5.1	100.0
	Diploma Courses	ADTEC, JMTI	95.5	4.5	100.0
		Polytechnic	83.3	16.7	100.0
		MARA Skills Institute	33.3	66.7	100.0
		Youth Skills Institute	100.0	0.0	100.0
		Total	85.0	15.0	100.0
Production & Manufacturing	Certificate Courses	ITI	93.9	6.1	100.0
		Community College	100.0	0.0	100.0
		MARA Skills Institute	100.0	0.0	100.0
		Youth Skills Institute	100.0	0.0	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	96.9	3.1	100.0

Course	Level	Institute	Lecturer's Academic Quallfication Related to Subject Taught		
			Related to Subject	Not Related to Subject	Total
	Diploma Courses	ADTEC, JMTI	79.1	20.9	100.0
		Youth Skills Institute	100.0	0.0	100.0
		Total	81.3	18.8	100.0
	Advanced Diploma Courses	ITI	100.0	0.0	100.0
		Total	100.0	0.0	100.0
Electronics Engineering	Certificate Courses	ITI	77.1	22.9	100.0
		Community College	65.0	35.0	100.0
		MARA Skills Institute	86.0	14.0	100.0
		Youth Skills Institute	96.7	3.3	100.0
		State Skills Devt. Centre	89.5	10.5	100.0
		Total	82.1	17.9	100.0
	Diploma Courses	ADTEC, JMTI	69.7	30.3	100.0
		MARA Skills Institute	33.3	66.7	100.0
		Youth Skills Institute	72.2	27.8	100.0
		Total	67.2	32.8	100.0
	Advanced Diploma Courses	State Skills Devt. Centre	85.7	14.3	100.0
		Total	85.7	14.3	100.0
Electrical Engineering	Certificate Courses	ITI	89.4	10.6	100.0
		Community College	81.8	18.2	100.0
		MARA Skills Institute	94.4	5.6	100.0
		Youth Skills Institute	84.4	15.6	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	88.5	11.5	100.0
	Diploma Courses	ADTEC, JMTI	66.7	33.3	100.0
		MARA Skills Institute	80.0	20.0	100.0
		Total	70.0	30.0	100.0
	Advanced Diploma Courses	ITI	100.0	0.0	100.0
		MARA Skills Institute	100.0	0.0	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	100.0	0.0	100.0
Furniture Technology	Certificate Courses	ITI	16.7	83.3	100.0
		MARA Skills Institute	87.5	12.5	100.0
		Youth Skills Institute	100.0	0.0	100.0
		Total	69.6	30.4	100.0
Plastics Technology	Certificate Courses	ITI	61.1	38.9	100.0
		Total	61.1	38.9	100.0
Information	Certificate	ITI	65.0	35.0	100.0

Course	Level	Institute	Lecturer's Academic Qualification Related to Subject Taught		
			Related to Subject	Not Related to Subject	Total
Technology	Courses	Community College	80.8	19.2	100.0
		State Skills Devt. Centre	57.1	42.9	100.0
		Total	69.9	30.1	100.0
	Diploma Courses	ADTEC, JMTI	16.7	83.3	100.0
		State Skills Devt. Centre	57.1	42.9	100.0
		Total	38.5	61.5	100.0
Art & Design	Certificate Courses	Community College	63.6	36.4	100.0
		MARA Skills Institute	76.5	23.5	100.0
		Youth Skills Institute	77.8	22.2	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	75.0	25.0	100.0
Textile & Garments	Certificate Courses	Community College	88.9	11.1	100.0
		Youth Skills Institute	85.7	14.3	100.0
		State Skills Devt. Centre	100.0	0.0	100.0
		Total	88.9	11.1	100.0
Hospitality	Certificate Courses	Community College	85.7	14.3	100.0
		Youth Skills Institute	100.0	0.0	100.0
		Total	92.3	7.7	100.0
	Diploma Courses	Polytechnic	88.9	11.1	100.0
		Total	88.9	11.1	100.0

Section B 3 Statistical Tabulations of Industry Survey

Distribution of Industry Respondents by Main Activity and Ownership

Type of Industry	Local Companies	Non-Japanese MNC	Japanese MNC	Total
Electrical, Electronics & Machinery	3	6	23	32
Fabricated Metal, Non-ferrous Metal	3	-	7	10
Chemicals, Rubber & Plastics	3	-	-	3
Other Manufacturing	5	-	8	13
Total	14	6	38	58
Column Percentage				
Electrical, Electronics & Machinery	21.4%	100.0%	60.5%	55.2%
Fabricated Metal, Non-ferrous Metal	21.4%	-	18.4%	17.2%
Chemicals, Rubber & Plastics	21.4%	-	-	5.2%
Other Manufacturing	35.7%	-	21.1%	22.4%
Total	100.0%	100.0%	100.0%	100.0%
Row Percentage				
Electrical, Electronics & Machinery	9.4%	18.8%	71.9%	100.0%
Fabricated Metal, Non-ferrous Metal	30.0%	-	70.0%	100.0%
Chemicals, Rubber & Plastics	100.0%	-	-	100.0%
Other Manufacturing	38.5%	-	61.5%	100.0%
Total	24.1%	10.3%	65.5%	100.0%

Distribution of Industry Respondents by Main Activity and Ownership

	Local	Non-Japanese MNC	Japanese MNC	Total
Small & Medium	9	1	9	19
Large	5	5	29	39
Total	14	6	38	58
Column Percentage				
Small & Medium	64.3%	16.7%	23.7%	32.8%
Large	35.7%	83.3%	76.3%	67.2%
Total	100.0%	100.0%	100.0%	100.0%
Row Percentage				
Small & Medium	47.4%	5.3%	47.4%	100.0%
Large	12.8%	12.8%	74.4%	100.0%
Total	24.1%	10.3%	65.5%	100.0%

Percentage Distribution of Employee Categorisation by Size and Ownership

	N	% Skilled & Semi Skilled Worker	% Unskilled Worker	% Technical Worker	% Admin, Management, Sales Worker
Local Companies	13	56.3	17.7	15.0	8.0
SMIs	8	39.0	12.1	9.4	16.1
Large Firms	5	58.7	18.5	15.8	6.9
Non-Japanese MNCs	6	62.7	6.2	21.7	9.4
SMIs	1	68.9	2.7	8.0	20.4
Large Firms	5	62.6	6.2	21.8	9.3
Japanese MNCs	38	34.0	30.5	17.0	21.1
SMIs	9	29.0	15.6	22.0	31.1
Large Firms	29	34.1	30.8	16.9	20.9
Overall	58	47.0	20.7	18.0	15.1
SMIs	19	37.6	12.6	13.3	21.0
Large Firms	39	47.4	21.0	18.2	14.8

Percentage of Employees having VTI Qualification and Working in Production & Technical Related Jobs by Industry Ownership, Size and Activity (Local Companies and Non-Japanese MNCs only)

By Ownership and Size	N	Total Employees	% Having Qualifications from VTIs	% of VTI qualified in Production & Technical Related Jobs
Local Companies	13	8,296	9.2%	90.3%
SMIs	8	1,019	12.1%	65.9%
Large Firms	5	7,277	8.8%	95.0%
Non-Japanese MNCs	6	12,924	24.9%	88.8%
SMIs	1	90	11.1%	80.0%
Large Firms	5	12,834	25.0%	88.8%
Overall	19	21,220	18.8%	89.1%
SMIs	9	1,109	12.0%	66.9%
Large Firms	10	20,111	19.1%	89.8%
By Ownership and Activity	N	Total Employees	% Having Qualifications from VTIs	% of VTI qualified in Production & Technical Related Jobs
Local Companies	14	8,296	9.2%	90.3%
Electrical, Electronics & Machinery	3	4,814	12.6%	100.0%
Fabricated Metal, Non-ferrous Metal	3	417	15.8%	89.4%
Chemicals, Rubber & Plastics	3	377	9.8%	43.2%
Other Manufacturing	5	2,688	2.1%	17.9%
Non-Japanese MNCs				
Electrical, Electronics & Machinery	6	12,924	24.9%	88.8%

Majority Ranking and Mean Score on Assessment of Current Employees by VTIs Graduated (Local Firms, Non-Japanese MNCs and Japanese MNCs)

	Local Firms		Non-Japanese MNCs		Japanese MNCs*
Majority Response on Ranking	**Public VTI**	**Private VTI**	**Public VTI**	**Private VTI**	**Public VTI**
Technical Knowledge	3	4	4	3	3
Basic/Practical Knowledge	5	4	2	3-4	3
Operational Skills	3-4	4	3	2-3	n.a.
Management & Supervisory Skills	4	3	2	2	n.a.
Upgrading/Acquiring New Skills	3	3-4	3	3	3
Personal Development	3	4	3	3	n.a.
Willingness to Work	n.a.	n.a.	n.a.	n.a.	3
Concept of 5S	n.a.	n.a.	n.a.	n.a.	2
Capability for Application	n.a.	n.a.	n.a.	n.a.	3
Capability for Communication	n.a.	n.a.	n.a.	n.a.	3
Mean Score	Public VTI	Private VTI	Public VTI	Private VTI	Public VTI
Technical Knowledge	3.8	4.2	3.3	3.4	3.1
Basic/Practical Knowledge	3.4	4.0	2.8	3.2	3.1
Operational Skills	3.5	3.7	2.4	2.5	n.a.
Management & Supervisory Skills	3.2	3.3	1.6	2.0	n.a.
Upgrading/Acquiring New Skills	3.0	3.3	2.7	3.0	3.2
Personal Development	3.4	3.4	2.6	2.8	n.a.
Willingness to Work	n.a.	n.a.	n.a.	n.a.	3.1
Concept of 5S	n.a.	n.a.	n.a.	n.a.	2.4
Capability for Application	n.a.	n.a.	n.a.	n.a.	3.0
Capability for Communication	n.a.	n.a.	n.a.	n.a.	2.8

*Japanese MNCs only answered for public VTIs

Assessment of Current Employees by VTIs Graduated (Local Companies and Non-Japanese MNCs only)

		Public VTI				
Local Companies	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Technical Knowledge	7	-	-	71.4%	28.6%	42.9%
Practical Knowledge	10	10.0%	20.0%	20.0%	20.0%	30.0%
Operational Skills	10	-	10.0%	40.0%	40.0%	10.0%
Management & Supervisory Skills	10	10.0%	10.0%	30.0%	50.0%	-
Upgrading/Acquiring New Skills	10	-	20.0%	60.0%	20.0%	-
Personal Development	10	-	10.0%	50.0%	30.0%	10.0%
		Private VTI				
Local Companies	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Technical Knowledge	9	-	-	11.1%	55.6%	33.3%
Practical Knowledge	8	-	-	25.0%	62.5%	25.0%
Operational Skills	9	-	-	33.3%	44.4%	11.1%
Management & Supervisory Skills	9	-	-	66.7%	33.3%	-
Upgrading/Acquiring New Skills	9	-	11.1%	44.4%	44.4%	-
Personal Development	9	-	11.1%	33.3%	55.6%	-
		Public VTI				
Non-Japanese MNCs	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Technical Knowledge	6	-	16.7%	33.3%	50.0%	-
Practical Knowledge	6	-	50.0%	16.7%	33.3%	-
Operational Skills	5	20.0%	20.0%	60.0%	-	-
Management & Supervisory Skills	5	40.0%	60.0%	-	-	-
Upgrading/Acquiring New Skills	4	-	25.0%	75.0%	-	-
Personal Development	5	-	40.0%	60.0%	-	-
		Private VTI				
Non-Japanese MNCs	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Technical Knowledge	5	-	-	60.0%	40.0%	-
Practical Knowledge	5	-	20.0%	40.0%	40.0%	-
Operational Skills	4	-	50.0%	50.0%	-	-
Management & Supervisory Skills	4	25.0%	50.0%	25.0%	-	-
Upgrading/Acquiring New Skills	4	-	25.0%	50.0%	25.0%	-
Personal Development	4	25.0%	25.0%	50.0%	-	-

Assessment of Current Employees by Public VTIs Graduated (Japanese MNCs only)

Overall Public VTI	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Overall	20	-	5.0%	85.0%	10.0%	-
Basic Knowledge	19	-	10.5%	73.7%	15.8%	-
Technical Knowledge	20	-	15.0%	60.0%	25.0%	-
Willingness to Work	20	-	10.0%	70.0%	20.0%	-
Concept of 5S	20	10.0%	45.0%	40.0%	5.0%	-
Willingness to Learn & Learning Capability	20	-	10.0%	65.0%	25.0%	-
Capability for Application	20	-	30.0%	45.0%	25.0%	-
Capability for Communication	19	-	31.6%	52.6%	15.8%	-
ITI & ADTEC	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Overall	8	-	-	75.0%	25.0%	-
Basic Knowledge	8	-	-	87.5%	12.5%	-
Technical Knowledge	8	-	-	62.5%	37.5%	-
Willingness to Work	8	-	12.5%	62.5%	25.0%	-
Concept of 5S	8	25.0%	50.0%	25.0%	-	-
Willingness to Learn & Learning Capability	8	-	12.5%	62.5%	25.0%	-
Capability for Application	8	-	25.0%	50.0%	25.0%	-
Capability for Communication	8	12.5%	37.5%	37.5%	12.5%	-
Polytechnics & Community Colleges	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Overall	17	-	5.9%	58.8%	35.3%	-
Basic Knowledge	17	-	11.8%	52.9%	35.3%	-
Technical Knowledge	17	-	11.8%	47.1%	41.2%	-
Willingness to Work	17	-	29.4%	52.9%	17.6%	-
Concept of 5S	17	11.8%	52.9%	29.4%	5.9%	-
Willingness to Learn & Learning Capability	17	-	11.8%	52.9%	35.3%	-
Capability for Application	17	-	17.6%	64.7%	17.6%	-
Capability for Communication	17	5.9%	23.5%	52.9%	17.6%	-
MARA & State Skills Centres	**N**	**1 (Low)**	**2**	**3**	**4**	**5 (High)**
Overall	6	-	33.3%	66.7%	-	-
Basic Knowledge	6	-	33.3%	50.0%	16.7%	-
Technical Knowledge	6	-	33.3%	33.3%	33.3%	-
Willingness to Work	6	-	16.7%	83.3%	-	-
Concept of 5S	6	-	50.0%	50.0%	-	-
Willingness to Learn & Learning Capability	6	-	16.7%	66.7%	16.7%	-
Capability for Application	5	-	60.0%	20.0%	20.0%	-
Capability for Communication	5	-	20.0%	60.0%	20.0%	-

Firms With Training Policy for Workers, Contribution to HRDF and Utilisation of HRDF

	N	% with training policy	% contributing to HRDF	% HRDF contributors fully utilising the fund'
Local Companies	14	71.4%	78.6%	90.9%
SMIs	9	66.7%	66.7%	100.0%
Large Firms	5	80.0%	100.0%	80.0%
Non-Japanese MNCs	6	66.7%	100.0%	66.7%
SMIs	1	-	100.0%	100.0%
Large Firms	5	80.0%	100.0%	60.0%
Japanese MNCs	38	89.5%	94.7%	67.6%
SMIs	9	77.8%	77.8%	42.9%
Large Firms	29	93.1%	100.0%	74.1%

Percentage Distribution of Training Budget Ratio over Total Expenditure

		Percentage over Total Expenditure			
	N	<1%	1% - 5%	5% - 10%	> 10%
Local Companies	7	42.9%	42.9%	14.3%	-
SMIs	5	40.0%	40.0%	20.0%	--
Large Firms	2	50.0%	50.0%	-	-
Non-Japanese MNCs	3	-	100.0%	-	-
SMIs	1	-	100.0%	-	-
Large Firms	2	-	100.0%	-	-
Japanese MNCs	37	32.4%	59.5%	2.7%	5.4%
SMIs	9	22.2%	66.7%	-	11.1%
Large Firms	28	35.7%	57.1%	3.6%	3.6%

Types of Industrial Training Relevant to Industry (Local Companies and Non-Japanese MNCs)

Type of Industrial Training	Relevant Currently			Relevant in Next 3 years		
	Local Firms	Non-Japanese MNCs	Overall	Local Firms	Non-Japanese MNCs	Overall
Agricultural Science	35.7%	-	26.3%	14.3%	20.0%	16.7%
Mechatronics	21.4%	20.0%	21.1%	28.6%	20.0%	25.0%
Electrical Engineering	7.1%	40.0%	15.8%	-	20.0%	8.3%
Electronics Engineering	21.4%	-	15.8%	14.3%	-	8.3%
Automated Assembly Process	7.1%	20.0%	10.5%	-	-	-
Injection Moulding	-	40.0%	10.5%	-	-	-
Mechanical Engineering	14.3%	-	10.5%	-	40.0%	16.7%
Information Technology	7.1%	-	5.3%	14.3%	-	8.3%
Business Management	-	20.0%	5.3%	-	-	-
Tooling and Fabrication	7.1%	-	5.3%	14.3%	-	8.3%
Production Technology	7.1%	-	5.3%	-	-	-
Product Designing	7.1%	-	5.3%	-	-	-
RF Technology	7.1%	-	5.3%	14.3%	-	8.3%
Number of Response	14	5	19	7	5	12

Industry Response to Availability of Training Relevant to their Industry (Local Companies and Non-Japanese MNCs)

	Local Companies	Non-Japanese MNCs	Overall
Number of Respondents	14	6	20
Industrial Training Relevant to Current Industrial Needs Available in Malaysia?			
Yes available in Public VTIs	85.7%	100.0%	90.0%
Yes, available in Private VTIs	71.4%	83.3%	75.0%
Industrial Training Relevant to Current Industrial Needs Available in your Area?			
Yes, available within my District	42.9%	33.3%	40.0%
Yes, available within my State	85.7%	83.3%	85.0%
Industrial Training for Future Industrial Needs Available in Malaysia?			
Yes, available in Public VTIs	78.6%	83.3%	80.0%
Yes, available in Private VTIs	78.6%	83.3%	80.0%

Percentage Distribution on Methods of Worker Training (Multiple Answers)

	N	Send worker to institute	Conduct internally with external trainers	Conduct internally with internal staff
Local Companies	14	57.1%	78.6%	85.7%
SMIs	9	44.4%	66.7%	88.9%
Large Firms	5	80.0%	100.0%	80.0%
Non-Japanese MNCs	6	83.3%	83.3%	83.3%
SMIs	1	100.0%	-	-
Large Firms	5	80.0%	100.0%	100.0%
Japanese MNCs	38	57.9%	65.8%	73.7%
SMIs	9	11.1%	55.6%	66.7%
Large Firms	29	72.4%	69.0%	75.9%

Source: Industry Survey by PE Research & JICA

Industry's Assessment of Public and Private VTIs Based on their Employment of Technical & Vocational Graduates (Local Companies and Non-Japanese MNCs)

	Local Companies		Non-Japanese MNCs		Overall	
Strengths	**Public VTI**	**Private VTI**	**Public VTI**	**Private VTI**	**Public VTI**	**Private VTI**
Number of Respondents	5	8	5	5	10	13
Full range of equipment/facilities	60.0%	-	-	-	30.0%	-
Cover various technical field	20.0%	-	-	-	10.0%	-
Graduates willing to learn new technology	20.0%	25.0%	-	-	10.0%	15.4%
Graduates independent/resourceful	20.0%	12.5%	-	-	10.0%	7.7%
Graduates have strong theoretical base	20.0%	12.5%	60.0%	40.0%	40.0%	23.1%
Graduates have strong practical base	20.0%	12.5%	60.0%	20.0%	40.0%	15.4%
Experienced/Qualified Trainers	-	12.5%	-	40.0%	-	23.1%
Understand industry needs/market driven	-	50.0%	-	-	-	30.8%
Reasonable cost for training	20.0%	-	-	-	10.0%	-
Weakness	**Public VTI**	**Private VTI**	**Public VTI**	**Private VTI**	**Public VTI**	**Private VTI**
Number of Respondents	7	5	5	5	12	10
Lack advanced/latest equip and facilities	14.3%	40.0%	-	-	8.3%	20.0%
Graduates have poor work commitment	42.9%	-	20.0%	20.0%	33.3%	10.0%
Graduates lack practical knowledge	14.3%	-	40.0%	60.0%	25.0%	-
Graduates lack communication skills	28.6%	-	60.0%	40.0%	41.7%	20.0%
Trainers lack industry/practical experience	14.3%	20.0%	-	-	8.3%	10.0%
Training lean more towards theoretical	28.6%	-	-	-	16.7%	-
Training not related to current industry need	28.6%	-	20.0%	-	25.0%	-
High cost for training	-	60.0%	-	40.0%	-	50.0%

Industry Response to Most Preferred VTI in Malaysia (Local Companies and Non-Japanese MNCs only)

	Local Companies	Non-Japanese MNCs	Total
Polytechnics	50.0%	83.3%	66.7%
GMI	66.7%	16.7%	41.7%
State Skills Development Centres	66.7%	16.7%	41.7%
Private Institutes	-	66.7%	33.3%
JMTI	16.7%	16.7%	16.7%
ITI	33.3%	-	16.7%
MARA Institutes	16.7%	16.7%	16.7%
CIAST	-	16.7%	8.3%
ADTEC	16.7%	-	8.3%
University	16.7%	-	8.3%
Number of Respondents	6	6	12

Section B 4 Statistical Tabulations of Senior Volunteer Survey

In order to get the views of the Senior Volunteers assigned to the various VTIs, a questionnaire survey was designed and with the assistance of JICA, the questionnaires (in Japanese) were distributed to the Senior Volunteers. By the end of December 2004, 14 completed questionnaires were submitted to JICA. The following tables outline the statistical tabulations from the Senior Volunteer Survey.

Distribution of Senior Volunteer Respondents by Institute

Institutes	Number of Respondents	% Distribution
Industrial Training Institutes (Ministry of Human Resource)	6	42.9%
ADTECs (Ministry of Human Resource)	5	35.7%
Kedah Industrial Skills & Management Development Centre (State)	1	7.1%
College Community Management Division (Ministry of Higher Education)	2	14.3%
Total	**14**	**100.0%**

Distribution of Senior Volunteer Respondents by Field of Expertise/Service

Field of Expertise/Service	Number of Persons	% Distribution
Civil Engineering	2	14.3%
Mechanical Engineering	3	21.4%
Electronics Engineering	3	21.4%
Electrical Engineering	2	14.3%
Industrial/Production Engineering	2	14.3%
Plastic Technology	2	14.3%
Total	**14**	**100.0%**

Current Role of Senior Volunteer Respondents by Institute (multiple answers)

	Institutes			
Current Activity	**ADTECs**	**ITIs**	**Others**	**Overall**
Selective lecture for lecturer (theory)	2	4	2	8
Selective lecture for lecturer (practical skills)	5	4	1	10
Instruction for student (theory)	2	2		4
Instruction for student (practical skills)	4	2		6
Advice for textbook (only advice)	2	2	3	7
Textbook Creation (model textbook creation, etc)	5	4		9
Advice to institution management	2	2	1	5
Co-operation promotion support with Industry	5	3		8
Others	2	2	3	7
N	**5**	**6**	**3**	**14**
Current Activity	**Institute**			
Percentage "yes" over number of respondent	**ADTECs**	**ITIs**	**Others**	**Overall**
Selective lecture for lecturer (theory)	40.0%	66.7%	66.7%	57.1%
Selective lecture for lecturer (practical skills)	100.0%	66.7%	33.3%	71.4%
Instruction for student (theory)	40.0%	33.3%		28.6%
Instruction for student (practical skills)	80.0%	33.3%		42.9%
Advice for textbook (only advice)	40.0%	33.3%	100.0%	50.0%
Textbook Creation (model textbook creation, etc)	100.0%	66.7%		64.3%
Advice to institution management	40.0%	33.3%	33.3%	35.7%
Co-operation promotion support with Industry	100.0%	50.0%		57.1%
Others	40.0%	33.3%	100.0%	50.0%

Preferred Role of Senior Volunteer Respondents by Institute (multiple answers)

	Institutes			
Preferred Activity	**ADTECs**	**ITIs**	**Others**	**Overall**
Selective lecture for lecturer (theory)	2	4	2	8
Selective lecture for lecturer (practical skills)	5	4	2	11
Instruction for student (theory)	1	1	-	2
Instruction for student (practical skills)	4	1	-	5
Advice for textbook (only advice)	4	2	3	9
Textbook Creation (model textbook creation, etc)	4	6	1	11
Advice to institution management	2	5	2	9
Co-operation promotion support with Industry	2	5	3	10
Others	1	1	3	5
N	**5**	**6**	**3**	**14**
Preferred Activity	**Institutes**			
Percentage "yes" over number of respondent	**ADTECs**	**ITIs**	**Others**	**Overall**
Selective lecture for lecturer (theory)	40.0%	66.7%	66.7%	57.1%
Selective lecture for lecturer (practical skills)	100.0%	66.7%	66.7%	78.6%
Instruction for student (theory)	20.0%	16.7%	-	14.3%
Instruction for student (practical skills)	80.0%	16.7%	-	35.7%
Advice for textbook (only advice)	80.0%	33.3%	100.0%	64.3%
Textbook Creation (model textbook creation, etc)	80.0%	100.0%	33.3%	78.6%
Advice to institution management	40.0%	83.3%	66.7%	64.3%
Co-operation promotion support with Industry	40.0%	83.3%	100.0%	71.4%
Others	20.0%	16.7%	100.0%	35.7%
N	5	6	3	14

Comparison of Current and Preferred Activity Senior Volunteer Respondents by Institutes (multiple answers)

	Percentage "Yes" response over total number of respondents							
	ADTECs		ITIs		Others		Overall	
	Current Activity	Preferred Activity	Current Activity	Preferred Activity	Current Activity	Preferred Activity	Current Activity	Preferred Activity
Selective lecture for lecturer (theory)	40.0%	40.0%	66.7%	66.7%	66.7%	66.7%	57.1%	57.1%
Selective lecture for lecturer (practical skills)	100.0%	100.0%	66.7%	66.7%	33.3%	66.7%	71.4%	78.6%
Instruction for student (theory)	40.0%	20.0%	33.3%	16.7%	-	-	28.6%	14.3%
Instruction for student (practical skills)	80.0%	80.0%	33.3%	16.7%	-	-	42.9%	35.7%
Advice for textbook (only advice)	40.0%	80.0%	33.3%	33.3%	100.0%	100.0%	50.0%	64.3%
Textbook Creation (model textbook creation, etc)	100.0%	80.0%	66.7%	100.0%	-	33.3%	64.3%	78.6%
Advice to institution management	40.0%	40.0%	33.3%	83.3%	33.3%	66.7%	35.7%	64.3%
Co-operation promotion support with Industry	100.0%	40.0%	50.0%	83.3%	-	100.0%	57.1%	71.4%
Others	40.0%	20.0%	33.3%	16.7%	100.0%	100.0%	50.0%	35.7%

Senior Volunteers Perception of Impact on Present Activities (multiple answers)

Parameters	Percentage over N (multiple answers)			N
	Need drastic improvement	Need some improvement	No problem	
Organisation				
Number of personnel	-	16.7%	83.3%	12
Organisation composition	8.3%	50.0%	41.7%	12
Number of lecturer	8.3%	16.7%	75.0%	12
Level of lecturer	30.8%	30.8%	38.5%	13
Course and content of lecture				
Course type	-	27.3%	72.7%	11
Curriculum	38.5%	30.8%	30.8%	13
Contents of lecture (theory)	33.3%	41.7%	25.0%	12
Contents of lecture (practical skill)	41.7%	25.0%	33.3%	12
Textbook	41.7%	41.7%	16.7%	12
Intern system (OJT)	-	30.0%	70.0%	10
Equipment				
Degree of sufficiency	-	27.3%	72.7%	11
Degree of practical use	45.5%	18.2%	36.4%	11
Maintenance management	18.2%	45.5%	36.4%	11
Others				
Co-operation with private enterprises	15.4%	53.8%	30.8%	13
Budget	15.4%	38.5%	46.2%	13

Senior Volunteers Perception of Impact on VTIs (multiple answers)

Parameters	Percentage over N (multiple answers)				N
	Serious Problem	Some Problem	No Problem	Good	
Organisation					
Number of personnel	8.3%	25.0%	66.7%	-	12
Organisation composition	9.1%	54.5%	36.4%	-	11
Number of lecturer	-	72.7%	9.1%	18.2%	11
Level of lecturer	58.3%	25.0%	16.7%	-	12
Course and content of lecture					
Course type	-	18.2%	63.6%	18.2%	11
Curriculum	38.5%	38.5%	23.1%	-	13
Contents of lecture (theory)	18.2%	63.6%	18.2%	-	11
Contents of lecture (practical skill)	40.0%	40.0%	20.0%	-	10
Textbook	38.5%	46.2%	7.7%	7.7%	13
Intern system (OJT)	9.1%	27.3%	54.5%	9.1%	11
Equipment					
Degree of sufficiency	-	18.2%	36.4%	45.5%	11
Degree of practical use	27.3%	63.6%	9.1%	-	11
Maintenance management	18.2%	54.5%	27.3%	-	11
Others					
Co-operation with private enterprises	16.7%	41.7%	41.7%	-	12
Budget	-	50.0%	50.0%	-	10

Senior Volunteers Perception on the Necessity and Continuation of SV Dispatch

Institutes	Distribution of Response			N
	Necessary	Conditionally Necessary	Not Necessary	
Industrial Training Institutes	2	4	-	6
ADTECs	1	4	-	5
Kedah Industrial Skills & Management Development Centre	-	1	-	1
College Community Management Division	-	1	1	2
Total	3	10	1	14
Institutes	**Percentage Response over N**			
	Necessary	**Conditionally Necessary**	**Not Necessary**	**Number of Persons**
Industrial Training Institutes	33.3%	66.7%	-	6
ADTEC	20.0%	80.0%	-	5
Kedah Industrial Skills & Management Development Centre	-	100.0%	-	1
College Community Management Division	-	50.0%	50.0%	2
Total	21.4%	71.4%	7.1%	14

Senior Volunteers Comments on Improving the Current Activities of SVs and VTIs

	Improving Current Activities of Senior Volunteers	Improving Impression of VTIs
Organisation	Counterpart specialising in technology transfer is required	Institute expansion must include increase in lecturer recruitment
	Number of lecturers insufficient	Technical knowledge sharing is required
	Insufficient experienced lecturers	Insufficient number of lecturers
	Insufficient information gathering capability	Insufficient industry/business experience amongst lecturer
		Insufficient commitment by lecturers
		Lecturer who receives technology transfer must have practical experience
Course, Content of Lecture	Lack of basic subjects	Implementation, purpose and objectives of courses not defined
	Lack of standard teaching materials	Amendment in NOSS required
	Improvement required in the capability of instructor who has no industry experience	Training course should look into both synthesis and specific nature
	Require a national unified textbook	Details on the contents of instruction need examination/evaluation
	Require adjustments in practical sessions	Development and usage of teaching materials in VTIs need examination/ evaluation
Equipment	Evaluation of maintenance management required	Many unutilised equipment
	Evaluation of scheduled inspection required	Purpose of equipment introduction not defined
		Scheduled inspection of equipment required
		Specification on qualification for person in charge of equipment required
Others	Technical needs of foreign MNCs need to be identified	Budget insufficient for equipment maintenance management
	No co-operation in maintenance capability	

Section B 5 Summary of Interviews Findings: Vocational Training Institutes

ADTEC (Advanced Technology Training Centre)	
Capacity & Capability	• Conducts Diploma Courses (2-3 years) and customised short courses for industries. On average have about 600-800 students per institute for the diploma courses. Also conducts between 10 and 30 short courses depending on industry demand. Training modules are 65% practical and 35% theory. • Except for ADTEC Shah Alam, the others indicate that they have only partially achieved their objectives. Reasons given include: - Location of institute far from industry (ADTEC Kulim) - Employment and skills utilisation of graduates only satisfactory (ADTEC Batu Pahat) - Poor location and poor marketing leading to low demand for courses offered (Melaka)
Internal Positive Aspects	• Good equipment and facilities • Conducive environment for training • No problems with budgets
Internal Negative Aspects	• Lack of industrial expertise among trainers • Lack of skilled teaching staff
External Positive Aspects	• Good support from Manpower Department • All curricula designed centrally and NVTC accredited • Advisory committee with industry representatives enables institutes to determine industry demand and needs • Informal networking with industry associations
External Negative Aspects	• Location is far from industry (Kulim) • Lack of cooperation from industries for student placements • SMIs not interested/bothered with skills training
Issues	• Lack skilled and/or experienced teaching staff • Delay in recruitment and posting of trainers/lecturers to institutes
Other Remarks and Observations	• No changes to roles and responsibilities of ADTEC and are still as per the objectives outlined by the Manpower Department. • One recurrent issue highlighted by all the institutes is the lack of skilled trainers. Recruitment is under Public Services Department (PSD) that conducts all interviews and sends the required manpower. In most cases these are fresh graduates lacking experience and the requisite skills. In some cases, vacancies are filled with staff that do not have the appropriate skills required for the particular field and therefore need to be retrained by the institutes. Institutes do not have powers for hiring and firing. • Financially, all development costs (equipment, facilities, upgrading) are under the purview of the Manpower Department. The department allocates an annual operational budget to the respective institutes based on proposals submitted. All collections from students are channelled back to the Treasury and are not treated as revenue. • Only discuss with the industries that are members in the Advisory Committee. Do not have any formal dialogue sessions with industry associations. • Rely on VTRD and NVTC to identify industry needs. • Curricula design, training course, equipment and facilities are all under purview of Manpower Department

Industrial Training Institutes (ITIs)	
Capacity & Capability	• Conduct both diploma and certificate level courses for manufacturing and service industries. However, diploma courses are only available in selected institutes. Majority of the courses are at certificate levels. On average have about 600-1,200 students. Training modules are 70% practical and 30% theory. • ITIs started after 2000 were undertaken on a turnkey project basis (e.g. ITI Muar, costs RM70 million for physical development and RM120 million for equipment). • Have achieved their objectives of training skilled workforce.
Internal Positive Aspects	• Good equipment and facilities • Conducive environment for training • No problems with budgets
Internal Negative Aspects	• Lack of industrial expertise amongst trainers • Lack of skilled teaching staff • Lack teaching materials and reference books
External Positive Aspects	• Good support from Manpower Department • Good rapport for industries who are represented in the committees;
External Negative Aspects	• Difficulties in getting student placements for on-the-job training • Poor demand for short courses and customised courses by industries
Issues	• Lack skilled and/or experienced teaching staff • ITIs established in 80s and 90s need serious upgrading in terms of equipment, facilities and building. Even though the Manpower Department allocates funds annually for upgrading, it is not sufficient for current needs. For example ITI Pasir Gudang and ITI KL are both facing shortages in equipment.
Other Remarks and Observations	• No changes to the roles and responsibilities of ITIs and are still as per the objectives outlined by the Manpower Department. • Lack of skilled/experienced trainers are due to the same reasons highlighted by the ADTECs, i.e. posting of fresh graduates; posting of staff not relevant to training requirements etc. • Financially, all development costs (equipment, facilities, upgrading) are under the purview of the Manpower Department. The department allocates an annual operational budget to the respective institutes based on proposals submitted. All collections from students are channelled back to the Treasury and are not treated as revenue. • ITIs tend to work more closely with industries except for the older institutes. • Curriculum design, training course, equipment and facilities are all under purview of Manpower Department

Japan-Malaysia Training Institute (JMTI)	
Capacity & Capability	• Focussing on engineering courses such as electrical engineering, mechanical engineering and mechatronics. Training modules 60% practical and 40% theory • Indicate that it has achieved its objectives and rates its contribution to skilled workforce, technology transfer and industry growth as very high (5.0)
Internal Positive Aspects	• Qualified instructors/trainers • Courses relevant to industries • Good/latest equipment and facilities.
Internal Negative Aspects	• Limitation of land for expansion • High turnover of lecturers/trainers
External Positive Aspects	• Rapid industrial development in Penang • Improved perception on technical training • JPA accreditation encourages high student enrolment.
External Negative Aspects	• Nil
Issues	• High turnover of lecturers/trainers.
Other Remarks and Observations	• No changes to the roles and responsibilities; JMTI is still relatively new. • Good linkages with industries and have formal dialogue sessions with FMM, JACTIM etc. • Keep track of technology changes of industries through regular site visits. • Conducts JICA supported programmes. • Formulation of curriculum is through industrial needs, survey and cooperation with Japanese experts, which is forwarded to Manpower Department.

Centre for Industrial and Advanced Skills Training (CIAST)	
Capacity & Capability	• Started in 1984 and has trained more than 27,000 instructors. Current full time students are 547 and part time students are 234 • Has fully achieved its objectives and rate its contribution to industry skilled workforce, technology transfer and industry growth to be high (4.0)
Internal Positive Aspects	• Qualified instructors/trainers • Sufficient equipment and facilities.
Internal Negative Aspects	• Operational budget constraints
External Positive Aspects	• Accepted and widely recognised
External Negative Aspects	• Policy changes, with more concern currently on agro-based development. CIAST is still trying to identify areas that it can develop.
Issues	• Most of the equipment and machinery are old and breakdown/downtime is rated as high. Need serious upgrading of equipment in machining, welding, plastic technology, automotive and electrical engineering
Other Remarks and Observations	• Role and objectives have changed over time, with additional functions such as (1) VTRD which undertakes studies relating to effectiveness of courses; (2) review of curriculum developed by Manpower Dept; and (3) study on new areas for development and submitting proposal to Manpower Department • Good linkages with industries and industry associations. Keep abreast of industry needs through regular site visits. • JICA supported programmes.

	Polytechnics
Capacity & Capability	• Conduct both diploma and certificate level courses for manufacturing and service industries. Each one has about 1,500-4,000 students. Training modules are 40-60% practical and 60-40% theory depending type of courses as polytechnics also offer hospitality, computer and other vocational courses that are non-technical. • Polytechnics started during the 8th Malaysia Plan are all turnkey projects and the amount spent on facilities/ buildings averaged RM150-170 million and RM50-80 million for equipment. Have achieved their objective of training technical and vocational skills.
Internal Positive Aspects	• Sufficient teaching staff, equipment and facilities • Conducive environment with lodging, recreational and physical development • No problems with budgets
Internal Negative Aspects	• Lack of industrial skill and expertise amongst trainers and skilled teaching staff; lack support staff and administrative staff • Under utilised equipment due to lack of skills of lecturers; in some polytechnics, lack of equipment due to late delivery is evident • Equipment old or obsolete/need upgrading • Students are usually more from rural background with limited exposure to different cultures and environment
External Positive Aspects	• Good support from industries for student placements • Qualification recognised and accredited
External Negative Aspects	• Government policy and budget limits exposure to outside needs, expertise and resources. • Some polytechnics are located in rural areas and therefore student placements for on-the-job training are problematic; rural location also affects enrolment of students and recruitment of lecturers/trainers. (e.g. Sabak Bernam, Merlimau)
Issues	• Inexperienced lecturers and trainers • New polytechnics (those built as turnkey projects under 8MP) face issues such as poor quality and/or workmanship on the complexes, machinery and equipment not fully assembled and facilities still needing additional work. • Older polytechnics on the other hand show obsolete equipment and machinery as well as equipment under repair. It has to be noted that while the student intake in polytechnics might be 3 to 4 times higher than ITIs and ADTECs, the number of equipment and machinery is less than one-third of those available in ITIs and ADTECs. • Transition change as they are now under a new ministry, but there has yet to be a clear picture of what is required etc. Under the previous Ministry of Education, the structure of polytechnic is limited
Other Remarks and Observations	• 100% subsidised by Ministry of Higher Education • All courses are LAN-accredited • Currently all polytechnics are in the process of submitting for ISO9001 • Have good rapport with state governments and is in the forefront of the governments affirmative action policies in education

Community Colleges	
Capacity & Capability	• Conduct certificate level courses for manufacturing (automotive and electrical engineering) and service industries (catering, fashion design). On average have about 500 students. Training modules are 75% practical and 25% theory. • Originally Community Colleges were "squatting" in Technical Schools but under 8MP they have been allocated development funds for facilities and equipment. The newer community colleges occupy a block of commercial shop lots (e.g. Bukit Beruang) or have their own complex within other higher training institutes (Ledang). • All indicate that they have partly achieved their objective of training technical and vocational skills.
Internal Positive Aspects	• Well designed curriculum • Qualified teaching staff • Sufficient basic equipment and facilities
Internal Negative Aspects	• Capability of some students limited as the entry criteria to enrol is just a pass in SPM
External Positive Aspects	• Good support from government, local authorities and other social organisations
External Negative Aspects	• CCs still "squatting" in Technical Schools need to relocate in order to expand and take in more students.
Issues	• Those CCs still "squatting" in Technical Schools face space limitations. • Capability and capacity of students are limited as the intakes are those who have no other option for further education due to poorer results in SPM
Other Remarks and Observations	• Role and objectives is to provide basic technical skills for secondary school leavers; also to encourage life-long learning • 100% subsidised by Ministry of Higher Education and all courses are LAN-accredited thus enabling graduates to proceed towards diploma level in polytechnics and further. • Have good rapport with state governments and are in the forefront of the government affirmative action policies in education • Advisory committees comprise representatives from local industries, local authority, village heads.

MARA Skills Institutes (IKM MARA)	
Capacity & Capability	• Conduct certificate and diploma level courses for automotive, fabrication, electroplating, marine, civil engineering, mechanical engineering, electrical engineering, electrical and electronic courses. Besides these, courses in graphic design, architecture, draughtsmanship are also available. Training module is 70% practical and 30% theory. Average student number is between 800-1000. • All indicate that they have achieved their objective
Internal Positive Aspects	• Sufficient facilities to accommodate training, with board and lodgings • Allowance for those qualified • Fully paid tuition fees.
Internal Negative Aspects	• Equipment slightly behind current industrial trend • Lack of industrial attachment programmes for students • Lack of experienced trainers.
External Positive Aspects	• Good support from government
External Negative Aspects	• Changing industrial trends • Lack of industrial linkages and networking
Issues	• Budget constraints limits upgrading of equipment and facilities in most IKMs • Recruitment of lecturers/trainers under PSD and the issues highlighted by ITIs and ADTECs are applicable • Lack experienced trainers/lecturers • Some certificate courses have been implemented for 15-20 years but are not recognised or accredited by the government. • Lack industrial linkages and networking
Other Remarks and Observations	• Role and objectives is to increase the number of skilled Bumiputera workers • 100% funded by MARA under the purview of MCED • Most of the courses are either LAN or NVTC accredited. • In the forefront of the Government's affirmative action policies in education

Malaysia Spanish Institute (MSI)	
Capacity & Capability	• Established in 2003, no students graduated yet. • Future courses in automotive manufacturing technology using Spanish expertise.
Internal Positive Aspects	• Qualified and committed staff • Adequate facilities
Internal Negative Aspects	• Limited funding • High operational costs • Campus management system is not in place yet
External Positive Aspects	• High demand for skilled workforce • Technology provider from Spain
External Negative Aspects	• Location of campus is far from parent campus in KL
Issues	• Insufficient funding • Equipment under used as courses just started • Several pieces of equipment have yet to be commissioned
Other Remarks and Observations	• Teaching staff are young but most of them are first degree or master degree holders • Courses have been sent for LAN approval (yet to be accredited) • Also open to fee paying students (RM20,000 for complete diploma course).

Malaysian Institute of Chemical & Bio-Engineering Technology (MICET)	
Capacity & Capability	• Established in 2002, no students graduated yet. • Conducts diploma courses in chemical engineering technology in bioprocess, environment, food, polymer and chemical. • Training modules are 60% practical and 40% academic.
Internal Positive Aspects	• Latest technology in equipment and infrastructure • Students exposure to equipment is at par with industry
Internal Negative Aspects	• Lecturers and trainers need experience
External Positive Aspects	• Nil
External Negative Aspects	• Insufficient students as most are not aware about the courses offered • Not many aware of chemical industry job demand
Issues	• Lack of students, low application; most not aware of the job demand and career development for chemical based courses • Equipment under used as courses just started • Future operational expenditure will be hard to maintain as the equipment and facilities are the latest and maintenance costs will be very high.
Other Remarks and Observations	• Previously under IKTM, but currently in collaboration with Uni-KL. Currently planning to offer Degree and Post Degree courses besides the 5 diploma courses offered currently. Planning with Belfast University to set up a programme. • Was a turnkey project, i.e., packaged at RM250 million. • Turnkey contract was not only for the physical development and the equipment but also sourced the curriculum from a third party that was later streamlined to local needs. • All current courses are LAN accredited. • Operating costs are about RM5 million per year.

Melaka Industrial Skills Development Centre (MISDC)	
Capacity & Capability	• A total of 2,036 persons have been trained over the period 1995 to 2002. • Provides 4 full time certificate courses in mechatronics, electronic, electrical and occupation safety & health. Part-time certificate courses are also conducted on demand basis. Currently planning to start a full time course on Packaging and Labelling. • Consider having only partially achieved its objectives, as most SMIs are still not responsive to training of their workforce. Considers its contribution to industries as high for skilled workforce, technology transfer and industry growth.
Internal Positive Aspects	• Adequate and sufficient equipment
Internal Negative Aspects	• Current land is not sufficient for future expansion
External Positive Aspects	• Support of Federal Government for new equipment purchase • Good linkages and networks with member industries
External Negative Aspects	• Poor co-operation from SMIs.
Issues	• Poor co-operation from SMIs • Lack of space for future expansion
Other Remarks and Observations	• Federal Government provided grant for equipment • State Government provided grant for physical development (RM1 million in 1996 and RM2 million in 2001); operational grant of RM100,000 for 1st 5 years • SEDC provided grant of 3 acres on industrial land and industrial sector members contributed a total of RM95,000 as membership fees. • Operational budget is self-funded. Only 4 full-time staff and 26 part-time/ freelance/project basis staff (trainers and training officers). • Operational expenditure in 2003 was RM1.5 million. • Works very closely with the following agencies in training co-operation - HRDC, SMIDEC, Ministry of Women & Family Development, NVTC and EPU. • International collaboration is with AOTS, Japan and OISCA, Japan.

Babah Skills & Technology Centre (SSTC)	
Capacity & Capability	• Provide courses in manufacturing skills • Provide customised courses to meet training needs of member companies • Indicate that it has only partly achieved its objectives, as relatively new and still identifying the directions and training culture.
Internal Positive Aspects	• Supportive management council; multi-skilled staff, low operating cost (as only 5 full–time staff, the rest are part-time or free lance basis)
Internal Negative Aspects	• Insufficient manpower for big events/seminars
External Positive Aspects	• Good co-operation and response from industries
External Negative Aspects	• Lack of training culture amongst SMIs.
Issues	• Poor response from SMIs • Shortage of full-time manpower for expansion • Courses are not accredited as the centre currently only designs courses for member industries.
Other Remarks and Observations	• State and federal government provides the funding and infrastructure while industry provides support and leadership. • Administered jointly by Management Council comprising 7 industrial members and 5 government sector members. • SSTC has only 5 full-time staff as course organisers and co-ordinators. All lecturers and trainers are hired on freelance basis. • Even though equipment are minimal, it is under utilised due to low number of training courses