However under the NVTC, Committee for Co-ordination of Public Training Agencies has been created to provide a forum for all general training agencies to discuss on issues and problems encountered in the execution of skills training programmes. The Committee meets on a quarterly basis and issues discussed include training co-curriculum, teaching manpower and training facilities.

5.9 Private Sector Providers of VET

Industry associations are also involved in the provision of VET. These include:

- FMM Institute of Manufacturing (FMM-IM)
- Malaysian Textile and Apparel Centre (MATAC)
- Malaysian Plastics Manufacturers Association (MPMA) Plastics Technology Technical Training Centre

The Federation of Malaysian Manufacturers (FMM) is Malaysia's foremost industry association. Established in 1968, it currently represents over 2,000 manufacturing and industrial service companies. The FMM is the officially recognised and acknowledged voice of the industry. The **FMM – Institute of Manufacturing (FMM –IM)** is the training arm of the FMM. It was incorporated as a company in 1999. Prior to its incorporation FMM – IM was a department within the FMM (Entrepreneur and Skills Development Centre – ESDC).

While FMM-IM operates from the FMM main office, it has not set up its own designated vocational training centre. Instead, it makes use of the public and private sector colleges to provide for the vocational training courses. Towards this end, FMM-IM has developed close relationship with several of the public sector polytechnics and industrial training institutes. Some of its partners include IKBN, ITI, GMI, MFI, PSA, ADTEC and CIAST. This arrangement of working with public sector providers is also carried out by the other FMM regional offices.

The courses offered are at all three levels, certificate to diploma level. In addition, FMM-IM also provides short courses, in-house training and public forums. The vocational courses offered by FMM-IM

The Malaysian Textile Manufacturers Association (MTMA) is the recognised national representative body for the textile and apparel industry. Membership is drawn from all sectors of the textile and apparel manufacturing, both large and small covering the fibre, spinning, weaving, knitting, garment-making, industrial textile/accessories sectors.

The main objective of MTMA is to protect and promote the interests of its members. The **Malaysian Textile and Apparel Centre (MATAC)** provides skills training in certain areas such as Industrial Sewing Machine Technicians Apprenticeship Scheme (ISMTAS). MATAC also offers other technical skills related to the textile and apparel industry.

The Malaysian Plastics Manufacturers Association (MPMA) is the official trade association of the Malaysian plastic industry. It represents its 900+ member companies and the industry in dialogues with the government and other bodies. It is also responsible for spearheading the plastics industry's growth. MPMA also and provides the platform for training of its members to upgrade the technological level of the plastic industry through its **Plastics Technology Training Centre (MPMA-PTTC).**

MPMA-PTTC was set up in 1993 with the objective of upgrading the skills of the workforce in line with the technological progress of the plastics industry. The role and objectives of

MPMA-PTTC is to provide facilities for developing and upgrading manpower skills. It also acts as a "vehicle" for technology transfer from foreign to the local plastics industry and to assist in the establishment of links between the plastics industry and the government, research institutions, local or foreign training agencies.

Currently, MPMA-PTTC has three branches, namely the MPMA-PTTC Northern Branch/ PSDC, MPMA-PTTC Southern/Johor and MPMA-PTTC Central/Selangor. The MPMA-PTTC Penang branch used to provide the Apprenticeship Training Programme. This programme has now been replaced with PIMAS[54].

MPMA-PTTC Selangor (1996) currently facilitates the Malaysian – Italian Plastic Technology Training Centre (MIPTTC). This programme is collaboration with the Selangor Human Resource Development Centre (SHRDC) which provides the infrastructure, supporting equipment and maintenance, ASSOCOMAPLAST (the association representing Italian companies in plastics and rubber machinery, ancillary equipment and mould manufacturers) provided the equipment and machinery, and ICE, the Italian government trade agency that provides for communication channel between the two countries.

5.10 State Skills Development Centres

Currently there are 12 state skills development centres throughout the country. As at the end of 2003, these skills development centres have trained 214,241 workers (**Table 5.16**).

Table 5.16: Skills Development Centres

Institute	Year of Inception	Total Output as at end of 2003	%
Penang Skills Development Centre	1989	94,514	44%
Selangor Human Resource Development Centre	1992	29,410	14%
Pahang Skills Development Centre	1993	14,251	7%
Perak Entrepreneur & Skills Development Centre	1993	8,782	4%
Negeri Sembilan Skills Development Centre	1994	12,051	6%
Johor Skills Development Centre	1994	11,051	5%
Melaka Industrial Skills Development Centre	1994	7,744	4%
Trengganu Advanced Training Institute	1996	21,748	10%
Kedah Industrial Skills & Management Centre	1996	10,054	5%
Sarawak Skills Development Centre	1996	3,214	2%
Sabah Skills and Technology Centre	1999	1,422	1%
Total		**214,241**	**100%**

Source: compiled from MITI Annual Reports, various years

A summary profile of each of the selected skills development centres is included in **Volume 2** of this report.

[54] PIMAS – is the Plastic Injection Moulding Apprentice Scheme. It is a 10-month programme whereby the company would sponsor an apprentice (school leavers).

5.10.1 Basic Characteristics of State Skills Development Centres

Although they are generally referred to as State Skills Development Centres (SSDC), all of them are incorporated as non-profit organisations and are thus not public sector vocational training institutions. Furthermore, while all the SSDC have representatives from the government, industry and academia, their operations are more akin to private sector. This section of the report summarises the basic characteristics of the SSDCs.

Table 5.17: Basic Characteristics of State Skills Development Centres

Basic Characteristics	Highlights
Organisational Setup	Non-profit organisation registered with the Registrar of Societies.
Management	Management Council comprising members from industry, academia and government are responsible for policy matters. Operational management by small core staff. Training Committee prepares yearly training calendars of courses to be conducted. These representatives also evaluate and obtain feedback on their effectiveness.
Target Groups	Existing employees in industry. School leavers. Retrenched workers. Unemployed graduates.
Sources of Funds	Membership fees Training fees: Most firms sending trainees can claim back the training expenses from their HRDF contributions. Capital expenditure mainly from Government (under the Malaysia Plans) which are channelled through the respective State Economic Development Corporations. Federal Government: for Graduate Reskilling Scheme and the newly-launched Industrial Skills Enhancement Programme (INSEP)
Curriculum	Determined by industry members through training needs analysis. Majority are short courses tailored to needs of industry: hard skills and soft skills. Joint courses with industry associations e.g. Plastics Higher Diplomas, Degree and Postgraduate programmes usually in collaboration with private colleges and universities.
Training Methodology	Classroom and practical training (laboratories and workshops). Part-time classes during weekends and evening to accommodate workers. Increasing use of e-learning.
Lecturers	Small number of full-time lecturers; majority are part-time drawn from industry and other private sector organisations.
Equipment	Mostly donated by industry and other donor agencies, including foreign governments
Other Special Features	Accredited to NVTC. Approved training centres for HRDF. Appointed by SMIDEC as training providers to provide training for SMEs under the Skills Upgrading Programme (see Section 4.5.3).

6. Key Issues of Public Sector VTIs

6.1 Introduction

This chapter looks into the current status of the vocational training in Malaysia. The first section of this chapter analyses the issues drawn from the findings from the workshops, interviews and surveys that were carried out as part of the baseline study. These include:

- **3 PCM workshops** conducted amongst various stakeholders. The first two workshops conducted in Kuala Langat, Selangor targeted MOHR personnel, i.e., Directors and Lecturers of MOHR VTIs respectively. The third workshop conducted in Penang had a mixture of stakeholders from public institutes, state development centres and industries. (the PCM Workshops report is provided in Section A of Volume 2);
- **In-depth interviews** response from **49 VTIs** in the Klang Valley (Kuala Lumpur and Selangor), Alor Setar (Kedah), Penang, Ipoh (Perak), Melaka, Johor Bahru (Johor) and Kota Kinabalu (Sabah). (Tabulations of the interview results and a sample of the interview questionnaire are provided in Section B of Volume 2);
- **Mail Survey** response from **58 VTIs** under the Ministry of Human Resource, Ministry of Higher Education, Ministry of Entrepreneurial and Co-operative Development (MARA), Ministry of Youth and Sorts, and State Skills Development Centres. (Tabulations of the interview results and a sample of the interview questionnaire are provided in Section B of Volume 2);
- **Mail Survey** response from **58 industries**. The mail survey was undertaken jointly with JICA Malaysia Office, with PE Research conducting the survey amongst local firms and non-Japanese MNCs while JICA conducted the survey amongst Japanese MNCs. Thus two sets of questionnaires were used. (Tabulations of the survey results and samples of the mail survey questionnaires are provided in Section B of Volume 2); and
- **Mail Survey** response from **14 Senior Volunteers**. The survey was undertaken by JICA Malaysia Office and the questionnaire used was translated into Japanese. (Tabulations of the interview results and a sample of the interview questionnaire are provided in Section B of Volume 2).

The rest of the chapter summarises other issues pertaining to vocational training compiled from secondary sources.

6.2 Identification of Issues

6.2.1 Issues from PCM Workshops

The PCM workshops highlighted several key issues pertaining to the VTIs under the Manpower Department of MOHR as well as the relationship between VTIs and industry. These key issues can be categorised into five main groups:

Students/Trainees: Most of the students/trainees are fresh school leavers after their SPM. While some of them are interested in vocational training, there are those that lacked interested in vocational training but took it because of parental pressure or as a "training choice of last resort" as are unable to go into the academic line (public university) because of low qualifications. For many of those with low qualifications[55], they tend to face problems following subjects such as maths and science. As such it is not surprising that these students/trainees tend to have an attitude problem – not interested to study, not motivated, lazy, have no direction and can easily be influenced by friends and negative external factors.

Lecturers/Instructors of VTIs: The majority of the lecturers/instructors are new graduates with less than 3 years' experience and many are still undergoing training themselves. As such the main issue that arises here relates to their lack of skills, both technical as well as pedagogy. This is reflected in their lack of confidence to handle first class machinery and equipment (unable to fully use the machinery and equipment). Furthermore most of the lecturers lack English proficiency and communication skills. Having to deal with problem students who are not interested in vocational training exacerbates the situation.

Other issues that have cropped up in the workshops include:

- high workload (including having to do management and co-curricular activities);
- skills mismatch (lecturers having to teach subjects which they are not equipped);
- lack of experts/capacity to develop written instructions materials (WIM) and learning guides (LG);
- insufficient capacity for pedagogy training and lack of master teachers to train new instructors; and
- lecturers/instructors do not have the interest to teach (occupation of last resort) and this is reflected in their attitude at work (poor discipline, low commitment).

VTIs and Manpower Department: The rapid increase in the number of VTIs over the last few years has presented additional challenges to the Manpower Department. These include shortage of staff at the departmental level as well as having adequate budgets to maintain the high technology equipment on a scheduled basis. Other matters include:

- issue of recognition of the courses by JPA;
- lack of analysis of industry needs (need to upgrade and revise curriculum to meet industry requirements);
- need to ensure that the lecturers recruited possess the adequate qualifications to teach the courses; and
- need to have some legislation in place to regulate the setting up of VTIs.

[55] Please see Annex 7 for entrance qualifications for public sector VTIs.

Relationship with Industry: As the final beneficiary of the outputs of vocational training, industry has repeatedly raised the issue on shortage of skills in selected areas. This has often led to pinching of staff. While the large firms have training programmes and budgets for HRD, most SMIs have very small budgets (or none). Furthermore with rapid changes in technology, most public VTIs find it difficult to keep up with them. While much has been said about the importance of co-operation between industry and training providers, VTIs sometimes find that industry do not have enough places for student attachment and are unwilling to share information/knowledge on technology developments.

JICA Senior Volunteers: The Senior Volunteers have been an important supporting stakeholder group for the public sector vocational training institutions. While the VTIs acknowledge their skills, knowledge and willingness to develop training for the lecturers, and ability to recommend appropriate technology, there are some issues that need to be addressed. There is a tendency for SVs' expertise to be only in specific areas. Language barrier also limits communication. Notwithstanding these issues, the VTIs appreciate their willingness to provide technology transfer and their contacts with Japanese companies in Malaysia which have enabled VTIs to work more closely with (Japanese) industry.

From all these key issues, the PCM workshop participants identified three core problems:

(i) students are unable to follow the training programme;

(ii) lecturers cannot perform teaching successfully; and

(iii) graduates from vocational training institutions do not fulfil the needs of industry.

The core problems, direct causes and direct effects are shown in the following simplified problem tree diagrams. The detailed problem trees are shown in **Annex 6.**

Figure 6.1: Result of PCM Workshop Targeting Directors of VTIs

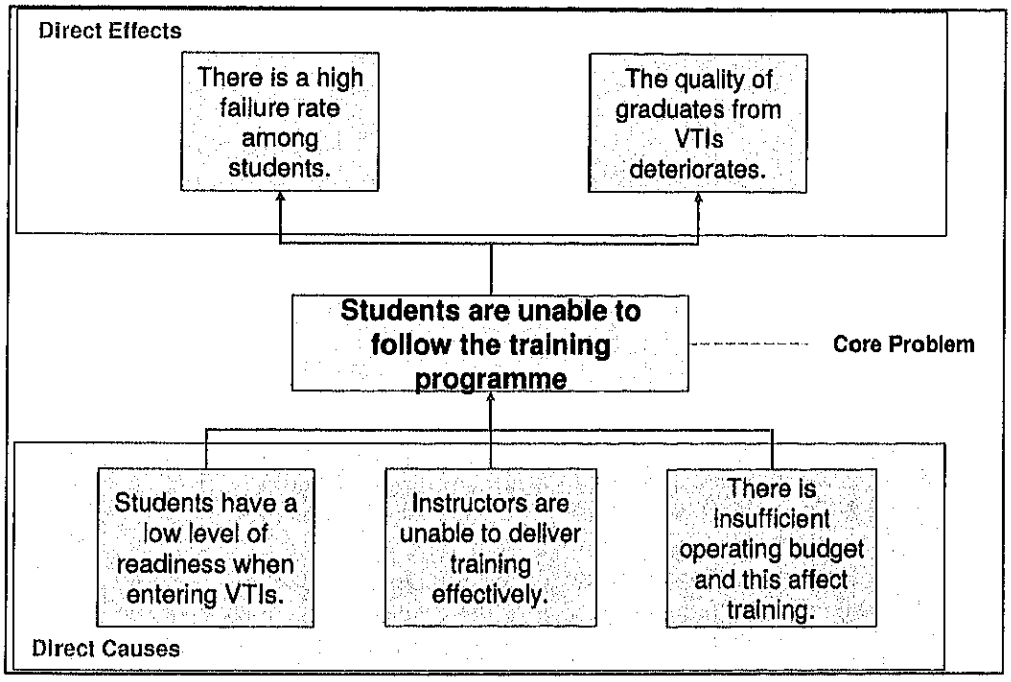


Figure 6.2: Result of PCM Workshop Targeting Lecturers of VTIs

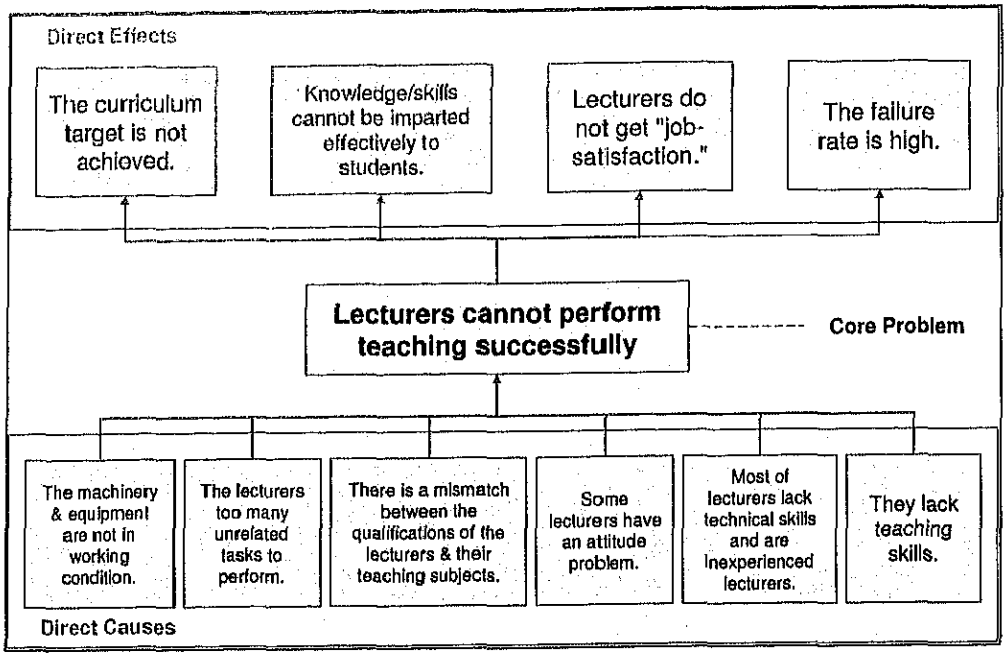
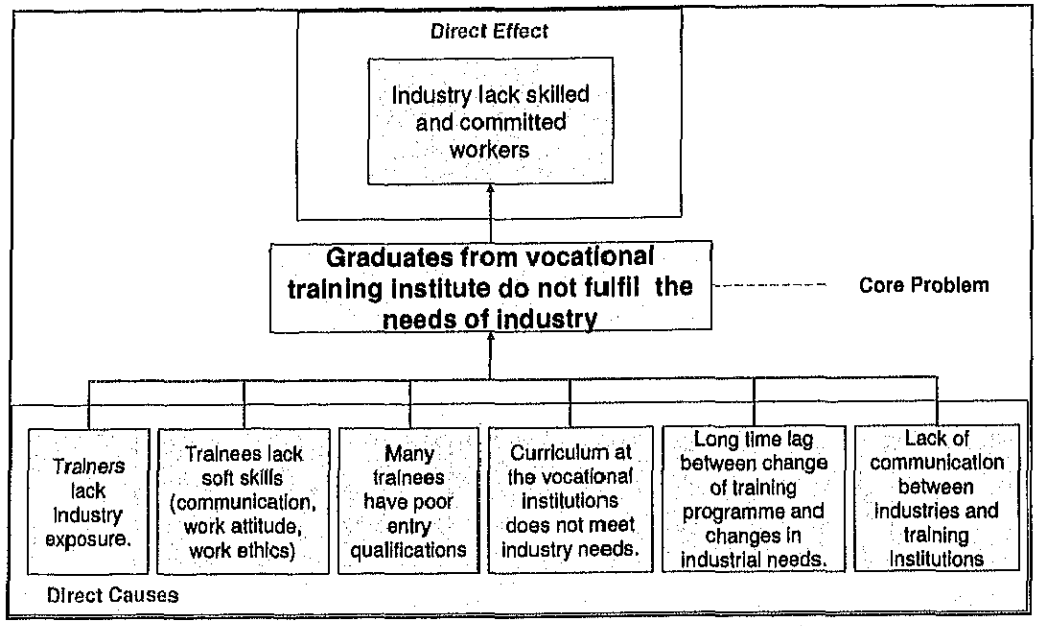


Figure 6.3: Result of PCM Regional Workshop Targeting Industry and VTIs



6.2.2 Issues from Survey of Senior Volunteers

In the case of the survey of Senior Volunteers several issues of concern, which need to be addressed, were highlighted. These issues are categorised into four main groups:

Organisation: While two-thirds of the SVs indicated that there are no issues related to the number of management staff, almost three-quarters of them expressed that there are some problems regarding the number of lecturers. The SVs felt that as the VTIs expand it is essential that there should be an increase in recruitment of lecturers.

This shortage is exacerbated by the fact that almost 60% of the SVs felt that there are serious problems regarding the level of lecturers (**Figure 6.4**). These problems include lack of industry/business experience, lack of commitment and lack of practical experience.

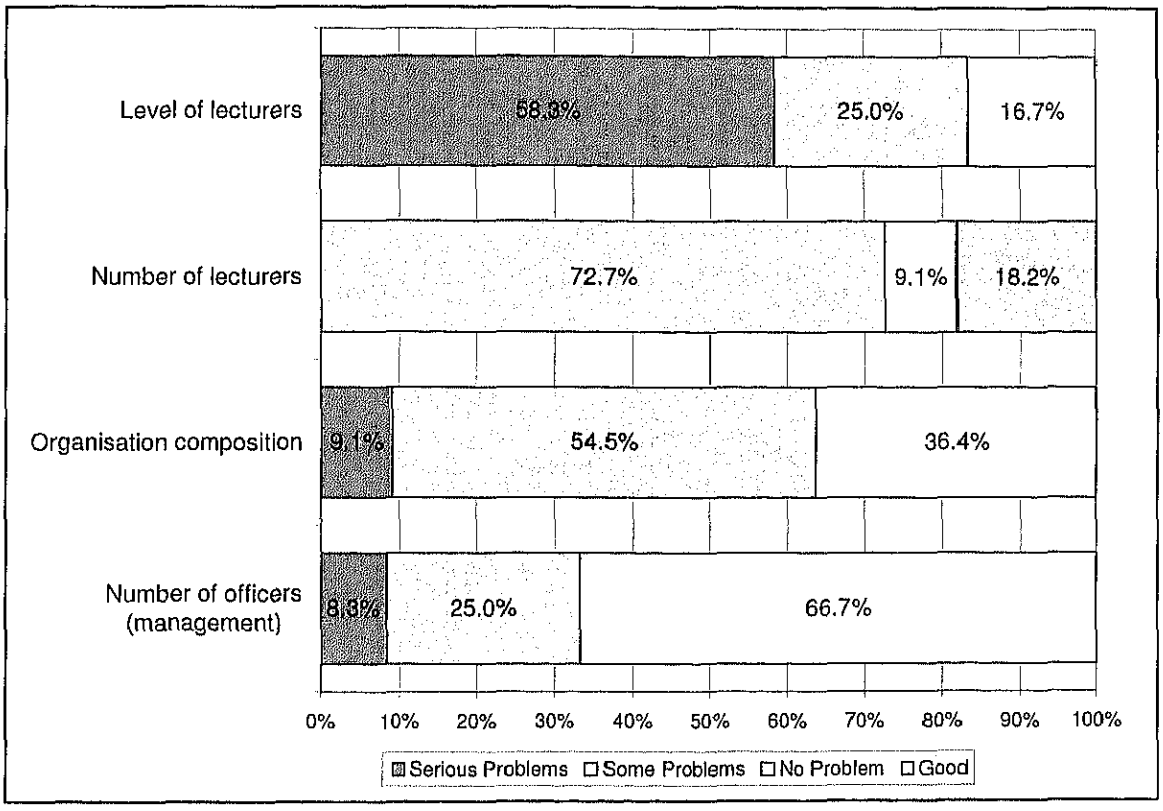
Course Content and Lectures (**Figure 6.5**): Although more than 80% of the SVs indicated that there are no problems with the type of courses, most of them expressed concern on issues related to textbooks, contents of lectures (both practical and theoretical) as well as curriculum. Details on the contents of instruction material as well as the development and usage of teaching materials need to be evaluated. They also felt that there is a need for improvement in the NOSS curriculum.

The SVs also felt that some issues related to the internship/OJT system need to be addressed.

Equipment (**Figure 6.6**): While most of the SVs consider equipment at VTIs as sufficient, they indicated they are concerned regarding equipment maintenance management as they felt that the budget is insufficient for proper equipment maintenance management. Concern on the degree of practical utilisation of the equipment was also expressed with some SVs noting that there are many unutilised equipment. They also suggested that there is a need for scheduled inspection of equipment.

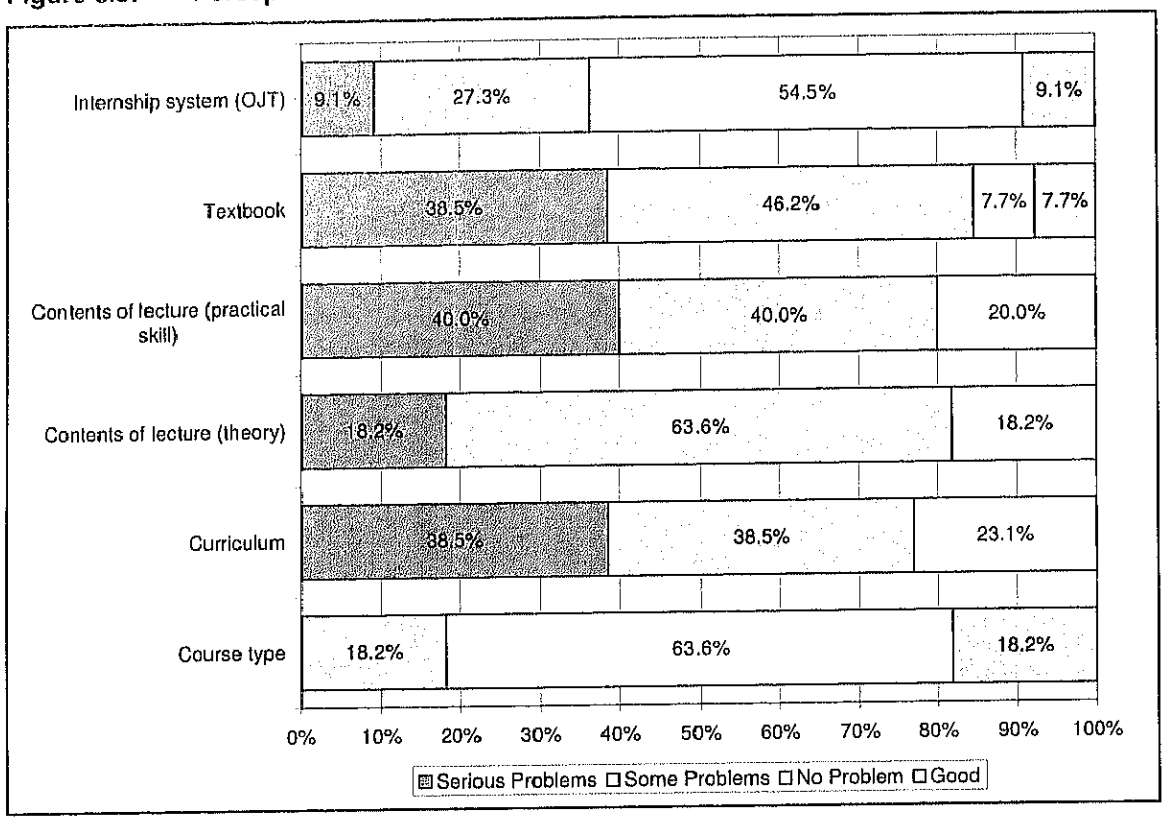
Relationship with Industry: More than half of the SVs felt that there are problems with respect to cooperation with industry which needs to be addressed.

Figure 6.4: Perception of Organisational Issues



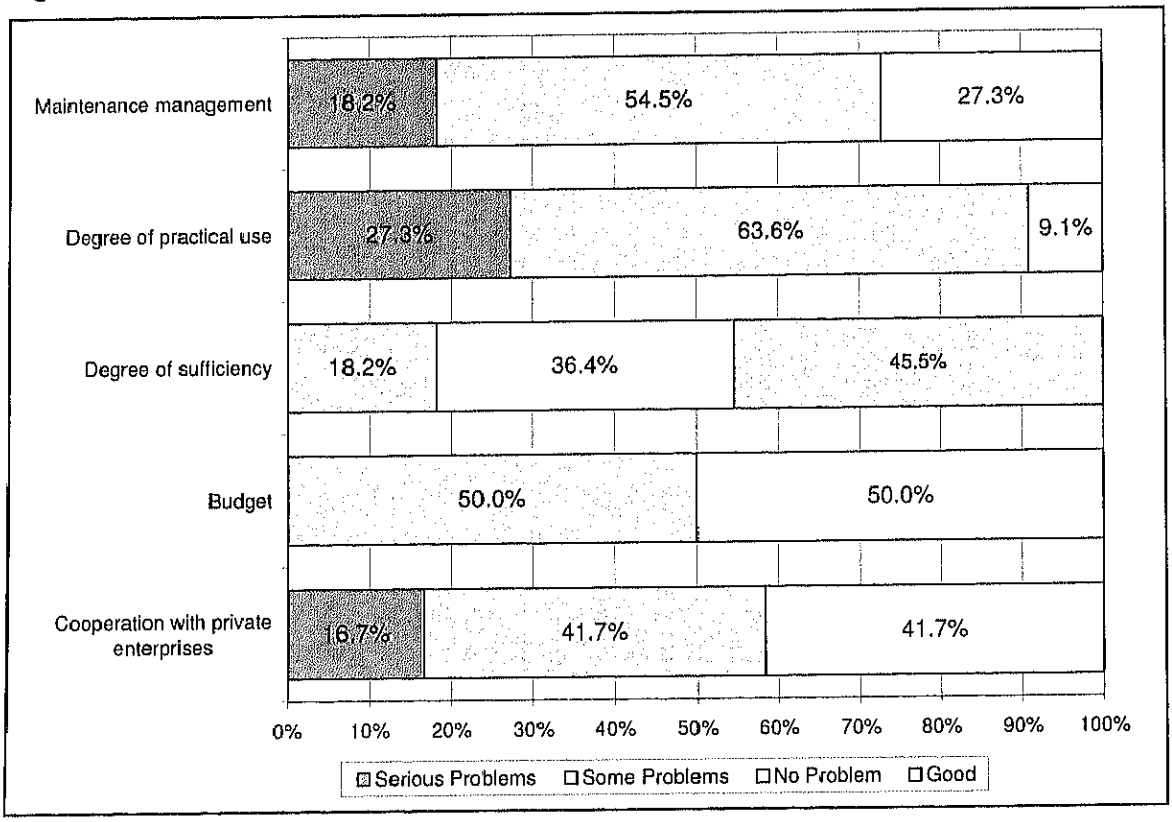
Source: JICA SV Survey, 2004.

Figure 6.5: Perception of Issues on Course Content and Lectures



Source: JICA SV Survey, 2004.

Figure 6.6: Perception on Equipment and Other Issues



Source: JICA SV Survey, 2004.

6.3 Current Status

The analysis of the issues of vocational training in Malaysia raised at the PCM workshops and also by the Senior Volunteers confirms that there appears to be a consensus by various stakeholders. These key issues have also surfaced from the findings of surveys and in-depth interviews with VTIs as well as from the survey of industry.

For easy reference, we have analysed the concurrence of key issues pertaining to the provision of vocational and technical training according the following aspects:

- Lecturers
- Curriculum
- Equipment
- Trainees
- Relationship with Industry

6.3.1 Lecturers

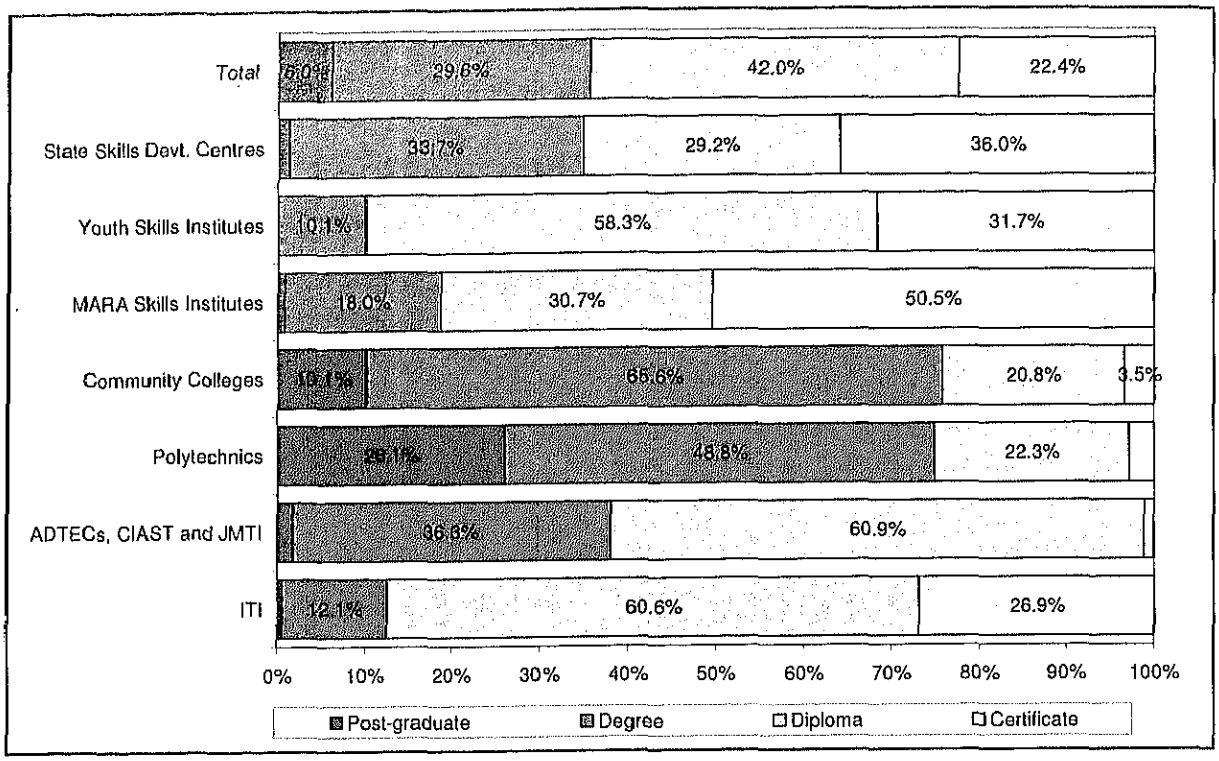
Key Issues	Situation
Inexperienced lecturers	Most of the VTIs interviewed cited inexperienced lecturers has affected the capacity and capability of the VTIs. More than half of the lecturers in public VTIs have less than 5 years' teaching experience. Industry felt that the trainers from VTIs lack industry/practical experience.
Shortage of qualified lecturers	Feedback from the in-depth interviews with VTIs indicated that only less than half of the institutes have qualified and experienced lecturers. They are also facing shortage of lecturers.
Mismatch of skills / qualifications	Findings from the survey of VTIs show that some of the lecturers are teaching subjects not related to their qualifications.

In terms of **qualifications**, most of the lecturers in VTIs are diploma (42%) and certificate (22%) holders. 30% are degree holders while only 6% have post-graduate qualifications. Analysis of the qualifications by type of institution reveals that lecturers in Polytechnics and Community Colleges tend to have a higher proportion (two-thirds) of their lecturers with degree and/or post-graduate qualifications. In comparison, ITIs, IKMs, IKBNs and the State Skills Development Centres indicate that two-thirds of their lecturers hold diploma and/or certificate qualifications (**Figure 6.7**).

Correlating the qualifications of lecturers with courses reveals that a higher percentage of lecturers in non-technical courses have degree and postgraduate qualifications compared to technical course lecturers (**Figure 6.8**). While 64% of lecturers for the hospitality course hold degrees or post-graduate qualifications, less than 10% of the lecturers for the electrical engineering, mechanical engineering and plastics technology courses hold degrees or post-graduate qualifications. In the case of the course on furniture technology, there are no lecturers with degrees or post-graduate qualifications at all.

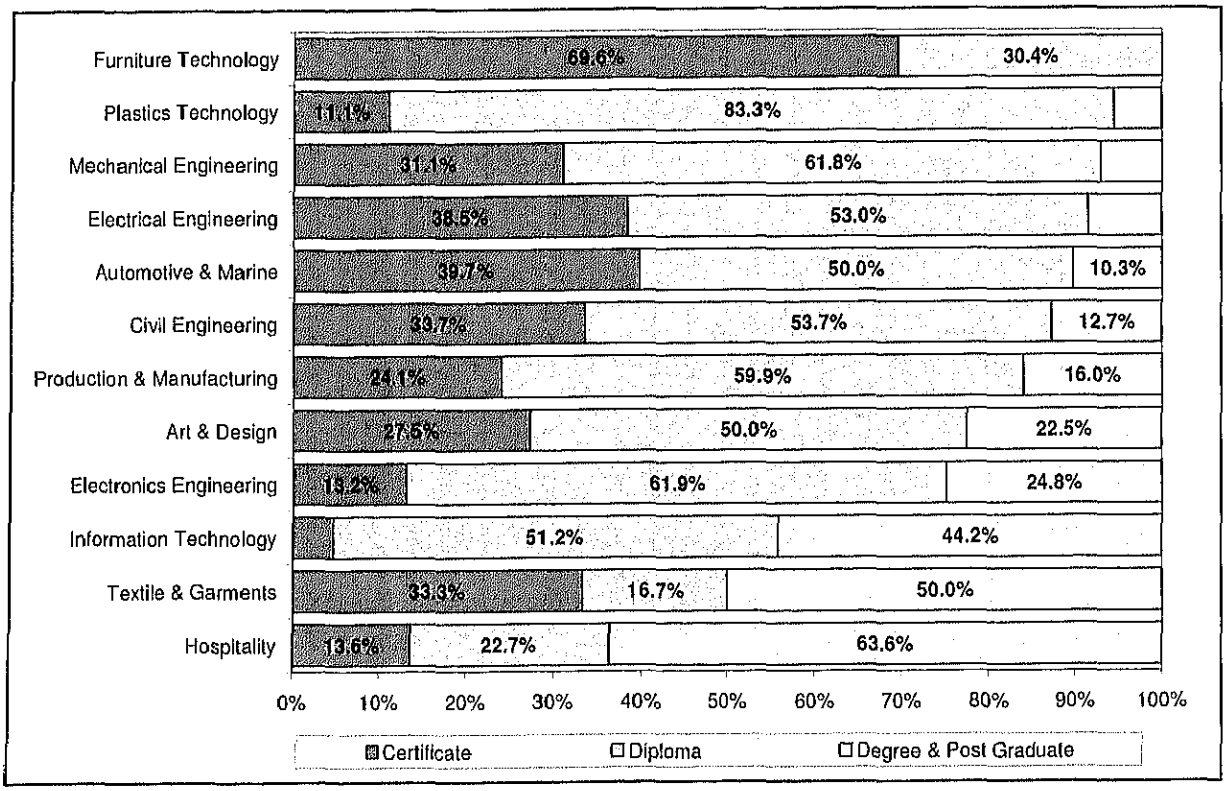
For the technical courses, the survey findings reveal that more than half of the lecturers hold diploma qualifications while one-third have certificate qualifications.

Figure 6.7: Distribution of Lecturers by Academic Qualification, 2004



Source: Mail Survey of Vocational Institutes, PE Research, 2004

Figure 6.8: Distribution of Lecturers by Qualification and Course



Source: Mail Survey of Vocational Institutes, PE Research, 2004

With respect to **teaching experience**, while a quarter of the lecturers in VTIs have more than 10 years' teaching experience, more than half of them have less than 5 years' teaching experience. In fact 24% of the lecturers have less than 2 years' experience (**Figure 6.9**).

The relationship between lecturers' qualifications and the level of courses taught (**Figure 6.10**) reveals some interesting points:

- 32.4% and 50.5% of the lecturers who are teaching certificate level courses have certificate and diploma qualifications respectively.
- 51.4% of the lecturers teaching diploma level courses have either diploma or degree qualifications.
- Only 9.7% of the lecturers teaching advanced diploma level courses have either advanced diploma or degree qualifications.

On the issue of **shortage of qualified lecturers**, feedback from the in-depth interviews with VTIs reveal that 35.4% of the responding VTIS face issues related to the recruitment of teaching and technical staff. The main reasons given are that they do not have autonomy over the selection of staff due to governmental procedures and that these are tied up with Public Services Department (PSD) regulations. There have been cases where lecturer positions are filled with staff with qualification in fields that are different from the courses they have to teach. Thus the institutes have to retrain them before they can utilise them for the needs of the institute. Approval for teaching and technical staff is also indicated as an issue by 27.1% of the VTIs interviewed.

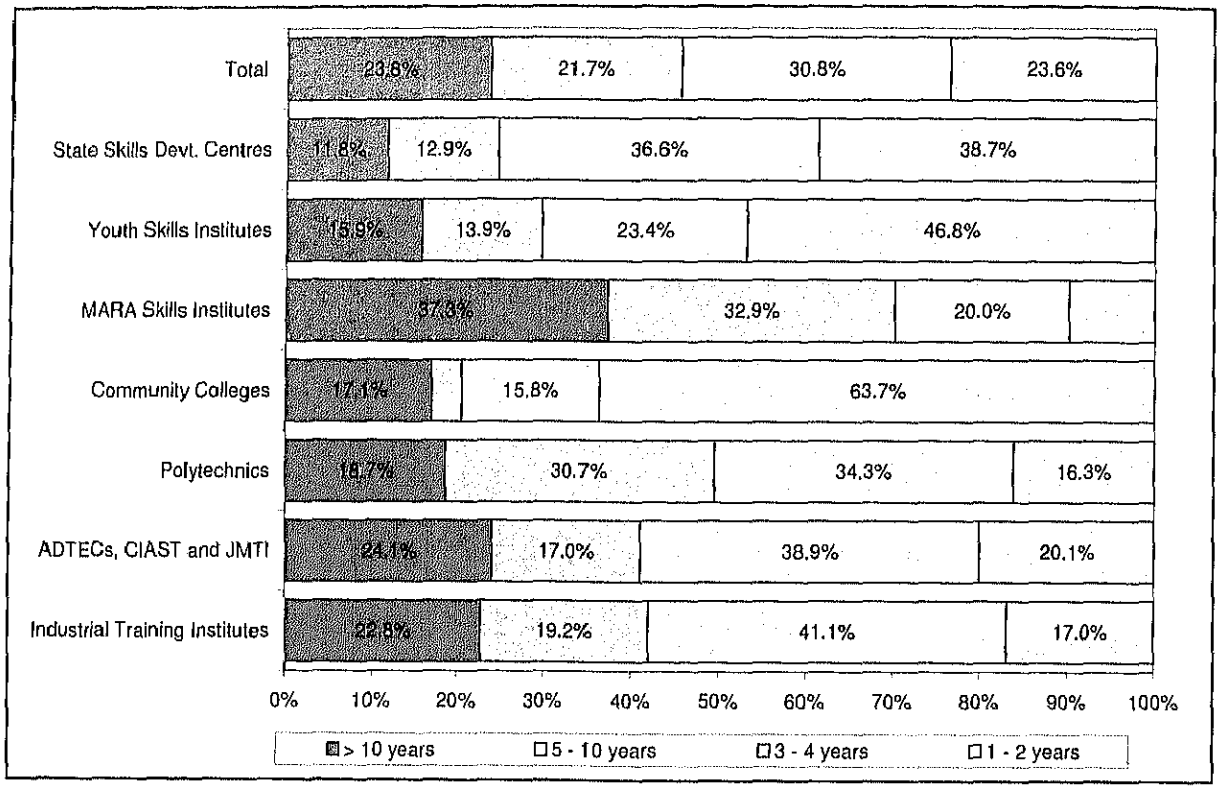
Furthermore findings from the survey of VTIs confirm that there is some degree of **mismatch of skills/qualifications** as 13.6% of the lecturers are teaching subjects that are not related to their academic qualification (**Table 6.1**). ADTECs and Community Colleges have the highest percentages of lecturers teaching subjects that are not related to their academic qualification, i.e. 26.9% and 21.7% respectively.

Table 6.1: Percentage of Lecturers Teaching Subjects not related to their Qualifications

Institute	%	Course	%
ADTECs, CIAST and JMTI	19.7%	Automotive & Marine	11.0%
Industrial Training Institutes	11.6%	Civil Engineering	6.8%
Polytechnics	14.6%	Mechanical Engineering	6.2%
Community Colleges	21.7%	Production & Manufacturing	7.4%
MARA Skills Institutes	12.3%	Electronics Engineering	20.9%
Youth Skills Institutes	9.6%	Electrical Engineering	12.0%
State Skills Development Centres	12.7%	Furniture Technology	30.4%
Overall	**13.6%**	Plastics Technology	38.9%
		Information Technology	34.9%
		Art & Design	25.0%
		Textile & Garments	11.1%
		Hospitality	9.1%

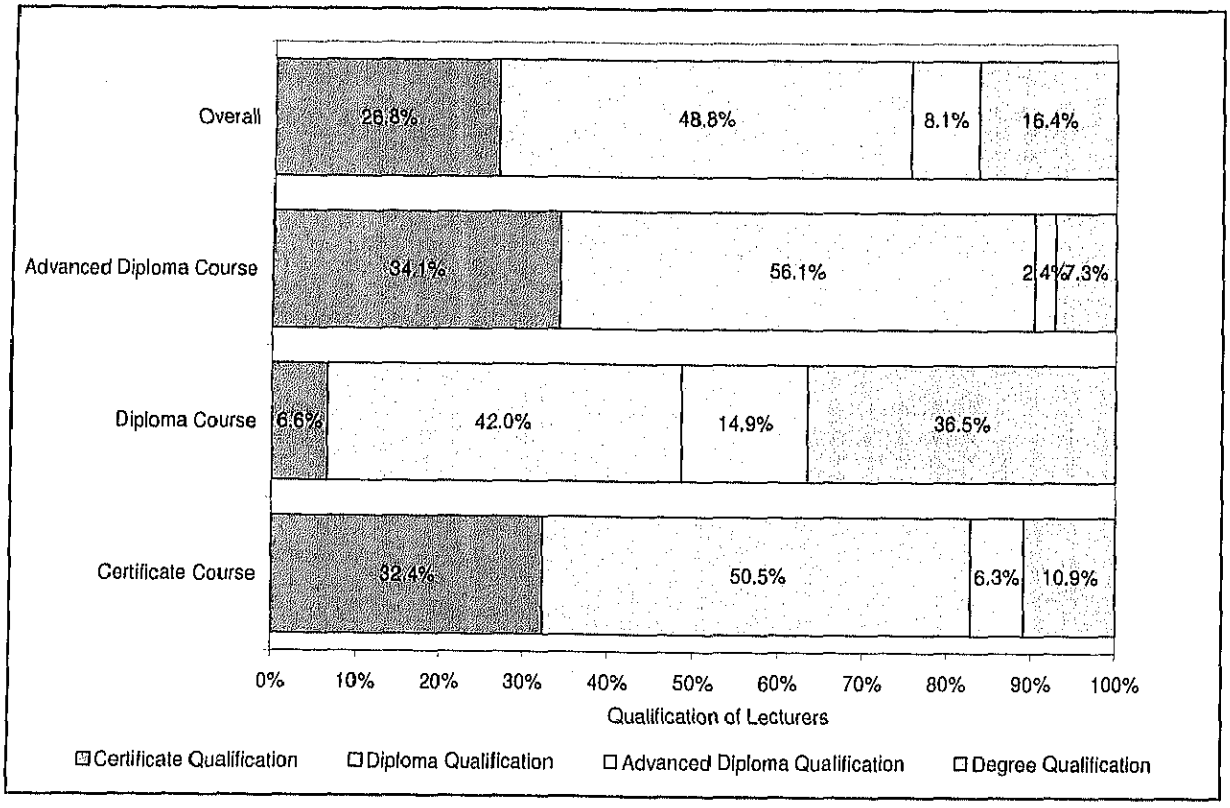
Source: Mail Survey of Vocational Institutes, PE Research, 2004

Figure 6.9: Distribution of Lecturers by Experience, 2004



Source: Mail Survey of Vocational Institutes, PE Research, 2004

Figure 6.10: Correlation between Lecturers' Qualifications and Courses Taught



Source: Mail Survey of Vocational Institutes, PE Research, 2004

6.3.2 Curriculum

Key Issues	Situation
Rapid Changing Technology	Curriculum of VTIs lags behind technology employed by industry. Training is not related to current industry needs. Need to upgrade and revise curriculum to meet industry requirements.
Reference Materials	Lack of written instruction material and learning guides. Lack of textbooks

Another issue highlighted by the institutes interviewed is the **rapid changing trends in industrial technology**. This challenge is faced mainly by the VTIs under the MOHR and the MARA skills institutes. In most cases the institutes tend to lag behind the technology employed by industry as the curriculum is updated only once every 3 to 5 years.

While VTIs use various mechanisms to identify current industrial needs, most of VTIs interviewed indicated that they rely on governmental guidelines and directives and have regular discussion with industries. However less than half them carry out research and studies. The exceptions are the VTIs under MOHR as more than half of them indicated that they carry out internal research and studies to identify current industrial needs (**Table 6.2**).

Generally the VTIs hold industry discussions either quarterly or twice a year, mostly with the members of the Advisory Committees[56] of the institutes. The lecturers also visit to industries to monitor and evaluate students during their on-job-training and they also take the opportunity to get feedback from the respective industries on industrial trends.

Table 6.2: Identification of Current Industrial Needs by Institutes

	Percentages indicating "yes" (multiple answers)						
	ITIs	ADTEC, CIAST, JMTI	Polytechnics	Community Colleges	MARA Skills Institutes	State Skills Development Centres	Overall
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%

Source: In-Depth Interview of Vocational Institutes, PE Research, 2004

In October 2002 VTRD conducted a Curriculum Effectiveness Assessment Study targeting lecturers in all VTIs under the MOHR. The study revealed that:

- Curriculum effectiveness is rated as satisfactory. This is based on the lecturers' perceptions on the basis of their experience. However it is noted that 62% of lecturers have less than 3 years teaching experience.

[56] Almost all the institutes have an Advisory Committee with membership drawn from industries.

- With respect to training materials, learning guides and written instruction materials the lecturers gave a rating of more than 75 per cent in terms of suitability and sufficiency.
- Overall, the curriculum fulfils NOSS requirements. Although lecturers understand the functions of NOSS, only a small percentage utilise NOSS as a teaching guide. One main reason is that a majority of the lecturers are new with less than 3 years experience in teaching.
- The existing curricula have yet to achieve full unification in terms of training materials, learning guides and written instruction materials.
- 57% of the lecturers indicating that they have problems conducting lecture and practical sessions due to lack of lecturers and increased student intakes.

Some main mitigating measures were recommended:

- Review of curriculum must be undertaken at least every 3 to 5 years.
- Need to upgrade machinery and equipment at least every 3 – 5 years to keep up with technology changes.
- VTI management must make sure that workload scheduling of lecturers to be more rational taking into consideration lecturers' main duties and responsibilities.
- All lecturers must undergo skills training before starting on their teaching duties.
- Lecturers must utilise the Learning Guide for planning a systematic training activity and schedule.
- All Learning Guides and Written Instruction Materials must be kept either in hard-copy (book format) or soft-copy (CD).

Student attachment forms an integral part of vocational training. All vocational students are required to undergo On Job Training (OJT) towards the end of their training course. In most cases, VTIs will approach industry members in their respective Advisory Committee's. Additionally, VTIs will also approach relevant industries directly to request for student placement for OJT. However, students themselves are allowed to look for OJT placements on their own as long as the requirements set by the VTI are met.

The study findings indicate that a fifth of the surveyed VTIs face difficulties in getting sufficient student placements from industries. VTIs that are seriously facing this issue include MARA Skills Institute, ADTECs and some State Skills Development Centres with a third of the institutes indicating so. However, less than a sixth of the Polytechnics, Community Colleges and Industrial Training Institutes faced this problem. Furthermore, some VTIs also indicated that they encounter problems even when their students are taken for OJT, as the complaint is that industries tend to use them as cheap labour in manual or administrative tasks.

Feedback from industries[57] on the subject of student attachment, revealed that less than one-third of the industries take in VTI students for OJT even though more than two-thirds indicated that VTIs approached them for assistance. The main reason is that they find it difficult to assign work related to students' training. Other obstacles raised by industry include:

- Low communication skills;
- Poor work commitment or attitude; and
- Qualifications or expertise of the students are still not sufficient for industries to risk using them on some of their production as most industries are operating on tight production schedules.

[57] Telephone interviews were carried out with the industry respondents to the industry survey.

Thus it is not surprising that industries that take on students for OJT end up giving them manual work or administrative work rather than putting them onto the technical or engineering work. Although this study did not interview students to get their feedback on this matter, there are two relevant studies that have been carried out and they give some insights into the perspective of students regarding the issue of Student Attachment.

A study of 1,101 polytechnic graduates[58], undertaken by the Technical Education Department of the Ministry of Education in 2003 indicated the following findings:

- 69% of the students indicated that they managed to get OJT placements on their own, 29% of the students relied on Industrial Training Units in their respective VTIs and the remainder 2% had sponsoring industries.
- Two-thirds of students undertaking OJT indicated that they get allowance from the industries. Average monthly allowance was RM241.
- 40% of OJT was in the manufacturing sector, followed by construction (19%), engineering (11%), trading and finance (5%) and others services (25%)

The main issue to a third of the students is financial as they either get low allowances or none at all from industries during their OJT. This leads to appropriateness or availability of accommodation. Evaluation of their OJT by the VTI also indicated this as an issue by 23% of the respondents. Surprisingly, only 2% indicated that communication was an issue while industries indicated this to be a major issue.

The Industrial Training Unit of CIAST undertook another study on 239 graduates of ILJTM. The findings of this study are as follows.

- 41% of the students indicated that their OJT placement was suitable to their training course. Additionally, 56% of the students indicated that their OJT was related fully to their training course. The highest score for both was recorded for automotive, industrial mechanics and refrigerator and air-condition courses.
- Almost all of the students indicated above 50% knowledge application of their theoretical training with their OJT practical work.
- All students also indicated positive results on acquisition of new technology during their OJT sessions.
- 93% of the students indicated that they fully utilised their OJT sessions to increase their skills and knowledge.
- Two-thirds of the students indicated that industries allow them to use related machinery and equipment. One-third indicated that they were given certain projects during OJT and only 1% indicated that they were only allowed to be observers.
- Students on OJT have logbooks in which they record their daily duties as well as type of jobs undertaken. These logbooks must be checked and verified by the Industrial Training Officer minimally at least once a month. Most of the Industrial Training Officers only fulfil their minimal requirement and there are also cases where logbooks are not checked nor verified throughout the OJT period.

[58] Kajian-Kajian Mengenai Politeknik 2003, Planning and Research Division, Technical Education Department, Ministry of Education.

6.3.3 Equipment

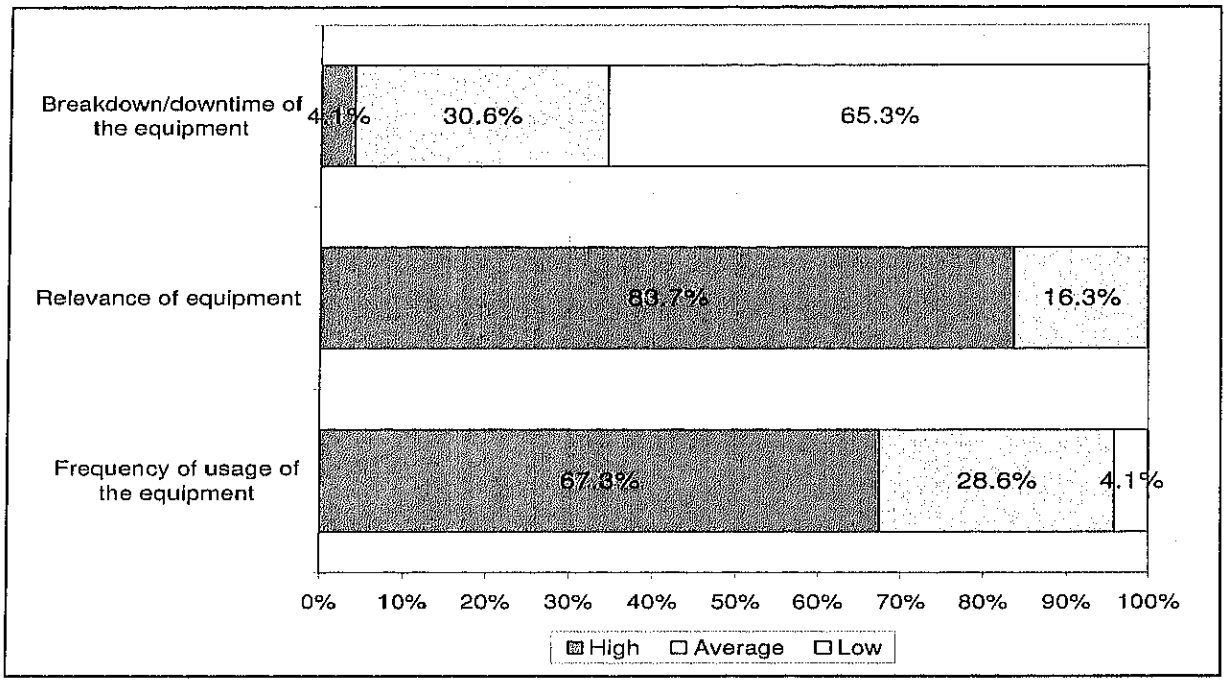
Key Issues	Situation
Lack of Equipment	More than half of the public VTIs interviewed indicated equipment shortage.
Equipment need regular maintenance	Although the SVs and PCM workshops raise this concern, the majority of the VTIs interviewed indicated that the downtime of equipment is low.
Equipment need upgrading	Feedback from the industry indicated that the VTIs lack advanced / latest equipment. This affects their ability to keep up with technological changes.
Equipment not fully utilised	Although the SVs and PCM workshops raise this concern, the VTIs interviewed indicated a high utilisation rate for their equipment.

Capital expenditure to upgrade equipment and facilities to keep up with current technology level is costly. Thus it is not surprising that the equipment challenge is raised by VTIs as well as industry alike. The issue of **old and/or obsolete equipment** (44% of MARA Skills Institutes interviewed) means that more time is spent on maintenance rather than training.

Another key issue regarding equipment in VTIs is the **lack of maintenance**. This is despite the fact that three-quarters of VTIs indicating that they have a standard system/ procedure for maintenance of equipment. Furthermore, 46% of the VTIs interviewed indicated there is a **shortage of equipment** to support the vocational programme, with more than 50% of the public sector VTIs reported so. This concurs with the feedback from the SVs and PCM workshops.

However, although the SVs and PCM workshops were concerned about equipment at VTIs being not fully utilised, the VTIs interviewed indicated otherwise with two-thirds of the VTIs rating the frequency of equipment usage as high. Furthermore, 84% of the VTIs rate the relevance of the equipment at their institute as high while two-thirds rate the frequency of equipment breakdown/downtime as low. This issue will need to be further examined (**Figure 6.11**).

Figure 6.11: Frequency of Usage, Relevance and Breakdown/Downtime of Equipment



Source: In-Depth Interview of Vocational Institutes, PE Research, 2004

6.3.4 Trainees

Key Issues	Situation
Low qualifications & communication skills	Feedback from the industry survey concurs with these problems which were raised at the PCM workshops.
Lack practical knowledge	

The industry survey shows that on average, 19% of the employees hold VTI qualifications (**Table 6.3**). Of these, almost 90% are in production and technical-related jobs. However analysis by size shows that while 90% of large firms utilise the VTI graduates in production and technical-related jobs, the average percentage drops to only 67% in the case of SMIs.

Analysis by activity shows that while firms in the electrical, electronics and machinery as well as those in the fabricated metal industry sector utilise the majority of the VTI graduates in production and technical related jobs, firms in other manufacturing activities use only 18% of the VTI graduates in these jobs.

Table 6.3: Percentage of Employees with VTI Qualifications and Working in Production & Technical Related Jobs by Ownership, Size and Activity (Local Companies and Non-Japanese MNCs only)

	N=19	% Having Qualifications from VTIs	% of VTI qualified in Production & Technical Related Jobs
By Ownership and Size			
Local Companies	**13**	**9.2%**	**90.3%**
SMIs	8	12.1%	65.9%
Large Firms	5	8.8%	95.0%
Non-Japanese MNCs	**6**	**24.9%**	**88.8%**
SMIs	1	11.1%	80.0%
Large Firms	5	25.0%	88.8%
Overall	**19**	**18.8%**	**89.1%**
SMIs	**9**	**12.0%**	**66.9%**
Large Firms	**10**	**19.1%**	**89.8%**
By Ownership and Activity			
Local Companies	**14**	**9.2%**	**90.3%**
Electrical, Electronics & Machinery	3	12.6%	100.0%
Fabricated Metal, Non-ferrous Metal	3	15.8%	89.4%
Chemicals, Rubber & Plastics	3	9.8%	43.2%
Other Manufacturing	5	2.1%	17.9%
Non-Japanese MNCs	**6**	**24.9%**	**88.8%**
Electrical, Electronics & Machinery	6	24.9%	88.8%

Source: Industry Survey by PE Research

The industry survey provided an interesting industry assessment on the ability of their employees based on several criteria:

- Local firms rated their employees from VTIs as average and above for all criteria;
- Non-Japanese firms gave below average ratings on all criteria except for technical knowledge for employees from public VTIs. Non-Japanese MNCs also gave below average ratings for operational skills, management and supervisory skills and personal development for employees from both private VTIs too;
- Japanese MNCs rated their employees from public VTIs as only average for most criteria while their "knowledge on the concept of 5S" and "ability to communicate" were rated below average. They also assessed their employees from ITIs/ADTECs and Polytechnics/ Community Colleges to be about the same level (average – 3.3) but they assessed those from the MARA Skills Centres as below average (2.6).

Figure 6.12: Assessment of Industry Employees from Public VTIs

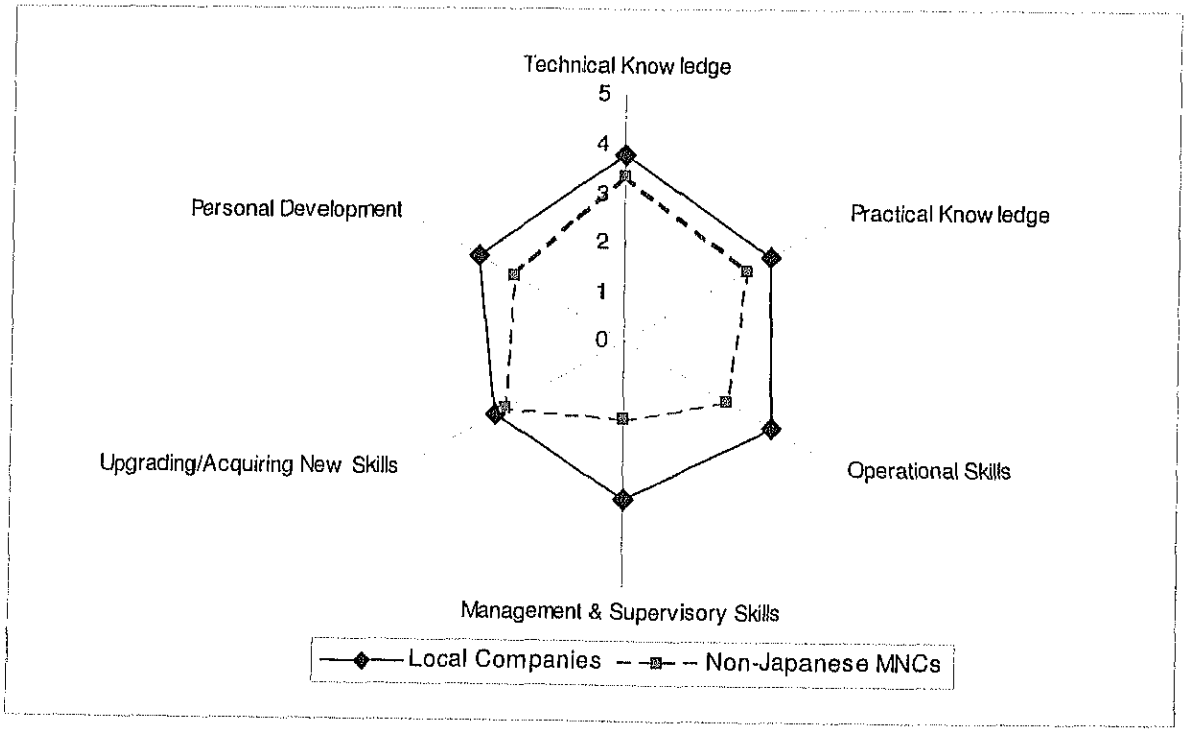


Figure 6.13: Assessment of Industry Employees from Private VTIs

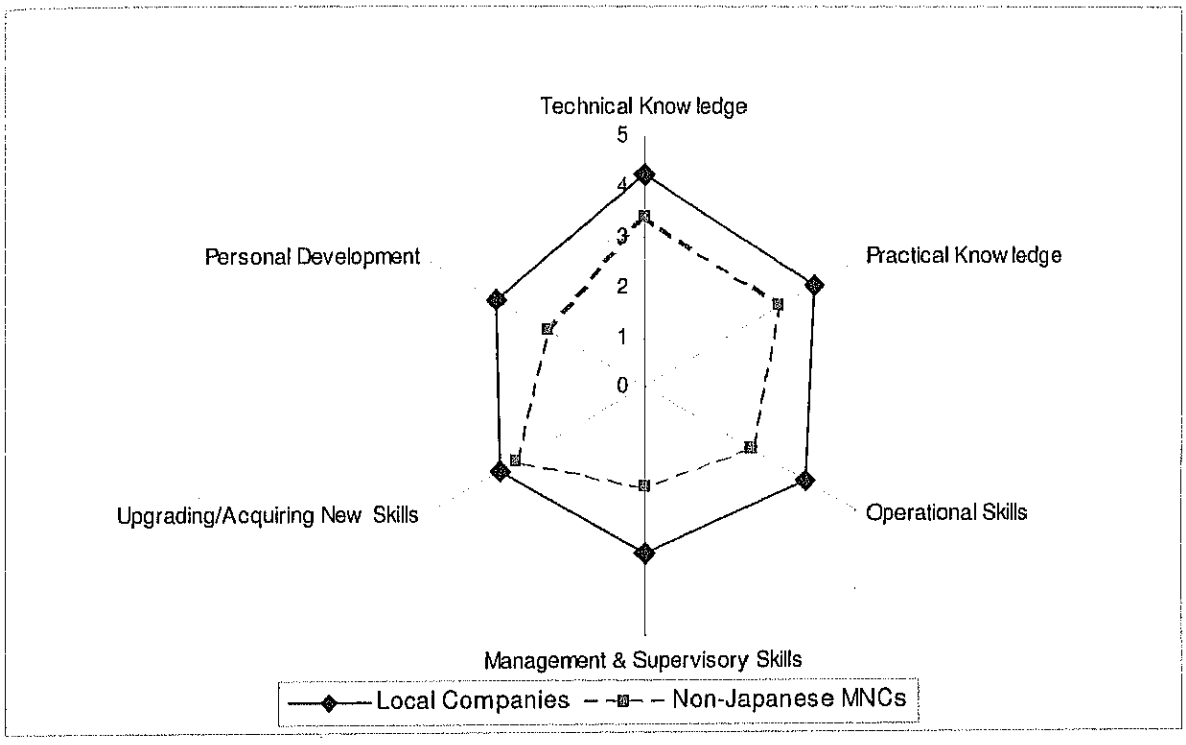
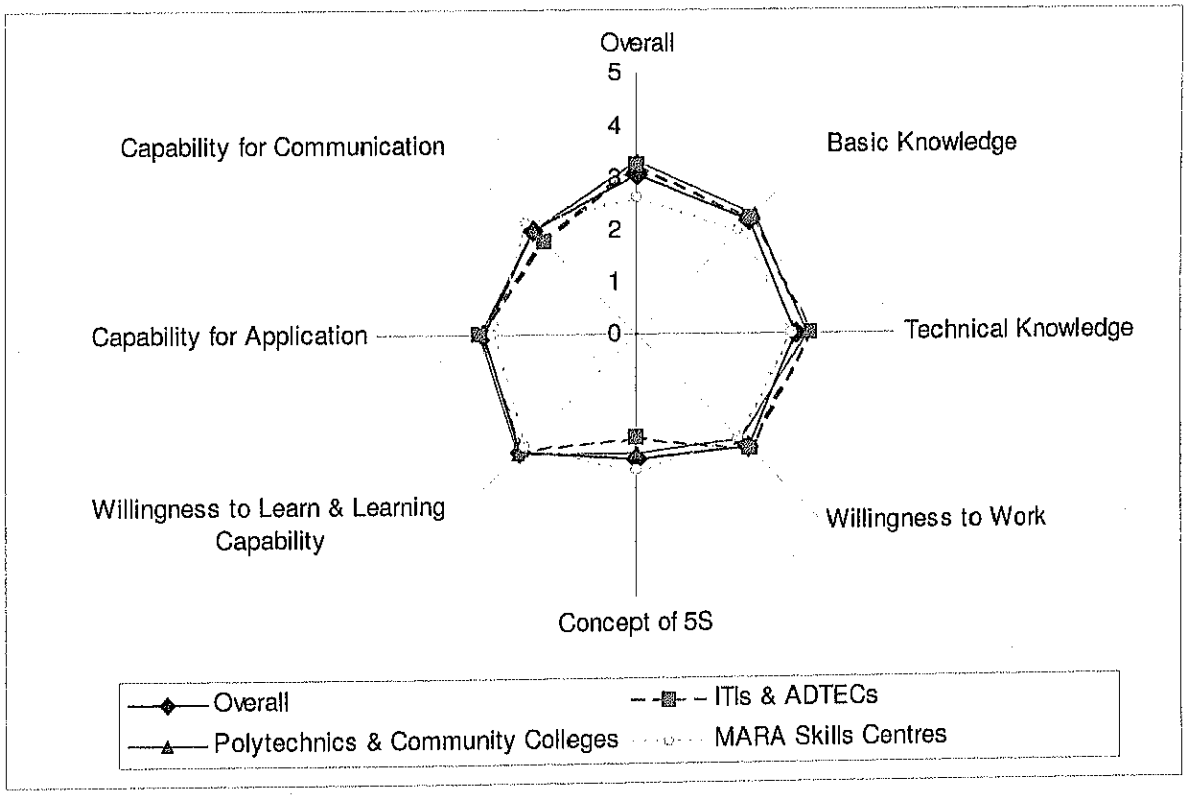


Figure 6.14: Japanese MNCs' Assessment of their Employees from Public VTIs



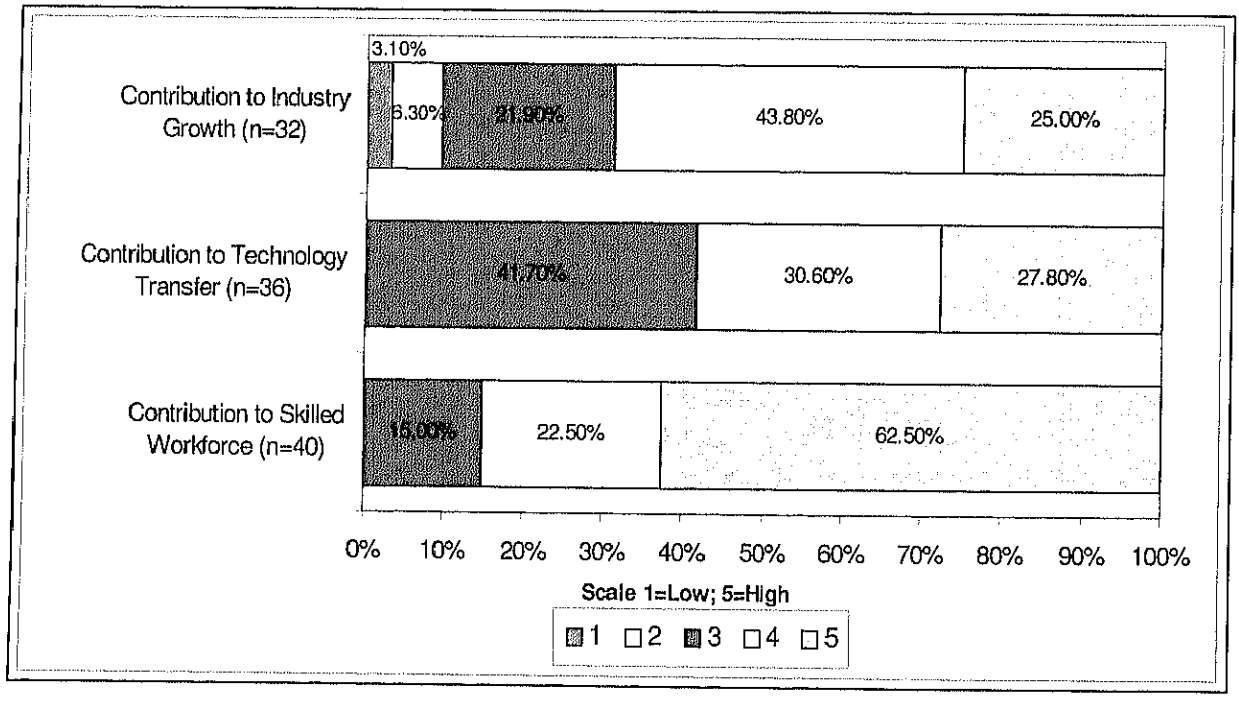
6.3.5 Relationship with Industry

Key Issues	Situation
Poor demand for training courses	Feedback from interviews with some ITIs, Polytechnics and SSDCs indicated that there is some reluctance of SMIs to train workers.
Reluctance to provide OJT	While some institutes indicated that they receive good support from industries, some ADTECs complained of "lack of co-operation from industries for student placement". Polytechnics and Community Colleges however indicated that they had government support and were hassle-free with respect to student placement in industries for on the job training.
Public VTI training not meeting current needs	Some of the industries (mainly local firms) indicated that the public VTIs are not meeting their current needs.

Despite the varying views regarding the relationship between VTIs and industry, a self-rating on the contributions of VTIs to the needs of industry revealed the following:

- In terms of **contribution to skilled workforce**, on a scale of 1 to 5 (1 = low; 5 = high), all respondents rated their contribution as 3 and above with 62.5% giving high (5).
- In terms of **contribution to technology transfer**, all institutes again rated their contribution between 3 and 5 with 27.8% giving themselves a rating of 5.
- However in terms of **contribution to industry growth**, 9.4% of respondents rated their contribution as only 2 and 1.

Figure 6.15: Self-Rating by Institutes on their Contribution to the Needs of Industries



While most of the respondents to the industry survey conduct worker training in house, 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 shown in the table below.

Table 6.4: 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

Feedback from respondents to the industry survey also revealed that the training relevant to their industry is available either in public or private VTIs.

Table 6.5: 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 industry 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 6.6: Assessment of Strengths and Weaknesses of Public and Private VTIs

	Local Companies		Non-Japanese MNCs	
	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	✓			
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

Feedback from AMCHAM

The American Malaysian Chamber of Commerce (AMCHAM) has been regularly submitting its feedback to government on various issues, including issues pertaining to human resource development. The following summarises the key issues and recommendations pertaining to HRD since 2001.

Key Issues	Recommendations
Malaysian Dialogue 2001 (with MITI) on Human Resources	
The labor supply situation remains tight especially in specialized areas such as Engineering and IT specialists. Some manufacturers have consolidated their Southeast Asia operations to Malaysia and are now experiencing difficulty in replacing the expatriates (Americans, Singaporeans, etc.) with local hires. The incentives recently introduced to bring back Malaysian talent are a good start but additional efforts to develop and retain specialized skills are still needed.	Continue developing institutions to produce high quality technical personnel, especially engineers and IT specialists.
Learning English in school is important. Many private colleges have impressive course titles but the standard of English is still very low. The quality and quantity of engineers and technicians coming out of local institutions is not keeping pace with demand.	Continue and expand the recent awareness campaign promoting English throughout all levels of education especially in technical fields of study.

Key Issues	Recommendations
Malaysian Dialogue 2002 (with MITI) on Skilled Labour	
The labor supply situation remains tight especially in specialized areas such as Engineering and IT specialists. Some manufacturers have consolidated their Southeast Asia operations to Malaysia and are now experiencing difficulty in replacing the expatriates (Americans, Singaporeans, etc.) with local hires. The incentives recently introduced to bring back Malaysian talent are a good start but additional efforts to develop and retain specialized skills are still needed. Skills in English, lateral thinking, and interpersonal communication (confidence to speak up) are noted to be lacking or on decline.	Continue developing institutions to produce high quality technical personnel, fluent in English and possessing good critical thinking skills. Engineers and IT specialists are especially in demand.
Response from MITI: • Training provided by some of the existing and new Industrial Training Institutes (ITIs), Advanced Technology Centers (ADTEC), Japan-Malaysia Technical Institute (JMTI) and Centre for Instructor and Advanced Skill Training (CIAST) focus on: manufacturing skills, ICT related fields, and engineering trades. • Trainees are provided with the opportunity to acquire hands-on technical skills as well as critical enabling skills and higher order cognitive skills. English is a priority subject in the training syllabi. • The National Vocational Training Council (NVTC) has developed 41 National Occupational Skill Standards (NOSS) on ICT fields such as System Engineering, Information Systems Management, Application Development Analysis, Telecommunication Engineering and Creative Multimedia. • Critical and analytical thinking skills have been introduced and incorporated in the curricula. • Technical and vocational subjects have also been introduced in secondary schools. • To ensure Malaysia has sufficient human resources in the field of science and technology, the Ministry of Education (MOE) adopts the policy of encouraging students to take science/technical subjects with the view to achieving the ratio of 60:40 field science and arts. • MOE through the Technical Education Department (TED) has embarked on several strategies/programs in order to overcome the problem of inadequate supply of technicians. These include: - building of 5 more polytechnics under the Eight Malaysia Plan - establishment of Community Colleges (CCs) in 193 parliamentary constituencies nationwide from 2001 to 2010 • MOE is aware of the lack of English competency among local graduates especially in interpersonal communication. The Ministry has encouraged all universities to use English as a medium of instruction besides Bahasa Melayu. Students' interpersonal communication skills and other related skills are also enhanced through their involvement in co-curricula activities. • MOE welcomes inputs from the industry to strengthen the curricula in all universities so as to ensure that potential graduates will be able to fulfill the needs of the industry.	
Malaysian Dialogue 2003 (with MITI) on Local Graduates	
Fresh graduates, particularly those with technical and engineering qualifications, are not equipped with the skills required by the various industries. Quite often, the courses offered are "generic" and they do not match market needs especially in high-tech and ICT industries.	Recommend compulsory industry attachments for fresh graduates (engineers and technicians). Set up a fund/incentive in order to help fresh graduates acquire the initial training requirement with the various industries. AMCHAM would like to work together with the Ministry to set up more effective programs for fresh graduates.

Key Issues	Recommendations
Malaysian Dialogue 2003 (with MAMPU) on Human Resources	
Learning English in school is important. Many private colleges have impressive course titles but the standard of English is still very low. The quality of engineers and technicians coming out of local institutions has begun to decline. One area to focus on is the development of local expertise in the study of failure analysis.	Promote the learning of English throughout all levels of education. Continue developing institutions to produce high quality technical personnel (especially in failure analysis).

Source: AMCHAM

Feedback from FMM

Information on the estimated demand for manpower/skills requirements of industry is limited. However, the annual survey on benefits and employment conditions in the manufacturing sector conducted by FMM gives some snapshot on the manpower/skill requirements of industry. According to the FMM 2003 survey, technical skills remain in short supply. The skills that were in short supply ranged from high technical skills (e.g. mechatronics and ICT skills) to lower level skills (e.g. carpentry). Shortages of skills were felt most for quality control (35.2% of the respondents), mechanical (23.1%), R&D (20.9%) and plant maintenance (20.3%). Shortages in machinists, electricians, IT, manufacturing systems, electronics personnel and tooling were also high (see **Table 6.7**).

Table 6.7: Technical Skills in Short Supply

Skills	No. of Firms	%	Skills	No. of Firms	%
Quality Control	64	35.2	Tool & Die makers	13	7.1
Mechanical	42	23.1	Electro-mechanical	13	7.1
R&D	38	20.9	Injection Moulding	13	7.1
Plant Maintenance	37	20.3	Material Handlers	10	5.5
Machinists	33	18.1	Spraying	9	4.9
Electrician	33	18.1	CADD-Mechanical	9	4.9
Chargeman	25	13.7	Mechatronics	8	4.4
Information Technology	25	13.7	Instrumentation	8	4.4
Manufacturing Systems	24	13.2	Packaging	8	4.4
Electronics	24	13.2	Foreman	8	4.4
Tooling	23	12.6	Plastic Moulding	7	3.8
Welders	18	9.9	Boilerman	7	3.8
CAD-CAM	16	8.8	Wireman	6	3.3
Fabrication	15	8.2	Metallurgical	5	2.7
CNC Machinist	15	8.2	Repairman	4	2.2
Storeman	15	8.2	Extrusion	3	1.6
Fitters	13	7.1	Carpentry	2	1.1

Source: FMM Salary, Benefits and Employment Conditions Survey in the Manufacturing Sector for the Year 2003

The top ten skills in short supply in 2003 and 2002 did not differ significantly as shown in **Table 6.8**. The findings from the FMM Survey show that the firms still face difficulties in the recruitment of skilled workers. The reasons cited were largely due to the high salaries expected by candidates (53.3%), the problem of job hopping (44%) and the fact that demand for such skills exceed supply (38.5%) as shown in **Figure 6.16**.

The FMM survey also provided information on the number of skilled and production workers in 2003 and estimated the additional HR requirements for 2004 and 2005.

In the case of **engineers**, 70% of the respondents to the FMM survey indicated that they currently employed 2,596 engineers currently. The average number of engineers employed by the respondents was 20.4. 43 respondents required a total of 208 engineers in 2004, while 27 estimated that additional 159 engineers will be required in 2005, indicating the average numbers of engineers required will increase from 4.8 persons per firm in 2004 to 5.9 persons per firm in 2005.

The FMM survey also showed that the requirement for **technicians** for technical support in manufacturing environment was higher than that of engineers. In 2003, the total number of existing technicians in 154 companies surveyed was 6,910, which works out to an average of 44.9 technicians per firm. 41 of the respondents to the survey indicated that they required an additional 352 technicians in 2004, while 30 respondents indicated that they required 293 more technicians in 2005. This shows that the average number of additional technicians required is expected to increase from 8.6 per firm in 2004 to 9.8 persons per firms in 2005.

With respect to **supervisors/production coordinators**, the survey reported that a total of 3,433 such workers were employed by 156 respondents, while in 2004 and 2005 the additional numbers needed were 87 (26 respondents) and 78 (30 respondents) respectively. Thus the average number of supervisors/production coordinators required is estimated to increase from 3.4 per firm in 2004 to 3.9 per firm in 2005.

The FMM survey revealed that **production/machine operators** were the largest group of workers required by the respondents. The 152 respondents employed a total of 37,058 production/machine operators in 2003, averaging 243.8 workers per firm. For 2004 and 2005, the additional number of workers required was a 1,297 and 1,178 by 44 and 30 respondent respectively. Despite the lower number of production/machine operators required in 2005, the average additional workers required would increase from 29.1 workers per firm in 2004 to 39.3 persons per firm in 2005.

Table 6.8: Top 10 Technical Skills in Short Supply in 2002 and 2003

Skills Shortages 2002	No. of Firms	%	Skills Shortages 2003	No. of Firms	%
Quality Control	72	26.5	Quality Control	64	35.2
Mechanical	60	22.1	Mechanical	42	23.1
Plant Maintenance	51	18.8	R&D	38	20.9
Electrician	48	17.7	Plant Maintenance	37	20.3
Chargeman	46	16.9	Machinists	33	18.1
Information Technology	42	15.4	Electrician	33	18.1
Electronic	42	15.4	Chargeman	25	13.7
Manufacturing Systems	39	14.4	Information Technology	25	13.7
Tooling	39	14.4	Manufacturing Systems	24	13.2
Machinists	38	14.0	Electronic	24	13.2

Source: FMM Salary, Benefits and Employment Conditions Survey in the Manufacturing Sector for the Year 2003

In terms of training, the majority of the respondents were of the view most of their workers required technical skills training. This was followed by the need for training in government policies and regulations, industry standards, IT skills and human resource management (**Figure 6.17**).

Figure 6.16: Difficulties in Recruitment of Skilled Workers

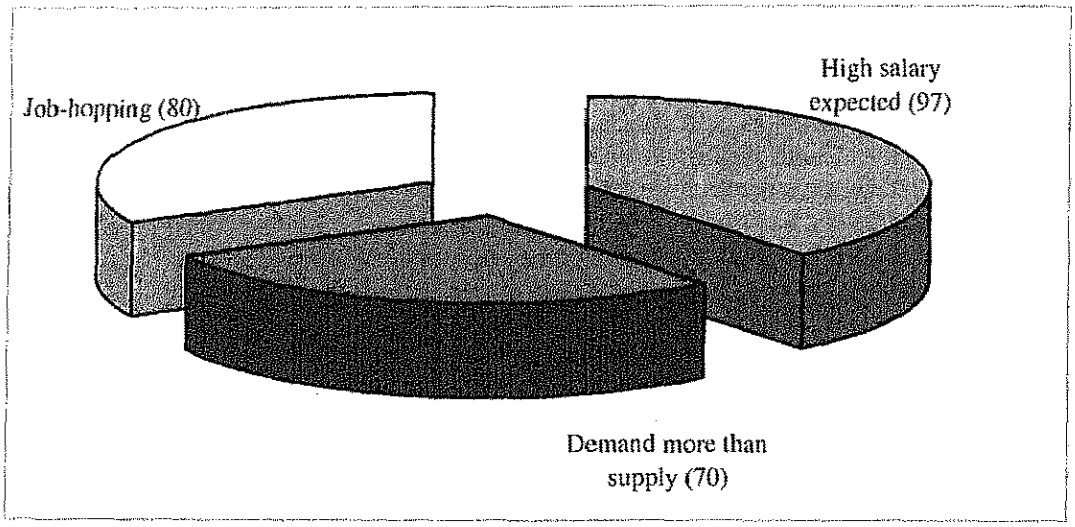
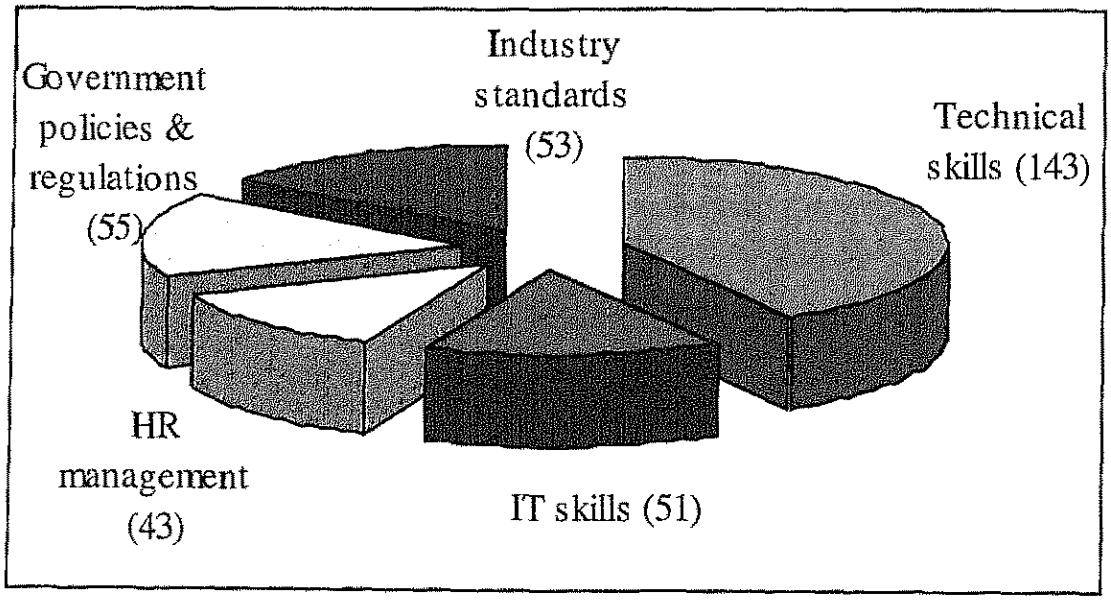


Figure 6.17: Types of Training Required



Summary of Findings on Capabilities of HR from Other Study

The study on Core Competence of Local Supporting SMIs in Malaysia (May 2004) also highlighted several relevant issues pertaining to current status of human resource issues of SMIs as shown in the following table.

Table 6.9: Summary of HR Issues in SMIs

Industry	Profile of Graduate or Diploma Employees	Staff Training
Mould and Die	9.2% of employees are graduate or diploma holders. Firms prefer to train their technicians through on-the- job training. General Issue: Diploma graduates have theoretical knowledge but lack practical know-how.	Low expenditure on staff training. Overall, firms spent only 0.4% of total annual sales on staff training. An average of 72 days of in-house training for workers when they join firm.
Metal Stamping	14.5% of employees are graduate or diploma holders/	On average, the training expenditure amounted to 0.3% of annual total sales.
Plastic Injection Moulding	8.1% of employees are graduate or diploma holders. Firms have large low skill production workforce.	On average, the training expenditure was 0.4% of average annual sales. Little importance placed on staff training. Only an average of 13.3 days was spent on in-house production workers training, reflecting low skill requirement of industry.
PCB/Electrical	20% of workforce are graduates and diploma holders	On average, the training expenditure amounted to 0.4% of annual total sales. An average of 40 days was spent on in-house production workers training. However, casting/electroplating/foam manufacturing provide up to 90 days of in-house training.
Electroplating, Die Casting and Foam	5-10% of workforce are graduates and diploma holders	

Generally, findings from the local SMIs interviewed for the Core Competence Study show that most SMIs do not place emphasis on human resource development. Training of the staff is usually provided by vendors who provide training on machine operation and software usage as part and parcel of the purchase of machineries or software. In fact, SMIs spend little on training of staff, be it to upgrade their technical skills or other know-how.

SMIs generally find it difficult to retain skilled staff especially after undertaking technical training as there is no contractual bond to ensure that they serve the firm after training. The findings of the Core Competence Study also show that there is the **perception among local SMIs that local training institutes lack skilled trainers and latest facilities**. In addition, they are of the opinion that most of the **courses offered are too theoretical** and insufficient emphasis is given to practical and hands-on training.

To deal with these challenges, the Core Competence Study stressed that the **credibility of vocation certification and training** in the eyes of local SMIs and MNCs are crucial. It was also suggested that the government should ensure that the trainers in the training institutes should be of high calibre in order to obtain the state of the art technology and know-how. In addition, it was also suggested that the training institutes be equipped with the latest facilities.

The study also provided some proposed actions:

- MITI and the MOHR should work together to examine the effectiveness and creditability of technical training and certification of vocational skills in the country. The existing training systems should be reviewed and, if possible, consolidated into a single integrated system or a better-coordinated sub-system.
- The agencies should obtain inputs from industries on the type of training (such as more practical trainings) and incorporate them into the curriculum. This will help to ensure that such training and certification is accepted by industries.
- The training should be promoted among industries, including providing more information on government subsidies and tax incentives. Industries also need to be guided to introduce reward schemes for those trained.

References

Asian Development Bank. 2004. Project Completion Report on the Technical and Vocational Education Project in Malaysia.

_____. 1999. Impact Evaluation Study of the Technical and Vocational Education Projects in Malaysia, Pakistan, PNG and Sri Lanka.

Challenger Concept (M) Sdn Bhd. 2003. Training Guide Malaysia: 6th Edition.

Deetya International Services. 1998. Strategic Review of Technical Education and Skills Training (TEST) in Malaysia.

Department of Statistics. 2003. Economic Characteristics of the Population – Population and Housing Census of Malaysia 2000. Kuala Lumpur, Malaysia

_____. 2002. Education and Social Characteristics of the Population – Population and Housing Census of Malaysia 2000. Kuala Lumpur, Malaysia.

_____. 2001. Population Distribution and Basic Demographic Characteristics – Population and Housing Census of Malaysia 2000. Kuala Lumpur, Malaysia.

_____. 1995. General Report of the Population Census – Population and Housing Census of Malaysia 1991. Kuala Lumpur, Malaysia.

Economic Planning Unit. 2004. Executive Summary: Study on the Formulation of a Human Resource Development Master Plan for Malaysia. Paper presented at Stakeholder Workshop Study on 21 September 2004.

Federation of Malaysian Manufacturers. 2004. A Guide to Professional Development. Kuala Lumpur.

_____, 2003. *Annual Report 2003.* Kuala Lumpur.

Government of Malaysia, Sixth Malaysia Plan, 1991-1995. Kuala Lumpur, Malaysia.

_____, Seventh Malaysia Plan, 1996-2000. Kuala Lumpur, Malaysia.

_____, Eighth Malaysia Plan, 2001-2005. Kuala Lumpur, Malaysia.

_____, Mid Term Review of the Eighth Malaysia Plan, 2001-2005. Kuala Lumpur, Malaysia.

_____, First Outline Perspective Plan, 1970 - 1990, Kuala Lumpur, Malaysia.

_____, Second Outline Perspective Plan, 1991 - 2000, Kuala Lumpur, Malaysia.

_____, Third Outline Perspective Plan, 2001 – 2010, Kuala Lumpur, Malaysia.

_____, Vision 2020.

Hong Tan & Indermit S Gill (2000), "Malaysia" in Indermit S Gill, Fred Fluitman, & Amit Dar (eds.), *Vocational Education and Training Reform: Matching Skills to Markets and Budgets*. The World Bank.

Human Resource Development Berhad. Annual Report 2002.

_____, Annual Report 2003.

IC Network (M) Sdn Bhd. 2003. A Study on Technical Institute Conducted by Other Donor Countries in Malaysia, Final Report.

Institute of Strategic and International Studies, Malaysia. 2002. Knowledge-based Economy Master Plan.

Japan Bank for International Cooperation (2004), Study of the Core Competence of the Local Supporting SMIs in Malaysia.

Manpower Department, Ministry of Human Resources. Annual Report 2002.

Ministry of Education. 2003. Education Indicators in Malaysia – An International Comparison 2003. Kuala Lumpur.

_____. 2003. Annual Report 2003. Kuala Lumpur.

_____. 2003. Malaysian Educational Statistics 2003. Kuala Lumpur.

_____. 2003. Quick Facts 2003 – Malaysian Educational Statistics. Kuala Lumpur..

_____. 2003. Research Studies on Polytechnics 2003. Kuala Lumpur.

_____. 2003. Trend Indikator Pendidikan Malaysia. Kuala Lumpur.

_____. 2002. "Satu Pendekatan Pendidikan dan Latihan Bersepadu Kolej Komuniti". Kuala Lumpur.

_____. 2002. "*Ringkasan Dapatan Kajian Pengesanan Lulusan Politeknik 2002*". Kuala Lumpur.

_____. 2001. "*Pembangunan Pendidikan 2001 - 2010*". Kuala Lumpur.

Ministry of Finance. 2004. Economic Report 2004/2005. Kuala Lumpur, Malaysia.

Ministry of International Trade & Industry. 1996. Second Industrial Master Plan 1996-2005. Kuala Lumpur, Malaysia.

_____, Malaysia International Trade and Industry Report 2002.

_____, Malaysia International Trade and Industry Report 2003.

Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan. 2003. Lifelong Learning in Malaysia. Working Document presented at International Policy Seminar Co-organised by IIEP/UNESCO and KRIVET on Making Lifelong Learning a Reality, 24-26 June 2003.

Small & Medium Industries Development Corporation. 2002. Small & Medium Industries Development Plan Project, 2001 – 2005.

The Further Education Funding Council, England. 1998. Aspects of Vocational Education and Training in Malaysia – International Report from the Inspectorate

UKM Pakarunding Sdn Bhd. 2002. Study on Unemployment Situation in Malaysia.

World Bank. 2003. Malaysia: Firm Competitiveness, Investment Climate and Growth.

Annex 1: Terms of Reference

1. BACKGROUND

The Government of Malaysia stresses the importance of sophistication of industries and transition of its economy to a knowledge-based economy from export–oriented economy, where the basis is on Multi National Companies. The Government of Malaysia also stresses the importance of development of human resource, to obtain high level of knowledge and technology.

In the field of vocational training, JICA has consistently extended cooperation to Malaysia, as represented by cooperation to the Center for Advanced Skill Training (CIAST), the Japan-Malaysia Technical Institute, activities by individual experts attached to Ministry of Human Resource Development and so on. Recently, JICA has also dispatched Senior Volunteer to the vocational training institutions such as Advanced Technology Training Centres and Industrial Training Institutes in order to develop capability of lecturers there.

The Government of Malaysia has also emphasised policy on development of human resource and has conducted several measures such as strengthening of capabilities of vocational training institutions and polytechnics.

On the other hand, JACTIM (The Japanese Chamber of Trade and Industry, Malaysia) has been requesting further improvement of policy on industrial human resource development. Senior volunteers have also raised several recommendations for improvement of function of vocational training institutions.

Therefore JICA decided to conduct Baseline Survey, "Malaysian Policy on Industrial Human Resource Development – Focussing on Vocational Training Institutions" in order to gather comprehensive information and data which contribute to the future Japanese Technical Cooperation in the area.

2. OBJECTIVE

- To gather comprehensive information and data for the Japanese Technical Cooperation in the area of Industrial Human Resource Development
- Especially, to identify an appropriate area and TOR for Senior Volunteer in the area of vocational training

3. OUTLINE OF SURVEY

3.1 Vocational Institutes to be Surveyed

- Advanced Technology Training Center, Ministry of Human Resource
- Industrial Training Institute, Ministry of Human Resource
- Center for Instructor and Advanced Skill Training, Ministry of Human Resource
- Japan Malaysia Technology Institute
- Polytechnic, Ministry of Higher Education
- Community College, Ministry of Higher Education
- Skills Development Center, State Government
- Vocational Institutions under MARA

3.2 Items to be Surveyed

(1) To gather basic information of policy and program on industrial development from related ministries

- Strategy on industrial human resource development
- Allocation of the budget for industrial human resource development
- Position of vocational training institution and larger education institution including university in the industrial human resource development
- Methodology on the estimation of the demand from industry for human resources
- Program on promotion of the industrial human resource development by private sector.

(2) To gather basic information of vocational training institutes by documental and interview survey

- General
  - Midterm and long term plan of the institutes
  - Management system
  - Objectives
  - Function
  - Activities on introduction of place of employment
- Budget
  - Allocation of the budget
  - Expenditure
  - Income from tuition, amount of tuition
- Trainees
  - Methodology of selection of trainees
  - Qualification of trainees
  - Place of employment of ex-trainees
  - Alumni

(3) To analyse curriculum and text books of vocational training institutes by documental and interview survey

- To analyse structure, covering areas, consistency of curriculum and text books
- To gather information of procedure on preparation of the curriculum and text books
- To analyse curriculum and text books from the point of matching with the needs from the industry

(4) To gather information of facilities and equipment in vocational training institutes by documental and interview survey

- Contents (specification, manufacturers and so on)
- Role in the curriculum
- Rate of operation
- Allocation of expert/lecturer
- System for maintenance and so on
- Needs for new facilities and equipment

(5) To gather information of lecturers in vocational training institutes by documental and interview survey

- Qualification of lecturers (experience, educational background)
- Number and allocation of lecturer and related staff
- Method of recruitment of lecturer and related staff
- Method and system of training of lecturer and related staff
    * The Technical Proposal should contain the plan of the above interview survey. The interview survey is expected to be conducted at Klang Valley, Alor Setar, Penang, Ipoh, Melaka, Johor Bahru and Kota Kinabalu

(6) To analyse needs and request from industry by interview and questionnaire survey

- Needs and request from industrial associations such as FMM, Chinese Chamber of Commerce, JACTIM, AMCHAM to the public and private vocational institutes and the government
- Needs and request from private companies (10 Japanese MNCs, 10 other MNCs, 20 Malaysian Companies) to the public and private vocational institutes
    - To gather information on graduates from vocational training institutes in MNCs
    - To gather information on policy of MNCs employee training and recruitment
    - To gather information on expectation of industry toward government policy on human resource development

(7) To analyse present situations of vocational training institutes through PDM workshop

- To assist PDM (Project Design Matrix) Workshop 1
    - Participants: Vocational Training Institutes, where Senior Volunteer has been attached
    - Number of workshop: 3 (ITI, ADTEC, CIAST). Institutes will be decided through discussion among JICA related agencies and Consultants
    - Facilitator for the PDM Workshop will be appointed by JICA. TOR for Consultant is to assist the facilitator including arrangement of the workshop and analyse the result of the workshop.

(8) To discuss on future direction for vocational training

- Interview Survey on related ministries such as Ministry of Human Resource, Ministry of Higher Education, Economic Planning Unit and so on.
- To assist in PDM Workshop 2
    - Participants: Staff of related ministries; representative of industry
    - Facilitator for the PDM Workshop will be appointed by JICA. TOR for Consultant is to assist the facilitator including arrangement of the workshop and analyse the result of the workshop.

Annex 2: List of Persons/Institutions Interviewed/Met

Ministries

Date	Organisations	Name/Position	Contact
October 7, 2004	Ministry of Human Resources, Manpower Department Level 6, Block D4, Parcel D Federal Government Administrative Centre, 62505, Putrajaya	En Shamsudin b. Jamil, Principal Assistant Director, Research & Planning	Tel: 603-8886 5440 Fax: 603-8889 2417 Email: sham@mohr.gov.my
		En Kamaruzaman, Director ITI Sandakan	
		Mohd Sani Salan, Assistant Director, Research & Planning	Tel: 603-8886 5583 Email: msani@mohr.gov.my
		En Mohd Rizal Ramly Assistant Director, Research & Planning	Tel: 603-8886 5586 Email: mrizal_r@mohr.gov.my
		Mr Megumu Fukumi, JICA Expert on HRD	Tel/Fax: 603-88865575 Mobile: 60-16-6592952 Email: fukumi@myjaring.net
October 7, 2004	Economic Planning Unit (Human Resource Section) Block B5, Level 3 Federal Government Administrative Centre, 62505, Putrajaya	Mr Othman Mustapha Principal Assistant Director	Tel: 603-8888 2859 Fax: 603-8888 3857 Email: othman@epu.jpm.my
		Puan Noor Zaidah Dahalan, Principal Assistant Director	Tel: 603-8888 2855 Fax: 603-8888 3857 Email: zaidah@epu.jpm.my
October 15, 2004	Ministry of Higher Education Management of Community Colleges Division Block E14, Level 6 Federal Government Administrative Centre, 62504, Putrajaya	Tuan Hj Imran Idris Director	
		Dr Abdul Rahim Ahmad, Deputy Director	Tel: 603-8884 5112 Fax: 603- Email: drabdulrahim@kksbs.edu.my
		Puan Fazilah Isa	Tel: 603-8884 5122 Email: zukhruf@hotmail.com
		Mr Takeda Akihiko Electric Electronic Technology Adviser (JICA Senior Volunteer)	Mobile: 019-2484804 Email: aktakeda1943@ybb.ne.jp
		Mr Takano Akira Integrated Manufacturing Adviser (JICA Senior Volunteer)	Mobile: 016-6257656 Email: afaik-lj@infoseek.jp

Date	Organisations	Name/Position	Contact
	Ministry of Higher Education Polytechnics Division Block E14, Level 5 Federal Government Administrative Centre, 62504, Putrajaya	Ms. Mohana Rani Chellathurai, Assistant Director, Polytechnic Division	Tel: 603–8884 5248 Tel: 603–8884 5256 (DL) Mobile: 019–3523252 Fax: 603–8884 5277
October 20, 2004	Majlis Amanah Rakyat (MARA) 20th Floor MARA Headquarters 21 Jalan Raja Laut 50609 Kuala Lumpur	En. Mohd Anwar Hashim, Director MARA Education & Training (Vocational) Division	Tel: 603-2692 7710 (direct) Tel: 603-2691 5111 ext 3322 Fax: 603-2691 4510 Email: anwar@mara.gov.my
		En. Ismail Hj Shahadan, Deputy Director (Devt)	Tel: 603-2691 5111
		En. Saharuddin Abdul Hamid, Deputy Director (Curriculum)	Tel: 603-2691 5111
		En. Rusli Abdul Rahman, Deputy Director (Learning Resources)	Tel: 603-2691 5111
		Pn. Salmah Hayati Ghazali, Deputy Director (Management Services)	Tel: 03-26910390 (DL) Email: salmahh@mara.gov.my
		Pn. Zarinah Idrus, Deputy Director (Research and Promotion)	Tel: 603-2691 5111
		Pn. Fadhilah Shukor, Deputy Director	Tel: 603-2691 5111
October 21, 2004	National Vocational Training Council (NVTC), Ministry of Human Resources, Manpower Department Level 8, Block D4, Parcel D Federal Government Administrative Centre, 62505, Putrajaya	Mr Pang Chau Leong Deputy Director General	Tel: 603-8886 5443 Fax: 603-8889 2430 Email: clpang@mohr.gov.my
		En. Mohamed Sulaiman Director NOSS	Tel: 603-8886 5426 Fax: 603-8889 2430 Email: mohamad@mohr.gov.my
		En. Mohamed Yusoff Abu Bakar Director MOSQ	Tel: 603-8886 5419 Fax: 603-8889 2430 Email: myusoff@mohr.gov.my
		En. Zaharudin b Abdul Latif, Asst Director, Research and Development	Tel: 603-8886 5524 Fax: 603-8889 2430 Email: zaharudin@mohr.gov.my
October 27, 2004	Human Resource Development Berhad	Dato' Tan Yik Huay, Chairman	

Date	Organisations	Name/Position	Contact
November 2, 2004	Skills Development Division, Ministry of Youth and Sports, Level 2, Block G, Jalan Dato Onn, 50570 Kuala Lumpur	En. Mohd Hashimi bin Abd. Hadi, Director	Tel: 603-2691 9519 (DL) 603-2690 8355 Fax: 603-2692 3017 Mobile: 019-283 7073 Email: mhashimi@kbs.gov.my

Public Sector Vocational Training Institutions

Date	Organisations	Name/Position	Contact
October 12, 2004	Polytechnic Kulim Kulim Hi-Tech Park Kulim 09000, Kedah	Puan Siti Jariah Ibrahim, Deputy Director	Tel: 604-403 3333 Fax: 604-403 3333
		Puan Rohaya Ibrahim Training & Continuing Education Officer	
October 12, 2004	Malaysian Spanish Institute Kulim Hi-Tech Park Kulim 09000, Kedah	Puan Hajjah Rosminah Mohd Hussin, Provost	Tel: 604-403 5198 Fax: 604-403 5201 Email: rosminah@msi.edu.my
		En. Mohd Razali Md Yunos, Head of Academic Department	Tel: 604-403 5198 Fax: 604-403 5201
October 12, 2004	Institut Kemahiran MARA Jalan Badishah, 08000 Sg Petani, Kedah	En Mohd Rosidi Tahar, Asst Principal (1)	Tel: 604-421 2382 Fax: 604-421 8432 Email: taharmr@yahoo.com
October 13, 2004	Japan-Malaysia Training Institute (JMTI) Plot 59 Lorong Perindustrian Bukit Minyak 15, Taman Perindustrian Bukit Minyak, 14100 Pulau Pinang	En. Zaihan b Shikri Director	Tel: 604-508 7800 Fax: 604-508 7808 Email: zaihan@jmti.gov.my Website:
		En Azman Hj Ibrahim Deputy Director 1	Tel: 604-508 7800 Fax: 604-508 7808 Email: azman@jmti.gov.my
October 14, 2004	ADTEC Kulim Lot 635 Mahang, 09500 Karangan, Kedah	En Mohd Yazid b Mohd Salleh, Deputy Director (Training)	Tel: 604-404 2975 Fax: 604-404 2972/73 Email: yazid@adteckulim.gov.my Website: www.adteckulim.jtr.gov.my
October 15, 2004	ADTEC Shah Alam No. 5934, Batu 6, Off jalan Bukit Kemuning, Section 34, 40470 Shah Alam, Selangor	En. Suimi Bin Abd Majid, Director	Tel: 603-5161 2610 (direct) Tel: 603-5161 2622 (main) Fax: 603-5161 2651 Email: suimi@adtecsa.gov.my
		Mr. Junichiro Nakamura, Electronic Specialist	Tel: 603-5161 2622 (main) Fax: 603-5161 2613/18 Email: jnakamu@aol.com
		Mr. Kida Yasuhiro, Electric Engineer	Tel: 603-5161 2622 (main) Fax: 603-5161 2613 Email: y-kida@qg8.so-net.ne.jp

Date	Organisations	Name/Position	Contact
October 15, 2004	Polytechnic Seberang Perai, Jalan Permatang Pauh, 13400 Permatang Pauh, Pulau Pinang	Ir Ashah bt Ab Rahman, Director	Tel: 604-538 3322 Fax: 604-538 9266 Website: www.psp.edu.my
October 15, 2004	Kolej Komuniti Chenderoh, PO Box 21, Pejabat Pos Kuala Kangsar, 33007 Kuala Kangsar, Perak	En Mohd Hashim Buyong, Principal	Tel: 605-758 5802 Fax: 605-758 5839 Email: kkche@edu.my Website: www.kkche.edu.my
October 15, 2004	Institut Latihan Perindustrian Kuala Lumpur (ITI Kuala Lumpur), Jalan Kuchai Lama, 58200 Kuala Lumpur	En. Syed Mohamad Noor B. Syed Mat Ali, Director	Tel: 603-79817495/6 Fax: 603-79832987 Email: pengarahilpkl@ilpkl.gov.my Website: www.ilpkl.gov.my
October 18, 2004	Institut Latihan Perindustrian Kota Kinabalu (ITI Kota Kinabalu), 2 Jalan KKIP, Selatan 4, 88450 Menggatal, Kota Kinabalu, Sabah	En Mustal bin Makmud, Department Head (Training Officer)	Tel: 6088-499825 Fax: 6088-499851 Email: info@ilpkk.gov.my Website: www.ilpll.gov.my
		En. Sudirman Hammade, Training Officer	
October 18, 2004	Polytechnic Sabak Bernam, Sungai Lang, 45100 Sungai Air Tawar, Selangor	Tuan Hj. Mohamad Jayus bin Hj. Bunasir, Director	Tel: 603-32136666 Fax: 603-32136633
October 18, 2004	Polytechnic Tanjung Malim, Behrang Stesen, 35950 Behrang, Perak	Tuan Haji Kamaruddin bin Haji Hamzah, Director	Tel: 605-4544431/4161 Fax: 605-4544993
		En. Azhari Noor Ahmad, Dy Director	Tel: 605-4544431 Fax: 605-4544993
		En. Hj. Rosli Idris, Head of Civil Eng.	Tel: 605-4544431 Fax: 605-4544993
		En. Mohana Krishnan, Head of Mechanical Engg.	Tel: 605-4544431 Fax: 605-4544993
		En. Hj. Abdul Wahab Mohd. Meerah, Head of Electrical Engg.	Tel: 605-4544431 Fax: 605-4544993
		En. Mohd Zin Mamat, Head of Commerce	Tel: 605-4544431 Fax: 605-4544993
		En. Mohamad Tarmizi Omar, Continuing Education & Training	Tel: 605-4544431 Fax: 605-4544993
October 19, 2004	Polytechnic Kota Kinabalu, Jalan Politeknik, 88450 Menggatal, Kota Kinabalu	Puan Maznah Bt. Othman, Deputy Director	Tel: 6088-499980 Fax: 6088-499960 Website: www.pkksabah.edu.my

Date	Organisations	Name/Position	Contact
October 19, 2004	Institut Kemahiran MARA Kota Kinabalu, Lot 4, Taman Perindustrian Kota Kinabalu, Km 6, Jalan Sepangar, 88991 Kota Kinabalu, Sabah	Hj Abd Halip bin Harun, Principal	Tel: 6088-496645 Fax: 6088-497512 Email: ahalip@mara.gov.my Website: www.pmn.gov.my/sabah
October 19, 2004	Institut Kemahiran MARA Jasin, Jalan Sempang Kerayong, 77000 Jasin, Melaka	Tuan Haji Muhammad Ismail, Director	Tel: 606-5291561 Fax: 606-5292561 Website: www.ikm.edu.my/jasin/
October 19, 2004	Polytechnic Kota Melaka, No.2, Jalan PPM10, Plaza Pandan Malim, Balai Panjang, 75250 Melaka	Tuan Haji Shamsudin Bin Abdullah, Head of Electrical Engineering	Tel: 606-3376013 Fax: 606-3376007/6022 Website: www.polimelaka.edu.my
October 19, 2004	Kolej Komuniti Bukit Beruang, No.23, Jalan BBI 1, Taman Bukit Beruang Indah, 75450 Bukit Beruang, Melaka	Puan Rashidah Bt. Mustapa, Director	Tel: 606-2332801 Fax: 606-2332877 Website: www.kkbbm.edu.my
		En. Ramlee Yahya, Councellor	Tel: 606-2332801 Fax: 606-2332877
		Puan Salbiah Bt. Wan Chik, Head of Service Industry Training	Tel: 606-2332801 Fax: 606-2332877
October 20, 2004	Institut Latihan Perindustrian Bukit Katil (ITI Bukit Katil), Lot 1729, Mukim Bukit Katil, 75450 Melaka	En. Suaibunaha Bin Jusoh, Director	Tel: 606-2320629/600 Fax: 606-2329600/2316851 Website: www.ilpmelaka.gov.my
		En. Muhamad Bin Zakaria, Dy Director	Tel: 606-2320629/600 Fax: 606-2329600/2316851 Email: mzakaria@ilpmelaka.gov.my
		En. Mohd Zakir Bin Mahmud, Mech.& Production Dept Head	Tel: 606-2320629/600 Fax: 606-2329600/2316851 Email: zakir@ilpmelaka.gov.my
		En. Zaidi Md. Yusuf, Tech Maintenance Unit	Tel: 606-2320629/600 Fax: 606-2329600/2316851
		En. Azmi Mohamad, Skills Development Unit	Tel: 606-2320629/600 Fax: 606-2329600/2316851
October 20, 2004	Polytechnic Merlimau, Jalan Jasin, 77300 Merlimau, Melaka	Puan Asmara Bt. Sulong, Director	Tel: 606-2636687 Fax: 606-2636678
October 21, 2004	MICET (Malaysian Institute of Chemical and Bio-Engineering Technology), Lot 1988, Bandar Vendor Taboh Naning, 78000 Alor Gajah, Melaka	Prof. Mohd. Azemi Bin Mohd. Noor, Provost	Tel: 606-5512000 (ext 2004) Tel: 606-5512003 (direct) Fax: 606-5512005 Email: azemi@micet.edu.my Website: www.micet.edu.my

Date	Organisations	Name/Position	Contact
October 21, 2004	ADTEC Melaka Bandar Vendor Taboh Naning, 78000 Alor Gajah, Melaka	En. Azmir Bin Mohd Yunus, Deputy Director	Tel: 606-5527224/27 Fax: 606-5527231 Email: azmir@adtecmlk.gov.my Website: www.adtecmlk.gov.my
		En. Kamal Bin Jaini, Technical Control Unit	Tel: 606-5527148 Fax: 606-5527231
October 23, 2004	CIAST (Pusat Latihan Pengajar Dan Kemahiran Lanjutan) Seksyen 19, 40900 Shah Alam, Selangor	En. Nidzam Bin Kamarulzaman, Director	Tel: 603-55415736/5739 Tel: 603-55487164 (direct) Fax: 603-55411508/4807 Email: nidzam@ciast.gov.my Website: www.ciast.gov.my
October 25, 2004	Institut Latihan Perindustrian MUAR (ITI Muar), KM43, Jalan Segamat, 84020 Sagil, Johor	En. Zainudin Hj Ahmad, Director	Tel: 606-9773800 Fax: 606-9773799 Email: pengarah@ilpmuar.gov.my Website: www.ilpmuar.gov.my
October 25, 2004	Kolej Komuniti Ledang, Jalan Paya Mas, 84900 Tangkak, Johor	Tuan Hj. Ir. Abdul Hamid Bin Othman, Director	Tel: 606-9538627 Fax: 606-9561315
October 26, 2004	ADTEC Batu Pahat KM8, Jalan Tanjung Labuh, 83000 Batu Pahat, Johor	En. Ab. Rahman B. Mohd. Said, Deputy Director	Tel: 607-4287733 (main) Tel: 607-4285293 (direct) Fax: 607-4285290 Email: abrahman@adtecbp.gov.my Website: www.adtecbp.gov.my
October 26, 2004	Institut Latihan Perindustrian Pasir Gudang (ITI Pasir Gudang), Jalan Gangsa, 81700 Pasir Gudang, Johor	En. Mazlan B. Abd. Majid, Director	Tel: 607-2513660 Fax: 607-2511910 Email: mazurai@hotmail.com Website: www.ilppg.gov.my
October 27, 2004	Institut Kemahiran MARA Johor Bahru Jalan Taruka, Off Jalan Datin Halimah, 80900 Johor Bahru, Johor	En. Wan Sabri Bin Wan Ismail, Director	Tel: 607-2361129/2370001 Tel: 607-2371434 (direct) Fax: 607-2364289 Email: wsabri@mara.gov.my Website: www.ikm.edu.my/jb/
		En. Md. Khalil Bin Mohamed, Deputy Director (Training)	Tel: 607-2361129/2370001 Tel: 607-2371434 (direct) Fax: 607-2364289 Email: ikmjb@tm.net.my
October 29, 2004	Kolej Komuniti Kepala Batas, 87 Lorong Bertam Indah 1, Taman Bertam Indah, 13200 Kepala Batas, Seberang Perai	Puan Hajjah Durishah bt Ismail, Counselling Officer	Tel: 604-5792300 / 5755930 Fax: 604-5759300 Email: durishah@kkkba.edu.my Website: www.kkkba.edu.my
		Robert Kerk Swee Tan, Integrated Manufacturing Division	Tel: 604-5792300 / 5755930 Fax: 604-5759300

Date	Organisations	Name/Position	Contact
November 2, 2004	Institut Latihan Perindustrian Ipoh (ITI Ipoh), Kawasan Perindustrian Tanah Meru, 30020 Ipoh, Perak	En. Md Isa b Ibrahim, Head of Mechanical Section	Tel: 605-5265476/7 Fax: 605-5270702 Email: ilppk@po.jaring.my
		Mr Shinichi Okada, Foundry Technology Adviser (JICA Sr Volunteer)	Tel: 605-527 7777 Fax: 605-527 0702 Email: okadashi@tm.net.my
November 4, 2004	Kolej Komuniti Sungai Petani, d/a SMT Sungai Petani 2, 08000 Sg Petani, Kedah	Tuan Hj. Mod Noor b Baharom, Principal	Tel: 604-441 2930 Fax: 604-441 2924 Email: spcc@tm.net.my
	Institut Kemahiran Mara Jalan Kota Tanah, 05050 Alor Setar, Kedah	En Ahmad Rakhli b Hassan, Principal	Tel: 604-772 9940 Fax: 604-772 4340 Email: arakhli@mara.gov.my
		En Azman Alias, Assistant Principal	Tel: 604-772 9940 Fax: 604-772 4340
November 8, 2004	Institut Kemahiran MARA Kuala Lumpur, Jalan Belangkas, Kampung Pandan, 55100 Kuala Lumpur	En. Zakaria Hasan, Principal	Tel: 603-92844455 Tel: 603-92857721 (direct) Fax: 603-92848213 Website: www.ikm.edu.my/kl/
November 8, 2004	Institut Latihan Perindustrian Jitra (ITI Jitra), Bandar Darulaman, 06000 Jitra, Kedah	En Mohd Raris n Mohamed Yusof, Department Head (Mechanical & Production)	Tel: 604-9161926 Fax: 604-9162367 Email: admin@ilpjitra.gov.my Website: www.ilpjitra.gov.my
November 8, 2004	Politeknik Sultan Abdul Halim Mu'adzam Shah, Bandar Darulaman, 06000 Jitra, Kedah	En Ahmad Tajudin b Jab, Head of Civil Engineering Department	Tel: 604-9146100 Fax: 604-9174232 Website: www.polimas.edu.my
		Ir Gan Chee Kuan, Director	Tel: 604-9146100 604-917 5421 (DL) Fax: 604-9174232 Email: ganck@admin.polimas.edu.my
November 8, 2004	Komuniti Kolej Selayang, c/o Sekolah Menengah Teknik Gombak, Jalan Sungai Pusu, 53100 Gombak, Kuala Lumpur	Puan Noor Azalifah Mohammed, Senior Lecturer	Tel: 603-61866711 Fax: 603-61866733
November 9, 2004	Politeknik Perlis, Ulu Pauh, 02600 Arau, Perlis	Mr Jem Cheong Tak Head of Mechanical Engineering Department	Tel: 604-988 6200 Fax: 604-988 6300 Mobile: 012-412 9778
November 26, 2004	Institut Kemahiran Tinggi Belia Negara Sepang (Youth National Advanced Skills Institute Sepang), Bandar Baru Salak Tinggi, 43900 Sepang, Selangor	Tuan Haji Suntong Bin Abdullah, Director	Tel: 603-87061726 Fax: 603-87061725 Email: suntong@iktbn.po.my Website: www.iktbn.edu.my

Date	Organisations	Name/Position	Contact
	Institut Kemahiran MARA Petaling Jaya, No.12, Jalan Templer, 46000 Petaling Jaya	En. Abdul Walid, Counsellor En. Seenivasan M. Muniandy, Lecturer	Tel: 603-77828971 Fax: 603-77828776 Email: Website: www.ikm.edu.my/pj/
December 2, 2004	Komuniti Kolej Bayan Baru. c/o SM Teknik Tunku Abdul Rahman, Jalan Ibbetson, 11400 Pulau Pinang	Tuan Hj Idris b Md Aron Department Head	Tel: 604-8351111 Fax: 603-8351222
December 3, 2004	Polytechnic Ungku Omar, Jalan Raja Musa Mahadi, 31400 Ipoh, Perak	En. Zolkarnain B. Hj. Jobshi, Deputy Director	Tel: 605-5457656/22 Fax: 605-5471162 Email: zoljobshi@adm.puo.edu.my Website: www.puo.edu.my
		Puan Nor Ainon Bt. Zakaria, Public Relations & Resource Officer	Tel: 605-5457656 Fax: 605-5471162 Email: ainon@adm.puo.edu.my Website: www.puo.edu.my
December 6, 2004	Polytechnic Sultan Salahuddin Abdul Aziz Shah, Persiaran Usahawan, Seksyen U1, 40150 Shah Alam, Selangor	En. Abdul Karim B. Jaafar, Deputy Director	Tel: 605-5457656 Fax: 605-5471162 Email: Website:
December 9, 2004	Komuniti Kolej Kuala Langat, Jalan Ubi, Jugra, 42700 Banting, Selangor	Tuan Hj. Izni Rashdidi Bin Wan Md Razalli, Principal	Tel: 603-31202030/50 Fax: 603-31202080 Email: kklangat@yahoo.com Website:

State Skills Development Centres

Date	Organisations	Name/Position	Contact
October 13, 2004	Kedah Industrial Skills and Management Development Centre (KISMEC) 351-352, Jalan Bandar Baru 4 Taman Bandar Baru, 08000 Sg Petani, Kedah	En Wan Ismail Ibrahim, Executive Director	Tel: 604-441 461- Fax: 604-441 4622 Email: kismec@tm.net.my Website: www.kismec.org.my
October 14, 2004	Selangor Human Resource Development Centre 1A, 1st Floor, Block 2, Worldwide Business Park, Jalan Tinju 13/50, Section 13, 40100 Shah Alam, Selangor	Ms Masliza Osman, General Manager	Tel: 603-5513 3560 Fax: 603-5513 3490 Email: masliza@shrdc.org.my
		Ms Teh Sook Ling, Finance & Operation Manager	Tel: 603-5513 3560 Fax: 603-5513 3490 Email: sookling@shrdc.org.my
October 22, 2004	Malacca Industrial Skills Developnment Centre, Lorong 1, Jalan PBB6, Taman Perindustrian	En. Zamrud Bin Mansor, Executive Director	Tel: 606-3353576 (ext 100) Fax: 606-3353577 Email: misdc@tm.net.my Website: misdc.netsdc.org.my

Date	Organisations	Name/Position	Contact
	Batu Berendam, 75350 Melaka	En. Mohd Zahiruddin Bin Ahmad, Marketing Officer	Tel: 606-3353576 (ext 100) Fax: 606-3353577
November 3, 2004	Perak Entrepreneur & Skills Development Centre, Jalan Johan 2/2, Kawasan Perindustrian Pengkalan II, 31550 Pusing, Perak	Ms Prema Sivabalan, Administrator	Tel: 605-366 8869 Fax: 605-366 8870 Email: pesdc@pesdc.edu.my Website: www.pesdc.edu.my
		Mr S Thillainathan, Marketing Executive/ Technical Trainer	Tel: 605-366 8869 Fax: 605-366 8870 Email: thillai@pesdc.edu.my
November 9, 2004	Penang Skills Development Centre, 1 Jalan Sultan Azlan Shah, Bandar Bayan Baru, 11909 Bayan Lepas, Penang	Ms Lim Wei Chen Manager, Systems and Program Development	Tel: 604-6437909 Ext 532 Fax: 604-6437929 Email: limwsc@psdc.org.my Website: www.psdc.org.my
December 6, 2004	Johor Skills Development Centre PLO 2, Jalan Perak 4, Kawasan Perindustrian Pasir Gudang, 81700 Pasir Gudang, Johor	Encik Ja'apar b Samat, Director	Tel: 607-2521606 Fax: 607-2521722 Email: puspatri@streamyx.com Website: puspatri.netsdc.org

Private Sector Vocational Training Institutions

Date	Organisations	Name/Position	Contact
October 21, 2004	Malaysian Textile and Apparel Centre (MATAC) C-9-4, Megan Phileo Promenade No 189 Jalan Tun Razak 50400 Kuala Lumpur	Encik Ismail Abu Hasim, HRD Manager	Tel: 603-2162 1587/1454/1879 Fax: 603-2162 5148/3953 Email: ismail@matac.org.my
		Ms Audra Chin Marketing Executive	Tel: 603-2162 1587/1454/1879 Fax: 603-2162 5148/3953 Email: audra@matac.org.my
November 4, 2004	FMM Institute of Manufacturing (FMM-IM) Wisma FMM, No. 3, Persiaran Dagang, PJU 9, Bandar Sri Damansara, 52200 Kuala Lumpur	Mr. Ramudaram Narayanan, Executive Director	Tel: 603-6276 1211 603-6276 7643 (DL) Fax: 603-6277 6712 Email: ramudaram@fmm.org.my Website: www.fmm.edu.my

Industry/Industry Associations

Date	Organisations	Name/Position	Contact
October 21, 2004	Malaysian Textile Manufacturers Association (MTMA) C-9-4, Megan Phileo Promenade No 189 Jalan Tun Razak 50400 Kuala Lumpur	Mr Soo Cheong Futt Director	Tel: 603-2162 1587/1454/1879 Fax: 603-2162 5148/3953 Email: soocf@mtma.org.my
		Ms Sophia Wong Marketing Executive	Tel: 603-2162 1587/1454/1879 Fax: 603-2162 5148/3953 Email: sophiawong@mtma.org.my
November 4, 2004	Federation of Malaysian Manufacturers (FMM) Wisma FMM, No. 3, Persiaran Dagang, PJU 9, Bandar Sri Damansara, 52200 Kuala Lumpur	Ms. Chin Lye Ha, General Manager, Development	Tel: 603-6276 1211 Fax: 603-6274 1266/7288 Email: clh@fmm.org.my Website: www.fmm.org.my
	Malaysian Plastics Manufacturers Association 37, Jalan 20/14, Paramount Garden, 46300 Petaling Jaya, Selangor, Malaysia	Mr. S. C Chan Manager, Economics/Industry Information	Tel: 603–7876 3027 Fax: 603-7876 8352 E-mail: scchan@mpma.org.my Website: www.mpma.org.my
December 22, 2004	Federation of Malaysian Manufacturers (FMM) – Northern Branch 2767 Mukim 1, Lebuh Tenggiri 2, Bandar Seberang Jaya, 13700 Seberang Perai Tengah, Penang	Dato' OK Lee Chairman	
		Tan Seang Aun, Branch Manger	Tel: 604-3992057 Fax: 604-3994863 Email: tsa@fmmnbpg.po.my Website: www.fmm.org.my
		Aw Sin Jam Assistant Manager – FMM - IM	Tel: 604-3992057 Fax: 604-3994863 Email: fmmpng@fmm.jaring.my Website: www.fmm.org.my

Annex 3: List of VTIs Interviewed

Type	Training Institutions	Town	State
ATC	ADTEC Kulim	Kulim	Kedah
ATC	ADTEC Shah Alam	Shah Alam	Selangor
ATC	ADTEC Batu Pahat	Batu Pahat	Johor
ATC	ADTEC Melaka	Alor Gajah	Melaka
CC	KK Darulaman	Jitra	Kedah
CC	KK Sungai Petani	Sungai Petani	Kedah
CC	KK Kepala Batas	Kepala Batas	PP
CC	KK Chenderoh	Kuala Kangsar	Perak
CC	KK Selayang	Kuala Lumpur	WPKL
CC	KK Ledang	Muar	Johor
CC	KK Bukit Beruang	Bukit Beruang	Melaka
CC	KK Bayan Baru	Bayan Baru	PP
CC	KK Kuala Langat	Banting	Selangor
CIAST	CIAST	Shah Alam	Selangor
IKM	IKM Alor Setar	Alor Setar	Kedah
IKM	IKM Sungai Petani	Sungai Petani	Kedah
IKM	IKM Kota Kinabalu	Kota Kinabalu	Sabah
IKM	IKM Petaling Jaya	Petaling Jaya	Selangor
IKM	IKM Kuala Lumpur	Kuala Lumpur	WPKL
IKM	IKM Johor	JB	Johor
IKM	IKM Jasin	Jasin	Melaka
IKT	Malaysian Spanish Institute (MSI)	BB Kulim	Kedah
IKT	Malaysian Institute of Chemical and Bioengineering Technology (MICET)	Alor Gajah	Melaka
ITI	ITI Jitra	Jitra	Kedah
ITI	ITI Kota Kinabalu	Kota Kinabalu	Sabah
ITI	ITI Ipoh	Ipoh	Perak
ITI	ITI Kuala Lumpur	Kuala Lumpur	WPKL
ITI	ITI Pasir Gudang	Pasir Gudang	Johor
ITI	ITI Muar	Tangkak	Johor
ITI	ITI Bukit Katil	Bukit Katil	Melaka
JMTI	Japan-Malaysia Technical Institute (JMTI)	SPT	PP
POL	Polytechnic Sultan Abdul Halim Mu'adzam Shah (POLIMAS)	Jitra	Kedah
POL	Polytechnic Kulim	Kulim	Kedah
POL	Polytechnic Perlis	Arau	Perlis
POL	Polytechnic Seberang Prai	Pmtg Pauh	PP
POL	Polytechnic Kota Kinabalu	Likas	Sabah
POL	Polytechnic Ungku Omar	Ipoh	Perak
POL	Polytechnic Shah Alam	Shah Alam	Selangor