

The Hashemite Kingdom of Jordan



**National Center for Human Resources Development**

**A Performance Review of  
Vocational Training  
Providers and the Linkages  
Between Training and  
Employment in Jordan**

By

Roger Pearson

Publication Series

56

1998



## **Acknowledgements**

The following study was initiated by Dr. V. Billeh, President, N.C.H.R.D., in response to a need to identify priorities which would guide future development in Vocational Education and Training in Jordan.

The study group comprised Roger Pearson as Principal Investigator with Dr. Arafat Tamimi, Dr. Mahdi Krunz, Suad Farkouh, Hesham Ibrahim Radi Mfadi and Robert Miller as co-team members.

The study team would like to thank all of those who helped in the production of the work.

Thanks are extended in particular to their Excellencies, the Minister of Education and the Minister of Labour as well as the Directors General of the Vocational Training Corporation and the Vocational Education Directorate of the Ministry of Education.

Appreciation is extended to all other members of the public and private sector who gave unstintingly of their time, insights and information upon which the findings are based.





## Table of Contents

	Page
1.0 Introduction .....	2
2.0 Terms of Reference, Methodology, and Presentation of Findings .....	4
3.0 Structure of Vocational Education and Training in Jordan .....	6
3.1 Current Status .....	6
3.2 Findings and Commentary on Policy and Structure of Vocational Education and Training in Jordan.....	9
3.3 Policy and Structure of Vocational Education and Training in Jordan: Key Performance Indicators .....	10
4.0 VTC Performance Review .....	12
4.1 VTC History, Mandate, Structure, and Operating Environment .....	12
4.1.1 VTC Organisational Structure .....	13
4.1.1.1 VTC Training Centre Mandate and Structure.....	13
4.1.2 Operating Environment .....	14
(a) Enhanced relevance to market economy .....	15
(b) Effective system management.....	15
(c) Quality Improvement .....	16
4.2 VTC Management Review .....	16
4.2.1 History and Current Status.....	18
4.2.2 Findings and Commentary .....	25
4.2.3 Summary of Performance Indicators: VTC Management .....	25
4.3 Performance Review of VTC Training Activities .....	26
4.3.1 VTC Training Programme Structure .....	25
4.3.1.1 Current Status .....	27
4.3.1.2 Findings and Commentary .....	31
4.3.1.3 VTC Training Programme Structure - Key Performance .....	29
4.3.2 VTC Training Programme Content, Curriculum and Learning Resource .....	32
General Design .....	32
Course Design.....	32
Teaching/Learning Resource Materials .....	32
4.3.2.1 Current Practice: VTC Training Programme Framework, Content and Programme Development Methodology.....	34
4.3.2.2 Findings and Commentary: VTC Training Programme Framework, Content, and Programme Development Methodology .....	33
4.3.2.3 Training Programme Content, Curriculum, and Learning Resource Materials: Key Performance Indicators .....	41
4.3.3 VTC Training Centre Staff .....	42
4.3.3.1 Current Status .....	42
4.3.3.2 Findings and Commentary.....	44
Principals .....	45
Instructional Staff .....	47
Staff Support.....	44
4.3.3.3 Training Centres Staff Profile: Key Performance Indicators.....	48
4.3.4 Student Recruitment, Enrollment, Performance, and Perceptions .....	48
4.3.4.1 Current Status .....	49
4.3.4.2 Perspectives and Performance .....	50
4.3.4.3 Student Recruitment, Enrollment, Performance and Perceptions: Key Performance .....	50
4.3.5 VTC Graduates .....	50
4.3.5.1 Current Status .....	52
4.3.5.2 Findings and Commentary .....	57
4.3.5.3 Graduates: Key Performance Indicators .....	57
4.3.6 Facilities and Equipment .....	55
4.3.6.1 Current Status .....	58
4.3.6.2 Findings and Commentary .....	60
4.3.6.3 Facilities and Equipment: Key Performance Indicators.....	60
4.3.7 Labour Market Linkages.....	60
4.3.7.1 Current Status .....	61
4.3.7.2 Labour Market Linkages--Findings and Commentary .....	64
4.3.7.3 Industry Linkages: Key Performance .....	64
4.3.8 Industrial Extension Services.....	64



4.3.8.1 History and Current Status.....	65
4.3.8.2 Findings and Commentary.....	65
4.3.8.3 Industrial Extension Services: Key Performance Indicators.....	66
4.4 VTC Institutes.....	66
4.4.1 Training and Development Institute (TDI).....	68
4.4.1.1 Historical Development and Current Status.....	68
4.4.1.2 Findings and Commentary.....	69
4.4.1.3 Training and Development Institute: Key Performance Indicators.....	71
4.4.2 Testing and Training Institute.....	71
4.4.2.1 History and Current Status.....	71
4.4.2.2 Findings and Commentary.....	72
4.4.3 Testing and Training Institute: Key Performance.....	74
4.4.4 Occupational Safety and Health Institute (OSHI).....	74
4.4.4.1 Historical Development and Current.....	74
4.4.4.2 Findings and Commentary.....	75
4.4.4.3 Occupational Safety and Health Institute: Key Performance.....	74
4.5 VTC Directorates.....	80
4.5.1 Buildings Directorate.....	80
4.5.1.1 Role and Current Status.....	80
4.5.1.2 Findings and Commentary.....	80
4.5.2 Planning Directorate.....	80
4.5.2.1 Role and Current Status.....	80
4.5.2.2 Findings and Commentary.....	80
4.5.3 Programme and Testing Directorate.....	82
4.5.3.1 Role and Current Status.....	82
4.5.3.2 Findings and Commentary.....	82
4.5.4 VTC Directorates: Key Performance Indicators.....	84
4.6 Cost and Efficiency Review.....	84
4.6.1 Overall Budget Review.....	85
4.6.1.1 Current Status.....	85
4.6.1.2 Commentary and Findings: Overall Budget Review.....	85
4.6.2 Allocation of Current Account Expenditures.....	87
4.6.2.1 Current Status.....	87
4.6.2.2 Findings and Commentary: Allocation of Current Account Expenditure.....	82
4.6.3 Student Performance.....	89
4.6.3.1 Current Status.....	89
4.6.3.2 Commentary and Findings: Student Performance.....	91
4.6.4 Training Costs.....	93
4.6.4.1 Current Status: Training Costs.....	93
4.6.4.2 Findings and Commentary: Training Costs.....	95
4.6.5 Staffing Efficiency.....	96
4.6.6 Capital Expenditure and Facility Utilisation.....	97
4.6.6.1 Current Status.....	97
4.6.7 Findings and Commentary: Capital Expenditure and Facility Utilisation.....	98
4.6.8 Cost and Efficiency: Key Performance Indicators.....	94
4.7 Performance Summary.....	100
4.7.1 VTC Training Activities.....	100
4.7.2 VTC Training Activities: Key Performance Indicators.....	101
4.7.3 VTC Institutes.....	103
4.7.3.1 VTC Institutes: Key Performance Indicators.....	104
4.7.4 VTC Directorates.....	104
4.7.5 VTC Management.....	105
4.7.5.1 VTC Management: Key Performance Indicators.....	106
4.7.6 VTC Cost and Efficiency.....	106
4.7.7 Conclusion.....	107
5.0 Vocational Education.....	108
5.1 Vocational Comprehensive Education: Current Status.....	108
5.1.1 Objectives.....	109
5.1.2 Competencies.....	110
5.1.3 Study Plan.....	112



5.2 Vocational Comprehensive Education, Previous Findings.....	113
5.3 Commentary .....	120
6.0 Labour Market Demand Issues Affecting Technical and Vocational Education and Training .....	124
6.1 Employer Attitudes Toward Training and Education .....	125
6.1.1 Current Status .....	125
6.1.2 Findings and Commentary .....	128
6.1.3 Employer Attitudes Towards TVET: Key Observations .....	131
6.2 Issues and Trends in Labour Capital Demand .....	131
6.2.1 The Global Workplace.....	132
6.2.2 The Growth of Technology .....	132
6.2.3 The Changing Structure of Jobs.....	134
6.2.4 Occupational Mobility .....	136
6.2.5 The Ascendancy of the Information and Services .....	137
6.2.6 The Increasing Role of Small Enterprises.....	138
6.2.7 The Quality Imperative.....	139
6.2.8 Issues and Trends in Labour Capital Development: Key Observations.....	141
6.3 Quantitative Indicators in Labour Market Demand .....	141
6.3.1 Sources of Quantitative Labour Market Demand .....	142
6.3.2 Commentary on Labour Market Planning Systems .....	144
6.3.3 Quantitative Indicators in Labour Market Demand: Key Observations .....	147
7.0 Labour Capital Formation Systems and Strategies .....	148
7.1 Elements of a National Labour Capital Formation System .....	149
7.1.1 Basic Education .....	149
7.1.2 Career Guidance .....	149
7.1.3 Skills Training .....	150
7.1.4 Occupational Classification .....	150
7.1.5 Tests and Certification .....	150
7.1.6 Labour Law.....	150
7.1.7 Labour Market Information .....	151
7.1.8 Employment Services .....	151
7.2 Current Status of Labour Capital Formation Systems in Jordan.....	151
7.2.1 Status of Basic Education .....	151
7.2.2 Status of Career Guidance .....	151
7.2.3 Status of Skills Training .....	152
7.2.4 Status of Occupational Classification .....	152
7.2.5 Tests and Certification .....	152
7.2.6 Labour Law.....	152
7.2.7 Labour Market Information .....	153
7.2.8 Employment Services .....	153
7.3 An Improved Labour Capital Formation System.....	153
7.3.1 Findings and Commentary: Labour Capital Formation System .....	157
8.0 Transforming Jordan's TVET System.....	158
8.1 The Change Process.....	158
8.1.1 The Need for Change: Findings and Commentary.....	158
8.1.2 Need for a Systemic Approach: Findings and Commentary .....	159
8.1.3 Future Vision for TVET in Jordan: Findings and Commentary.....	159
8.1.4 Leadership and Coordination: Findings and Commentary.....	160
8.1.5 An Action Plan: Findings and Commentary .....	161
8.1.6 Implementing Resources: Findings and Commentary .....	161
8.1.7 Monitoring and Evaluation: Findings and Commentary.....	161
8.2 Change Issues Arising from the Performance Review .....	162
At the Policy Level.....	162
At the Management Level.....	162
At the Operational Level.....	163
8.3 Investment Programme to Support Change .....	163
8.3.1 Policy Issue One: Adopting a Systemic Approach .....	163
Action Steps.....	163
Required Resources .....	163
8.3.2 Policy Issue Two: A TVET Coordinating Body .....	163
Action Steps.....	163



Required Resources .....	164
8.3.3 Policy Issue Three: Differentiation of Vocational Education and Vocational Training .....	164
Action Steps.....	164
Required Resources .....	164
8.3.4 Management Issue One: VTC Strategic Management.....	165
Action Steps.....	165
Required Resources .....	165
8.3.5 Management Issue Two: VTC Management Information System.....	165
Action Steps.....	165
Required Resources .....	166
8.3.6 Operational Issue One: Programme Framework Review.....	166
Action Steps.....	166
Required Resources .....	167
8.3.7 Operational Issue Two: Training Programme Renewal.....	167
Action Steps.....	167
Required Resources .....	168
Appendix A.....	169
1.0 Introduction .....	169
2.0 The Bellagio Principles.....	169
Guidelines for the Practical Assessment of Progress Towards Sustainable Development.....	170
1. Guiding Vision and Goals .....	170
2. Holistic Perspective .....	170
3. Essential Elements.....	170
4. Adequate Scope .....	170
5. Practical Focus.....	171
6. Openness.....	171
7. Effective Communication.....	171
8. Broad Participation .....	172
9. Ongoing Assessment .....	172
10. Institutional Capacity.....	172
3.0 Sustainability Assessment of Jordan's Labour Capital Formation System.....	172
LIST OF ANNEXES .....	175
Bibliography .....	176





## 1.0 Introduction

Historically, education has been regarded as central to Jordan's social and economic development. Systematic investments have been made to develop the education and training delivery systems at all levels. This has resulted in education participation and literacy rates in Jordan being amongst the highest in middle income countries.

During the past ten years, development of the education system has been guided by the objectives of the Education Reform Programme which is aimed at improving the quality of educational performance at the primary, secondary and tertiary levels. The current external macro economic environment imposes greater urgency and new demands on the human resource development sector.

As the lead agency for national human resources policy analysis, the National Centre for Human Resources Development (NCHRD) has commissioned a number of studies to assess progress in addressing the respective sub-components of the Education Reform Programme. In the TVET context, these studies have been undertaken within the framework of NCHRD's mandate to provide policy guidance which will result in rationalisation of the Technical and Vocational Education and Training (TVET) system in Jordan.

This study, *"A Performance Review of Vocational Training Providers and the Linkages Between Training and Employment in Jordan"*, has been undertaken to measure progress toward meeting a number of perceived developmental needs in the vocational training system. These include:

- the removal of rigidities in responding to labour market needs
- addressing structural overlaps between the Vocational Training Corporation (VTC) and the Ministry of Education (MOE) school system
- a need to upgrade the quality of curriculum, and graduate performance
- the need to ensure the efficient use of resources.

The study examines the performance of VTC and the MOE Vocational Training Directorate as contributors to a national labour capital formation system at four levels:

- policy development and implementation
- mandates
- structure and management
- operations.

The study also examines the demand side of the labour market through a review of recent labour market literature together with surveys, interviews and focus groups held with employers and stakeholders, as well as interviews with training programme graduates. This work provides perspectives on the relevance and quality of vocational training as well as providing indicators of future training needs.

Based on findings that suggest a need to accelerate the reform process in vocational education and training, the study concludes with proposed action plans at the operational and structural/management levels while also discussing issues and options at the policy and mandate levels which are necessary to enhance the sustainability of the national labour capital formation system.

## 2.0 Terms of Reference, Methodology, and Presentation of Findings

The Terms of Reference as shown in Annex I, address the following two purposes:

- to undertake a performance review of the Vocational Training Corporation in light of its mandate to meet the vocational training requirements of Jordan. The review will examine VTC's organisation, management, and programming activities with a view to developing informational products and tools for the use of NCHRD in its assigned policy guidance and coordination role.
- to undertake a survey of the characteristics of the demand for skilled workers amongst formal and informal employers in Jordan with particular reference to the current and future role of the Vocational Training Corporation, and the Vocational Education General Directorate of the Ministry of Education in the preparation of new entrants into the labour market;

A variety of methodologies and techniques were used in the research, field work, and evaluation of the various components of the Technical and Vocational Education and Training system. Each section of the report provides an overview of the methodologies used in that section.

The first two sections of the report provide an introduction to the study and outline the Terms of Reference, general methodologies, and report structure.

Section 3.0 of the report describes the reorganisation of vocational education and training which has taken place in Jordan as a result of the Education Reform Programme. This provides important policy and directional context against which the performance review has been conducted.

Section 4.0 reports the findings of a performance review of the Vocational Training Corporation. Nine representative training centres were selected for detailed examination with field work being conducted at six of the focus centres. Discussions were held with principals, instructors, students, graduates, and employers in each of these Centres. In addition, surveys of physical facilities, instructional materials and student assignments were undertaken. Data assembled from this process provides the basis for the development of performance indicators and an analysis of trends during the past five years. A similar approach was adopted in a review of headquarters operations and of the work of VTC directorates and institutes.

In presenting the findings, a three step approach has been adopted. A descriptive overview is provided for each element of the VTC's activity profile. This is followed by the findings of the study team, together with related commentary. Finally, a performance summary is provided which assesses the progress made by VTC during the past five years against criteria of quality, relevance, and efficiency.

Recognising that recommendations arising need to be considered within a holistic context as opposed to being addressed individually, issues requiring attention are identified for discussion later in the report and finally for integration into a recommended action plan.

Section 5.0 addresses progress made by the Ministry of Education, Vocational Education General Directorate, in implementing the introduction of the vocational education stream into the comprehensive secondary education system in Jordan. This commences with an analysis of the programme approach, followed by an operational review. At the operational level, a comprehensive study, commissioned by NCHRD, was undertaken in 1996 by a team from the University of Jordan. This work adopts a methodology similar to that used for the VTC performance review, and consequently provides the basis for much of the analysis.

Section 6.0 reviews the status of the training provider/labour market interface in Jordan, with particular reference to current issues and trends in labour market monitoring, and the identification of emerging trends on the demand side of the labour market in Jordan.

Recognising the need to analyse the performance review findings, and to formulate recommendations within a coherent and integrated manner, Section 7.0 opens with a discussion of the eight principal elements of a labour capital formation system. This is followed by a characterisation of the current status of labour capital formation in Jordan and an assessment of its sustainability. This assessment identifies where priority action needs to be focussed.

Section 8.0 identifies four components of the labour capital formation system where action is required to address the relevance, quality, and efficiency criteria. These include the programmatic level, the management level, the mandate level and the policy level. For each component, issues are brought forward from the performance review and priority needs are identified. Finally, these needs are translated into recommendations and an associated action plan.

### 3.0 Structure of Vocational Education and Training in Jordan

The objectives of the Education Reform Programme, first articulated in 1988, and reinforced in 1994, establish clear purpose and responsibilities for vocational education and training in the Kingdom. The purpose of this section is to evaluate progress in implementing this component of the reform programme.

#### 3.1 Current Status

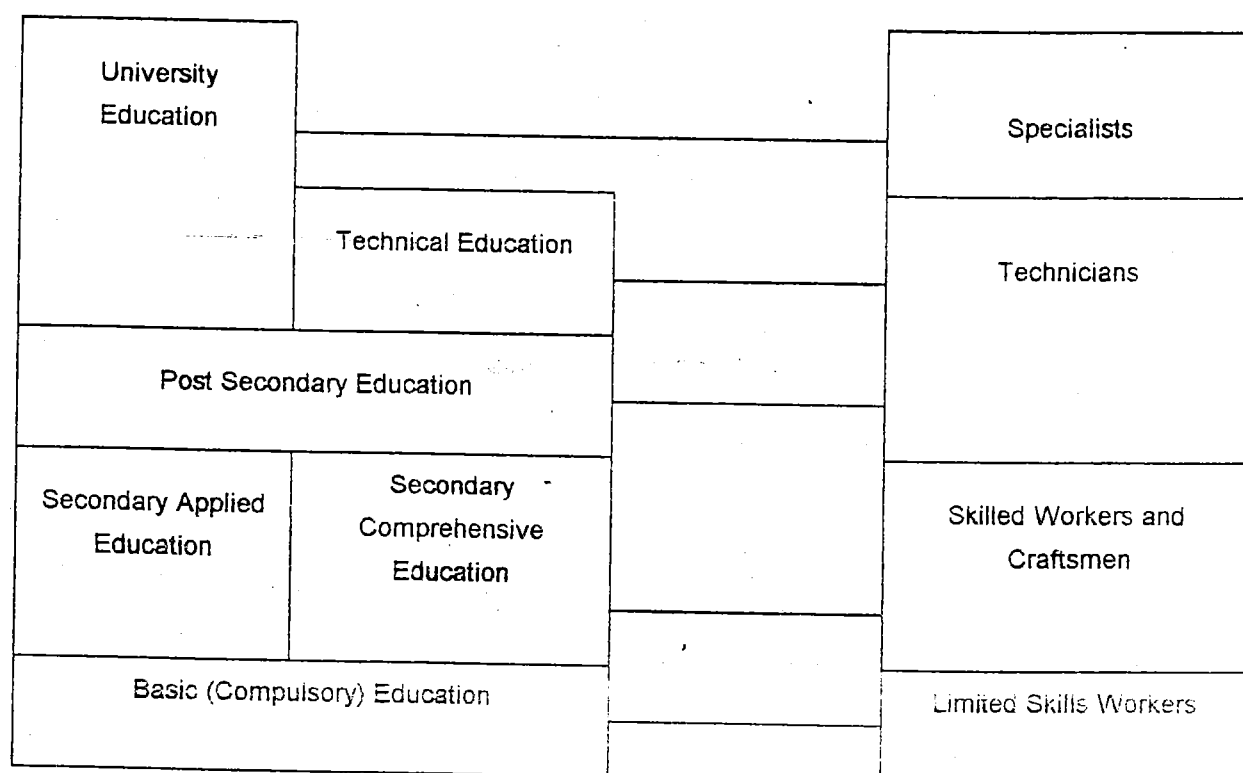
The following abstract from a paper presented at the May 1997 conference hosted by VTC on vocational education and training clearly outlines the objectives for vocational education and training in Jordan. These include:

- preparing skilled vocational workers in various vocations and crafts, providing them with the necessary specialised vocational, cultural, and scientific experience (according to students' abilities and interests) to meet the existing and future needs of society and industrial development plans,
- providing students with the concepts, theoretical knowledge, practical and applied skills so that integration between theory and practice and between knowledge and work are achieved,
- providing students with the ability to perform vocational tasks in accordance with recognised standards and preparing them to respond and adapt to technological change,
- providing students with appropriate attitudinal orientations including a commitment to accuracy, elimination of waste, attention to the principles of safety and conservation of the environment,
- developing in students the values of respect, team work, initiative, innovation, and creativity,
- preparing students to integrate and effectively participate in the world of work and production,
- participating in raising the vocational level of craftsmen and workers in the various sectors,

- providing the opportunity for students who have the appropriate skills and abilities to further their education in higher educational institutions.

The following diagram illustrates the intended linkages between the education system and vocational labour levels in Jordan.

**Figure 1**  
**Linkage Between the Education System and**  
**Vocational Labour Levels in Jordan**



Within the education system, pre-vocational education is now offered to all students at the basic education stage from grades one to ten. Following completion of grade ten, two vocational secondary options are available. Comprehensive secondary vocational programmes are offered by the Ministry of Education, while vocational secondary applied programmes are primarily offered by the Vocational Training Corporation.

Students enrolled in the comprehensive secondary vocational education can pursue studies in a specific specialisation associated with one of the six streams shown in the following table.

**Table 1**  
**Vocational Study Options for**  
**Vocational Secondary Education Students**

Stream	Number of Specialisations
Industrial	32
Agricultural	2
Nursing	1
Hotelery	1
Commercial	2
Home Economics	5

On completion of the 12th grade, vocational secondary students sit for the General Secondary Certificate in Vocational Education and, if successful, are eligible to apply for entrance to a university programme, or a community college programme, or to seek employment. Under the vocational labour levels applicable in Jordan, graduates of secondary comprehensive vocational education, after having gained suitable experience, are classified as craftsmen.

Students enrolled in vocational secondary applied programmes pursue an apprenticeship-style programme based on institutional training coupled with work experience for a total programme duration of three years. Apprenticeship programmes at the vocational secondary applied level are available within 11 occupational groupings and 40 specialisations as shown in the following table.

**Table 2**  
**Apprenticeship Programme Options for**  
**Vocational Secondary Applied Students**

Occupational Group	Number of Programme Specialisations
Electric Power	8
Vehicle Repair and Maintenance	4
Electronics	2
Metal Fabrication and Mechanical Maintenance	11
Air Conditioning and Plumbing	3
Printing and Binding	4
Hotel and Restaurant	2
Chemical Industries	1
Construction	2
Carpentry	2
Other	4

On completion of the three year apprenticeship programme, students undertake a final theoretical and practical examination. Graduates of this programme are classified as Skilled Workers under the vocational labour levels in Jordan.

### **3.2 Findings and Commentary on Policy and Structure of Vocational Education and Training in Jordan**

The study team has traced the evolution of vocational education and training philosophy in Jordan over the past twenty years. This philosophy, articulated in the respective National Development Plans, education conferences and seminars, reflects progressive and positive thinking which has been translated into constructive action through the Education Reform Programme. The concept of two vocational streams, the comprehensive and applied stream, is consistent with global directions in vocational education and particularly appropriate for Jordan where human resource development providers need to serve a wide spectrum of individual, technological, and social needs.

The reform process in terms of the vocational education activities of MOE is well advanced. Curricula and teaching resource materials are at an advanced stage of development. It is intended that all schools will have completed transfer to the comprehensive model by 1998.

The mandate of VTC under the education reform process has not changed. It has, nevertheless, been charged with reforming its programming to more fully demonstrate the characteristics of relevance, quality, and efficiency. This issue is addressed fully in Section 4.0 of the report.

A central issue still remaining is the need to complete the process of differentiation of programming and intent between vocational education and vocational training.

The study team perceives that the objectives underlying the introduction of comprehensive vocational secondary education are founded on an expanded concept of "vocation"; that is, it is based on a recognition that the workforce is comprised of professional vocations, technical vocations, and commercial vocations, as well as the traditional trades vocations.

In this case, the vocational component of the comprehensive vocational secondary stream should be broadly based to:

- encourage students to understand the full spectrum of vocational possibilities,
- build foundational skills in a broad band of vocational opportunity.



- provide articulation mechanisms with the post-secondary system,
- include appropriate mechanisms for career development to the craftsman level in the event that the graduate opts to enter the labour market directly.

The intent of the applied vocational stream is clear. Applied vocational training is intended to train for the semi-skilled and skilled worker level. This differentiation is not yet fully evident in the structure and programming of the MOE comprehensive vocational secondary stream. An examination of the MOE comprehensive vocational programme shown in Table 2 indicates that students can pursue studies in one of 39 specialisations as listed in Annex 2. A more detailed review of these specialisations indicates that many are narrowly focussed, occupation specific, terminal in nature, and address similar skill sets to those being taught by VTC. Thus, the comprehensive vocational secondary structure still exhibits strong links with its past which focussed almost exclusively on trades training.

A further issue is the consistency and achievability of student performance objectives with the programme structure, content and duration. Annex 3 provides a listing of performance objectives and competencies for Industrial Stream Comprehensive Vocational Secondary graduates which, while being descriptive of the role of an experienced craftsman, are not deemed to be achievable within a school-based two year training programme. Finally, the stated goal of enrolling 50 percent of males and 35 percent of females in vocational education and training will not serve the needs of the labour market or national economic development objectives if the suite of programmes offered by MOE and VTC continues to train students in occupations which currently comprise less than 20 percent of the work force. The foregoing issues are examined in further detail in Section 5.0.

The following recommendations are suggested to improve the alignment of policy intent and programme structures in vocational education and training.

### **3.3 Policy and Structure of Vocational Education and Training in Jordan: Key Performance Indicators**

The following table provides a consolidated summary of performance indicators related to policy and structure.

Indicator	Relevance	Quality	Efficiency
Policy Coordination	P	P	P
MOE Policy Intent	B	B	B
VTC Policy Intent	P	P	P
Programme Structures	N	N	N
<b>Key:</b> <b>P = Positive indicators for both policy and practice</b> <b>B = Sound base for development, but requires investment</b> <b>N = Needs fundamental review of policy and practice</b>			

**Comments:**

- Vocational education and training policy structures are appropriately coordinated on the training supply side. Additional coordinating mechanisms are required to develop an effective national approach to labour capital formation. (See Section v. . )
- Programme structures between the Vocational Secondary and Applied Secondary require further differentiation to complete the reform process, avoid duplication, and achieve system efficiencies.
- VTC vocational training policy is sound in concept. Training profile, programme delivery, and related issues requiring urgent attention are discussed in Section 4.0.

## 4.0 VTC Performance Review

This section of the report addresses the principal components of VTC's activity and reviews their performance and progress over the period 1992 to 1996. The section begins with a review of VTC's history and mandate as the context for current activities. This is followed by a performance review of training programmes and the activities of headquarters and institutes. Management practices and progress, are reviewed in the light of the institutional strengthening component of the CIDA-funded Economic Development through Technical Skills Project (EDTSP). The section concludes with a cost and efficiency review.

### 4.1 VTC History, Mandate, Structure, and Operating Environment

Prior to 1976, vocational training in Jordan fell within the mandate of the Ministry of Education while the Ministry of Social Affairs and Labour coordinated the relationships among training, labour and employment. The 1976 to 1980 National Development Plan proposed a project to establish "The Labour Vocational Training Corporation" which would parallel the vocational education system. The goal of this project was "to concentrate on vocational training and development with a view to:

- meeting the needs and requirements of the labour market through providing unskilled labourers with intensive short-term training,
- enhancing the competence of the labour force and upgrading skills in the various vocations, especially with regard to vocations which are presently in short supply, and
- developing existing training capabilities at all levels and taking all necessary steps to secure a competent training staff in cooperation with the various ministries and public agencies as well as with private establishments."

This resulted in the proclamation of the "Vocational Training Corporation Temporary Law, No. 35 of 1976", which assigned the following mandate to VTC:

"The Corporation will provide vocational training opportunities to prepare the technical work force and upgrade its efficiency in non-academic vocational training specialisations and levels including:

- (a) industrial apprenticeship which allows youngsters to undergo organised long-term training,
- (b) training workers in their work sites to raise their efficiency,
- (c) quick and intensive training for all vocations."

In 1985 the temporary law was revised and replaced by the "*Vocational Training Corporation Law No. 11 of 1985*". Under this law, the following mandate was assigned to VTC:

"The VTC undertakes to provide opportunities for vocational training in order to prepare the technical manpower and raise their competence in the various specialisations and levels of non-academic vocational training. In addition, it attempts to vary the types of training to include:

- vocational apprenticeship which allows youngsters to exercise organised long-term training,
- training workers in the institutions where they are employed to upgrade their skills,
- intensive and quick training services for the various occupations, and
- provision for level classification and testing for interested trainees and others, and issuing the certificate of efficiency which each person deserves (receiving accreditation as appropriate)."

This continues to be the mandate under which VTC operates. A more complete history of VTC's mandate and evolution is provided in "VTC History and Mandate.-- A Working Paper in Support of an NCHRD Performance Review of Vocational Education and Training Providers in Jordan". (Annex 4)

#### **4.1.1 VTC Organisational Structure**

As an organisational entity, VTC is a semi-autonomous organisation under the supervision of a tripartite Board of Directors, chaired by the Minister of Labour with membership representing the government, employers, and labour unions.

The Corporation is managed by an executive body, headed by a Director General (DG), with support from four Assistant Director Generals (ADGs). For reference purposes, an organigram depicting VTC's current organisational structure is provided in Annex 6.

#### **4.1.1.1 VTC Training Centre Mandate and Structure**

VTC's training activities are delivered through training centres located in the north, south, and central regions of the Kingdom. A listing of centres and 1996 enrollment levels is provided in Annex 5. This section of the report briefly outlines the mandate and structure of all centres.

The basic mandate of the training centres is to work in cooperation with the VTC Headquarters in the delivery of applied vocational training relevant to the needs of the productive sector within the catchment area served.

This is to be achieved through the following activities:

- establishing an advisory committee representative of the geographical/industrial region being served;
- developing relationships with employers in the region to facilitate placement of trainees for on-the-job training;
- undertaking or participating in needs analysis or tracer studies to ensure consistency between training programme offerings and local productive sector needs;
- recruiting trainees for enrolment into apprenticeship, medium-term, and short-term programmes;
- promoting training centre capability to industry for the delivery of specialised short skill upgrading courses;
- delivering training programmes;
- evaluating and testing trainees;
- managing human, physical, and financial resources in the delivery of training.

#### **4.1.2 Operating Environment**

The 1993 to 1997 National Development Plan focused on issues of unemployment, poverty, and administrative reform to address social and economic consequences arising from the Gulf Crisis. Objectives related to vocational education and training included:

- introducing training to reduce dependence on non-Jordanian labour
- providing vocational training for job seekers with a view to reducing unemployment and meeting workers' needs
- extending the activities of the Vocational Training Corporation to various areas of the Kingdom

- developing and expanding the role of the private sector in various fields of vocational training
- providing effective vocational training for women
- improving health and occupational and environmental safety in various institutions and enterprises
- accelerating the completion of the comprehensive national system of job description and classification
- achieving effective and active coordination among the various institutions and parties supervising vocational training
- preparing awareness-building programmes and promoting social values which encourage respect for manual work
- establishing diligent maintenance systems for training equipment and facilities
- establishing employment offices to promote the employment of new graduates in domestic and foreign labour markets.

The foregoing objectives provide the general environmental context within which the two primary vocational education and training providers, i.e. MOE and VTC, could have been expected to plan, prioritise, and focus resources during the past five years.

At a more specific level, in 1994 the Government of Jordan in collaboration with the World Bank, formulated a strategy for investment, development, and reform of the Technical and Vocational Education and Training (TVET) system which would be supported by the second Human Resources Development Sector Loan (HRDSIL II). Key policy objectives of the TVET strategy which were expected to guide the priorities of VTC are identified in the HRDSIL II Staff Appraisal Report as follows:

"The main policy objectives and means are:

(a) Enhanced relevance to market economy

- (i) analysing economic policies for their training implications as a basis for investment decisions in TVET;
- (ii) establishing capacity to track systematically the graduates of TVET in the labor market;
- (iii) achieving greater flexibility by introducing short training programs;
- (iv) promoting expansion of private technical training;
- (v) directing TVET towards fields and areas with clear employment prospects; and

- (vi) introducing entrepreneurship training to facilitate entry of graduates into self-employment.
- (b) Effective system management
  - (i) maintaining and strengthening the National Task Force for Coordinating TVET (established by the Prime Minister on 22/8/1993 which has representation from the private sector and attach to it a policy analysis capability;
  - (ii) rationalizing the Vocational Education and Training (VET) system through differentiation of roles and gradual consolidation and restructuring of secondary vocational training, and the community college system through redefining its purposes and reorganizing its governance; and
  - (iii) establishing clear norms to improve planning and management of TVET resources.
- (c) Quality Improvement
  - (i) instructors who recognize and demand excellence in trainee performance. This requires opportunities for teachers to upgrade their practical and work skills;
  - (ii) availing appropriate instructional/learning materials and equipment; and
  - (iii) disseminating and upholding safety standards and eliminating hazardous work habits."

The performance review which follows uses the Development Plan objectives and Government of Jordan/World Bank TVET strategy as benchmarks for evaluating progress during the past five years.

## **4.2 VTC Management Review**

Section 3 reviews the overall policy environment for vocational education and training in Jordan which differentiates between the comprehensive secondary vocational stream and the applied secondary vocational stream. This differentiation is further clarified in VTC's legislated mandate which designates the Corporation as the national training provider for entry level skilled workers and semi-skilled workers as well as having responsibility for in-service upgrading.

This section of the report examines the management structures and practices which have been put in place to implement programming under this mandate, together with adaptations to those structures arising from the work of the Economic Development through Technical Skills (EDTS) project.

#### **4.2.1 History and Current Status**

Prior to 1995, the VTC management structure was a functional structure with the functions of finance, administration, supplies, buildings, occupational classification, training and planning, all reporting through individual directorates to the Director General assisted by one deputy director as shown in Annex 6. (from 1994 Annual Report)

VTC recognised the need to address management efficiency and took steps to ensure that a strong management development component was negotiated into the Canadian International Development Agency (CIDA)-funded EDTS Project. This project, initiated in November 1994, included a component for capacity building of VTC Management comprised of the following three elements:

- a needs assessment element which provided in-Jordan technical assistance to review the existing management structure and to formulate a management development programme for VTC Managers;
- a management skills development element which would assist the Training and Development Institute (TDI) to formulate and deliver a management training programme for VTC training centre principals. This element also included a study tour to Canada for VTC Directors to attend the Canadian Leadership Development Institute for college administrators;
- an element which would provide VTC with in-Jordan Technical Assistance to develop an operating plan.

In 1995 a technical assistance mission undertook a Strengths/Weaknesses, Opportunities/Threats (SWOT) analysis of VTC to identify key management issues within the context of the Corporation's operating environment. Arising from this work it was agreed between VTC and the consultant that the themes of increased management efficiency through decentralisation and team work warranted consideration of a revised management structure.

Following an assessment of several optional models, a modified decentralised model was agreed upon which was based upon the introduction of four Assistant



Directors General positions and three Training Director positions, one for the southern region, one for the central part of the country, and one for the north.

The technical assistance mission concluded with the preparation of templates for job descriptions for the recommended new positions, as well as more than 50 recommendations relating to management practices under the headings of:

- Decision-making
- Human resources management
- Organisational structure
- Linkages with industry
- Communications
- Linkages with other institutions.

In September 1996, a study tour to Canada was undertaken by four Assistant Directors General to Assiniboine College in Manitoba Canada. During this study tour the participants were provided with exposure to all aspects of executive decision-making, administrative planning and management approaches of a typical Canadian college.

A follow-up technical assistance mission occurred in June 1996 during which the CTA worked with the Assistant Directors General to complete job descriptions. The advisor also formulated a comprehensive professional development plan for VTC senior managers.

On completion of the foregoing work, VTC revised its organisational structure, reporting relationships, and job descriptions of senior managers. Job descriptions for ADGs and Regional Directorates are provided in Annex 7. In 1996, the new structure was initiated for a trial period of six months, following which an evaluation of its efficiency was to be made. The revised management structure remains in effect.

#### **4.2.2 Findings and Commentary**

The study team recognises the complexity of the management questions for all organisations whether public, private, or institutional. It is further recognised that these complexities are compounded by the organisational history, culture, regulatory environment, and available resources. Thus there is no single model or "correct" solution for a given set of circumstances.

Organisational adaptation is, however, essential in an era of rapid change in the external environment. This change needs to be built on clear vision and consistency of leadership, supported by a clearly understood change process.

For the purposes of this discussion, the study team has adopted a simplified definition of management which focuses on fundamental operational management issues as opposed to exploring progress on the broad base of generic management practices.

The definition of "management" which has been chosen to guide the assessment is: "*management comprises the efficient deployment of human, physical, and financial resources to achieve a stated set of objectives*". In the case of VTC, it is assumed that the objectives relate first and foremost to the quality of training delivered to the trainees and to productive sector stakeholders.

Based on these premises, the discussion which follows examines the impact of the structural change, the extent to which operational change has occurred, and issues arising for future development of the organisation.

As noted previously, VTC has moved from a functional management structure to a modified matrix management structure. Some discussion of the advantages and disadvantages of the two models is warranted.

The functional model previously adopted by VTC in which all functional areas of the organisation reported to the Chief Executive Officer has advantages. Under this model the chief executive can keep directly in touch with operations thereby minimising problems of management control. The natural flow of information is vertical and lines of communication are short. The model results in specialists in senior and middle management positions which improves the quality of management functions. In this type of functional structure, job functions are clearly understood and easy to define because they are based on the tasks the organisation has to carry out.

The disadvantages associated with this model become increasingly apparent as the organisation becomes larger or more diverse in its interests. Senior managers become over-concerned and over-burdened with routine matters, neglecting the strategic concerns facing the organisation. In this model it becomes increasingly difficult to cope with diversity, coordination between functions becomes difficult, and the organisation fails to adapt. A summary of strategic advantages and disadvantages is shown in Box 1.

**Box 1**  
**Summary of Advantages and Disadvantages of the**  
**Functional Organisational Structure**

Strategic Advantages	Strategic Disadvantages
<ul style="list-style-type: none"> <li>• Permits centralized control of strategic results.</li> <li>• Very well-suited for structuring a single business or organization.</li> <li>• Structure is linked tightly to strategy by designating key activities as functional units.</li> <li>• Promotes in-depth functional expertise.</li> <li>• Well suited to developing a functional-based distinctive competence.</li> <li>• Conducive to exploiting learning/experience curve effects associated with functional specialization.</li> <li>• Enhances operating efficiency where tasks are routine and repetitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Poses problems of functional coordination</li> <li>• Can lead to interfunctional rivalry, conflict, and empire-building.</li> <li>• May promote overspecialization and narrow management viewpoints.</li> <li>• Hinders development of managers with cross-functional experience because the ladder of advancement is up the ranks within the same functional area.</li> <li>• Forces performance responsibility to the top.</li> <li>• Functional specialists often attach more importance to what's best for the functional area than to what's best for the whole organisation.</li> <li>• May lead to uneconomically small units or underutilisation of specialized facilities and manpower.</li> <li>• Functional myopia often works against creative entrepreneurship, adapting to change, and attempts to restructure the activity-cost chain.</li> </ul>

Source: "Strategy Formulation and Implementation", Thompson and Strickland, 1989.

The matrix structure is a combination of structures. It frequently takes the form of functional and divisional structures operating in tandem. Advantages claimed for this type of structure are that the quality of decision making is improved; formal bureaucracy is replaced by direct contact between individuals; the structure encourages informal exchange of views across responsibilities. Furthermore, the matrix structure is expected to result in managerial motivation, because of its participative nature, and management development, due to the extent to which all levels become involved in activities.

There is, however, a widely supported body of opinion among management practitioners that matrix organisations are among the most difficult to manage. Potential disadvantages include a lack of clarity in decision-making processes, dilution of priorities, and decision-making paralysis. A summary of the advantages and disadvantages of the matrix structure are shown in Box 2.

**Box 2**  
**Summary of the Advantages and Disadvantages of**  
**the Matrix Organisational Structure**

Strategic Advantages	Strategic Disadvantages
<ul style="list-style-type: none"> <li>• Permits more attention to each dimension of strategic priority.</li> <li>• Creates checks and balances among competing viewpoints.</li> <li>• Facilitates simultaneous pursuit of different types of strategic initiative.</li> <li>• Promotes making trade-off decisions on the basis of "what's best for the organization as a whole".</li> <li>• Encourages cooperation, consensus-building, conflict resolution, and coordination of related activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Very complex to manage.</li> <li>• Hard to maintain "balance" between the two lines of authority.</li> <li>• So much shared authority can result in a transaction logjam and disproportionate amounts of time being spent on communications.</li> <li>• It is hard to move quickly and decisively without getting clearance from many other people.</li> <li>• Promotes an organizational bureaucracy and hamstrings creative entrepreneurship.</li> </ul>

Source: "Strategy Formulation and Implementation", Thompson and Strickland, 1989.

Interviews conducted by the CTA in 1995, indicated that VTC had by this time, outgrown the efficiencies associated with a functional organisation structure and that change was warranted. The model introduced was intended to encourage a clearer allocation of responsibilities, to promote communications and team work, and to promote a more holistic approach to institutional development.

When the operational experience with the new model is viewed from the perspective of training centre principals, the process of "efficient allocation of human, physical, and financial resources to achieve a stated set of objectives" has been retarded. All concerns identified in 1995 still exist, plus the added belief that the introduction of Regional Directorates has introduced another layer of bureaucracy with decision-making becoming duplicated, lost, or contradicted.

When the model is viewed from Headquarters staff there is a much wider comprehension of the intent underlying the structural change, a commitment to the principles on which it is founded, and a recognition that time and experience are required in order for the benefits to appear.

From the perspective of the study team, the following inhibiting factors are seen to be restricting the transition from the previous organisational model to the new:

- The external environment in terms of staffing, (human resources) budgeting and the delegation of financial authority (financial resources) and the establishment of training centres (physical resources) is highly regulated, thus constraining the autonomy of the organisation in addressing issues of decentralisation.
- There remains a strong hierarchical culture throughout the organisation resulting in a reluctance at all levels to take independent decisions and always to seek solutions from the top.
- Devolution of responsibility and accountability has not yet been fully embraced by all senior managers. This results in uncertainty, stalling, consulting or forwarding issues to another level for decisions.
- There has not been widespread communication of the intent and practices associated with the revised structure, resulting in line directorates continuing to operate functionally.

Reverting to our definition of "management", however, which was stated to be "the efficient allocation of human, physical, and financial resources to achieve a stated set of objectives", the fundamental management question in VTC is the clear articulation of strategic objectives. The absence of strategic objectives creates a vacuum in terms of both planning and decision-making.

A review of the current planning process within VTC indicates that it is entirely process driven. At the start of each budget planning cycle, training centres are requested to forward their budgetary requirements for the coming year. These are assembled by the planning directorate and presented for consideration to senior management who then review, rationalise, and forward to the Ministry of Finance. Following the announcement of the budgetary allocation, the process is then essentially reversed.

An improved process would be the formulation and articulation of an annual corporate development plan with a limited number of strategic priorities for the coming year. This plan would be developed with input from training centres and institutes but would be led by senior managers. The plan would also include clear monitoring mechanisms together with associated reporting structures. Centres and Institutes would subsequently formulate their own action plans and budgetary requests against the strategic objectives. While recognising that the budgetary submissions would need to comply with the standard Ministry of Finance format, its formulation could adopt a more creative and strategically-focussed approach.

As noted previously, the current management structure was put in place for a six month trial period. VTC has now had one year of operating experience with the model and will, no doubt, be scheduling an evaluation in the near future. As part of this evaluation, VTC may wish to consider the following questions:

- Has the revised structure and operating process resulted in the establishment of institutional development objectives by senior management, followed by the articulation of an action plan, allocation of resources, assignment of leadership responsibility, establishment of time lines, and a rigorous monitoring mechanism?
- What identifiable responsibilities/accountabilities/resources have been devolved to training centres which have resulted in identifiable new programme initiatives or improved services to students or productive sector clients?
- The establishment of Regional Directorates represents an incremental cost to the organisation. What identifiable added value has accrued to trainees and productive sector clients as a result of their introduction?
- Has the revised structure resulted in an identifiable acceleration in the achievement of internal efficiency issues such as decision-making, communication, information systems, development and analysis, or financial management and reporting?
- Has the revised structure resulted in the identification and elimination of non-productive programmes or practices, thereby resulting in improved client services?
- Has the revised structure resulted in an identifiable reduction in "administrivia" reaching the desk of the Director General, thereby allowing increased focus on strategic development issues?

#### 4.2.3 Summary of Performance Indicators: VTC Management

Indicator	Relevance	Quality	Efficiency
Structure	B	B	B
Institutional Goal Setting	N	N	N
Strategic Management	N	N	N
Operational Management	B	B	B
Human Resources Management	B	B	B
Financial Management	B	B	B
Communications	B	B	B

Key: P = Positive indicators for both policy and practice  
 B = Sound base for development, but requires investment  
 N = Needs fundamental review of policy and practice

#### Comments:

- Benefits of the revised organisational structure have yet to be realised.
- Mechanisms need to be developed for establishing institutional goals which focus on improvement of training programmes.
- Management is currently driven by activity and process rather than by strategic objectives.
- Human resource and financial management are largely defined by external processes beyond VTC's control.
- While there are many mechanisms for communication in VTC. It is frequently difficult for managers to link communications to strategic priorities.

### 4.3 Performance Review of VTC Training Activities

The overall effectiveness of any training activity is determined by the programme structures and content, learning resource materials, students, staff, facilities, and equipment together with the quality of the relationship between the training institution and the labour market. Efficiency is a function of the management structure and the deployment of resources in achieving the training objectives.

This section of the report evaluates each aspect of VTC's training activities. Issues identified during the course of the review are carried forward for discussion later in the document.

In terms of the evaluation methodology, a representative sample of nine training centres was selected for detailed examination. Field work was undertaken at six centres. At these centres, drawn from the north, central, and southern regions of the Kingdom, specific information on staff, programmes, enrollment levels, industrial linkages, graduates, and advisory committees was requested in advance of field visits. Questionnaires based on the World Bank document "Evaluating Vocational Training Programmes: A Practical Guide", were prepared as survey instruments, to assess internal and external efficiency. During field visits, interviews were conducted at each centre with the training centre principal, at least four instructional staff, and ten to twelve students drawn from different programme areas. Similarly, at each centre, a survey was undertaken of instructional methodology, teaching resources, workshop equipment and other physical facilities.

All three of the VTC's Institutes were visited and interviews held with the Directors and other staff members.

At the Executive level, the VTC Director General and four Assistant Directors General provided information on policy, organisation and management. Statistical data were drawn from Annual Reports supplemented by data supplied directly from training centres, data gathered during field interviews, or supplied from individual headquarters units.

Details of the performance review of training activities are provided in the following paragraphs.

#### **4.3.1 VTC Training Programme Structure**

For any training institution, the overall training programme framework needs to be designed to serve training objectives and ensure efficient use of training resources. This section of the report outlines the current status of the framework adopted by VTC and provides commentary on its relevance to current and future labour force development needs in Jordan.



#### **4.3.1.1 Current Status**

VTC currently offers training programmes directed at three points in the labour market. These programmes are classified as:

- Long Term (Apprenticeship)
- Medium Term Training
- Short Term Training

Three year apprenticeship programmes, designed to produce skilled workers, include two years of instruction in the training centre, coupled with supervised experience in the workplace, followed by one year of practical work experience. Apprenticeship programmes are offered in 47 specialisations within 14 occupational groups.

Medium term programmes designed to produce limited skills workers are of one year duration comprising both instruction in the training centre and experience in the workplace. These programmes are currently offered in 45 specialisations in 14 occupational groups.

Short term programmes are offered either to train new entrants to the work force or to upgrade the efficiency of existing employees. These courses vary from one week to six months in duration. In 1996, 125 specialisations were offered in 14 occupational groups.

A programme profile for 1996, abstracted from VTC's Annual Report is provided in Annex 8.

#### **4.3.1.2 Findings and Commentary**

Jordan has embarked on national directions which express a clear intent to integrate with global trading partners and to diversify its economy as rapidly as possible. These directions are seen in the elimination of trade barriers, removal of foreign investment restrictions, and the recently signed association agreement with the European Union. The foregoing policies must be supported by a similarly progressive stance among human resource development agencies. The need for vocational education and training providers to design and maintain systems which are open, flexible, broadly-based and responsive to economic, industrial, and technological change, is now universally accepted.

Annex 9, entitled "School to Work --Policy Insights from Recent International Developments", provides a summary of a report soon to be published by the National Centre for Vocational Research at the University of California at Berkeley. The paper contains an overview of the direction and structure of vocational education systems in a number of countries worldwide. In its introduction, the paper includes the following observations:

"Changes in labor market conditions are also prompting changes in education and training policy in countries with relatively successful school-to-work systems as well as in other countries. Employer involvement no longer means training students for predictable, static jobs. Instead, employers and schools are caught up in an evolution toward more flexible production and life-long learning. This trend poses challenges for school-to-work systems. One is to overcome the rigidity and fragmentation of vocational training that prepares young people for narrow occupations and leaves them unable to adapt to rapidly shifting markets."

"To prepare individuals for work that demands continual learning, education must promote high-level thinking skills for all students, not just for an elite group. Vocational education, traditionally offered for students who were considered to be less academically inclined, is now being reformed and, in some places, radically reconstituted. These reforms are intended to attract more academically proficient students and to equip them with the skills necessary for continual learning and problem-solving in rapidly changing work environments. As change proceeds in this direction, the line between vocational and academic education becomes indistinct. Instead of serving as an alternative to general education, vocational education becomes a method for promoting it."

It is within this context that the following observations are made:

The central core of VTC's training activity is the delivery of apprenticeship programmes. The fundamental structure of these programmes is sound, insofar as they are built on a dual system which includes both institutional and work-based learning. Relationships have been built with numerous employers throughout the Kingdom which provide a foundation for employers and educators to share responsibility in the school-to-work transition. These strategies should be retained, valued, and built upon. There are, however, a number of structural issues, inherited from the past, that are incongruent with global trends and national policy objectives for vocational training in Jordan.

The 1996 VTC apprenticeship programme profile is virtually identical to that offered five years previously. All programmes are of the same structure and the same duration, irrespective of the specialisation or sector. The programme profiles exhibit

many characteristics of "rigidity and fragmentation of vocational training that prepare young people for narrow occupations." Three examples are cited:

In the Metal Fabrication and General Mechanical Maintenance occupational group, VTC offers apprenticeship training programmes in Plate Metal Fabrication, Steel Structure Fabrication and Metal Profile Fabrication. Steel working industries worldwide employ two basic categories of employees. Firstly, the steel worker or steel fabricator who marks, cuts, forms, fits, tacks, fairs, or erects steel fabrications of varying complexity; secondly, the welder who performs all-position welding on steel of various types and thicknesses to specified standards. Small steel fabrication enterprises frequently require employees to undertake both fabrication and welding. In order to reflect more generic skill development and to avoid narrow occupational training, the VTC programme structure in this area could more appropriately offer a single well developed programme in Steel Fabrication with specific welding programmes offered on a demand basis.

As a second example, in the Electric (Power) Occupational Group, VTC offers three year apprentice training programmes in the following areas:

- House Equipment Maintenance Electrician
- Auto-Electrician
- Machine Winding Electrician
- Plant Maintenance Electrician
- Line Network Electrician
- House Wiring Electrician
- Cable Electrician
- Substation Electrician.

It is self-evident that the specific and limited skills provided in "House Equipment Maintenance Electrician" is an example of training that will lead a young person into a narrow occupational classification which offers little growth potential. Similarly, a Machine Winding Electrician is a smaller subset of a much wider occupational classification. The VTC programme structure could more appropriately include just two programme options such as Electrician (Industrial) and Electrician (Power Distribution). This would support the design and delivery of broadly-based programmes with the output of multi-skilled graduates.

Finally, the offering of a full apprenticeship in Retail Sales illustrates the need for a review of the VTC programme profile. The retail sales industry in Jordan is demonstrably able to recruit and train its own personnel to high standards. The

staffing and delivery of a programme which has graduated only 33 students in the past five years, is clearly not a profitable investment of public funds.

Medium term and short term programming provides an opportunity for VTC to demonstrate its relevance to the local community through the design of responsive, skill-specific programming. Relevance and responsiveness are, however, restricted by centralised programme planning, scheduling, and marketing. The selection and scheduling of training topics for short term programmes are established by VTC Headquarters and advertised through newspapers in the regions. Courses are then conducted subject to minimum enrollment levels. This approach is not characteristic of a flexible, demand-driven delivery system. The result of a centrally-driven approach to short term programming is to be found in the enrollment trends shown in Table 3.

**Table 3**  
**Enrollment Trends in VTC Programming**

Year	Apprentice	Medium Term	Short Term	Total FTE	Percent App	Percent Med Term	Percent Short
1992	5,875	1,208	965	8,048	73.0	15.0	12.0
1993	5,539	1,099	932	7,570	73.1	14.5	12.3
1994	5,858	1,217	986	7,889	74.2	15.4	12.4
1995	6,594	1,271	755	8,620	75.9	14.6	8.4
1996	7,696	1,591	600	9,887	77.8	16.1	6.1

**Note:** Enrollment figures for all programmes have been converted to Full-Time Equivalents (FTE) on the basis of one FTE being equal to 900 hours of training. Apprenticeship programmes include first and second year FTEs only.

Although the policy objective is to increase and diversify responsiveness to the short term training needs of job seekers and the upgrading of existing workers, the actual training delivered shows an increasing consolidation around a fixed core of apprentice programmes and a sharp decline in both absolute and percentage terms of short term training.

The foregoing observations relate to the current and historical programme profile. It is also relevant to note that large occupational groups and important sectors of the economy such as clerical workers, administrative support staff, health care workers, communications, hospitality, transportation, and agriculture workers are either under-represented or not represented at all in the VTC programme profile.

This analysis suggests that a complete review of VTC's programme structure is in order. The main objective of this review would be to rationalise apprenticeship programming into more broadly based occupational categories while extending and strengthening the technical competencies of graduates. The second objective of a programme review would be to identify ways in which the training resources resident in the VTC Centres could be more effectively mobilised to develop marketable skills among the unemployed or underemployed within the catchment areas they serve.

An example of a fundamentally different approach to training programme structures designed to build a composite of technical skills, academic skills, and employability skills was proposed by VTC in December 1996 in a proposal to establish female training centres in Zarqa and Madaba. This concept, approved by the Intermediary Policy Council Resolution No 2/96 dated November 20, 1996, provides a model against which the proposed review might be undertaken.

#### 4.3.1.3 VTC Training Programme Structure - Key Performance

Indicator	Relevance	Quality	Efficiency
Apprenticeship Programme Structure	P		P
Apprenticeship Programme Specialisations	N	N	N
Medium Term Structure	N		N
Medium Term Specialisations	N	N	N
Short Term Structure	N		P
Short Term Specialisations	P		P
KEY: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>Dual system of institution/employer training is sound and potentially efficient.</li> <li>The entire programme of apprenticeship programme specialisations has remained unchanged during the past five years. The programme is too narrowly focused and requires complete re-design.</li> <li>Links between learning objectives and programme duration require review; many programmes do not warrant one year of training.</li> <li>Short-term programming should be driven by community demand; not centrally determined, and supply driven.</li> </ul>			

#### **4.3.2 VTC Training Programme Content, Curriculum and Learning Resource Materials**

The training programme and associated resource materials, together comprise the vehicle or mechanism for communicating knowledge and developing skills necessary for:

- initial employability within an occupation
- building a foundation for continuous learning, development and adaptation.

Current best practice suggests that the format and content of the curriculum should clearly state:

- who the educational process is aimed at
- what objectives and qualifications are to be achieved
- what skills must be learned in what sequence of learning to achieve this purpose
- what procedures and aids are to provide information on progress in learning.

The elements of a fully developed training programme typically include:

##### **General Design**

- an occupational or task analysis
- a framework of competencies
- a course structure detailing the instructional sequence, instructional content, and instructional materials.

##### **Course Design**

- course aims
- major topics
- learning objectives
- tasks/evaluation/standards to measure the achievement of competencies.

##### **Teaching/Learning Resource Materials**

- modular training units
- instructor guides
- student handbooks
- lab/workshop exercise guides
- textbooks
- audio visual materials.

This section of the report describes the historical and revised approach by VTC to the design of training programme framework, content, learning resource materials, and evaluation materials within the context of the foregoing globally accepted standard. Commentary is provided on instructional delivery. The section concludes with the findings of the study team with respect to quality and relevance of the training programmes.

#### 4.3.2.1 Current Practice: VTC Training Programme Framework, Content and Programme Development Methodology

The overall study plan for Applied Vocational Secondary Students is prescribed by the Ministry of Education. The actual programme framework for all apprenticeship programmes delivered by the VTC training centres surveyed is shown in Table 4.

**Table 4**  
**Programme Framework for Applied Secondary Vocational Students**  
**(Years One and Two)**

Day	Periods or Hours	Programme Activity
One	2	Arabic Language
	1	Islamic Culture
	1	English
	1	Science
	1	Social Studies
	1	Physical Education
<b>Sub Total</b>	<b>7</b>	
Two	4	Workshop
	2	Vocational Science
Three	4	Workshop
	2	Vocational Science
<b>Sub Total</b>	<b>12</b>	
Four	8	On-the-Job training (duration varies with employer)
Five	8	
Six	8	
<b>Sub Total</b>	<b>24</b>	

The above study plan is similar for each of the first two years of the apprenticeship programme.

The study plan for the one year Medium Term programme is similar to the above with only five hours devoted to general studies. The study plan for short courses is based on the subject matter being taught.

The vocational content for each of the 40 specialisations offered for applied vocational secondary students is currently based on a series of training units developed by the Ministry of Education in the early to mid-1980's. These comprise the curriculum. The number of training units which comprise a programme vary from about 15 to 25 units. A representative set of training unit headings for the welding and metal shaping specialisation is shown in Annex 10. Training units currently available and those remaining to be developed in the respective vocational families are shown in Table 5.

**Table 5**  
**Training Units Available or to be Developed for**  
**Applied Secondary Vocational Programmes**

<b>Vocational Family</b>	<b>Number of Units Completed</b>	<b>Number of Remaining Units</b>
Electricity	102	23
Metal Fabr. & General Mechanical Maintenance	134	17
Driving and Maintaining Vehicles and Machinery	83	20
Air Conditioning and Plumbing	27	19
Construction	39	9
Carpentry and Decoration	43	12
Miscellaneous (personal services)	14	0
<b>Total</b>	<b>442</b>	<b>100</b>

The format and content of a training unit is comprised of broad learning objectives followed by elementary information-based vocational content. An example of a typical training unit drawn from the carpentry programme is shown in Annex 11.

No texts are prescribed and no other learning resource materials are provided by VTC to the student. Library resources and audio/visual materials and equipment intended for instructors and training officers are minimal (see Tables 6 and 7).



Student performance evaluation procedures are defined for each specialisation in terms of the trainee's ability to perform specific tasks under guidance, with minimal guidance, or independently.

In 1996, VTC assumed responsibility for the development of its own training units and established the Programme and Training Directorate, reporting to the ADG, Technical Affairs. Curriculum is now developed according to the following procedure:

Curriculum development teams are assembled including representatives drawn from VTC, MOE, the armed forces, and the private sector. Training units are developed using a common model. When completed, units are forwarded through the Guidance Committee and Coordination Committee for approval by the Board of Education at MOE.

Under this new direction, the curriculum includes a series of training units for any given vocational family. The number of training units per family ranges from 15 to 125 units. The new training unit format includes the following elements:

- title page and information indicating the relationship of the training unit to the occupational family
- a training unit purpose statement
- a task analysis outlining the tasks to be performed and the related skills to achieve the task
- performance objectives for each sub-task, expressed in terms of basic competencies
- the practical and theoretical content of the curriculum
- supporting instructional text and diagrams
- worksheets for practical exercises
- a trainee evaluation record
- test sheets outlining skill and knowledge standards to demonstrate the achievement of terminal competencies.

To date, 180 new training units have been developed in the above format. None have been implemented; all are awaiting approval by the Board of Education at MOE.

In addition to the foregoing initiative, the CIDA-funded Economic Development through Technical Skills Project has had as one of its central objectives the strengthening of VTC's training programme development capacity. The EDTS Project is channelling its activities through the Training and Development Institute.

Activities have included the development of capabilities in the DACUM process coupled with professional/skills upgrading of instructors in 7 fields. It is intended that future project activities will link the two components, resulting in improved learning resource materials.

#### 4.3.2.2 Findings and Commentary: VTC Training Programme Framework, Content, and Programme Development Methodology

Existing training programmes are based on a series of training units developed by the Ministry of Education in the mid-1980's. These units are the primary resource materials for both instructors and students. Each unit is structured around broad learning objectives and limited elementary technical information. Much of this content is now outdated. Some training units are lacking for some programme topics in every specialisation. Some instructors indicated that, where no training units were available, no training was delivered relating to that particular topic.

The approach of instructors to the development of supplementary teaching material is highly variable. Some instructors restrict training to the specific information contained in the training unit and provide students with no additional technical material. Others use notes from their own previous training as a basis for instruction. One instructor showed to the study team members, a text he had purchased locally from his own resources from which he had developed teaching notes for students. Another instructor had a well formulated lesson plan based on the training units, together with a fully developed set of supplementary notes and overheads for classroom use. In most cases, teaching resources were found to be a rather random collection of material drawn from different texts, manufacturers catalogues, and maintenance manuals.

A comprehensive survey of library and audio visual resources was undertaken by the study team in five of the focus centres. Table 6 indicates the current holdings of books and periodicals at the respective centres.

**Table 6**  
**Library Holdings at Representative VTC Training Centres**

<b>Books and Periodicals</b>	<b>Marka</b>	<b>Ein El Basha</b>	<b>Sahab</b>	<b>Tafileh</b>	<b>Aqaba</b>
Number of general books	468	700	900	70	800
Number of technical books	56	800	150	25	300
Number of scientific periodicals	100	150	5	2	50
Number of technical periodicals	-	100	-	-	10

Table 7 provides a listing of audio visual hardware at the representative centres while

Table 8 lists software holdings.

**Table 7**  
**Audio Visual Equipment Available in Sample Centres**

Audio Visual Equipment	Marka	Ein El Basha	Sahab	Tafileh	Aqaba
Overhead projectors	1	1		1	
Photocopiers					
Slide Projectors (with sound)		1			
Slide Projectors (without sound)	1				1
Computers					
TV Sets		1		1	1
Video Players					
Photographic Cameras		1		1	1
Video Cameras					
Projection Screens		2			
Tape Recorders		1			

**Table 8**  
**Software Holdings in Sample Centres**

Software Holdings	Marka	Ein El Basha	Sahab	Tafileh	Aqaba
Films		10		2	6
Audio Tapes		12			
Video Tapes	3		5	3	
Transparencies	1	100			
Models					
Charts		*			
Slides					
Computer Diskettes					
Other					

\*Available, but no number provided

The survey also addressed the use of library resources by students and staff. While the data returned is considered indicative rather than actual, library use per day was reported by 2.6 percent of students and 23 percent of staff.

The above data indicates that within the process of programme renewal, library and audio visual facilities, which represent the common pool of learning resource materials, requires significant attention.

Instructors interviewed conveyed varying levels of understanding of the concepts surrounding the curriculum development process, establishing specific and progressive learning objectives, evaluating competencies, and the need to provide students with independent learning resource materials.

The curriculum contains no behavioural objectives relating to employability skills. These normally would include objectives designed to encourage innovative thinking, problem solving, independent thought, self-reliance, team work, punctuality, commitment to precision, and quality.

Practical skills are typically taught by the instructor demonstrating a specific skill and the trainee attempting to repeat it. With the exception of machine shop work, no work sheets were found to explain the activity, indicate its purpose, outline expected results, establish standards, or specify tolerances for the skill being developed. While some limited practical training was observed during the course of the survey, it is clear that because of limitations of work stations, hand tools, and other equipment students spend a great deal of time "observing" rather than practising a skill.

Few practical exercises involve team work, except when a production order is received from an external customer in areas such as carpentry or steel fabrication. In these cases, the production exercise is led by the instructor at which time the learning environment switches from institutional learning to on-the-job learning. Depending upon the nature of the work, this can negate the intent and benefits associated with the separation of institutional learning and experiential learning.

The foregoing observations relate to the historical programme development and delivery model as is currently practised in the training centres. The new programme development approach and the training units which have yet to be approved by the Board of Education, are a positive step towards upgrading the relevance and quality of programme content. The programme development procedure is well formulated. The basic learning objectives for each unit are clearly defined. The knowledge content is limited but presented in a progressive manner. Evaluation procedures

included within the training unit format, address the measurement of competencies expected to be developed as a result of the learning activity.

Similarly, the work of the EDTS Project is developing a strong methodological capability which is directly linked to instructor skills upgrading and the production of learning resource materials. VTC needs to ensure that these two initiatives are more closely connected and that the benefits of both are captured to result in improved quality programming.

While reiterating that the new programme development approach adopted by VTC represents a very progressive initiative, the following observations are offered for consideration:

A potential danger associated with integrating knowledge content in the same document as course outline, learning objectives and evaluation mechanisms, is that teaching will be limited exclusively to the knowledge content provided in the training unit. Thus the curricula rapidly become static and outdated.

A more dynamic approach might be to have the programme/learning resource materials developed as three separate documents. Curriculum and learning outcomes; instructor teaching guides; and finally, student learning materials. The format of the Instructor Teaching Guides would provide a basic instructional framework and a listing of reference materials from which the individual instructor would develop a living and breathing learning programme. Student learning materials would comprise basic information relevant to the training unit in loose leaf format to allow for the inclusion of class notes and other materials obtained during the course of instruction.

The knowledge component of existing training units is quite limited. Recognising that this is the primary source of teaching resource material available to students, every possible effort should be made to continuously expand and develop these resources.

The development of training units and their application in a learning programme should also be considered within the context of redesigning the number of specialisations and working towards a common core curriculum for students pursuing related occupations. Annex 13 provides a partial common core curriculum for the following categories of apprenticeship trades training in Ontario, Canada:

- Motor Vehicle Mechanic

- Truck/Coach Mechanic
- Heavy Duty Equipment Mechanic
- Farm Equipment Mechanic
- Fork Lift Mechanic.

This illustrates the approach to adoption of a common core competency-based curriculum which is widely used in many educational jurisdictions in the interest of efficiency, programme coherence, and, most importantly, in the flexibility of the skills acquired by apprentices.

It should be stressed that while the curriculum format is central to programme design, instructional quality improvement will require an integrated approach to the upgrading of instructor technical skills and the enhancement of learning resource materials.

#### 4.3.2.3 Training Programme Content, Curriculum, and Learning Resource Materials: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Design of Current Training Programmes	N	N	N
Quality of Current Training Units	N	N	N
Instructor Notes	B	B	N
Library and Audio Visual Materials	N	N	N
Teaching methods	B	B	N
Evaluation Methods	B	B	B
Design of New Teaching Units	P	P	P
<b>Key:</b> P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			

##### Comments:

- Programmes currently in use have very limited content for two years of institutional training.
- Programmes currently in use are not designed around industry-defined performance objectives and expectations.
- Curricula contain no behavioural objectives relating to employability skills.
- Teaching/Learning Resources currently available to both instructors and students are extremely limited and technically dated.
- Library and A.V. support materials are inadequate.
- No identifiable policy, standards, or expectations exist in terms of instructor-developed teaching materials.
- Quality standards and expectations from students are set at unacceptably low levels.
- A process for student performance evaluation exists but needs review to align with progressive competency-based programming.
- Revised approaches to the design of training units represent a progressive step and need to be supported by instructor training and the development of additional learning resource materials.
- EDTS Project activities are contributing to curriculum improvement.

### **4.3.3 VTC Training Centre Staff**

Training programme quality is governed by the quality of the training centre staff and their ability to work as a team with student, community, and productive sector stakeholders. This section of the report examines VTC's staff recruitment practices, staff profiles, and performance management. Perceptions of staff with respect to programme quality are also provided.

#### **4.3.3.1 Current Status**

The VTC Training Centre staff complement typically includes a principal, a training supervisor, training officer, instructors, teachers, a guidance counsellor, and administrative support staff.

VTC staffing levels during the five year period under review are shown in Table 9.

Staff recruitment originates at the training centre level. A recruitment request is forwarded to Headquarters for approval by the Director General, subject to a budget approved position being available. The request is subsequently forwarded to the Jordan Civil Service Bureau which identifies approximately three candidates from their applicant data bank. The list is transmitted to VTC with final selection being made by the training centre principal. The selection is based upon the recommendation of a selection committee and the candidates' test results. The current profile of academic credentials held by VTC employees is shown in Table 10.

Based on data provided by the training centres in our sample, the work experience background of staff prior to appointment as instructors, varies widely. In one centre 63 percent had prior experience; in another 55 percent had no prior experience, and in a third, only 18 percent had no prior experience. Most have less than five years experience before employment with VTC.



**Table 9**  
**Credentials of VTC Employees**

Job Educational level	Services Staff	Staff				Administrators		Percentage %	Total	Grand Total
		Technical Staff				Centres	Admin			
		Teacher	Instructor	Training Officer	Coordinator					
Grand Total	211	62	498	53	12	158	100	%100	883	1094
University	--	23	45	48	12	56	53	%26.8	237	237
Degree										
Community	9	39	236	2	--	70	36	%43.4	383	392
College										
Secondary	47	--	144	3	--	23	11	%20.5	181	228
Certificate (S.C.)										
Less than (S.C.)	155	--	73	--	--	9	--	%9.3	82	237

**Table 10**  
**VTC Staffing Levels, 1992 to 1996**

<b>VTC Employees</b>								
<b>Year</b>	<b>Teachers</b>	<b>Technicals</b>			<b>Administrators</b>		<b>SERVICES</b>	<b>TOTAL</b>
		<b>Instructors</b>	<b>Training Officers</b>	<b>Coordinators</b>	<b>Centres</b>	<b>Head Quarters</b>		
1992	59	381	63	13	108	47	169	840
1993	63	425	71	13	121	53	162	908
1994	70	529	73	13	138	65	190	1,078
1995	62	498	53	12	158	100	211	1,094
1996	61	490	48	21	174	116	220	1,130

Source: VTC Annual Reports

Teaching loads for instructors typically include 24 hours assigned to workshop or vocational theory with a further 16 hours assigned to trainee supervision in the workplace. Academic teachers are typically assigned 28 hours of classroom contact per week.

The Training and Development Institute (TDI) provides teaching staff with professional development opportunities related to instructional techniques. Technical upgrading opportunities are available either through the Tests and Training Institute or through externally-funded programmes.

Instructor performance is evaluated annually by the training centre principal.

#### **4.3.3.2 Findings and Commentary**

The following findings arise from interviews with principals, instructors, and staff during visits to the sample centres.

##### **Principals**

The study team found the academic, professional, and experience profile of the principals to be appropriate to their positions. Several have formal engineering training followed by supervisory level industrial experience and experience in the training field prior to assuming management responsibility in a training centre. All principals demonstrated strong commitment to VTC training purposes and were able to illustrate initiatives they had taken to pursue those purposes. Most demonstrated a high level of

leadership and appeared to have the full respect and cooperation of teaching and support staff.

A very high proportion of a principal's work load is administrative and internally focussed. This leaves insufficient opportunity for building linkages, understanding, and support with the external community and productive sector employers.

Principals expressed continuing frustration with the centralised nature of the organisation and several believed that the recent changes in organisational structure had compounded both centralisation and the complexity of decision-making. All expressed a need for greater autonomy if they are to contribute more fully to upgrading the quality of programme delivery.

Without exception, principals articulated a need for a significant review of training programmes at both the structural and specific level. Some programmes were identified as redundant; others of inappropriate duration; others where the existing market demand was saturated. Principals also recognise that a high proportion of staff require technical skills upgrading. All centres have taken advantage of staff development in teaching methodology, provided by the Training and Development Institute, but the value of this was seen to be limited by the lack of technical upgrading.

Several principals expressed concern related to the process of student recruitment and allocation of students by MOE which results in VTC receiving less motivated trainees with lower academic potential. In areas outside Amman the process also results in centres operating with student numbers well below viable levels.

As a concluding observation, it is reiterated that the principals are seen to be well chosen and comprise a strong leadership resource.

### **Instructional Staff**

The commitment level of instructional staff is also high. There are, however, weaknesses in the staff profile in terms of VTC's ability to deliver and maintain high quality and technically relevant programmes.

In 1996, 220 of 563 instructional staff had secondary school certification or less as their highest level of academic qualification (see Table 10). The experience profile of the instructional staff is also weak. A high proportion of those with community college level qualifications moved directly into teaching with no prior work experience. Others have no sound practical background.

VTC recognises the need for staff development. 1,203 instructors have participated in 81 teaching methodology courses, each typically between 10 to 75 hours duration during the past five years. Professional development in technical areas has been provided by TDI and TTI to 1,635 instructors. Other professional development has been provided from externally-funded projects. A summary of all professional development activities undertaken by VTC instructional staff during the past five years is provided in Annex 14. There is a broadly based recognition that a formal mechanism should be built into VTC's operation to ensure continuous renewal of the technical competence of instructional staff.

Instructional staff recognise currently assigned work loads as acceptable but many believe the amount of time available to supervision of on-the-job training is insufficient to allow for meaningful evaluation, or to ensure that working environments are conducive to learning.

As previously noted, the study team had little opportunity to observe the instructional process. Based on limited observation of classes, instruction seems to rely primarily on "chalk and talk", followed by practical demonstration and practice. The most significant observation, which is particularly evident in carpentry, metal working, and construction trades, are the low quality of expectations and performance standards, which are found acceptable for practical work undertaken by trainees.

Conversely, high expectations and standards were observed in clerical training, hospitality industry training, dress making, some machine shop work and the printing trades. This points to the importance of articulating measurable quantitative and qualitative performance criteria stated in the curricula.

Staff perceptions regarding student abilities were generally positive. In terms of improving the quality of training, 48 percent of those interviewed identified upgrading of curriculum as a number one priority, 26 percent identified upgrading of staff, 12 percent, upgrading of equipment, and 14 percent, other issues.

VTC instructors generally view their positions favourably in comparison to the alternative employment opportunities available to individuals of similar qualifications and experience. This is attributed to stability of employment, conditions of service, work environment, and work load. Consequently, staff turnover is low to nil in most centres. Those centres located in regions distant from Amman experience higher staff attrition through requests for transfer to positions in the central region.

## Staff Support

Administrative and support staff were not interviewed by the study team, but it was apparent from requests for information, that in all the sample centres, recording and administrative system functions operate efficiently within the current organisational structure.

### 4.3.3.3 Training Centres Staff Profile: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
<b>Principals</b>			
• Academic/Experience Profile	P	P	B
• Leadership	P	P	
• Training Centre Management	P	P	B
• Industry Relationships	B	B	
<b>Instructors</b>			
• Academic Profile	B	B	B
• Skill/Experience Profile	N	N	N
• Preparation for Teaching	B	B	B
• Maintenance of Technical Currency and Competency	N	N	N
• Expectations for Student Performance	N	N	N
• Participation in Programme Renewal	N	N	N
• Work Load	P	P	P
<b>Support Staff</b>			
• Qualifications	P	P	
• Skill/Experience Profile	B	B	
• Quality of Service	B	B	B
<b>Key:</b> P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			

#### Comments:

- Training centre leadership is sound with good potential for further development.
- Principals have limited opportunity to influence training programmes reform or renewal.
- Administrative burden limits principals' potential to interact with the client community.
- Instructional staff profile is weak in terms of both academic credentials and prior work experience.
- Some progress has been made during the review period in upgrading pedagogical/androgogical abilities.
- Significant expenditures have been made on externally funded professional development and technical assistance. Training programme impact is as yet, limited.
- Maintenance of technical currency and competence of instructional staff is limited outside externally-funded technical assistance.
- Only a limited number of instructional staff have participated directly in the upgraded process for curriculum development.
- Quality of programme delivery and performance expectations of students is variable with some unacceptably low, and others excellent.
- Administrative and support staff have an appropriate skill profile and provide a sound quality of support to training activities.

#### **4.3.4 Student Recruitment, Enrollment, Performance, and Perceptions**

During the course of the study, student related issues were explored from a statistical perspective and through interviews with principals, staff, and representative groups of students themselves. The following section of the report provides a synthesis of data, information and opinion on student-related issues.

##### **4.3.4.1 Current Status**

Students enrolled in the Applied Secondary Vocational system originate from three sources:

- secondary school graduates seeking to develop skills leading to employment
- students leaving the 10th grade who have selected VTC programmes by choice
- students leaving the 10th grade who have been channelled into VTC programmes by the Ministry of Education.

Statistics on the percentage of students entering through the various streams were not available to the study team. From discussion and observation at the sample centres, it is apparent that in male training centres, a high percentage of the enrollment is channelled by MOE, while in female centres the majority of students enrol as a matter of personal choice.

Enrollment statistics in the respective occupational categories during the past five years is shown in Table 10 below.

**Table 10**  
**First and Second Year Enrollment of Applied Secondary**  
**Students in the Respective Occupational Groups**

Occupational Group	1992	1993	1994	1995	1996
Electric	1,158	1,055	1,108	1,259	1,268
Vehicle Maintenance	1,428	1,341	1,504	1,611	1,804
Electronics	166	176	202	214	278
Metal Fabrication	1,005	992	980	1,097	1,354
Air Conditioning/Plumbing	661	697	738	838	984
Printing	160	98	111	136	155
Hospitality	315	207	211	302	455
Construction	30	22	9	18	5
Carpentry	753	750	746	858	876
Other	180	201	212	264	379

The entrance prerequisite for medium term training is grade seven. There is no academic requirement for those entering short term programmes.

#### **4.3.4.2 Perspectives and Performance**

It is clear that the process of selection, coupled with programme structure and perceptions surrounding social standing of the occupational categories for which VTC trains, that the majority of trainees are amongst the least academically accomplished and are drawn from the lower end of the socio-economic spectrum. While this reality needs to be considered in the design of the instructional programme, it should not be allowed to limit the potential level of achievement in skills acquisition.

Following enrollment in a VTC training centre, applied vocational secondary students undertake a three month rotational programme which provides a broad exposure to a number of occupational categories. At the end of this period, each student ranks specialisations of choice. VTC then places the students in the respective programmes taking account of the student's preference and academic performance. While no statistical data is available on the number of students placed in the programme of first choice, interviews with staff and students suggest that the majority of trainees pursue training in their preferred specialisation.

On completion of the three month orientation, trainees continue in the regular apprenticeship programme of combined institutional and on-the-job training. The primary

indicator of the quality of student experience and the value placed on the training received is the rate of attrition and completion versus levels of initial enrollment.

During the five year review period, student numbers were traced through the sample centres, enabling attrition and completion rates to be calculated for trainees enrolling in 1992 and 1993. These students comprise the graduating class for the years 1995 and 1996. Results of this analysis are shown in Table 11.



Table 11  
Percentage Attrition and Completion Rates  
for Students Enrolled in 1992 and 1993 in Study Focus Training Centres

	Sahab	Marka*	Al Hashimieh	Ein Al Bash	Hakama	Al Mashara	Gor Al Safi	Al Tafilieh	Aqaba	
Students Enrolled in 1992	Year 1 to Year 2 Attrition	22.8	13.2	29.6	25.9	27.7	16.7	2.3	48.9	37.0
	Year 2 to Year 3 Attrition	16.8	20.0	24.0	32.0	44.3	28.3	32.6	16.7	41.2
	Year 3 Graduate Attrition	20.3		7.0	26.7	25.3	44.2	17.2	0	40.0
	Accumulated Attrition	48.8	30.6	50.2	63.2	69.9	66.7	45.5	57.5	77.8
	Completion Rate	51.2	69.4	49.8	36.8	30.1	33.3	54.5	42.5	22.2
Students Enrolled in 1993	Year 1 to Year 2 Attrition	37.4	20.8	28.0	25.8	28.4	25.4	27.4	40.5	22.7
	Year 2 to Year 3 Attrition	(10.8)	18.9	2.2	17.0	19.8	6.0	22.2	0	52.9
	Year 3 Graduate Attrition	15.9		34.0	14.5	31.0	12.8	(25.7)	45.5	(37.5)
	Accumulated Attrition	41.6	35.8	53.6	52.6	60.4	38.8	29.0	67.6	50.0
	Completion Rate	58.4	64.2	46.4	47.4	39.6	61.2	71.0	32.4	50.0

\* At Marka VTC, students graduate after completing two years.  
(-) indicates instances of growth in trainee numbers attributable to previous drop outs enrolling in the final year in order to complete the apprenticeship.

The following observations are made regarding the above table:

- While attrition rates vary in different jurisdictions, a loss of 25 to 30 percent of trainees from enrollment to graduation is considered typical and acceptable for apprenticeship programmes. Drop out rates exceeding 40 percent are unacceptable.
  - VTC indicates that the actual number of students who begin the first year of the apprenticeship programme is lower than the enrollment statistics because of "no shows" or students making other career choices.
  - A possible relationship exists between the high attrition rate and the process of allocating students to VTC by MOE which results in a high proportion of less motivated students pursuing apprenticeship programmes.
  - Differences in attrition between urban and rural centres are striking. The most probable cause is lack of on-the-job training locations or employment opportunities in the occupation for which training is offered.
  - Lower attrition at the female training centre most likely correlates with the higher academic standard of those trainees.
  - Some of those interviewed attributed high attrition rates to poor on-the-job training experience or to the cost of travel to a work site when no remuneration is received.
  - Several students and staff pointed to the fact that some trainees find employment part way through the programme, following which employment income becomes more important than continuing training.
- 
- The current unacceptably high level of attrition is reflected in the training costs as discussed in Section 4.6. It is evident that VTC should better understand the causes and initiate remedial action.

Issues of course duration, course content, on-the-job training, staff, facilities, and equipment were explored with groups of students from different specialisations. While the student sample was too small to have statistical significance, a number of common themes emerged which correlate and validate other findings of the study. These themes are summarised as follows.

On course duration, student opinion varied predictably. As examples, students enrolled in auto mechanics with a high level of skill complexity and technical content said that the programme is too short. Students enrolled in carpentry felt that the course duration was appropriate, while those in programmes such as house wiring, with a low technical content, believed that the programme was too long. This supports the previously identified need to re-visit programme structures and content from perspectives of relevance and efficiency.

On course content, student opinion followed similar patterns. Students enrolled in courses where technology is rapidly changing, such as air-conditioning, believe that the programme content is shallow, outdated, and not consistent with their experiences in the workplace. Students enrolled in hospitality industry training, printing trades, and clerical trades, expressed satisfaction with the programme content.

Opinion on the quality of on-the-job training experiences varied the most widely. Students placed in large industries such as oil refining, the hospitality sector, the minerals and mining sector, or with the armed forces, enjoyed well-structured and productive learning experiences. Students placed with manufacturing industries were typically given low level repetitive work. Students trained in small enterprises generally were engaged in a diversity of tasks, but experienced no progressive learning. Some metal working students at one centre had not been provided with on-the-job training experience at all and had been told to stay at home.

Student opinion of staff was quite positive. Students found staff to be supportive, helpful, and good teachers. Some students, however, encountered technologies in the workplace with which teaching staff were unfamiliar, and recognised the urgent need for technical upgrading of instructors.

In terms of facilities and equipment, opinion varied as a factor of on-the-job experience. Some found that they were working with significantly more advanced equipment than that found in training centres; others felt the equipment was satisfactory. The most frequent comment was that there was insufficient equipment and too few work stations to permit an adequate amount of practice for each student.

Although student recruitment practices suggest that students would be of low quality, the study team was continually impressed with the level of maturity, intelligence, understanding and energy of those students interviewed. This leaves the impression that the attainment of significantly higher learning levels within the VTC programme is an achievable goal.

#### 4.3.4.3

### Student Recruitment, Enrollment, Performance and Perceptions: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Recruitment Practice	P	P	P
Allocation Practice		N	N
Student Body Profile	P	P	
Attrition/Retention Rate			N
Student Assessment of In-School Learning	B	B	B
Student Assessment of On-the-Job Learning	B	B	B
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• Training centre recruitment efforts are well founded and should be supported and extended.</li> <li>• The practice of MOE placement of students in VTC centres is seen to result in the enrollment of a number of unwilling trainees, thereby contributing to high attrition rates.</li> <li>• The overall quality and orientation of the student body is consistent with the training offered.</li> <li>• Trainee attrition rates are unacceptable and unsustainable.</li> <li>• Trainee assessment of learning achieved within the training centre is generally positive, with a widely recognised need for staff and programme upgrading.</li> <li>• Trainee assessment of learning achieved as a result of work experience is highly variable. Recognising the centrality of work experience in an apprenticeship programme, this issue needs to be addressed.</li> </ul>			

#### 4.3.5 VTC Graduates

This section of the report discusses the experience and perceptions of VTC Graduates following completion of their apprentice training.

##### 4.3.5.1 Current Status

Following completion of the two year programme of joint institutional/on-the-job training, trainees continue to be registered with VTC as apprentices and undertake a further year

of work experience. At the end of this year the trainee takes a final trade test and theory examination following which he or she is certified as a skilled worker.

During the course of the study, 54 graduates were interviewed representing 12 specialisations as shown in the following table.

**Table 12**  
**Specializations of VTC Graduates**  
**Surveyed by the Study Team**

<b>Specialization</b>	<b>No. of Graduates</b>
<b>(a) Male Graduates</b>	
Industrial machine maintenance/general mechanics:	6
Welding and metal work -construction:	3
Light vehicle mechanic	6
Metal profile fabricator	2
Industrial machine maintenance electrician	3
Air Conditioning	7
Food production	6
Carpentry and cabinet making	8
<b>(b) Female Graduates</b>	
Office equipment maintenance	3
Dress-making/sewing	6
Secretarial/clerical	3
Hairdressing and beauty culture	1

The above sample was drawn from graduates who completed their programme between 1988 and 1996, with the majority being from more recent years.

Issues explored with graduates included their experiences in obtaining employment, relationship between training and employment, and salary levels, as well as their perceptions of the quality and relevance of the training received.

As noted elsewhere in the study, VTC does not undertake regular tracer studies and as a consequence, statistically reliable data is not available. Similarly, this sample, drawn from graduates of 4 centres, is representative of those which the centre was able to quickly identify and who were available for interview. Findings should therefore be regarded as indicative only.

#### 4.3.5.2 Findings and Commentary

The majority of graduates interviewed (85 percent) were found to be employed in the specialisation for which they had trained. Several had either joined a family business or had established their own business with the initial capital being provided by family members. The majority of graduates worked for enterprises employing fewer than five workers as shown in Table 13.

**Table 13**  
**Percentage of VTC Graduates Employed**  
**by Size of Enterprise**

<b>Number of Employees in Enterprise</b>	<b>Percentage of Graduates in Survey Sample</b>
Fewer than 5	55%
5 to 10	13%
10 to 50	2%
More than 50	15%

Fifty percent of graduates had found work with the assistance of VTC, 41 percent through friends, and 9 percent through family.

Salaries earned by graduates as a percentage of the survey sample were found to be as shown in Table 14.

**Table 14**  
**Salary Range of VTC Graduate Sample**

<b>Salary Range (J.D. per Month)</b>	<b>Percentage of Graduate Survey Sample</b>
Less than 100	6 %
100 to 120	33 %
120 to 140	30 %
140 to 160	12 %
160 to 200	19 %

Of the graduates surveyed, 81 percent of males and 92 percent of females expressed the view that the training had paid off in terms of access to employment and advancement opportunity. Nineteen percent of males believed that they could have obtained similar positions without training or they were unable to find work which met their expectations.

When questioned about the application of knowledge and skills acquired during training, 79 percent of respondents indicated they were using many of the skills learned while 21 percent felt they were using few of the skills. Graduates in air-conditioning and auto mechanics particularly felt that the programme content was insufficient. Auto mechanics indicated that, during their programme, they had learned nothing of automatic transmission or electronic fuel injection or electronic control systems which are currently at the heart of all vehicles. Refrigeration graduates, also believe that their institutional learning was outdated.

Seventy-seven percent of male graduates indicated that the training received was adequate to perform successfully on the job, while 23 percent expressed a contrary opinion. The most common response as to why they were not able to perform adequately was insufficient theoretical knowledge.

When comparing their abilities with co-workers who had not been through the VTC apprenticeship programme, 75 percent of males and 43 percent of female graduates felt they were better employees, while 25 percent and 57 percent respectively believed that they were not as good.

When asked about the employment experiences of classmates and the numbers of graduates being trained, all carpentry, general mechanics and heating and air-conditioning graduates expressed the view that too many graduates were being trained. One graduate mechanic indicated that to his knowledge, only three of his graduating class of 12 were working in their field of training. Others were working as bus conductors or general labourers. Graduates of other specialisations also expressed the view that the local market could not absorb all the VTC output and that VTC should seek out employment opportunities for graduates in the wider Gulf Region.

The final survey question focussed on measures to improve the quality of training programmes. All graduates placed upgrading the course content as a first priority and upgrading of staff as second. Graduates of carpentry and mechanic programmes expressed a serious need for upgrading equipment.

In conclusion, all graduates interviewed supported VTC as an essential provider of basic skill to grade ten students who are not accepted into the comprehensive secondary programme.

#### 4.3.5.3 Graduates: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Training/Employment Linkage	P	P	
Programme Relevance Perceptions	B		
Programme Quality Perceptions		B	
Programme Efficiency Perceptions			N
<b>Key:</b> P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• Graduates interviewed perceive positive linkages between training and employment.</li> <li>• Graduates believe that the training they received provides a foundation for further advancement.</li> <li>• Graduates recognise that the VTC programmes are out dated and, while generally relevant to their employment, are in urgent need of upgrading.</li> <li>• Graduates express similar views on programme quality and indicate a need for a significantly higher levels of technical content.</li> <li>• Graduates believe that VTC is training too many students in the existing specialisations and is therefore not efficient.</li> <li>• Findings reinforce the need for regular and rigorous tracer studies.</li> </ul>			

#### 4.3.6 Facilities and Equipment

The complement of workshops, equipment and tools in a training institution provide the environment in which skill competencies can be progressively built. This section of the report outlines the findings of the study team in terms of progress made since the 1992 review in addressing issues of equipment upgrading, equipment maintenance, and workshop safety.



#### **4.3.6.1 Current Status**

In the design of training workshops, VTC has used International Labour Organisation (ILO) standards for floor area and other characteristics. Each workshop typically comprises an area for practical instruction and skill development, an area for theoretical instruction, a tool and equipment store, and an instructor's office.

Workshop equipment is prescribed, tendered, and purchased by VTC Headquarters and commissioned as part of the construction phase. Following mobilisation, equipment operation and maintenance become the responsibility of the workshop instructor. Requests for new or upgraded equipment are processed through the Training Centre Principal as part of the annual budgetary cycle.

Safety surveys are undertaken periodically by Occupational Safety and Health Institute (OSHI) staff. Recommendations are left with the principal for action.

#### **4.3.6.2 Findings and Commentary**

Workshop visits were made at each of the sample centres. The following findings are drawn from a survey of 27 workshops and are intended to convey a broad view of the current status.

- Workshop dimensions and physical layout are, in most cases, adequate for the number of trainees in each training group.
- Machinery complement is frequently unbalanced. For example, one woodworking shop has industrial capacity bandsaws while work bench vices are of domestic "do it yourself" quality. This situation was observed in numerous workshops and is sometimes attributable to equipment being provided from different donor sources.
- Most shops are equipped with machine tools at the most basic level. This is adequate for basic training but limits the capacity of the centres to engage in more advanced in-service training for industry clients in areas such as industrial refrigeration, advanced auto mechanics, hydraulic and pneumatic system maintenance; all of which have been requested.
- The complement of hand tools in many shops is insufficient and often they are poorly maintained. An example was one set of woodworking tools with cracked handles and blades chipped to the point of serration. This is a clear reflection of lack of commitment to high quality instruction and student performance.

- The overall level of equipment provided for some programmes (e.g., domestic house wiring) is such that it is impossible to provide a meaningful level of skill development. This issue is also linked to the question of programme structure where it is the opinion of the study team that narrow specialisations should be integrated into a more broadly based programme.
- Several centres have outdated equipment (e.g., Freon-based air conditioning and refrigeration equipment) and are thus training students in obsolete technology.
- Most equipment is operational, but access to spare parts continues to be a problem. This is particularly so with some donor-provided equipment. A notable example is one automotive workshop where all of the Italian-supplied engine performance analysis equipment had failed and the equipment manufacturer had subsequently gone out of business. As a result, no spare parts were available.
- All workshops observed by the study team were clean and provided environmentally sound training spaces.
- Safety standards for both machines and personal safety are, in many cases, completely unacceptable in a training environment. Among the worst offenders are carpentry workshops where virtually all machine safety guards have been removed. Students were observed using circular saws and other power tools in a manner which suggested they had not been taught the basic elements of safe operation. With the exception of machine shop work and welding, few students wear eye protection or appropriate footwear. Follow-up processes to safety reviews are not undertaken.
- While there are a number of identified deficiencies in facilities and equipment, it must be reiterated that equipment is only a vehicle for the achievement of learning objectives. Consequently, investments in equipment should follow a programme review and the associated development of competency-based curricula which will, of itself, prescribe the equipment needs for each learning activity.

## 4.3.6.3

## Facilities and Equipment: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Compatibility with instructional Objectives	P	B	
Technological Currency	B	B	
Maintenance	B	B	B
Safety Practices	N	N	
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>The general complement of machine tools is compatible with instructional objectives of the existing programme.</li> <li>Workshops are insufficiently equipped with hand and power tools.</li> <li>Demonstration models and workshop equipment are becoming progressively outdated in technology and require upgrading.</li> <li>Equipment maintenance is variable but particularly poor in hand tools.</li> </ul> <p>Safety practices are weak in all areas and require urgent attention in woodworking workshops.</p>			

## 4.3.7 Labour Market Linkages

As the designated national training provider for entry level skilled workers, VTC is required to maintain close linkages with the labour market to:

- ensure consistency of programming with national social and economic objectives
- ensure that programming is, to the extent possible, demand-driven
- maintain currency with technological and industrial developments
- seek participation and input into programme revision and update
- facilitate trainee and graduate placement.

This section of the report reviews the structures and mechanisms which VTC has established to build labour market linkages, and provides commentary on the findings.

#### **4.3.7.1 Current Status**

Labour market linkages are found in all aspects of VTC activities and may be summarised as follows:

- Industry is represented at a senior level on the VTC Board of Directors, to provide a channel for information regarding changes in industrial policy.
- The Director General assumes responsibility to seek out strategic alliances with new industrial partners.
- Various Headquarters units and Institutes maintain an outward focus or have specific responsibility for industry-linked activity. These include units of the Planning Directorate, the Occupational Safety and Health Institute, the Training and Development Institute, the Training and Testing Institute, and the Extension Division.
- Regional Training Directors are responsible for the maintenance of contact with key industrial sectors and employers within their respective regions.
- Individual training centres are expected to maintain advisory committees.
- Training centre principals are expected to develop linkages with the industrial community in their respective catchment areas.
- Training coordinators and instructors are required to identify trainee placements for on-the-job training and to work with employers to ensure that progressive learning occurs during these placements.

The following section reviews the findings of the study team related to the efficiency of the above mechanisms in achieving labour market linkage objectives.

---

#### **4.3.7.2 Labour Market Linkages--Findings and Commentary**

All vocational education and training systems worldwide recognise that effective school-to-work transition systems are dependent upon the quality of the relationship between the training provider and the employment market place.

It is also recognised that building this relationship is one of the most challenging, frustrating, and demanding tasks facing the training provider. The following factors contribute to the challenges:

- While it is possible to set objectives, it is difficult to institutionalise an approach as the external environment is always fluid.
- The initiative must almost always be taken by the training institution. Only the largest, most progressive companies develop specific workforce development plans and actively seek the assistance of training providers in the implementation of those plans.
- Most companies are so focussed on production and profit, or survival, that they are rarely willing to provide experienced, high level personnel to participate in training programme review or development.
- The issue tends to take a lower priority to the practice or administration of the training itself, but in fact requires continuous focus to achieve high quality training for the trainee and high employment rates for graduates.
- When input is provided from the productive sector into manpower demand forecasting, technology development, definitions of workforce structure, employee competencies or programme development, it tends to be very company-specific, leaving the institution with the challenge of synthesising all inputs into a progressive and balanced programme.

Within this context, VTC has developed a credible structure which, by virtue of the environment rather than want of effort, is making excellent progress in some areas, and less in others. The following observations are made:

- At the senior executive level, new relationships are being forged with multi-national enterprises in the textile and apparel sectors. Relationships are also being explored with the chemical and pharmaceutical sectors as well as in the consumer goods assembly sector.
- Headquarters units such as OSHI and TDI are showing continued growth of external revenues through the sale of services to the productive sector.
- An increasing level of external input is being introduced into VTC programming through the revised curriculum development process.
- Tracer studies which provide important labour market information are not undertaken with sufficient frequency or scope. This function in VTC is under-resourced.

- Sectoral and regional labour market demand studies have been initiated from time to time. These studies have provided general demand indicators but the output has not provided valid statistical, occupational, or competency demand data upon which to make programme investment decisions.
- Regional Training Directors maintain contact with larger industrial employers within their regions and provide support to individual training centre principals in promoting relationships with individual employers.
- Advisory Committees are nominally in place in all sample centres. Some had not met for several years; some met annually, but all agreed that their activities were symbolic as opposed to substantive.
- Several of the principals interviewed demonstrated a strong entrepreneurial stance in promoting their centres to potential business clients, the community, and productive sector partners. Results were found in new programme initiatives in the food production sectors and increased activity in the hospitality sector.
- With a few notable exceptions, a high level of success is being achieved by the staff of individual centres in finding work placements for trainees.

Reverting to the opening remarks of this section, the maintenance of productive sector linkages is a challenging task. VTC is conscious of its importance and is active at many levels in building these linkages. The outcome which remains to be achieved is the continuous collection, analysis, and evaluation of intelligence obtained from these linkages so that information can be translated into continuous programme revision and development.

Indicator	Relevance	Quality	Efficiency
Industry Linkage Policy	P	P	P
Executive Participation in Industry Linkage	P	P	P
Headquarters Staff Participation in Industry Linkage	B	B	N
Institutes' Participation in Industry Linkage	P	P	P
Use of Advisory Committees	N	N	N
Principals' Participation in Industry Linkage	P	P	P
Instructional Staff Participation in Industry Linkage	P	P	P
Trainee Benefits Resulting from Industry Linkage	B	B	B
Programme Renewal Resulting from Industry Linkage	N	N	N
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			

**Comments:**

- VTC recognises the central importance of industry linkages and works diligently to build them at all levels of the organisation.
- Increased regularity and scope of tracer studies would enhance graduate/labour market understanding.
- The work of the Institutes strengthens credibility and interaction with industry at levels not reached through training centre programmes.
- The current focus of industry linkage is, rightfully, trainee and graduate employment. Additional efforts should be made to use this network to influence the continuous renewal and updating of programmes.

**4.3.8 Industrial Extension Services**

Although not an activity of the VTC training centres, Industrial Extension Services are primarily training oriented, and therefore are included in this section of the report.

Since the early 1980's, VTC Training Officers working to place and supervise trainees in small enterprises, identified a need to strengthen the viability of these enterprises by providing access to expertise in management, costing and cost control, production layout, and materials management.

This section of the report outlines the establishment of an industrial extension capability in VTC and its performance during the past five years.

#### **4.3.8.1 History and Current Status**

Following a 1989 review of potential funding sources to support the establishment of an Industrial Extension Service, a concept paper was agreed to in principle with the United Nations Development Programme (UNDP). Further progress was delayed because of the Gulf conflict, but in 1992 a project agreement was signed by UNDP with the International Labour Organisation (ILO) as the executing agency and VTC as the implementing agency. The development objective of the project was to "increase productivity and profitability in small/medium scale enterprises in both the urban and the rural sector. The project will contribute to the Government's policies for promotion of small/medium scale enterprises, and for regional spread of economic activity."

Project activities included:

- establishment of the Industrial Extension Services unit in VTC with a mandate to act as Project Implementation Unit
- appointment of eight staff, six of whom were engineers, as core staff of the unit
- completion of a survey of Small and Medium Sized Enterprises (SMEs) to classify problems and measure receptivity to training
- intensive training of project staff and the design of training programmes
- delivery of management services either as consultancy or as training in the following areas: general management; materials management; accounting, marketing; cost analysis; purchasing; cash flow management.

The initial project has been completed and a tripartite review conducted. Based on a positive evaluation, a second phase has been proposed which would see the services expanded through the establishment of a "Small Business Development Institute" which would increase staffing levels to between 20 and 25 and add new services in business information and entrepreneurial development. During the course of the project the new Institute proposes to recover 25 percent of its costs through client fees.

#### **4.3.8.2 Findings and Commentary**

During the project period, consultancy or training services were provided to approximately 1,000 SMEs, principally in the garment and textile, wood industries, metal



industries, and plastic industries. Based on an evaluation of 153 enterprises undertaken by the consulting company, MCG International, it is clear that the Industrial Extension Services (IES) unit is providing a unique and valuable service. This is validated by the fact that 91.3 percent of the MCG survey sample rated the extension service as a positive factor in contributing to performance improvement, and the fact that 29 percent used the services of IES more than once, 19 percent more than twice, and 18 percent more than three times.

In addition to the performance evaluation of IES services, other characteristics of Jordanian SMEs have been identified that can assist in shaping VTC's training programmes for the future.

#### 4.3.8.3 Industrial Extension Services: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Programme Design	P	P	P
Capacity Development	P	P	P
Programme Delivery	P	P	P
Quality of Service	P	P	P
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• IES illustrates the benefits of clarity of purpose and autonomous responsibility/ accountability in execution.</li> <li>• Professional level services and programmes were developed and validated in advance of service delivery.</li> <li>• Service is client oriented and demand-driven.</li> <li>• Quality of service is attested to by levels of repeat business.</li> </ul>			

#### 4.4 VTC Institutes

The previous sections of the report have examined the work of VTC in training new entrants for the labour force. While this is the core activity in its mandate, VTC also operates three Institutes focussed on different aspects of human resource development activity. A fourth Institute is now being established. The following paragraphs review the mandate, activity profile, and performance of the Training and Development Institute, Testing and Training Institute and the Occupational Safety and Health Institute.

#### **4.4.1 Training and Development Institute (TDI)**

##### **4.4.1.1 Historical Development and Current Status**

Historically, in 1982, TDI was established as a Training Centre to be later developed into an internal professional development unit in both pedagogical/androgical training for VTC staff, as well as to provide specialised skills development for instructors, and the production of learning resource materials. The mandate also extended to providing training to TVET institutions in the wider Arab World and the productive sector.

Following the commissioning of the Test and Training Institute (TTI) in 1995, the TDI mandate was revised to focus primarily on androgical training for VTC and management and supervisory training for the productive sector. Responsibility for specialised skills upgrading was transferred to TTI. This transfer is reflected in the training activity profile shown in Annex 15.

TDI describes its current objectives as follows:

"The TDI aims to train instructors and supervisors to meet the growing needs in these fields locally, regionally and throughout the Arab World through:

A Providing training programmes in the following areas:

- Instructional techniques and pedagogical aspects for instructors and other members of training staff.
- Management and supervision for supervisors in business and industrial establishments.
- Vocational and technical training management for training officers, training centres principals and others responsible for training management.
- Specialized courses for staff and career development of employees.

B Production of learning materials and A/V aids.

Current course offerings by TDI include:

- Management of Vocational training
- Role of the VTC Instructor
- Teaching and training Techniques
- Course Preparation
- Vocational Guidance and Counselling
- Effective Communication Skills in Vocational Guidance and Counselling

- Production Planning and Control
- Library Management.

TDI staff currently comprise eight technical staff, seven of whom have engineering or science degrees, and one diploma holder. Technical staff are supported by nine administrative staff including the Director.

Facilities include a library, computer lab, learning resource centre and lecture rooms.

#### 4.4.1.2 Findings and Commentary

TDI fulfills an important role both within VTC and externally. During the past five years TDI has delivered professional upgrading in subjects relating to teaching methodology to a total number of 1,202 VTC course participants with each course averaging 30 hours in duration. Prior to the change of mandate, TDI similarly delivered skill upgrading to 635 VTC course participants. This represents a significant capacity building investment. TDI training has also been delivered to private companies, staff of Jordanian ministries, and other agencies from Sudan, Yemen, Oman, Bahrain, Morocco, Libya and Palestinian National Authority.

In the longer term, the capability which is being built in TDI should be regarded as a national resource to support professional development for all those engaged in labour force development or adult training. In particular, links to the Community College system and its re-development can benefit from TDI programmes.

Costs and revenues for TDI for the 1992 to 1996 period are as shown in Table 15 below.

**Table 15**  
**Costs and Revenues for Training and Development Institute 1992-1996**  
**(Jordanian Dinars)**

Item	1992	1993	1994	1995	1996
Salaries	54,729	42,354	45,195	48,231	49,475
Current and Capital	29,564	25,859	17,977	19,187	21,551
<b>Total Cost</b>	<b>84,293</b>	<b>68,204</b>	<b>73,172</b>	<b>67,418</b>	<b>71,026</b>
<b>Total Revenue</b>	<b>8,531</b>	<b>12,739</b>	<b>11,116</b>	<b>41,106</b>	<b>52,099</b>

The above figures indicate that TDI is currently covering 73 percent of costs with external revenues. This represents a very positive orientation for the Institute, recognising that while the internal VTC constituency should always take priority in its programming, it is, nevertheless, a small constituency and the costs of running the institute cannot be sustained on internal training alone.

The final component of TDI's mandate - the production of learning materials and A/V aids warrants some discussion.

Lead responsibility for programme and curriculum development in VTC is assigned to the Programme and Curriculum Division of the Programme and Testing Directorate reporting to the ADG of Technical Affairs. TDI lies within a different reporting relationship through the ADG for Institutes. Clearly, the development of curriculum and the production of learning materials needs to be integrated.

During the past year, two curriculum related initiatives have been in progress. Firstly, the preparation of new training units by the curriculum division and secondly a capacity building exercise in curriculum development methodology supported by the EDTS Project with TDI as the lead unit in the VTC organisation. While there has been cross representation at the organisational level, continuing efforts will be needed to maintain a "best product" focus and to ensure coordination of process and the selection of priority programme/curriculum/learning resource materials.

#### 4.4.1.3 Training and Development Institute: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Mandate	P		
Staff Profile	P	P	
Programme Profile	P	P	P
Facilities and Equipment	P	P	
Development Directions	P	P	
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• TDI represents a valuable capability which warrants continued development and support for its entrepreneurial stance.</li> <li>• TDI capacity in curriculum development is being further strengthened through the EDTS Project.</li> <li>• The present programme profile is sound and serves both internal and external clients.</li> <li>• Coordination mechanisms with the Curriculum and Programme Division of the Programme and Testing Directorate should be strengthened.</li> </ul>			

#### 4.4.2 Testing and Training Institute

##### 4.4.2.1 History and Current Status

The establishment of the Testing and Training Institute (TTI) in 1994 was based on an extension of VTC's role in occupational classification and the preparation of a draft law relating to the organisation of labour under which all workers would require to be tested and certified. A second premise in the funding proposal was that TTI would provide specialised training for fields in which training capacity was unavailable elsewhere in Jordan, and finally, that it would undertake skills upgrading for VTC instructors in new or advanced vocational fields.

TTI articulate their objectives relating to the vocational testing component of their mandate as follows:

- participation in the preparation and development of vocational tasks for different levels within the respective occupational groups;
- evaluation and validating tasks before official accreditation;

- encouraging workers to sit for vocational testing and certification through awareness and guidance programmes;
- implementation of the testing and certification programme for workers at the technical, vocational, skilled, and semi-skilled levels;
- conducting tests;
- documentation and certification of certificates.

During the past year, seven workers were tested in four occupational groups.

Training was conducted for 238 first year and 104 second year trainees in VTC's traditional apprenticeship programmes during the past year. Tests were administered to 138 medium term trainees in bread making, tailoring and leather work programmes. Training was undertaken for 228 VTC staff in 12 subject areas as shown in Annex 16.

TTI staff is currently comprised of 29 instructional staff and 12 administrative/support staff including the Director. Seven of the instructional staff hold degrees, 12 hold community college diplomas and the remainder secondary school certificates or less.

Facilities include workshops and equipment for training in tool and die production, auto mechanics, auto electrical, auto body, industrial sewing, leather work, electrical, metal fabrication, radio and TV repair, hospitality services and carpentry.

#### **4.4.2.2 Findings and Commentary**

TTI is a relatively new institute and, in consequence, is still attempting to create an identity for itself and to integrate with other VTC functions. The following commentary is provided on the three aspects of the TTI mandate.

In the event that the certification of labour law comes into effect, there will be a significant increase in activity at TTI. (Discussion is provided elsewhere in the report on the implications of this proposed law). At the present time, however, testing demands virtually none of TTI's capacity. The current practice is that all tests are developed within a separate directorate with no involvement of TTI staff. The EDTS Project has provided assistance to VTC in the preparation of standard tests, but TTI has not been a participant in this activity. Nevertheless, during 1996, TTI delivered four courses of 30

hours duration to 52 VTC instructors in the Design and Implementation of Occupational Tests.

During the visit of the study team, TTI staff demonstrated an apparent lack of knowledge of the present status of which tests were available or in which occupational categories. This situation is inconsistent with the purpose for which TTI was originally established or the role they claim in this mandate.

TTI has adopted a traditional training centre model with the entire student body enrolled in programmes offered elsewhere in the VTC system. The training capacity of TTI is also under-utilised.

TTI's mandate to provide VTC instructor skills upgrading has resulted in the development of 12 instructor training programmes. During 1996, 22 courses were delivered. The content of these courses has not been evaluated by the study team. There is little indication, however, that TTI is leading a strategically focussed assessment of priority professional development needs of VTC instructional staff and coordinating this strategy with the introduction of new training centres.

Costs and revenues for the two years in which TTI has been in operation are provided in Table 16.

**Table 16**  
**Costs and Revenues for the**  
**Testing and Training Institute, 1995 and 1996**

Item	1995	1996
Salaries	52,970	115,013
Current and Capital	142,726	157,494
Total Costs	195,696	272,507
Revenue	6,666	53,984

Revenue growth in the second year of operation is attributable, approximately equally, to training fees and training products.

#### 4.4.3 Testing and Training Institute: Key Performance

Indicator	Relevance	Quality	Efficiency
Mandate	B		
Staff Profiles	B	B	
Programme Profile	B	B	N
Facilities and Equipment	P	P	
Development Directors	N	N	N
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• TTI objectives are not consistent with VTC practice. TTI currently has no assigned role in the development of occupational tests.</li> <li>• TTI training profile shown is not differentiated from that of other vocational training centres.</li> <li>• Skill upgrading for VTC instructors requires additional focus through the formulation of a clearly defined strategy.</li> </ul>			

#### 4.4.4 Occupational Safety and Health Institute (OSHI)

##### 4.4.4.1 Historical Development and Current Status

The Occupational Safety and Health Institute (OSHI) is the oldest of VTC's institutes, having been established in 1983. While having no legislated mandate, OSHI's work is guided by the following objectives:

- the provision of advice to government and official organisations;
- the encouragement of research in health, safety and accident prevention;
- the provision of training services;
- conducting field studies in health and safety;
- the provision of consulting services for government and industry;
- participating in the development of safety standards and regulations;
- promoting health and safety awareness;
- promoting instruction in occupational safety through the educational system.

Within these objectives, OSHI has consolidated its activities under the functions of training services, consulting services, and research and field studies.



OSHI staff currently includes 18 technical and 12 administrative support staff. The academic credentials of technical staff include one PhD, two Masters and 11 Bachelors degrees, four community college diplomas, five secondary school diplomas, and four basic education graduates. Practical experience of technical staff ranges between four and 25 years.

In 1989, the Overseas Development Agency of the United Kingdom provided assistance for the construction of new facilities including classrooms, a lecture theatre, library, and staff offices. OSHI also maintains a workshop for the development and demonstration of industrial safety devices.

Training courses have been developed in fields indicated in Table 17 below.

**Table 17**  
**OSHI Training Courses**

General Safety	Accident Prevention
Role of the Safety Director	Dust Control and Monitoring
Electrical Hazards	Personal Protection
Chemical Hazards	Occupational Illnesses
Construction Hazards	Noise, Heat, and Radiation
Biological Hazards	Hazardous Materials
First Aid	Ventilation
Fire Fighting	Welding Safety

These courses have been developed and delivered primarily for industrial clients.

#### **4.4.4.2 Findings and Commentary**

OSHI was established to serve the occupational health and safety needs of VTC and those of external national interests. External interests are being served through the following activities:

- Implementation of health and safety studies for resource or manufacturing companies. These studies, typically involving three to four weeks of effort, involve an initial survey of facilities followed by detailed analysis of operating procedures. Four to five studies are undertaken annually. Each project results in a status report together with recommendations for procedural change, practice change, or investment.

- Training for individual clients in all aspects of health and safety. In 1996, 627 trainees attended 36 training courses and 2,028 individuals participated in seminars and meetings held by OSHI.
- OSHI periodically sponsors national health and safety conferences. The last of these was a safety supervisors' training programme conducted in March 1996 at the Sahab Industrial Estate in co-operation with the Canadian International Development Agency, and Lakeland College.
- OSHI staff currently serve on a variety of national committees and task forces that work to develop health and safety codes, regulations and standards in various sectors.
- Maintenance of an Information Resource Centre.

OSHI technical staff periodically undertake safety surveys of workshop facilities, equipment, and working practices in VTC training centres. A comprehensive survey was undertaken in 1989 but little action resulted. A follow-up was undertaken in 1994. The OSHI director has sought a stronger mandate from the Director General to address safety practices in the centres which should serve as models of excellence for industry, while also promoting a high level of safety and health awareness among trainees.

There is a clear need for a national agency with a strong mandate to promote workplace safety and health and to enforce regulations. The proposed law to certify workplaces will provide an opportunity to improve the regulation of safety and health conditions in the workplace. The following table illustrates the increasing human and financial costs of workplace accidents in the Kingdom.

**Table 18**  
**Financial Losses, Repetition and Injury Rate**  
**of Occupational Accidents, 1991-1995**

<b>Indicators</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>
No. of injuries	8,183	7,864	12,269	13,862	14,665
No. of workers	226,192	600,000	656,000		750,000
Financial Losses (J.D.)	8,183,000	7,864,000	12,269,000	13,862	14,665,000
No. Absence Days	54,417	52,295	81,588	92,182	97,522
Repeated Injury Rate	6.17	3.14	6.28		8.15
Injury Rate	41	21	41		54

Source: Ministry of Labour

The above data shows a disturbing trend in the number of accidents and their cost. Some of this increase may result from the larger proportion of workers employed in industries. Nevertheless, this trend is unacceptable both in terms of the loss of human resources and the financial costs of these injuries. Some improvements will result from promotion of health and safety in the workplace and the implementation of a concerted training effort. This will, however, need to be reinforced by strong regulations related to workplace safety and health, and strict monitoring and compliance enforcement by a national agency. This role is not one that is appropriate to a training agency.

Costs and revenues for OSHI for the 1992 to 1996 period are as shown below.

**Table 19**  
**Costs and Revenues for the**  
**Occupational Safety and Health Institute, 1992-1996**

ITEM	1992	1993	1994	1995	1996
Salaries	65,854	65,687	83,884	87,446	93,846
Current and Capital	69,645	71,113	72,640	71,720	81,690
Total Cost	135,499	136,800	156,524	59,166	175,536
Total Revenue	9,737	11,869	34,702	14,894	24,094
Percent Cost Recovery	7.2	8.7	22.2	9.3	13.7

In conclusion, it is apparent that:

- occupational health and safety is currently an important national issue and one that will grow with increased industrialisation.
- OSHI has built a strong capability and is meeting the external need for assistance, research, training, and regulatory framework development within the limits of its current resources.
- OSHI's ability to meet a wider national need is constrained by its organisational relationship and budgetary restrictions.
- Levels of cost recovery are variable and modest at best.
- Internal services to VTC are visibly ineffective as witnessed by safety practices within the VTC training centres.

Recognising the external requirement to focus and strengthen occupational health and safety as well as VTC's need to focus its attention and resources on renewal of training programmes, it may be timely to consider the following:

- A review of the national need for development of occupational health and safety services--particularly in light of the proposed certification of workplaces law.
- Undertaking an assessment of the required technical, regulatory, inspection, and training resources necessary to meet the above need.
- Undertaking a review of OSHI's mandate and capability in a national context.
- Based on the mandate review, reassessing the appropriateness of OSHI's organisational home and relationship.

#### 4.4.4.3 Occupational Safety and Health Institute: Key Performance

Indicator	Relevance	Quality	Efficiency
Mandate	P	P	P
Staff Profile	P	P	
Facilities and Equipment	P	P	
Internal Services	N	N	N
External Services	P	P	B
Development Directions	B	B	B
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• Mandate is sound in terms of training, but may warrant a review in the wider national interest.</li> <li>• Facilities are excellent and constitute a valuable institutional and national resource.</li> <li>• Staff profile is academically strong and gaining experience through the delivery of external services.</li> <li>• External services are of high professional standard and valued by clients.</li> <li>• Internal services to VTC are ineffective owing to lack of clarity in responsibility, accountability, and allocation of resources to safety issues.</li> </ul>			

## **4.5 VTC Directorates**

Previous sections of the report have examined training activities and the work of the three VTC Institutes. These activities are supported by three Headquarters Directorates which address Buildings, Planning, and Programmes and Testing. The following section outlines the work of these Directorates and provides related commentary.

### **4.5.1 Buildings Directorate**

#### **4.5.1.1 Role and Current Status**

The role of the Buildings Directorate is to manage all aspects of the construction and maintenance of VTC's physical facilities. This includes land acquisition, coordination with architects and engineers, preparation and administration of tenders, construction supervision and acceptance procedures, and, following the commissioning of buildings, all aspects of building maintenance.

The Directorate is staffed by a Director, six engineers, and five technical staff.

#### **4.5.1.2 Findings and Commentary**

During the past five years, the Building Directorate has been responsible for new construction and training centre extensions having a capital value of 11,559,943 J.D. Not being central to the study objectives, detailed review of the Directorate was not undertaken. Based on observations during field visits, however, physical facilities are well designed, appropriate to local conditions and well-maintained.

### **4.5.2 Planning Directorate**

#### **4.5.2.1 Role and Current Status**

Responsibilities of the Planning Directorate currently include:

- Planning
- International Cooperation
- Technical Studies
- Information/Computing
- Libraries.

#### **4.5.2.2 Findings and Commentary**

The VTC planning function assists in the formation of national human resources development objectives for the Ministry of Planning's five year planning process. The Planning Directorate also perceives its role to include the translation of external

environmental analysis into VTC's programming through needs assessments, programme design, and coordinating the capacity of training centres, staff, facilities, and equipment for programme delivery. The programme rigidities described in section 4.3.1 and the low levels of facility utilisation discussed in section 4.6.6 indicate that this function is not effective.

The Planning Directorate participates in the annual budgetary planning process through coordination of budgetary requests submitted by each cost centre in the organisation. This work adopts a process-driven approach as opposed to an objective-driven approach. This process has resulted in uncoordinated development of the Corporation and starving of training programme upgrading in favour of system expansion.

International cooperation activities are initially led by the Director General in cooperation with the Ministry of Planning. Having reached executive level agreements to proceed, administrative and process support is provided by Planning Directorate personnel. This support also includes facilitating the work of international delegations and promoting the image and interests of VTC.

The technical studies unit is responsible for tracer studies to support manpower planning and labour market demand analysis. Only one tracer study has been completed in the past five years; another is nearing completion. This function is under-resourced in terms of the potential impact on programming efficiency which could result from an improved qualitative and quantitative understanding of graduate performance.

As noted elsewhere in the study, labour market information should be collected by a national agency with a mandate to monitor the entire labour market. Training providers could then use this data to create a sharper focus for programme planning in the sectors for which they provide training. It is unrealistic to expect the technical studies division of VTC to generate reliable primary level labour demand data.

The Information and Computing Division is staffed by four programmers mandated to develop information systems for VTC's management. The current approach is to write in-house software for applications such as payroll and personnel management. This is considered to be an inefficient approach as there is a variety of proprietary software available for all financial, administrative, and information management functions which could be purchased and readily adapted to VTC requirements.

VTC's information systems are currently highly centralised and consolidated, slow to access, and not configured in a manner which provides management with timely analysis. An urgent review of the information and computing function is recommended.

This should be undertaken with the assistance of a local systems analyst consultant working in concert with NCHRD to formulate a management information system strategy for VTC. As noted earlier in the report, library resources within VTC are minimal or non-existent. Library development should occur in parallel with programme development. While a central coordination function is desirable, this should be oriented toward facilitation rather than control.

### **4.5.3 Programme and Testing Directorate**

#### **4.5.3.1 Role and Current Status**

The Programme and Testing Directorate is responsible for the functions of occupational classification, testing, programme and curriculum development, and registration results and certification.

The Directorate currently has 11 staff of whom eight function in professional roles and three who provide support.

#### **4.5.3.2 Findings and Commentary**

In the early 1980's VTC was mandated to develop an occupational classification system for the Kingdom. This mandate recognises the need for a taxonomy and matrix to provide the basic framework for the collection, analysis, and dissemination of labour market information to provide input into:

- manpower planning
- labour market analysis
- training policy development
- training programme design
- guidance and counselling
- testing and certification
- wage policy development.

During the past ten years the basic five scale occupational ladder has been designed for ten occupational categories and their specialisations. Two other categories are under development. It was recognised that in order to become functional the occupational classification framework would need to be incorporated into the labour law. In 1989, an initiative was taken a letter from the Prime Minister to six Ministers requesting legislation to govern the certification of the workforce and workplace. An initial draft law was sent to parliament in 1989. The draft was returned to NCHRD in April 1994 for review and updating. NCHRD subsequently established an interministerial agency committee which

drafted a revised law. This revised draft has been re-submitted to parliamentary process but has yet to be legislated.

The study team believes that the issue of occupational classification has been overwhelmed within the proposed legislation which has more far reaching and potentially regressive implications. The central significance of occupational classification to a national labour capital formation strategy is discussed in Section 7.0.

While VTC has made an excellent start in developing the framework and demonstrating the methodology, it may be that the organisational home, (i.e. VTC), and limited human resources available, are restricting the full development of a national information system imperative. Policy makers may wish to address this issue when considering future development of labour capital formation strategies.

The testing component of the Programme and Testing Directorate includes the development of the occupational tests necessary to validate the acquisition of identified knowledge and skill prior to receiving certification for classification within an occupational group and specialisation. VTC has received assistance from the EDTS Project to strengthen capacity in this regard. This project component has been well structured and professionally delivered. VTC personnel are now well versed in the process of the development of tests and testing procedures. The absence of clear performance objectives arising from detailed occupational analysis has, however, constrained the scope and rapidity of test development.

The work of the Programme and Testing Directorate in leading the development of new training units is well-structured and the product is a major step forward in addressing relevance and quality issues in curriculum design. Recognising the investment which is being made in the development of a learning resources centre at TDI and also recognising the role of this institute in the professional development of VTC staff, a closer organisational relationship between the two functions would clearly enhance efficiency.



#### 4.5.4 VTC Directorates: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
<b>Buildings Directorate</b>			
New Facilities	P	P	P
Facility Maintenance	P	P	P
<b>Planning Directorate</b>			
Planning Process	N	B	N
Studies	B	B	N
Information and Computing	N	N	N
<b>Programme and Testing Directorate</b>			
Occupational Classification	B	P	B
Occupational Tests	P	P	P
Programme Content Development	P	P	P
<b>Key:</b> P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• Facility development, construction, and maintenance is managed effectively.</li> <li>• Planning activities are process-driven rather than strategically-driven.</li> <li>• Studies are under resourced and need to be integrated with a national labour market information system.</li> <li>• VTC management information systems are inadequate and not sufficiently responsive to support strategic planning and management processes.</li> <li>• Occupational classification is considered to be a national imperative. Questions are raised as to whether this imperative can be satisfied within its present organisational home.</li> <li>• Strong capability is being built in the formulation and administration of occupational tests.</li> <li>• Revised processes for training unit design are contributing to strengthening programme relevance and quality but need integrating with work of TD1.</li> </ul>			

#### 4.6 Cost and Efficiency Review

This section of the report examines the allocation and distribution of VTC resources, from an overall perspective, then from the perspective of the focus centres, and finally from the perspective of individual cost and revenue line items. Overall trends are examined together with differential rates of growth of the respective cost categories.

#### 4.6.1 Overall Budget Review

All data contained in the following analysis was abstracted from VTC Annual Reports or supplied to the study team from VTC Headquarters or individual training centres.

##### 4.6.1.1 Current Status

Table 20 provides a consolidated cost/revenue picture for VTC as a whole for the period 1992 to 1996.

**Table 20**  
**Actual Revenues and Expenditures (Current Price)\***  
**Vocational Training Corporation, 1992 to 1996**

DESCRIPTION	1992	1993	1994	1995	1996
<b>REVENUES</b>					
Self Revenues	473,217	604,806	572,791	640,179	799,393
Government Contribution	2,861,933	3,710,750	4,517,242	4,845,378	4,803,113
Gifts and Other Revenues	576,668	4,007	178,725		540,000
External Loans	768,478	878,341	1,055,638	845,684	515,925
Trust Funds	383,736	22,563	21,534	109,176	297,932
Deficit/Surplus	(38,784)	219,890	(14,390)	84,694	(11,700)
<b>TOTAL REVENUES</b>	<b>5,025,248</b>	<b>5,440,357</b>	<b>6,331,540</b>	<b>6,534,111</b>	<b>6,944,663</b>
<b>EXPENDITURES</b>					
Current Expenditures	2,682,209	3,140,358	3,505,729	3,892,056	4,200,455
Capital Expenditures	1,699,412	2,291,826	2,719,583	2,544,579	2,304,534
Cash Reserve	642,827	7,214	105,706	96,596	439,015
Expenditure Advances	880	959	522	880	659
<b>TOTAL EXPENDITURES</b>	<b>5,025,248</b>	<b>5,440,357</b>	<b>6,331,540</b>	<b>6,534,111</b>	<b>6,944,663</b>

\*All amounts in this section are expressed in Jordanian Dinars

##### 4.6.1.2 Commentary and Findings: Overall Budget Review

Reference to Table 24 shows that during the 1992 to 1996 period, the total increase in student enrollment expressed in FTE/Cs who completed a full year of studies during the fiscal year, amounts to 6.1 percent. During the same period, the overall budget for VTC increased by 38 percent. While recognising there was some parallel growth in the

activity of Institutes, the net result has been a steady escalation in the cost per FTE. This issue is discussed further in Section 4.6.4.

The trend in the percentage of government contribution to the total budget is shown in Table 21.

**Table 21**  
**Government Contribution to VTC**  
**as a Percentage of Total Expenditure**

Year	Percentage
1992	57 %
1993	68 %
1994	71 %
1995	74 %
1996	69 %

This general escalating trend is not sustainable in the context of fiscal restraint within the public sector. During the five year period, VTC has allocated 11,559,943 (JD) in capital funds for the construction of new facilities. This includes new training centres, extensions to training centres, and the construction of TTI. This construction programme compares to an increase in FTE/Cs of 6.1 percent during the five year period. While once again recognising that some capital expenditures are not directly related to training, training is VTC's central purpose, and an appropriate rate of return to the national economy needs to be demonstrated to justify the magnitude of the above expenditures.

Revenues expressed as a percentage of total expenditure for the period are shown in Table 22.

**Table 22**  
**VTC Revenues as a Percentage of**  
**Total Expenditures, 1992 to 1996**

Year	Percentage
1992	9.4 %
1993	11.1 %
1994	9.0 %
1995	9.8 %
1996	11.5 %

The above fluctuating, but slightly positive trend is to be encouraged, but with clarity of purpose. If revenue generation becomes an objective in itself, then production activities in training centres may begin to supersede instructional activities, thereby blurring the distinction and benefits of separating institutional learning and experiential learning.

The above issues need to be considered in the context of an environment where public sector expenditures will not grow, international grant aid is declining, and there are increased demands for rigour and accountability in the expenditure of loan funds. These forces working together will inevitably limit the rate of growth of available resources for VTC and will define the planning environment for the immediate future.

#### **4.6.2 Allocation of Current Account Expenditures**

Current account costs are allocated to salaries, materials, communications, transportation, and other overheads as well as depreciation on buildings and equipment.

##### **4.6.2.1 Current Status**

Current account expenditures allocated to Headquarters, Institutes, and Training Centres during the study period are shown in Table 23 below.

**Table 23**  
**VTC Current Expenditures by**  
**Headquarters, Institutes, and Training Centres**

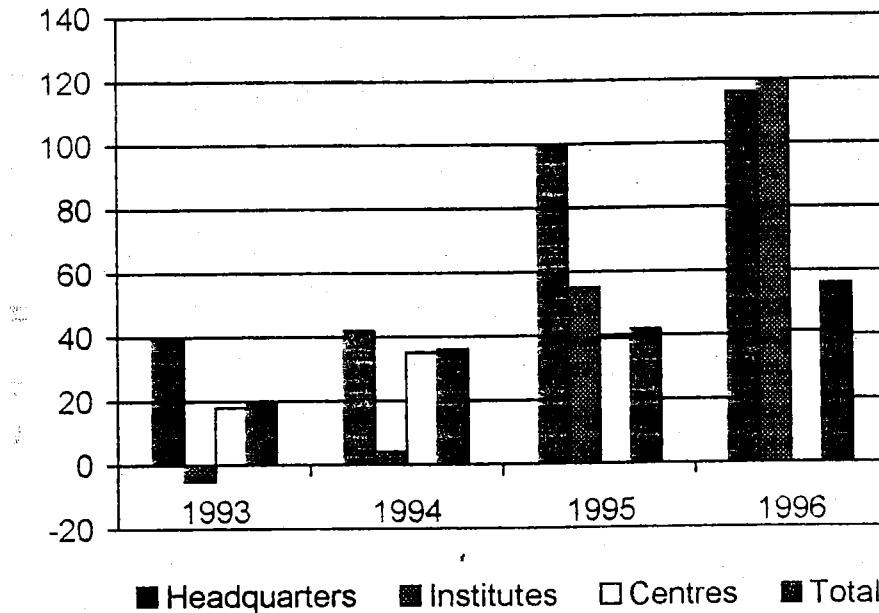
<b>Year</b>	<b>Headquarters</b>	<b>Institutes</b>	<b>Centres</b>
1992	313,688	139,887	2,228,632
1993	439,721	128,484	2,572,153
1994	449,181	149,434	2,907,114
1995	627,753	215,778	3,048,525
1996	665,154	308,590	3,226,711

Source: VTC Planning Directorate

##### **4.6.2.2 Findings and Commentary: Allocation of Current Account Expenditure**

Figure 2 below illustrates percentage growth of expenditure by Headquarters, Institutes, and Training Centres during the study period over the base year of 1992.

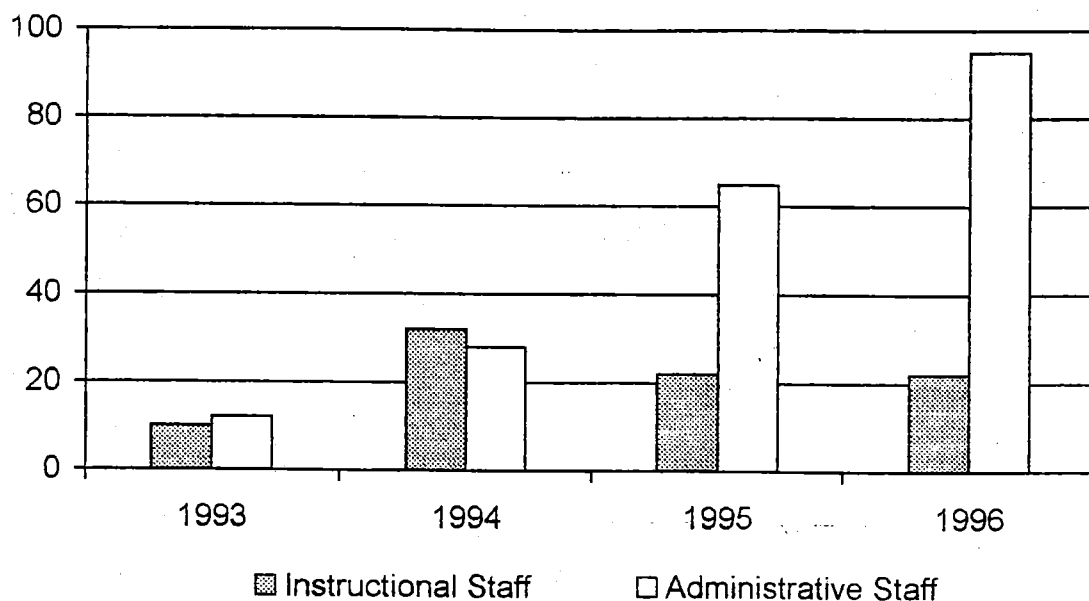
**Figure 2**  
**Percentage Growth in Current Expenditure of the**  
**Respective Elements of VTC Over 1992 Base Year**



Headquarters current expenditures over the period grew by 111 percent, while those of training centres grew by 44 percent. Current account costs of institutes grew by 115 percent which is attributable to TTI becoming operational in 1995/96

It is clearly of concern that headquarters and administrative activities are consuming steadily increasing proportions of the overall budget. This is reflected in the rate of growth of administrative staff appointments as opposed to instructional staff as shown in Figure 2 below.

**Figure 3**  
**Rate of Growth, Instructional Staff**  
**and Administrative Staff Over 1992 Base Year**



#### **4.6.3 Student Performance**

System efficiency as indicated by student performance considers attrition and completion rates, average years to graduate, and in/out/output ratios. The following data examines these issues from the perspective of the whole system and from the focus centres.

##### **4.6.3.1 Current Status**

Table 25 provides a summary of student enrollment and FTE/Cs in the VTC system. Table 24 provides a summary of student enrollment and FTE/Cs for study focus centres.

**Table 24**  
**VTC Student Enrollment in Full Time Equivalents/Completed (FTE/C)**

Year	Apprenticeship				Medium Term Training		Short Training	Total FTE/Cs	% age Change
	First Year A	Second Year B	Third Year C	Graduate D	First Year E	Graduate F	FE/CSE		
1992	3,047	2,828	1,180	1,105	1,208	998	965	5,961	0
1993	3,220	2,319	1,435	1,399	1,099	882	932	5,568	6.7
1994	3,520	2,338	1,647	1,384	1,217	806	986	5,777	(5.1)
1994	3,987	2,607	1,470	1,363	1,271	861	735	6,173	(3.6)
1995	4,944	2,752	2,096	1,085	159	879	660	6,327	6.1

**Note:** The financial year starts in January while the enrollment numbers are for students enrolled in August of the same year. In order to determine costs for students under instruction as of the start of the financial year, the costed FTE/C calculation has been determined by adding columns B+C+F+G. This methodology slightly over estimates FTE/C costs but is reflective of the actual cost of students completing one full year of study and provides a consistent basis for trend analysis.

#### 4.6.3.2 Commentary and Findings: Student Performance

Table 24 indicates a total increase of training activity by the whole VTC system of 6.1 percent in FTE/Cs over the base year following a decline in 1993 and 1994.

Table 25 provides a summary of attrition and completion rates for all apprentice trainees in all centres. Table 26 provides similar information for the focus centres. As discussed in Section 4.3.5.2, the overall levels of attrition are unacceptably high and those of the rural centres raises serious questions of viability.

**Table 25**  
**Apprenticeship Attrition and Completion for all VTC**  
**Students Enrolled in 1992 and 1993 (Percentages)**

<b>Students Enrolled in 1992</b>	Year one to year two attrition	32.9 %
	Year two to year three attrition	29.0 %
	Year three to graduate attrition	3.6 %
	Accumulated Attrition	45.4 %
	Completion Rate	54.6 %
<b>Students Enrolled in 1993</b>	Year one to year two attrition	26.4 %
	Year two to year three attrition	15.7 %
	Year three to graduate attrition	14.5 %
	Accumulated attrition	47.7 %
	Completion rate	52.3 %



**Table 26**  
**Percentage Attrition and Completion Rates**  
**for Students Enrolled in 1992 and 1993 in Study Focus Training Centres**

		Sahab	Marla*	Al Hashimleh	Ein Al Bash	Hakama	Al Mashara	Gor Al Safi	Al Tafleh	Aqaba
Students Enrolled in 1992	Year 1 to Year 2 Attrition	22.8	13.2	29.6	25.9	27.7	16.7	2.3	48.9	37.0
	Year 2 to Year 3 Attrition	16.8	20.0	24.0	32.0	44.3	28.3	32.6	16.7	41.2
	Year 3 to Graduate Attrition	20.3		7.0	26.7	25.3	44.2	17.2	0	40.0
	Accumulated Attrition	48.8	30.6	50.2	63.2	69.9	66.7	45.5	57.5	77.8
	Completion Rate	51.2	69.4	49.8	36.8	30.1	33.3	54.5	42.5	22.2
Students Enrolled in 1993	Year 1 to Year 2 Attrition	37.4	20.8	28.0	25.8	28.4	25.4	27.4	40.5	22.7
	Year 2 to Year 3 Attrition	(10.8)	18.9	2.2	17.0	19.8	6.0	22.2	0	52.9
	Year 3 Graduate Attrition	15.9		34.0	14.5	31.0	12.8	(25.7)	45.5	(37.5)
	Accumulated Attrition	41.6	35.8	53.6	52.6	60.4	38.8	29.0	67.6	50.0
	Completion Rate	58.4	64.2	46.4	47.4	39.6	61.2	71.0	32.4	50.0

\* At Marka VTC, students graduate after completing two years.  
( - ) indicates instances of growth in trainee numbers

As noted previously, the high attrition rates are unsustainable, particularly in the rural training centres. This study was unable to devote the necessary resources to examine the reasons for high attrition rates but the issue should be addressed as a matter of urgency by VTC.

#### 4.6.4 Training Costs

This section of the report addresses the cost of training for the system as a whole and for the study focus centres. No account has been taken for revenues generated by individual centres as this is considered to accrue to the system as a whole and used to offset overall costs. Data is provided in both current and constant prices.

##### 4.6.4.1 Current Status: Training Costs

Tables 27, 28, 29 provide the following information:

- Cost per FTE/C for VTC System
- Cost per Graduate for Focus Centres
- Cost per Graduate for VTC System.

**Table 27**  
**Cost Per full Time Equivalent VTC Trainee\***

Year	FTEs	Total Cost	Cost of Living Index**	Cost/FTE Current Price	Cost/FTE Constant Price
1992	5,961	3,147,481	100	528	528
1993	5,568	3,767,226	103.3	666	645
1994	5,777	4,158,677	107	720	673
1995	6,173	4,645,744	109.5	752.6	687
1996	6,327	5,030,908	116.6	795	682

Source: VTC Planning Directorate

\*Costs include all current expenditures plus capital depreciation

\*\*Cost of Living Index from Central Bank of Jordan

**Table 28**  
**Cost Per Graduate in the Sample Centers Unadjusted for Revenues**

Graduating Year/Center	Cost of Living Index		Sahab	Marfa	Al Hashimleh	Ein Al Basha	Hakama	Al Mashara	Gor Al Sall	Al Taffleh	Aqaba
1994	107	Current Price	1301	1408	1231	1178	1148	4326	2577	689	2344
		Constant Price	1286	1387	1216	1166	1134	4271	2533	675	2312
1995	109.5	Current Price	1345	1634	1061	1765	2116	4913	3050	1453	5529
		Constant Price	1279	1583	1023	1647	1978	4605	2978	1378	5275
1996	116.6	Current Price	1366	1807	1398	1369	2196	2368	2068	3473	3337
		Constant Price	1207	1708	1307	1229	1977	2130	1973	3205	3093

**Table 30**  
**Cost Per VTC Graduate**

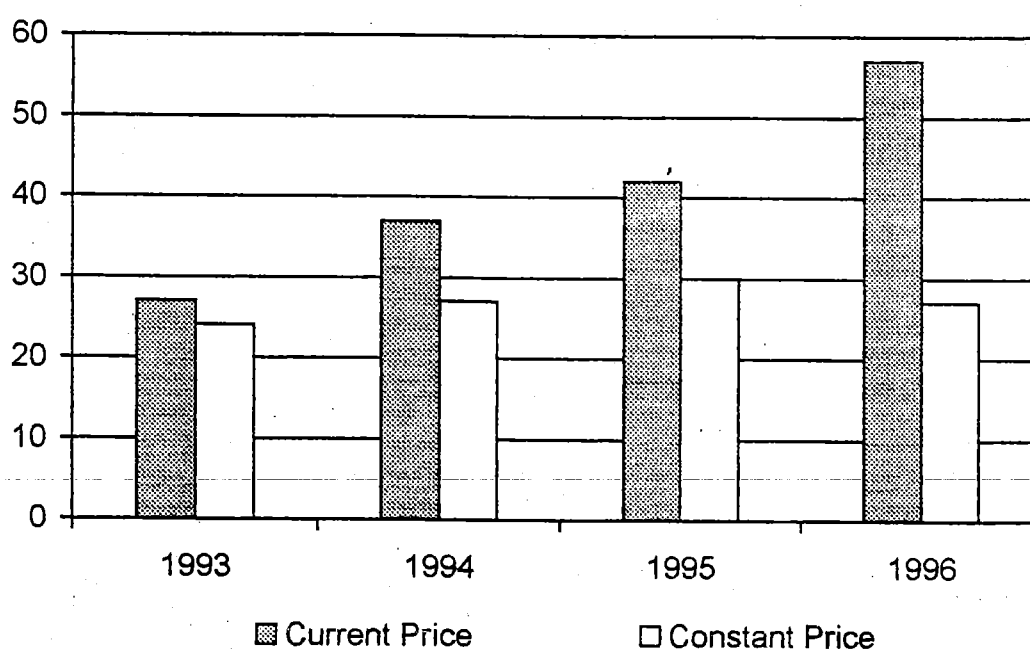
Year	Current Price	Constant Price
1992-1994	1,769	1,748
1993-1995	2,003	1,911
1994-1996	1,879	1,737

All Costs in JD's

#### 4.6.4.2 Findings and Commentary: Training Costs

Data in the foregoing tables show a disturbing trend. Cost per FTE/C has increased each year as illustrated in Figure 4 below.

**Figure 4**  
**Percentage Growth in Cost/FTEC over 1992 Base Year**



For the whole VTC system, a constant cost increase per FTE/C in excess of 30 percent should have an identifiable added value in terms of programme quality and content, student competencies acquired or increased graduation rates. None of these results have been found during the course of the performance review.

In the focus centres, the cost variance per FTE/C is 524 percent between a high enrollment urban centre and a low enrollment rural centre. Clearly there is a social cost associated with serving less populated parts of the Kingdom. There is, nevertheless, a viability threshold in terms of sustainable costs. At some point alternate strategies such as providing residences in consolidated regional centres, or the sharing of facilities between MOE and VTC will need to become a reality.

#### 4.6.5 Staffing Efficiency

Staff workloads for teachers are typically 28 hours per week and those for instructors 40 hours per week. Instructor workloads include supervision of apprentices while training in the workplace.

Table 30 indicates the ratio of instructional staff per FTE/E. Increasing efficiencies are noted in this area. Instructor/trainee ratios are fully consistent with international norms for vocational training.

**Table 30**  
**Ratios of FTE/Es to Teachers and Instructors at VTCs**

Year	No. FTE/Es	No. Teachers and Instructors	Ratio of FTEs to Teaching Staff
1992	8,048	478	16.8 : 1
1993	7,570	521	14.5 : 1
1994	7,889	612	12.9 : 1
1995	8,620	562	15.3 : 1
1996	9,887	550	17.9 : 1

\*FTEs in short term courses are excluded

\*\*Teachers and instructors in centres offering only short term courses, OSHI, and TDI are excluded.

Other staffing efficiency questions are noted in Section 4.6.2.2 where it is observed that the rate of growth of headquarters administrative staff significantly exceeds that of instructional staff.

#### 4.6.6 Capital Expenditure and Facility Utilisation

This section examines capital investment patterns during the study period and provides and assessment of available workshops, classrooms and libraries against enrollment levels and the respective ILO standards.

##### 4.6.6.1 Current Status

Capital expenditures during the study period are as shown in Table 31 below.

**Table 31**  
**VTC Capital Expenditures, 1992 to 1996**

Year	Capital Expenditures
1992	1,699,412
1993	2,291,826
1994	2,719,583
1995	2,544,579
1996	2,304,534

These expenditures were committed to the following new construction activities:

- Construction of new centres at
  - Al Tafeleh
  - Irbid (female training centre)
  - Al Hashimieh (driver training centre)
  - Test and Training Institute.
- Construction of extensions to existing training centres at
  - Middle Ghor
  - Ein el Basha
  - Aqaba (hotel school)
  - Al Quesmah
  - Yajooz
  - Al Ramtha
  - Al Ruseifa.

#### 4.6.7 Findings and Commentary: Capital Expenditure and Facility Utilisation

A summary of workshops, classrooms, and libraries currently available in the VTC system together with enrollment levels expressed in FTE/Es are as shown in Table 32.

**Table 32**  
**Summary of Workshops and Instructional Space (square metres)**  
**in VTC Centres**

Centres	Workshops	Classrooms	Libraries	FTE/Es*
Al-Quesmeh	1,500	552	225	767
Marka	1,420	288		270
Yajooz	3,539	770	100	1,185
Al-Hashimieh	3,653	270	300	1,085
Ein-El-Basha	4,180	592	48	1,460
Middle Ghor	384	48	48	172
Hakama	3,005	678	148	823
Al-Mashra	768	175	145	323
Al-Ramtha	1,234	147	66	190
Irbid (female)	1,024		147	131
Ghor-Al -Safi	1,430	135	77	169
Al-Tafleh	1,230	228	63	130
Ma'an	240	50		63
Aqaba	1,050	112	48	84
Sahab	2,723	339	60	1,019
Testing and Training Institute	3,480	180		341
<b>Total</b>	<b>441,860</b>	<b>4,555</b>	<b>1,375</b>	<b>8,212</b>

\*FTE/Es are counted for centres operated by VTC only, for 1996.

In order to divide students into groups of 10 to 12 for practical instruction, the trainee timetable includes eight hours per week dedicated to workshops. Assuming that workshops are available for instruction six days per week, eight hours per day, (48 hours), one workshop should be able to accommodate the training requirements of six FTE/E's per week.

On this basis, and allowing for a 70 percent efficiency factor, the workshop space available within the whole VTC system amounts to 22.6 square metres per FTE/E. This compares to an ILO standard of 10 to 12 square metres per student. On a similar basis,

available classroom space amounts to 2.5 square metres per FTE/E compared to an ILO standard of 1.5 to 1.75 square metres.

This excess capacity reflects the low level of enrollment and space utilisation in the rural training centres and further calls into question the policy objectives and programming approach to the delivery of vocational training in the areas of low population density and graduate demand.

#### 4.6.8 Cost and Efficiency: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Budget Growth			N
Budget Distribution			N
Revenue Growth			P
Student Performance			N
FTE Costs			N
Graduate Costs			N
Staff Utilisation			P
Facility Utilisation			N
Key: P = Positive indicators for both policy and practice B = Sound base for development, but requires investment N = Needs fundamental review of policy and practice			
<b>Comments:</b> <ul style="list-style-type: none"> <li>• Overall budget growth is exceeding growth in training activity.</li> <li>• Revenues generated by training centres and institutes are increasing. Care needs to be taken to ensure consistency of revenue generating activities with training objectives.</li> <li>• Current account allocations to Headquarters are growing three times as fast as allocations to training centres.</li> <li>• Recruitment of administrative staff grew by 98 percent during the survey period, while instructional staff numbers increased by 21 percent.</li> <li>• Student attrition rates of 47.7 percent for the system as a whole and a range of 30.6 percent to 77.8 percent for focus centres is unsustainable.</li> <li>• Cost per FTE/C in focus centres have a variance of 524 percent between rural and urban centres.</li> <li>• Staff/student ratios are low, but improving</li> <li>• Facility utilisation is/vers are well below international norms.</li> </ul>			



## 4.7 Performance Summary

This section of the report synthesises the analysis outlined in previous paragraphs and identifies key areas for attention.

VTC is operating in a complex external environment which is charged with frequently competing objectives. The national agenda has, however, determined that all TVET providers must give primacy to the goals of relevance, quality, and efficiency in terms of both current operations and future investments.

### 4.7.1 VTC Training Activities

VTC's central purpose is to lead the design and delivery of training for those skilled and semi-skilled workers required for Jordan's current and future economic development. The following comments provide a summary of training programme issues:

- The main thrust of VTC's programming, apprentice training was found to be appropriately structured in its combination of institutional and on-the-job training.
- The study identifies, however, that the overall programme framework in terms of specializations offered, is static and fragmented and leads trainees into narrow job-specific areas which is inconsistent with global direction in school-to-work training strategies.
- The training programmes and related learning resource materials were found to be dated and of elementary content. Recent initiatives to redevelop training units are well founded.
- The overall staff profile is weak. Large investments of both internal and external resources have been made in staff development. A return on that investment has yet to be seen in terms of improved quality of programs. A strategic initiative to capture the professional development benefits and focus them on development of the instructional programme is required.
- Facilities and equipment are adequate for teaching basic skills. Additional hand tools are required, and more sophisticated equipment will be necessary for teaching advanced skills. Equipment maintenance is a challenge but is being addressed to the extent possible. Workshop safety practices leave much to be desired.

- Industry linkages were found to be very positive overall. Further benefits are likely to arise from a consolidation of the programme framework and the adoption of multi-skilling as a training programme objective.
- Student recruitment practices by VTC are positively focussed and bring good results. The practice of channelling students by MOE into VTC programmes results in the placement of less motivated students into apprenticeship training. Student attrition rates are unacceptably high.
- Student and graduates both regard their training experience in the centres positively. All recognise, however, the need for staff, programme and equipment upgrading. On-the-job training and subsequent employment experience is much more variable and dependent upon the characteristics of the different occupational sectors.

#### 4.7.2 VTC Training Activities: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Training Programme Structure	P	P	P
Training Programme Framework	N	N	N
Programme Content and Learning Resources	N	N	N
Staff Profile	B	B	P
Facilities and Equipment	B	B	
Industry Linkages	P	P	P
Students and Graduates	B	B	N
Key P = Positive indicators for both policy and practice. B = Sound base for development, but requires investment. N = Needs fundamental review of policy and practices.			
<b>Issues Central to Training Programme Renewal</b> <ul style="list-style-type: none"> <li>• Comprehensive review and consolidation of the programme framework.</li> <li>• Rapid investment of programme development and the development of learning resource materials.</li> <li>• Formulation of a focussed staff development strategy to parallel and support programme renewal.</li> </ul>			

#### 4.7.3 VTC Institutes

In addition to the training activities for labour force development, VTC operates three specialised Institutes which serve internal development objectives while also providing services on a cost recovery basis to external clients. The following comments summarise the findings of the study team with respect to the work of the Institutes.

- The Training and Development Institute (TDI) is developing a capability which will contribute to further professionalism VTC's of curriculum development/learning resource material capability, as well as the teaching abilities of instructional staff. The Institute maintains an appropriate external orientation in marketing its services. The capability developed in the Institute should be viewed as a national resource in training personnel from all institutions or agencies in the effective formulation delivery of adult learning programmes.
- The Testing and Training Institute (TTI) was established to lead the formulation and administration of a national testing and certification programme, as well as providing a resource for the development of advanced skills training and VTC instructor professional development. Based on an internal decision, lead responsibility for test formulation has been retained by the Programme and Testing Directorate with TTI being assigned responsibility for the administration of tests similar to other training centres. TTI has, in fact, essentially become another training centre and has yet to develop other dimensions of its mandate.
- The Occupational Safety and Health Institute (OSSHI) is the oldest and most well established of VTC's institutes. It is performing a valuable and much needed service to Jordan's industrial development. A review of OSHI's mandate and organizational base may be warranted if the Institute is to be seen as leading the national agenda in occupational health and safety issues. OSHI's internal activities relating to the maintenance of safety practices within training centres is not effective due to lack of clarity in responsibility/accountability issues.

#### 4.7.3.1

#### VTC Institutes: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
<b>Training and Development Institute</b>			
Mandate	P	P	B
Internal Services	P	P	B
External Services	P	P	B
<b>Testing and Training Institute</b>			
Mandate	B	B	B
Internal Services	B	B	B
External Services	N	N	N
<b>Occupational Safety and Health Institute</b>			
Mandate	P	P	B
Internal Services	N	N	N
External Services	P	P	B
<b>Key</b> P = Positive indicators for both policy and practice. B = Sound base for development, but requires investment. N = Needs fundamental review of policy and practices.			
<b>Issues</b> <ul style="list-style-type: none"> <li>Coordinating mechanisms with related tasks in other Directorates need to be strengthened in all the institutes.</li> <li>TTI needs to develop its capacity and programming, in concert with the Planning Directorate and Training Directorate to formulate and deliver skills upgrading of instructional staff.</li> <li>The OSHI mandate warrants revisiting in light of national occupational health and safety needs.</li> </ul>			

#### 4.7.4 VTC Directorates

VTC Headquarters Directorates provide technical and support services essential to the work of the Corporation. The following comments summarise the findings of the study team with respect to the activities of the Buildings Directorate, Programme and Testing Directorate, and Planning Directorate.

- The Building Directorate provides effective support to all phases of new construction and maintenance of Training Centre facilities.
- The Planning Directorate is process-oriented as opposed to being focussed on the definition and planning of strategic developmental objectives. Information management is inadequate. Studies necessary for training programme evaluation and future directions are under resourced.
- The Programme and Testing Directorate currently undertakes activities, such as occupational classification which comprise the foundational matrix for labour market monitoring and subsequent national policy development. the study team recommends a reassessment of the organizational home of this function. Other activities of the Directorate used to be integrated with the work of TDI.

#### **4.7.5 VTC Management**

In 1995 VTC initiated a structural and management reorganization. The following comments summarise the findings of the study team in terms of VTC's management practices and its ability to efficiently deploy human, physical and financial resources in pursuit of strategic development objectives:

- During the early 1990's, VTC clearly outgrew its original functional organizational structure and a new structure was required to achieve increased efficiency. This resulted in the introduction of 1995 of a modified matrix organizational structure and an intent to adopt a team approach to management issues.
- More than one year of experience has been gained with the new structure and an evaluation of its utility needs to be undertaken. The study team found a hierarchical culture to prevail within the management, as well as competition, which derives from an absence of prioritised goals.
- The central management issue is an identified need to move from a process approach to planning and management of a strategic approach.

#### 4.7.5.1 VTC Management: Key Performance Indicators

Indicator	Relevance	Quality	Efficiency
Goals Setting	N	N	N
Strategic Planning	N	N	N
Communication	B	B	B
Resource Allocation	B	B	B
Performance Monitoring	N	N	N
Key P = Positive indicators for both policy and practice. B = Sound base for development, but requires investment. N = Needs fundamental review of policy and practices.			
<b>Key Issues</b> <ul style="list-style-type: none"> <li>VTC has an urgent need to develop and implement strategic planning and strategic management processes.</li> </ul>			

#### 4.7.6 VTC Cost and Efficiency

During the five year period from 1992 to 1996, VTCs budget grew from JD5.025 million to JD6.944 million. The following comments summarize the findings of the study team in terms of the cost and efficiency of operations during this period:

- During the survey period, the total number of students completing a full year of study grew by 6.1% as opposed to a budget growth of 38.1%.
- Current account allocations to Headquarters are growing three times as fast as allocations to training centres.
- Recruitment of administrative staff has grown at four times the rate of recruitment of instructional staff.
- Student attrition rates are high and unsustainable in rural training centres.
- Staff/student rates are low but improving.
- Average facility utilisation levels are below international norms.

- Cash and efficiency data reflects the need for more focussed planning against identified need, and established decision-making criteria.

#### **4.7.7 Conclusion**

It is evident that during the course of the past five years, VTC has focussed its leadership, management and fiscal resources on quantitative expansion as opposed to qualitative improvement of programming. The policy directions articulated by government suggest that this trend should now be reversed.

Recognising that VTC is only one player within the national labour capital formation system, and recognizing that any future action plan should be formulated within the context of systemic changes as a whole, recommendations for follow-up action are discussed in the final chapter of the report.

## **5.0 Vocational Education**

The general policy objective for the comprehensive and applied streams of vocational education in Jordan is to prepare a qualified and trained labour force in the basic occupational levels and to prepare students who have appropriate interests and abilities to pursue higher applied or professional level education.

Design and delivery of the vocational component of the comprehensive secondary stream is the responsibility of the General Directorate of Vocational Education of the Ministry of Education.

In July, 1996, NCHRD commissioned a study entitled "Secondary Vocational Comprehensive Education in Jordan - An Evaluative Study" prepared by Dr. Suleman Rihani, et. al., of the University of Jordan. This study thoroughly documents the academic and socio-economic profile of students; profiles the teaching and administrative staff; outlines the available facilities and equipment; provides information on graduate employment experience, as well as documenting employers' perspectives on graduate performance in the workplace.

The section of the report which follows, restates the performance objectives for a student enrolled in the secondary vocational stream and outlines the study plan for these students. The report then draws extensively on the evaluative study undertaken by the team from the University of Jordan to summarise findings in key areas. The section concludes with a commentary on the achievability of the policy objectives and a perceived need to further differentiate between vocational education and vocational training.

### **5.1 Vocational Comprehensive Education: Current Status**

The stated primary intent of the vocational comprehensive programme is to prepare individuals for employment as "craftsmen" following graduation and after having completed a suitable period of workplace experience.

The objectives and competencies to be achieved during the vocational education programme are all those required of students in the applied stream plus additional competencies. These are stated by MOE for the Industrial Branch of specialisation as follows.



### 5.1.1 Objectives

#### **"Third Broadline for Secondary Industrial Education (Comprehensive and Applied) - Objectives"**

"The secondary industrial education (Comprehensive and Applied) seeks to prepare qualified and trained labour force in the basic occupational levels, in the industrial areas and crafts, and prepare students who have the appropriate interest and abilities to pursue higher applied and engineering education. It also aims at realizing the following objectives:

1. Preparing craftsmen and skilled workers for all industrial areas and crafts, and providing them with the specialized vocational, cultural and scientific experiences, in the light of student abilities and inclinations on one hand, and in response to present and future societal needs and development plans on the other.
2. Providing students with the concepts, theoretical information and practical and applied skills so that close complementation between theory and practice and between work and education are realized.
3. Providing students with the ability to perform industrial operations and crafts according to technical rules and criteria, preparing them to deal with and respond to modern technology, and developing their readiness to improve it.
4. Equipping students with the appropriate behavioural habits concerning the exercise of industrial crafts and vocations, such as: accuracy, reduction of waste, application of the principles of economy and safety at work and the conservation of the environment.
5. Developing in students sound attitudes and values, among which are respect for work, team-work spirit and individual creativity.
6. Developing student skills and creative capacities and preparing him for active participation and integration in the world of work and production.
7. Participating in raising the vocational level of craftsmen and vocational workers in all industrial production sectors and crafts.

8. Providing students who have the appropriate interests and abilities with an opportunity to attain the pre-requisites for entry into higher educational institutions.”

The study plan for the Industrial Branch is shown in Table 33. The study plan for other branches is provided in Annex 18.

### **5.1.2 Competencies**

#### **“A. Vocational Competencies of Graduates of the Secondary Industrial Applied Education**

1. Reading diagrams and implementation specifications.
2. Reading manuals for constructing, operating and maintaining equipment, tools and machines, and applying the production companies recommendations.
3. Choosing the manual work tools; their use and maintenance.
4. Choosing the measurement and testing equipment; their use and servicing.
5. Operating machines and tools and their servicing.
6. Implementing preventative maintenance programmes for the equipment, tools and machines according to instructions.
7. Implementing curative maintenance procedures for the equipment, tools and machines according to instructions.
8. Performing tasks related to unscrewing, constructing, joining and fixing operations.
9. Preparing work places; moving materials, equipment, and tools, their transportation and storage.
10. Receiving work permits, their implementation according to specifications and their documentation.

11. Observing the operational condition of equipment by reading measurement, protection and control equipment, recording it and informing on any suspected malfunctioning that occurs.
12. Implementing the principles and instructions of vocational safety and health.

Writing reports related to completed work and work in progress and submitting them to the supervisor."

**"B. Vocational Competencies for Graduates of Secondary Industrial Comprehensive Education**

In addition to the vocational competencies mentioned in Section A above, the vocational competencies for this type include:

1. Preparation of detailed drawings.
2. Estimation of the raw materials needed for implementing work and follow up to ensure their provision and storage.
3. Participation in cost estimates and in the timing of the implementation process.
4. Follow up of preventative maintenance programmes implementation according to schedule.
5. Examination and diagnosis of main technical faults and deciding on curative maintenance procedures.
6. Matching the accomplished tasks with the approved specifications.
7. Follow up of work performance progress in the light of implementation programmes.
8. Familiarity with the characteristics and specifications of materials used in production.
9. Implementing the principles and regulations of vocational safety and health.
10. Distributing tasks on employees and upgrading employees' competencies/skills.

11. Participation in implementing delivery and pre-operation tests for equipment and tools.
12. Ensuring that equipment and machinery are ready for operation."

### 5.1.3 Study Plan

The study plan for the Secondary Industrial Branch of the Comprehensive Stream is as shown below.

**Table 33**  
**The Study Plan for the Secondary Comprehensive/Vocational Stream**  
**(Industrial Branch)**

Study Subjects		Number of Weekly Class Periods	
		1st Secondary	2nd Secondary
Common Core-General Cultural Subjects	Islamic Education	3	3
	Arabic Language (ordinary level)	3	3
	English Language (ordinary level)	3	3
	Scientific Education	3	
	Social and National Studies		3
<b>Total</b>		<b>12</b>	<b>12</b>
Basic Sciences	Mathematics	2	2
	Physics	2	2
	Chemistry	2	2
<b>Total</b>		<b>6</b>	<b>4</b>
Vocational Sciences	Special Industrial Sciences (I)	3	4
	Industrial Drawing (ii)	3	4
	Industrial Safety Administration	2	
<b>Total</b>		<b>8</b>	<b>8</b>
Total number of theoretical class periods per week		26	24
Practical Training (iii)		16	16
Free Subjects (Optional) (iv)		2	2
Additional Mathematics		2	2
Additional Physics		2	2

- (i) The curricula for the special industrial sciences subject (as in the practical training), vary according to the different specialisations listed in Annex 18-6 and others, and includes: a curriculum for special industrial measurements and accounts as well as sciences related to the particular specialisation.
- (ii) The industrial drawing curricula for the second secondary industrial class vary according to the different industrial vocational groups as clarified in Annex 18-6.
- (iii) The students who succeed in the first secondary class undergo summer practical training in the industrial school and in workplaces.
- (iv) As in other specialisations.

During 1996, some 25,000 students were enrolled in the respective branches of vocational education throughout the Kingdom as shown in Table 34.

**Table 34**  
**Number of Vocational Education Students in the Various Vocational Branches**  
**Number of Teachers (Male and Female)**  
**Number of Vocational Education Sites in 1996**

Branch	1st Sec	2nd Sec	Total Students	Teachers (Male)	Teachers (Female)	Total Teachers	No. of Vocational Education Sites
Industrial	4,040	3,808	7,848	523		523	29
Agricultural	413	434	847	80	2	82	12
Commercial	5,105	4,693	9,798	169	241	410	76
Hotelery	440	330	770	40	1	41	9
Nursing	936	1,012	1,948	28	145	173	40
Home Economics	2,248	1,688	3,936		274	274	48
Total	13,182	11,965	25,147	840	663	1,503	214

Source MOE

## 5.2 Vocational Comprehensive Education, Previous Findings

The following section draws upon the study "Secondary Vocational Comprehensive Education in Jordan - An Evaluative Study" to profile some key characteristics of the work of MOE.

The student body enrolled in vocational education programmes is currently comprised of approximately 65 percent males and 35 percent females. The average age of enrollment is 16 + years.

Ranking of students in the basic stage of education prior to enrollment in vocational secondary is as shown in Table 35. Actual student averages are shown in Table 36.

**Table 35**  
**Percentages for Student Categories According to**  
**Their Ranks in the Basic Stage Education**

	Male		Female		Total	
	% age	Cumulative % age	% age	Cumulative % age	% age	Cumulative % age
A In the top 25% of students Very good to excellent	20.4	20.4	22.3	22.3	21.0	21.0
B In the second 25% of students.—Good	46.3.4	66.8	40.8	63.1	44.4	65.5
C In the third 25% of students Average	29.7	96.4	36.1	99.2	31.9	97.4
D In the fourth 25% of students Weak	3.6	100	0.8	100	2.6	100

Source: NCHRD Study/University of Jordan

**Table 36**  
**Percentages for Categories of Student Averages According to Which**  
**They Were Enrolled in Vocational Secondary Education (M & F)**

	Male		Female		Total	
	% age	Cumulative % age	% age	Cumulative % age	% age	Cumulative % age
A - Less than 50	1.8	1.8	.8	.8	1.4	1.4
B - 50 to 54	6.6	8.4	8.3	9.1	7.2	8.6
C - 55 to 59	14.1	22.5	15.8	24.9	14.7	23.3
D - 60 to 64	23.2	45.7	19.2	44.0	21.8	45.1
E - 65 to 69	18.7	64.3	17.1	61.1	18.1	63.2
F - 70 to 74	16.3	80.7	13.7	74.9	15.4	78.7
G- 75 to 79	10.2	90.8	10.6	85.5	10.3	89.0
H - 80 and over	9.2	100	14.5	100	11.0	100

Source NCHRD Study/University of Jordan

During the University of Jordan "Evaluation Study" students were surveyed on their aspirations upon graduation. Results of this survey are shown in Table 37.

**Table 37**  
**Percentages and Ordering of Students' Ambitions (M & F)**  
**After Finishing Secondary School**

	Male		Female		Total	
	%age	Rank	%age	Rank	%age	Rank
A - Direct entry to labour market	19.7	3	22.5	3	20.7	3
B - Start a small business related to educational specialisation	9.0	5	5.5	5	7.8	5
C - Enter a community college to continue in specialisation	20.1	2	30.5	2	23.7	2
D - Enter a university to continue in specialisation	39.9	1	30.5	1	36.6	1
E - Enter a community college or university to study a different specialisation	11.3	4	11.0	4	11.2	4

Source: NCHRD Study/University of Jordan

It is of interest to note that 71.3 percent of the students surveyed indicated a desire to pursue post-secondary education. While this situation is reflective of the high value placed on higher education in Jordan, it is also indicative of a student body not enthusiastically inclined towards practising the vocations for which they are trained.

Teachers in the vocational education programme are well qualified academically. The staff profiles of vocational teachers is as shown in Table 38.

**Table 38**  
**Academic and Pedagogical Characteristics of**  
**Vocational Education Teachers**

#	Description	Agriculture	Industrial	Commercial	Hotel	Nursing	Total
<b>1.</b>	<b>Academic Qualifications</b>						
	1. Community College Diploma		22	57	5	1	35
	2. Bachelors	2	12	31		29	74
	3. Masters	3					3
	<b>Total</b>	<b>5</b>	<b>34</b>	<b>38</b>	<b>5</b>	<b>30</b>	<b>112</b>
<b>2.</b>	<b>Country of Education</b>						
	1. Jordanian Universities	2	15	30	4	28	79
	2. Arab Universities	2	7	6		2	17
	3. Foreign Universities	1	11	1	1		14
	<b>Total</b>	<b>5</b>	<b>33</b>	<b>37</b>	<b>5</b>	<b>30</b>	<b>110</b>
<b>3.</b>	<b>Pedagogical Qualifications</b>						
	1. Community College Diploma	2					2
	2. Bachelors	1		5			6
	3. Masters		3				3
	<b>Total</b>	<b>3</b>		<b>8</b>			<b>11</b>
<b>4.</b>	<b>Source of Pedagogical Qualification</b>						
	1. Jordanian Universities	3	6				9
	2. Arab Universities		1				1
	3. Foreign Universities		1				1
	<b>Total</b>	<b>3</b>	<b>8</b>				<b>11</b>

Source: NCHRD Study/University of Jordan

The Evaluative Study undertakes an extensive survey of staff knowledge and understanding of the vocational programme objectives as well as an assessment of the available facilities and equipment. The results indicate a broadly based understanding of the programme intent. Gaps in instructional equipment were identified in computing and audio visual facilities. Staff expressed a low level of satisfaction with office space, class rooms, and support spaces. More than 60 percent felt that workshops were adequate in size but lacking in many aspects of tools, machinery, and instructional



models necessary for a sound vocational education programme. They identified lack of equipment maintenance as a major deficiency.

Graduates have difficulty finding employment for the following reasons.

**Table 39**  
**Difficulties Faced by Graduates in Obtaining Employment**

	General	Commercial	Industrial	Hotel	Agriculture	Nursing
Scarcity of jobs	51.5%	50.0%	52.2%	100%	100%	50.0%
Low Salaries	36.8%	40.9%	26.1%	100%	100%	45.5%
Poor Preparation for work requirements	5.9%	9.1%	100%	100%	100%	9.1%
Reluctance to work in government departments	4.4 %	4.5%	100%	100%	100%	100%

Source: NCHRD Study/University of Jordan

Table 40 shows the length of time taken by students to find employment after graduation.

**Table 40**  
**Length of Job Search for Vocational School Graduates**

	Less than 3 months	3 to 6 months	One year	More than one year
General	52.2%	9.17%	9.17%	9.11%
Commercial	40.9%	7.22%	3.27%	1.9%
Industrial	78.2%	1.9%	6.13%	1.9%
Agricultural				100%
Hotelery	100%			
Nursing	45.5%	7.22%	6.13%	2.18%

Source: HCHRD Study/University of Jordan

Salaries earned by the Vocational School graduates surveyed are shown in Table 41.

**Table 41**  
**Monthly Salaries Earned by Vocational School Graduates on Employment**

Specialisation	Less than J.D. 100	J.D. 100 -150	J.D. 150-200
General	64.7%	26.5%	8.8%
Commercial	59.1%	31.8%	9.1%
Industrial	56.5%	26.1%	17.4%
Hotelery		100%	
Agricultural		100%	
Nursing	81.8%	18.2%	

Source: HCHRD Study/University of Jordan

Graduate perceptions of the contribution and relevance of their vocational education studies to job performance are shown in Tables 42 and 43.

**Table 42**  
**Contribution of Vocational Subjects studied to**  
**Graduates' Level of Job Performance**

Subject	General	Commercial	Industrial	Agriculture	Hotel	Nursing
Cultural Subjects	1.98	1.95	2.04	1.92	2.00	2.00
Specialised Subjects	2.67	2.36	2.73	2.21	3.00	2.90
Science Support Subjects	1.27	2.00	2.39	2.11	2.00	2.40

Source: HCHRD Study/University

**Table 43**  
**Contribution of Practical Training to**  
**Graduate Job Efficiency**

Training Aspects	General	Commercial	Industrial	Hotel	Agriculture	Nursing
Content and Details	2.47	2.00	2.56	2.11	2.11	2.59
Up-to-Date Equipment Used	1.69	2.58	2.04	2.05	2.17	2.23
Competency of Trainers	2.52	1.55	2.52	2.04	1.85	2.76
Time Allotted in Programme	2.20	2.25	2.47	2.45	2.05	2.05
Relevancy to Actual Work	2.41	2.05	2.65	2.02	2.13	2.52
Availability of Raw Materials	2.20	1.90	2.34	2.24	1.87	2.61

Source: NCHRD Study/University of Jordan

Employer satisfaction levels with various aspects of vocational graduates work performance is shown in Table 44.

**Table 44**  
**Mean of Employer Satisfaction with Graduates Employed**  
**(Out of 3)**

	Commercial	Industrial	Agriculture	Hotel	Nursing	General
Cultural level	2.13	2.00	2.01	1.5	2.00	2.04
Scientific level	2.20	2.18	2.05	1.5	2.07	2.18
Training level	2.18	2.33	1.99	2.5	2.14	2.23
Adaptability to working conditions	2.47	2.13	2.15	2.5	2.31	2.39
Desire to increase vocational efficiency	2.47	2.56	2.23	2.5	2.42	2.49
Ability to increase vocational efficiency	2.54	2.53	2.31	2.5	2.14	2.43
Ability to deal with superiors	2.47	2.13	2.16	2.5	2.50	2.43
Ability to deal with colleagues	2.61	2.12	2.21	3.0	2.35	2.42
Ability to deal with subordinates	2.36	2.20	2.19	3.0	2.30	2.33
Ability to deal with the public	2.78	2.26	2.27	3.0	2.21	2.50
Desire to attend training courses for skills upgrading	2.68	2.18	2.25	3.0	2.14	2.41
Adaptability to new machinery	2.31	2.12	2.14	2.5	1.93	2.17
Adherence to working hours	2.73	2.43	2.33	3.0	2.71	2.65
Dedication to work	2.78	2.56	2.61	3.0	2.64	2.69
Accuracy in work	2.69	2.43	2.14	2.5	2.14	2.47
Adherence to regulations	2.73	2.37	2.11	3.0	2.35	2.55
Stability at work	2.43	2.31	2.16	3.0	2.23	2.37

Source: HCHRD Study/University of Jordan

### 5.3 Commentary

The foregoing analysis suggests that the vocational education programme is achieving a measure of success in preparing the less academically oriented secondary student for entry level employment. Recognising that the education reform process is ongoing in Jordan, and also recognising the rapidity of change in the approaches to vocational education in response to an increasingly fluid global labour market, the study team suggests that the relevance and efficiency of current directions can be questioned as to:

- the vocational premise or intent upon which the model is founded
- the achievability of the educational objectives
- the sustainability of the cost of the model
- the degree to which a clear differentiation between the applied and the comprehensive streams has been achieved.

The intent of vocational comprehensive secondary programme is that its graduates fit in the occupational pyramid after gaining suitable experience, at the "craftsman" level. A review of job functions in many sectors, both in Jordan and internationally, shows that the sharply defined horizontal divisions which traditionally characterised classification of workers, has decreasing relevance in the labour market. In particular, few industries, manufacturers, service providers, resource sectors, or other employers would today be able to identify a particular band of employees under the collective heading of "craftsmen". This term, coined in the days of Crafts and Guilds, is not considered to be a relevant description of the flexible, multi-skilled, life long learning employee of contemporary industry.

If craftsmen are characterised as MOE describes them, as skilled workers with increased technical abilities as well as having responsibilities to train and supervise other skilled workers, (i.e., a lead hand or foreman in traditional terminology), the question of the achievability of training this category of employee through a secondary school programme must be raised.

A review of the competency listings shown in Section 5.0 indicates that the vocational secondary graduate should have all of the competencies of the applied graduate, i.e., skilled worker, plus the ability to:

- prepare detailed drawings
- prepare material and cost estimates
- undertake preventative maintenance of machinery and equipment
- maintain production schedules
- assign production tasks
- undertake delivery and commissioning of new equipment.

The following table illustrates a comparison of the structure of the applied and vocational secondary streams in terms of hours dedicated to the acquisition of knowledge and skills.

Table 45  
Comparison of VTC and MOE Study Plans

Subject	VTC		MOE	
	Hours/week	Hrs. in 2 years	Hours/week	Hrs. In 2 years
General Culture	7	560	17	1,224
Vocational Science	4	320	8	512
Practical Training	8	640	16	1,024
On-the-Job Training	24	1,920		160

Source: NCHRD Study/University of Jordan

It is apparent from the foregoing that the MOE two year programme dedicated 60 percent more time to vocational science than does the VTC programme. The VTC two year programme dedicates 116 percent more time to the acquisition of practical skills than does the MOE programme.

It is self-evident that within this programme framework, it is not possible for the MOE graduate to acquire an equivalent level of applied vocational competencies to the VTC graduate. Similarly, a review of the MOE programme content and structure shows that there are neither in-school learning activities nor on-the-job experiential activities whereby the vocational secondary graduate may acquire the incremental competencies stated in the policy objectives.

Clearly, under the current programme structure, graduates of the vocational secondary education programme are equipped to enter the labour market with employability skills and occupational competencies only at the semi-skilled level. This fact is emphasised by the entry level salaries for graduates from the two streams. Many, nevertheless, have academic skills and abilities to enable them to develop more rapidly than their counterparts in the applied stream, and ultimately to achieve the higher level for which they are destined by the education system. Currently, however, there are no mechanisms to facilitate the acquisition of advanced occupational skills and accreditation by the vocational secondary graduate other than to enter a VTC apprenticeship programme.

To remedy this situation, an articulation mechanism might be considered to provide a pathway for the comprehensive vocational secondary graduates to acquire advanced trade skills, employment experience, and the related industrial practice skills that are necessary for employment at the skilled worker or supervisory level.

In the context of programme differentiation between the two education streams, there are many commonalities in the specialisations offered. It is clear that many of the vocational secondary specialisations are narrow, occupation-specific, terminal in nature, and identical to those offered under the applied stream.

Issues for consideration are similar to those discussed earlier in the report relating to effectiveness of occupation-specific training versus common core training and the cost/efficiency questions associated with the continuous technological upgrading of job specific skills.

Finally, it is questioned whether the stated goal of enrolling 50 percent of males and 35 percent of females in vocational education and training will appropriately serve the needs of the individual, the needs of the labour market, or the national economic development objectives if the suite of programmes offered continues to train students for occupations which currently comprise less than 20 percent of the work force.

The analysis of school-to-work policies shown in Annex 7 indicates that many other jurisdictions have adopted an expanded concept of "vocation" which recognises that the work force is comprised of professional vocations, technical vocations, and commercial vocations, as well as traditional trades vocations.

Within this concept it is believed that the role of vocational secondary education is to:

- encourage the student to understand the full spectrum of vocational possibilities
- build foundational skills and knowledge in a broad base of vocational opportunity
- provide articulation mechanisms with all branches of the post-secondary system
- include appropriate career development mechanisms for the graduate who wishes to enter the skilled worker category of the labour market.

While recognising that the foregoing commentary is founded on a different set of premises from those which underpin the current programme, it is globally recognised that all training providers, particularly those in the public sector, need to engage in open evaluation of the delivery systems if they are to remain relevant to the real needs of a new economic paradigm.

On these grounds, the study team recommends that as part of the ongoing reform process, a senior level Policy Forum be convened to either validate existing policy objectives to guide both investment and programming for the next five years. This issue is further discussed in Section 8.0 of the report.

## 6.0 Labour Market Demand Issues Affecting Technical and Vocational Education and Training

This section of the report addresses current and emerging issues and trends that affect the demand for workers in the labour market and evaluates the performance and potential of Jordan's Technical and Vocational Education and Training (TVET) system to meet labour market demands. The section begins with an overview employer attitudes towards the education and training system in the context of global trends in employment creation and the organisation of work, and analyses the influence of these trends on quantitative and qualitative labour market planning.

This is followed by a review of labour market planning initiatives in Jordan and the linkage of these plans to the development of education/training services to satisfy labour market demands. The strategies and activities of the TVET system are then reviewed in the context of the global and national environment.

Three techniques were used to identify indicators of labour market needs for the graduates of TVET programmes in Jordan:

- A literature review was conducted to examine recent qualitative and quantitative analyses of labour market needs in the Kingdom. Demand indicators were abstracted from this literature.
- Focus groups of employer representatives were conducted by the study team.
- Interviews were arranged with representatives of major employers of VTC graduates and with representatives of employer associations.

Interviews with employers and employer associations were based on the "External Efficiency" questionnaire adapted from the World Bank document *Evaluating Vocational Training Programs: A Practical Guide*, (Hunting, G., Zymelman, M., and Godfrey, M., 1986), but it was used only as a guide to structure interviews and focus groups. The limited scope of the study and the short time available did not permit original quantitative labour market demand research, nor were sample sizes sufficiently large to aggregate data in a meaningful way. Instead, several recent labour market studies were drawn upon for indicators of quantitative demand. A review of these studies is provided in Section 6.3.

The results provide an overview of global and national trends in labour capital demand, indicators of individual employer's needs for skilled workers, and their opinions of the quality and relevance of the Technical and Vocational Education and Training system in Jordan.

## **6.1 Employer Attitudes Toward Training and Education**

By definition, the purpose of Technical and Vocational Education and Training is to prepare its students/trainees for successful employment in the labour market, whether this market is defined as local, sectoral, regional, or global. As in all markets, the fundamental principles of supply and demand apply to labour markets. It is the challenge of the education and training system, as the primary supplier of skilled workers, to produce the right quantity of graduates with the right quality of skills to meet the needs of the labour market.

There are two fundamental dimensions to market research and planning: The first is a determination of customer wants and needs, and how the quality of the product will be measured. Secondly, market researchers must determine how much of the product can be absorbed by the market to achieve relative equilibrium in supply and demand. Similar dimensions of quality and quantity apply to labour market planning. Since market research usually begins with a determination of customer needs and wants, the following labour market quality issues are identified to provide context for TVET planning and delivery in Jordan. Issues related to the determination of quantity of labour will be discussed in section 6.2.

### **6.1.1 Current Status**

In focus groups and individual interviews with employers and private sector associations, the study team was impressed by the optimism and vigour of the productive sector in Jordan. Particularly on the Sahab Industrial Estate and the Al Hassan, Industrial Estate in Irbid, there is strong support for current economic development policies, and a commitment to the principles of "clustering" and partnership that are encouraged by the development of industrial estates.

Companies in the private sector believe that the education/training system is particularly successful in producing the high-level skills required for international competitiveness. There is considerable pride in the university system which is seen to be extremely efficient in preparing engineers and other highly skilled workers for the Jordanian and Arab Region economies.

Employers also seem to be satisfied with the primary and secondary school systems. When asked about the skills of secondary school leavers in terms of basic requirements such as literacy, numeracy, learning and problem-solving skills, most agreed that Jordanian workers were equal to or better than those in other countries.



In terms of Technical and Vocational Education and Training, there is less unanimity. The companies interviewed had difficulty articulating their needs and expectations of TVET, and there is little consensus as to the role of TVET in supporting productivity and competitiveness.

Of particular importance to this study is the low level of product recognition and differentiation accorded to graduates of the VTC system. For most companies it seems not to matter whether an entry level worker comes via the comprehensive secondary vocational system, the vocational training centres, or the community colleges. There seems to be little customer differentiation in the value of the training or the credentials provided by the three major producers of entry level technical workers. There is some opinion that VTC graduates have better practical training, but less theoretical knowledge and lower learning potential than do workers trained in the comprehensive secondary vocational system or the community colleges.

Those companies that participate in training VTC apprentices, of course, have a high awareness of VTC and its role in training apprentices and most are satisfied with the level of support provided by the training centres in assisting them with on-the-job training of apprentices. Several company representatives mentioned that visits by VTC instructors to the workplace to monitor the progress of apprentices were very helpful in motivating apprentices and solving training problems.

When asked about how the training centres could improve the quality of the in-school portion of training, there was virtual unanimity in the request for better theoretical training. A few large companies such as the Jordan Petroleum Refinery Company have on-site training facilities and the capacity to provide theoretical training for apprentices. Most companies, however, have neither the capacity nor the inclination to provide theoretical instruction and are frustrated by the lack of trade theory knowledge among the apprentices they receive from VTC.

The other primary frustration experienced by companies that train VTC apprentices is apprentice attrition. Several companies mentioned that they often invest considerable resources in training an apprentice only to have him leave near the end of training or soon after graduation. When asked about the reasons for high attrition rates, many pointed to:

- poor trainee selection. Some said that many apprentices when they begin their training have no real knowledge of, or interest in, the trade they are learning and therefore do not have the motivation to learn. When these apprentices begin to

understand what is involved in practising a particular trade, they realise that they lack the interest and/or aptitude for the occupation, but by then it is too late to change, so they simply drop out.

- lack of financial resources. Many apprentices leave training because they receive no wages or very low wages while in training. As soon as a job becomes available that offers better wages, the apprentice abandons training in favour of employment.
- "poaching" by other companies. This is an especially frustrating problem for training companies that invest resources in training an apprentice only to have him recruited by another company near or at the end of training.

Company representatives offered a variety of solutions to these problems. Among the suggestions were:

- a trial period during the first six months of in-school training during which an apprentice could "try out" a variety of trades and then choose the one best suited to his aptitudes and interests for specialisation.
- government wage subsidies or training allowances for apprentices. There was some difference in opinion as to whether government support should go directly to the apprentice in the form of a subsistence allowance, or to the training company in the form of a wage subsidy which would be supplemented by the employer, but all agreed that financial assistance would encourage companies to train more apprentices and reduce attrition rates. Moreover, there was strong opinion that financial support would help to raise the status and appeal of technical training, thereby attracting a higher calibre of student to the trades.
- some form of indenture protection in labour law that would prevent a company from "poaching" another company's apprentices during the training period. There was consensus that this would encourage companies to invest more resources in apprenticeship training and help to ensure that only those students serious about learning a trade would indenture themselves to a company.

All of these suggestions relate to improving the motivation and resources of VTC apprentices to begin and complete an apprenticeship program.

Those companies that do not employ trades workers in the occupations for which VTC provides training, or who do not train VTC apprentices, have little knowledge or recognition of VTC's role in preparing young people for employment. When asked about

the quality of VTC graduates many admitted that they do not know whether or not they employ any VTC graduates.

Entry level workers are not usually hired because they have a specific education/training background and credentials. The hiring practices of most of the companies interviewed suggest that entry level recruitment normally occurs through personal or business contacts or through the recommendations of current employees who have a family member or friend who is available for work. Again, motivation to learn and personal characteristics such as reliability, loyalty, and willingness to work hard were mentioned as the most important hiring criteria.

Whatever the source, most of the company representatives interviewed said that they must assume that graduates from the TVET system have little theoretical knowledge and few practical skills and therefore they must provide most of the required training in the workplace. Many said that it takes about one year of on-the-job training before a new employee becomes fully productive. In this respect they believe the Jordanian system of TVET does not have the relevance, quality, or efficiency of TVET systems in some of their competitor countries. Many of those interviewed had experience training and working in other countries (including Italy, Germany, Russia, The Ukraine, Israel, and the USA) and therefore they were able to make comparisons of the Jordanian system against other forms of TVET in other countries.

There was also little recognition or differentiation of VTC's other programmes and services such as extension services, safety and health training, consulting services, or its work in labour market planning and occupational classification. Many company representatives mentioned that they had been active in providing in-service training for employees, and had brought in external consultants and trainers to assist with various projects. None recalled using VTC resources for these purposes, and all agreed that VTC needs to do a better job in communicating its services to the private sector.

### **6.1.2 Findings and Commentary**

The study team was struck by the consistent opinion expressed by virtually every company interviewed that Jordanian workers do not want to work in the technical occupations for which VTC provides training. The low status accorded to trades workers in Jordanian society they say, inhibits the recruitment of capable and motivated students into trades training and results in significant attrition of trades trainees and workers into other occupations or to other countries where their skills are accorded higher social status and/or better wages. Employers believe that young people enter trades training only as a last resort and then often leave as soon as a better opportunity becomes

available. Several of the VTC graduates interviewed by the study team on other occasions supported this opinion in stating that their career aspirations involved emigration from Jordan to another country in search of better wages and working conditions.

In this context, employers seemed not to recognise their own culpability in contributing to the problems of status and attrition. Clearly, the low (or non-existent) wages paid to apprentices is a major cause of attrition. The study team observed apprentices in some workplaces performing low level tasks unrelated to their trades training, and several employers admitted to using apprentices for any low-skilled work that needs to be performed. This kind of exploitation does nothing to raise the motivation of apprentices nor the status of trades occupations.

The employer suggestion of government financial support for wages, and protection against poaching might indeed improve the motivation of trainees and reduce attrition rates during training, but unless such incentives are accompanied by strict monitoring of on-the-job training content, and the regulation of minimum wages to be paid by the employers of apprentices, these measures would likely be ineffective.

Experience in other jurisdictions has shown that wage subsidies for specific kinds of workers often have negative impacts on existing workers and do not often result in improved employability, retention, or status for the target group. Subsidies for workplace training can be more effective, especially if the subsidies relate only to the incremental costs incurred in training (e.g., the expenses of training facilities, materials and supplies, train-the-trainer costs, etc.), accompanied by close monitoring and control of training content and format. Wage subsidies have not generally been found to be effective in increasing either the quantity or quality of on-the-job training, and can often lower the employment status of the workers who are subsidised.

Another major observation made by the study team was the low level of recognition and differentiation accorded to VTC activities by the employer community. There seems to be little awareness of VTC's various mandates or knowledge of how VTC training is different from that of the comprehensive secondary system or the community colleges.

Those employers selected by VTC training centres for interview by the study team were always those who were active in training VTC apprentices and often those who participated on VTC advisory committees. Therefore, they were familiar with VTC's role in apprenticeship training, but often were not aware of other VTC activities such as continuing education services, health and safety training, supervisory training, consultancy services, etc. Those who did not have a specific relationship with VTC

training centres, seemed entirely oblivious to VTC's role in the labour market. Clearly, there is an urgent need for VTC to improve its marketing efforts to raise the awareness of the employer community and the population at large of its role in the labour capital formation system.

Finally, the study team was struck by the seemingly underdeveloped structures available in most companies for the recruitment, classification, management, and training of employees. Even in the larger and more sophisticated companies interviewed, there seem to be few formal human resources planning, management, and development systems. Most of the companies interviewed did not have formal recruitment practices, written job descriptions for all employees (especially at the lower levels) or explicit policies and practices for employee training, compensation, performance management, or promotion.

This situation may result from the over-supply of skilled workers that has characterised the Jordanian labour market for many years. When there is an over-supply of any resource, there is little incentive to manage it carefully. Nevertheless, as the Jordanian economy becomes increasingly market-driven and globally oriented, companies will face a critical need for improvement in human capital management. Clearly there is a need for a national agency to stimulate awareness of these issues and to provide support for capacity building in human resources planning, management and training among private sector employers in the Kingdom.

### 6.1.3 Employer Attitudes Towards TVET: Key Observations

- The companies interviewed were generally supportive of national directions in economic development policy and were confident of their potential to compete in global markets.
- There is general satisfaction with the primary and secondary education systems and pride in the quality of Jordanian universities, but ambivalence toward the TVET system.
- Companies have difficulty in differentiating the products of the various providers of technical and vocational level workers. VTC products and services do not have a high recognition factor among companies who do not train apprentices.
- The companies interviewed generally believe that it is the role of the TVET system to provide trainees with the theoretical knowledge and core skills required as a basis for on-the-job training in skills specifically related to the needs of their workplaces.
- There is a strong belief that Jordanian society does not value trades workers and the low status accorded to technical training inhibits the recruitment and retention of motivated trainees.
- Companies that train apprentices are frustrated by lack of motivation among many trainees, attrition of apprentices, low levels of theoretical knowledge and lack of financial assistance for training.
- The companies interviewed do not have difficulty in recruiting the skilled workers to meet their current needs.
- Most companies do not have highly developed structures or systems for human resources planning, recruitment, development and management.

## 6.2 Issues and Trends in Labour Capital Demand

There are a number of inexorable trends in labour market demand affecting all countries that wish to compete in the global market place. This section of the report identifies some of these trends and examines how they will affect labour market demand and the expectations of the Jordanian TVET system in the immediate future.

### **6.2.1 The Global Workplace**

It is becoming increasingly difficult for national economies (and the systems that support them) to protect themselves from global competition. The clear trend is toward reducing government regulation of national economies and the dismantling of trade barriers and the encouragement of free flow of capital, products, and services across international boundaries.

In keeping with this trend, the Government of Jordan, in its national Economic and Social Development Plan for 1993 to 1997 declared its intention to reduce the role of Government in direct production and enhance the role of the private sector through improving incentives for domestic and foreign investment. The Plan further elaborated on extensive plans to raise export capability and reduce excessive protectionism of domestic products. These plans have been implemented through a variety of measures including, most recently an agreement of association with the European Union.

Jordan's businesses and industries are convinced that they can compete with the best of their counterparts in the Middle East and Europe and many are achieving or preparing for ISO certification to demonstrate their capacity to meet international standards of productivity and quality. To compete successfully with the best in the world, they must be confident that their suppliers of goods, services, and human resources, also meet international quality standards.

As outlined in Section 6.1, Jordanian companies consider the outputs of the basic education system, and the university system to be "world class", but many of the companies interviewed expressed doubts about the quality of TVET outputs and uncertainty as to how to improve the management of human capital.

### **6.2.2 The Growth of Technology**

To be competitive in the global market place Jordanian companies must adopt new production and information technologies to improve quality, productivity, management, and control functions. Many of the company representatives interviewed admitted that they had been slow to introduce new technologies for a variety of reasons. An abundance of labour and comparatively low wage rates, particularly for "guest workers", have served to discourage investments in production and information technologies. There is a recognition, however, especially among those companies competing in foreign markets that Jordan will not be able to rely on "cheap labour" for its competitive advantage. Issues of quality and productivity are driving Jordanian companies to adopt more aggressive strategies in technology acquisition and application. The impacts of

technological change must be taken into consideration by the TVET system in planning for the future.

The most important consequence of the introduction of technology is the growth of highly skilled, knowledge-based jobs and the decline of traditional skilled and trades level jobs. Jobs with very low skill requirements such as cleaners, construction labourers, and service workers are less affected by technological change. It is the expected decline in demand for workers at the semi-skilled level that the TVET system must take into account in planning its capacity, and its programme structure and content.

Already Jordanian employers are complaining about the lack of workers with the skills to adapt to new technologies. When asked about their human resources needs, most of the company representatives said that they had little difficulty in finding very highly skilled workers such as engineers and accountants, or low skilled workers such as labourers, service workers, and machine tenders. The greatest need seems to be at the technician level. This trend is expected to accelerate as companies acquire new technologies.

Currently, when introducing new technologies, Jordanian companies often send senior staff abroad to be trained by a partner or parent company, or the manufacturer or supplier of the technology. Then the trained employee returns to lead the training of the workers who will use the technology. Sometimes trainers are sent to the workplace by a partner or parent company or the technology vendor to provide on-the-job training and technical support. This has the effect of creating a dependency on outside sources to manage the technology transfer process and to maintain and repair systems. This results in increased costs and decreased return on technology investments.

The other major impact of technology adaptation is the need for perpetual learning by existing employees. Increasingly, companies require employees who can adapt easily to technological changes and who are able and willing to learn new processes and technologies quickly. Several company representatives complained that Jordanian workers are often inflexible and assume that once trained and hired, they will have a job for life. Few employees, they say, take responsibility for their own skills development. Compared with many industrialised nations there is low participation by Jordanian workers in continuing education programmes. Several company representatives said that the TVET system needs to do more to instill a culture of perpetual learning and offer more continuing education opportunities for workers at all levels.

It is a widely held view that computer literacy will soon become a fundamental requirement for all workers in semi-skilled or skilled positions in all sectors. Companies do not expect TVET graduates to be experts on the specific hardware or software used



in their organisations, but they believe that it is the role of the education and training system to equip students with basic understanding of computer technology and the use of various standard applications. The introduction of workplace technology could become much easier and more effective if a greater number of employees had basic computer skills to use as a platform for more advanced skills development. It must become a major goal of the TVET system to ensure that all graduates of the system are computer literate. In the workplace of the 21st century, computer literacy will be equally as important to success as are reading, writing, and computation skills.

Admittedly, most of the companies participating in interviews and focus groups were larger, progressive companies in the formal sectors of the economy. In interviewing VTC graduates it became clear that a large proportion were self-employed or working in small informal enterprises in which the introduction of technology occurs at a much slower rate, and where the impact of new technology is much less dramatic than in large organisations.

It will continue to be a significant challenge for the TVET system to prepare students for successful participation in the new global economy, while ensuring that they leave the education/training system equipped with a broad range of traditional skills to meet the requirements of self-employment or work in small, informal enterprises where much of the Kingdom's employment creation will continue to occur. The recent work of the VTC Extension Services in the design and delivery of consultancy and training services for small and medium-sized enterprises is seen as very positive. Employers see a growing need for similar services not only for managers and highly skilled workers, but also for lower skilled workers. Clearly, VTC needs to do more to raise awareness of its capacity to deliver these services.

### **6.2.3 The Changing Structure of Jobs**

In the post-industrial economies of the world, the concept of work and the structure of jobs are changing rapidly. Former occupational boundaries are rapidly becoming obsolete as various components from different jobs are combined in new, more flexible configurations of tasks and responsibilities. A clear example of this trend is in office support occupations. Formerly, there were clear occupational specifications for the responsibilities of stenographers, office clerks, secretaries, receptionists, telephone operators, and data entry operators. Gradually, the boundaries of these occupations have been blurred or eliminated. With the advent of modern office computer and communications technologies, support functions have been integrated. Workers in support functions have responded by becoming multi-skilled and multi-functional.

Similar integration of functions is changing the composition of occupations in many sectors and industries. The integration of mechanical and electronic components in manufacturing equipment, for example, is driving an integration of mechanical and electronic maintenance functions. The integration of functions has always been a requirement in small enterprises. The welder who also has carpentry skills or the carpenter who has welding skills has always been in demand by small construction or renovation companies. As the small enterprise sector becomes a more important generator of new jobs, a greater number of workers are finding it a distinct advantage to be multi-skilled.

The transformation in the organisation of work outside of traditional systems of occupational classification has important implications for the work of VTC in developing an occupational classification system. The development and regulation of a traditional occupational classification system is not consistent with the transformation currently in progress in the organisation of work.

The workplace of the 21st century is not likely to employ individuals in standard, tightly defined job classifications, but rather in teams of workers with unique combinations of skill sets that are assembled to accomplish specific goals. In such an organisation, teams of workers are assembled around the needs of a specific customer or a specific project. Individuals work cross-functionally to accomplish tasks and solve problems rather than in a hierarchy of occupations and roles.

These factors need to be taken into account by planners in the TVET system. The current programme offerings by the major training providers in Jordan are very specialised and provide skills development in narrow bands of each occupation (see Section 4.3.1). The study team observed trainees working mostly on individual projects to demonstrate very specific competencies such as welding window frames, rather than in cross-functional teams that would develop an appreciation for how individual tasks fit together to create a high-quality finished product or a valuable service.

The current structure of training therefore is not consistent with trends in the way jobs will be organised in the workplaces which graduates will enter. In programme reform initiatives consideration ought to be given to restructuring of programmes around the generic skills required by sectors of business/industry or clusters of occupations. Trainees need to have experience studying with and working with counterparts in related or unrelated specialisations so that they will gain an appreciation of how various functions must work together to produce a quality product or deliver integrated services for customers. Subjects such as conflict management and group dynamics should be an important component of all programmes.

#### 6.2.4 Occupational Mobility

Decreased job stability and greater labour force mobility are also important trends influencing labour market demand. Labour markets are de-stabilised by a number of changes and cycles that are happening with increased rapidity. These include political, economic, social, and technological forces that influence the demand for both the quantity and characteristics of workers in the labour market.

Most workers today make five major occupational changes, as well as several smaller job adjustments during their careers. It is becoming rare to find a worker who has trained in a given occupation and continued on a straight career path until retirement. Even in Western European countries such as Germany, with strong traditions of labour market and occupational regulation, there is increasing mobility among occupations. Dr. Jon Lauglo, Director of Research for the Norwegian Research Council for Science and Humanities in his paper *"Vocational Training Policy: International Issues"*, cites Scandinavian tracer studies showing that only about 25 percent of vocational training graduates pursue the trade in which they were trained. This trend is likely to accelerate as labour market stability decreases.

Tracer studies of graduates from many TVET systems around the world confirm that a large proportion of graduates do not continue for long in the occupation for which they have trained. This has led policy makers to question the cost-effectiveness of TVET in comparison to general academic preparation of students. TVET is a more expensive alternative to general education because of the necessity of providing specialised equipment, facilities, instruction, and work placement. Yet many studies have shown that graduates of general education programmes have an equal or better rate of success in the labour market than do vocational school graduates. (Middleton, p.50). When tracer studies find that a large proportion of graduates who have been trained at considerable expense in specific occupations, do not practice those occupations, the return on investment is questioned.

In Jordan there has not been sufficient attention paid to following TVET trainees as they make the transition into employment and make career choices. Tracer studies have been sporadic, limited in scope, and inconsistent in methodology and taxonomy of occupations. Nevertheless, there is strong anecdotal evidence that suggests significant occupational attrition, especially among trades workers. (See Section 4.6.3)

This trend has caused TVET planners in many parts of the world to transform the fundamental paradigm of skills training. Policy makers, administrators, instructors, and students/trainees in the system must now assume that it is unlikely that graduates will

practice the specific job skills they learn during training. Instead of assuming that the purpose of the system is to prepare students for careers in specific occupations, they must now assume that the job skills learned in a programme are merely the vehicle for mastering the knowledge and skills required in a wide variety of future occupations, jobs, and task combinations, many of which do not yet exist.

The futile rush of training institutions to keep up with the ever-accelerating rate of labour market transformation by inventing new programmes and specialities and acquiring new technologies is replaced by a concentration on student/trainee mastery of higher-level technical, vocational, problem-solving, and information management skills that can be applied across general industrial sectors and broad occupational groupings. The objective is to facilitate, rather than to impede, labour market mobility as the demands of the labour market change. Under such a paradigm the subject matter for training may continue to be occupationally oriented but the intended outcome is not the mastery of a hierarchy of skills in a narrow occupation but rather the mastery of competencies required to gain entry to a broad sector of economic activity and then to be able to move easily from job to job in and around that sector or occupational family.

#### **6.2.5 The Ascendancy of the Information and Services Sector**

In post-industrial economies the vast majority of jobs will be created by the information and services sectors rather than in the goods production sectors. The proportion of jobs in agriculture, mining, processing, manufacturing and construction occupations is likely to continue to decline worldwide owing to technology innovations that reduce the manpower required to produce commodities. Meanwhile, the demand for workers in occupations that support health, education, financial, information, entertainment, and personal services is likely to continue to increase worldwide.

TVET systems that limit themselves primarily to the preparation of manpower for the goods production sectors will gradually have a less important role in workforce development and leave a major gap in the skills training required for growing sectors of the economy.

In Jordan, the proportion of workers in the services sector is not likely to rise as quickly as in more industrialised economies. Jordan traditionally has been a service-oriented economy. Approximately 65 percent of GDP is generated by the services sectors compared to an average of 50 percent for lower middle-income countries. Employment in the commodity sectors fell from 37 percent in 1979 to 25.1 percent in 1991, while employment in the services sector rose from 63 percent in 1979 to 74.9 percent in 1992. (Ministry of Planning, Economic and Social Development Plan 1993-1997, p.37)

Approximately 50 percent of Jordanians are now employed in public sector employment alone. Even if public sector reform results in an decreasing number of public sector workers, it is likely that the workers currently employed by government would be absorbed into private sector organisations created to provide services formerly delivered by government.

Jordan's situation is unique in that it has exhibited the characteristics of a post-industrial economy for many years and is only now implementing concerted industrial development strategies. If successful, current government policies aimed at strengthening the goods production sectors may alter the balance of labour market demand, thereby stabilising the demand for service and information workers while stimulating an increasing need for workers in the goods production sectors. While many other countries project a major increase in the proportion of workers employed in the services and information sectors, it is likely that the Jordanian labour market will remain stable in terms of the proportion of workers required in the various major sectors of the economy.

There is, however, growing homogeneity in the skills required in the information/services sectors and the goods production's sectors. The distinction between technical jobs and non-technical jobs is rapidly becoming blurred as the skills required in information and service occupations become more technical, while the skills required in goods production become more service and information oriented. For example, health care workers increasingly require higher levels of technical skills to manage increasingly sophisticated medical technologies while factory workers require higher levels of customer service, communications, record keeping, and interpersonal skills to work in self-directed teams in a "total quality", customer-focused production environment.

Therefore, the distinction between technical education and non-technical education is likely to become less important. Educational planners need to take these factors into consideration when developing structures and designing programmes aimed at preparing young people for the future needs of the labour market.

#### **6.2.6 The Increasing Role of Small Enterprises**

An increasing percentage of the workforce throughout the world is employed by small enterprises (those with fewer than 50 employees). Indeed, the fastest growing source of employment is among enterprises with fewer than five employees. In Jordan it is difficult to quantify employment in this "non-formal" sector because surveys usually do not include enterprises with fewer than five employees. Nevertheless, in interviews with VTC graduates conducted in five training centres it became clear that a large proportion were

self-employed or working in very small enterprises. As this is a substantial market for the TVET system it is important to understand the characteristics of employment in small enterprises so that structures and programmes can be designed to prepare students for self-employment or paid employment in very small enterprises.

Among the features that characterise self-employment or work in small enterprise are:

- concentration of demand in the services sectors: By far the largest segment of the small enterprise sector is that of services--retail services, hospitality services, business services, residential and automotive services, and personal services.
- the need for multi-skilled workers: In small enterprises it is likely that each employee is required to perform more than one function using both technical and non-technical skills.
- the need for flexible workers: Employment in small enterprises is often much less stable than work in large companies. Employment is often unstable in terms of regulation, recruitment practices, wages, working conditions, and job security.
- the need for high levels of customer service skills. In small enterprises it is likely that most employees have direct customer contact. Therefore, success often depends as much on communications, marketing, and interpersonal skills as it does on technical proficiency.

In reviewing the structures, programming, and delivery of Jordan's TVET system, the study team found little recognition of the employment realities that graduates will face on graduation. In planning reforms in the TVET system, decision-makers must recognise that a large proportion of graduates will be self-employed or employed by very small enterprises and establish structures and programme components to facilitate entry to, and success in, the non-formal sector. For example, courses in starting and operating a small business might be a required or optional component in all technical/vocational curricula. Employability skills such as communications, customer service, job search skills, and personal management skills should be integrated into the technical/vocational curricula.

#### **6.2.7 The Quality Imperative**

The shifting paradigm that is driving all of the other trends in the productive sectors is the ascendancy of quality as the competitive advantage of companies and national economies. Ever since the theories of J. Edwards Deming revolutionised Japanese manufacturing in the 1960's, companies have sought to emulate and improve the

processes that catapulted Japanese industries into pre-eminence in many sectors including automotive design and assembly, consumer electronics, and computer hardware. Since then, other countries with an abundance of human resources, but few natural resources (including South Korea, Taiwan, and Singapore) have prospered through national policies designed specifically to support quality initiatives in manufacturing. Quality principles and systems have gradually been adapted to the information and services sectors and now form the central paradigm of all competitive organisations and expanding national economies.

It is not within the scope of this study to detail the implications of this transformation nor to assess the status of the Jordanian economy with respect to its progress in adopting the quality paradigm. It was, however, made clear to the study team in interviews with company representatives that quality goals are central to the strategies of many Jordanian companies, especially those engaged in export activity. As more Jordanian companies enter the global market place, the goal of total quality and the need for national systems to support this goal will drive private and public sector initiatives.

Nor is it within the scope of this study to detail how the TVET systems in Japan, South Korea, Taiwan, etc., were re-invented to support national economic transformation. Clearly, TVET models cannot be imported successfully from one country to another without modifications to adapt to differing stages of economic development and to different environments and cultures. Nevertheless, there are some common characteristics of TVET systems designed to support continuous quality improvement. These characteristics include:

- recognition of the importance of technical workers to economic success and a conscious and concerted effort to raise the status of skilled workers and the systems that train them;
- the establishment of close partnerships among industries, governments, labour unions, sectoral associations, and educational institutions to develop and maintain efficient and effective education and training systems. Whether the TVET system is focused on comprehensive vocational education institutions, specific vocational training schools, dual system apprenticeships, private schools, public schools or workplace-based training, there is a recognition that all labour market partners must have influence in the structures, programmes, and access policies of the system;
- the recognition of quality principles by the TVET system. One of the main principles of quality improvement is that all the suppliers of goods and services to a company must adhere to the similar quality standards. This principle has driven quality

improvement initiatives among TVET providers that seek to meet the needs of the employers of their graduates.

As more Jordanian companies pursue the principles of quality management there will be increasing pressure on TVET institutions to adopt similar goals and methodologies to improve the quality of processes and outputs.

#### **6.2.8 Issues and Trends in Labour Capital Development: Key Observations**

- As Jordan's economy becomes increasingly market-driven in a global context, companies in the productive sectors will require a more highly skilled and adaptable work force to compete in a global market place.
- The increasing use of production and information technologies by Jordanian companies will require workers who are computer literate and who are motivated toward perpetual learning.
- Companies are organising work in new configurations and integrating components of various occupations in new ways. This requires flexible, multi-skilled workers.
- The de-stabilising of labour markets means that workers will likely not practice the occupations for which they are trained. This requires a shift in the paradigm of TVET.
- There is increasing homogeneity in the skills required in the goods production sectors and the services/information sectors. The distinctions between TVET and other forms of training/education will become less meaningful.
- A larger proportion of the labour force will be employed in small enterprises. TVET must increasingly equip students with the skills and competencies required to adapt to less formal employment environments.
- The "Quality Imperative" is driving adaptation and innovation in the productive sectors. TVET institutions will be under increasing pressure to comply with the principles of quality management.

#### **6.3 Quantitative Indicators in Labour Market Demand**

Most labour market research in Jordan has been related to the supply side of the labour market, dealing with issues such as how to improve the quality, relevance and effectiveness of the education and training system and its component parts. Issues of labour market demand have been somewhat neglected. Yet, a major indicator of TVET success is its contribution to the achievement of labour market equilibrium.

The determination of employer needs for skilled workers is a complex undertaking in any labour market, especially for those that rely on institutions as the primary focus for skills development. One might think that a simple market research survey of employers to ask



their needs will result in a list of skills they will require and the number of workers they will employ in each skilled occupation. In fact, most employers do not undertake any kind of internal needs analysis, nor prepare any projections of manpower requirements.

There are so many variables to consider when projecting needs for skilled labour that most companies simply ignore the issue and hope that the vocational training institutions will somehow know what their needs are and produce the right number of graduates, at the right time, with the right skills, to meet their current and future human resources requirements. When the training system graduates the wrong number of trainees, with the wrong skills, at the wrong time, labour market equilibrium is lost, graduates cannot find employment, and employers complain that they cannot find workers with the skills to meet their needs.

### **6.3.1 Sources of Quantitative Labour Market Demand**

A number of efforts have been made during the past several years to quantify and forecast labour market demand for skilled workers in the Jordanian economy.

Labour market demand projections using standard manpower planning techniques are, however, notoriously unreliable. Jordanian studies have focused on quantifying demands in broad sectoral classifications and occupational groupings rather than on specific occupations and skills requirements. Therefore, they are of limited value to the training system in quantifying specific training needs or in developing quality output indicators and evaluating results.

A 1995 study by the Ministry of Planning and the UNDP, Matching the Outcomes of the Educational System with the Labour Market Needs to Serve the Goals of Expanding the Economic Productive Base, using data from the 1993 national household survey (Manpower, Unemployment and Income Survey) developed projections of labour market needs to the year 2000. Projections are, however, based on sectoral needs (i.e., the number of workers required in primary, manufacturing, processing, etc., sectors), and by the number of graduates who will be required in various specialisations (e.g., commercial, engineering, social sciences, health sciences, etc.). There is no attempt to quantify occupational or skills requirements. The report notes, however, that approximately 75 percent of new jobs will be for non-specialised (unskilled) labour.

The Vocational Training Corporation has been more successful in quantifying the demand for skilled workers in the occupations for which it provides training. In a 1991 project, the Corporation surveyed 1,510 enterprises in the industrial, hotel and restaurant, bakery, and printing sectors to determine their employment and training

practices, as well as to forecast their requirements for workers at basic occupational levels to 1993. The survey showed that the 1,510 enterprises intended to hire 15,991 workers at basic occupational levels between 1991 and 1993.

However, the results provide estimates only in occupational classifications rather than at the level of specific job titles. Hence, we learn that there will be new jobs for 185 welders, but there is no information about what kind of welders will be needed. Similarly, we learn that hotels and restaurants will need to hire 2,087 food production and service workers, but there is no information about the skills that will be required of these workers, nor is it within the scope of the study to forecast demand for other occupations required in these sectors. The report notes that only 25 percent of respondents were willing to make any forecast of human resources requirements. As a result, the forecasts are based on a sample of only about 380 enterprises across three major sectors of the economy. Furthermore, the demand projections do not take into account those needs resulting from worker attrition factors such as retirements, "turnovers", deaths, etc.

A larger study by VTC in cooperation with the Ministry of Planning, the Ministry of Education, the Ministry of Labour and The Amman Chamber of Commerce, Training Needs Study in the Basic Occupational Levels in the Productive Industries Sector conducted in 1994, provides a more complete projection of manpower needs for the period 1995 to 1997. 2,500 mostly small to medium sized organisations, (public, private, and independent enterprises) were surveyed. Questionnaires were completed by 1,806 organisations across a wide variety of sectors.

The results are particularly useful because needs are identified in some specific occupations. For example, in the carpentry trade, the projected demands for workers in the specific occupations of furniture making, building renovation, decorating, and upholstery are estimated. However, requirements in the food industry are not provided at the occupational level. There is a lack of consistency in defining occupational levels and characteristics across sectors. The survey limits its scope to basic skill levels in occupations and sectors for which VTC provides training. Therefore, the focus is on defining needs from the viewpoint of the provider rather than the customer.

A study by the National Centre for Educational Research and Development, in cooperation with the U.S. Agency for International Development, An Assessment of Vocational and Technical Education in Jordan, (1992), used 1990 data compiled by Dr. Fathi Arouri and graduate students from the University of Jordan to examine employer and employee views on Jordan's labour market and to forecast demand for skills required by employers. The report contains a list of occupations in which growth is expected (Table 11-10, pp. 11-20), but the authors admit that the projections are a

"mere guesstimate". "It is", they conclude, "impossible to accurately predict skilled manpower needs by sector because of two major factors: (1) many trades or occupational skills appear in many different sectors, e.g. mechanics, welders, and secretaries appear in all industries; and (2) available data exclude 50% of the work force involved in small enterprises, many of which involved typical skilled trades, e.g., carpenter, plumber, electrician etc." (p.3)

A recent (1996) report by the Higher Council for Science and Technology, Study of National Scientific and Technological Requirements and Potential, Phase I surveyed 3,036 large and medium-sized institutions, both public and private, and achieved a response of 2,115 respondents. The survey is particularly valuable because it links training needs to the "technical problems" that are being confronted by Jordanian organisations in meeting their goals for quality management, marketing, product development, etc. This methodology reinforces the principles that employers are the customers of the education/training system, and that the outputs of the system contribute to the achievement of organisational and economic goals.

The survey concerns itself only with broad categories of training (e.g. commercial and management sciences, engineering sciences, crafts, vocations and trades, etc.), and therefore provides little insight into the specific skills required to meet the goals of Jordanian employers. The research methodologies applied in this study, could however, be applied at a more micro level to determine the specific skills required in the labour market.

### **6.3.2 Commentary on Labour Market Planning Systems**

The foregoing research studies have been undertaken to develop an understanding of the dynamics of labour market demand and to forecast the needs for skilled labour in the Jordanian economy. These studies, have, for the most part used traditional manpower planning techniques that calculate the number of workers expected to be graduated by education/training providers and the number of workers that are expected to be required in each sector. The value of these studies has been limited by lack of a consistent national system of occupational classification and by lack of consistent research methodology.

Research has been conducted in a piecemeal fashion to meet the forecasting needs of particular sectors or training/education providers. In the absence of a national labour market planning agency with a mandate to monitor the entire labour market on regular and consistent basis, it is impossible to aggregate data from one study to another or to aggregate demand across occupations and sectors.

The lack of a consistent national system of standard occupational classification also calls into question the validity of source data. One employer will often define a specific job title to mean something quite different from another employer. For example, the job titles "carpenter" or "maintenance worker" or "food production worker" can have many different definitions depending on the nature of the sector and the organisations in which these occupations are employed. The terms "skilled", "highly skilled", "craftsman", etc., are relative terms that are highly subjective and carry different meaning depending on the sector and company using the terms.

Organisations have different ways in which to organise tasks into jobs, work units, and hierarchies. Clearly, the ways in which tasks are organised varies significantly from informal to formal enterprises and from small to large enterprises. Generally, as organisations become more formal and/or grow in size, or acquire advanced technology, the more highly organised and specialized the job classifications. Few organisations, however, have sophisticated internal classification systems or skills inventories for each occupation they employ. Therefore, when presented with a question related to their needs for specific occupations, without at the same time presenting a standard occupational taxonomy, there is a strong likelihood that respondents will provide data that cannot be aggregated with any degree of reliability.

Training institutions also organise learning in a variety of ways to conform to their understanding of the organisation of tasks that graduates will be expected to perform in employment. The resulting curricula will achieve intended goals only if the curriculum developers have a clear understanding of how occupations are organised among the employers of their graduates. Curricula must also be sufficiently flexible to adjust to changing patterns of occupational design as changes occur due to increasing formalisation, introduction of new technology, developments in business organisation and management, or growth in size or sophistication of employers. Generally, however, changes in labour market demand occur so quickly that training institutions cannot possibly anticipate and adapt with sufficient speed to meet the specific skills requirements of their employer customers.

For these reasons, standard manpower planning techniques have generally failed to provide clear and reliable data to assist in the planning of training capacity and content. This is particularly so in Jordan because of the absence of a recognised standard system of occupational description and classification across all sectors and occupations. Nevertheless, the development of such a system would not, in itself, be sufficient to remedy the situation. Many countries, recognising the futility of traditional manpower planning exercises, have replaced these studies with more flexible methods of labour

market monitoring and forecasting. Under these systems, a central monitoring agency undertakes studies of labour market indicators including:

- household surveys (number of unemployed by occupation, educational level and length of unemployment)
- surveys of sectoral and professional associations
- analysis of trends in "help wanted" advertisements and recruitment activity
- graduate employment tracer studies
- monitoring and analysis of work permits for foreign labour
- wage surveys
- analyses of contracts concluded through collective bargaining.

When these studies are conducted on a consistent and regular basis, trends can be established to identify skills that are experiencing increasing demand and those in which demand is decreasing. Help Wanted advertisements are useful not only in indicating demand in occupations but also in identifying the specific skills and qualifications content of high-demand occupations. Similarly, sectoral and professional association are particularly useful in identifying changes in the skills content of occupations employed in specific sectors or occupations. Trends in salaries/wages paid in the private sector and foreign worker permits are strong indicators of supply and demand. To be useful, however, monitoring must occur on a quarterly (or preferably monthly) basis, using standardised research methods so that trends can be established and tracked over time.

Labour market monitoring and trends analysis provide higher quality and more useful labour market information than do traditional manpower planning techniques. Moreover, labour market information collected in this way has broad application to a variety of government, education, and corporate functions including:

- education and career counselling
- human resources planning in companies
- collective bargaining and labour relations
- social planning
- educational planning
- economic planning.

Another productive way to collect labour market demand information is through the provision of consulting or financial assistance to enterprises by government and/or training institutions. In many countries, governments and training systems provide free, or subsidised consultancies to the private sector in return for information about human

resources needs, issues, and trends. Sometimes, subsidies or other incentives are provided for recruitment of specific target groups or for on-the-job training services. In return, the employer provides a wide range of data that is collected and aggregated to inform labour market planning. This is a particularly useful strategy to collect information from small enterprises that need assistance or financing to solve business problems or to upgrade the skills of current workers.

### 6.3.3 Quantitative Indicators in Labour Market Demand: Key Observations

- Quantitative studies of labour market demand in Jordan have limited usefulness because:
  - they are usually limited to specific sectors or occupational groupings; they do not sample the entire labour market
  - they are often too broadly based to provide information at the specific occupational or skill level
  - they are not conducted on a sufficiently regular basis to measure trends in a quickly shifting labour market
  - they do not use a consistent taxonomy of occupations or skills
  - they rely on traditional labour market planning methodologies that have proven to be inaccurate in projecting labour market demand with any degree of reliability.
- There is an urgent need to:
  - designate an agency with a national mandate for labour market monitoring and planning
  - develop and implement a consistent taxonomy of occupational and skills classification
  - develop and implement a consistent methodology and schedule of labour market demand surveys
  - assist employers to develop consistent systems and methodologies for job description/classification and manpower planning techniques.

## 7.0 Labour Capital Formation Systems and Strategies

Since its inception in 1976, VTC has grown in the scope and volume of training activity and also in terms of its participation in related labour market activities. VTC has added occupational classification, testing and certification, participation in labour law formulation, and, in the absence of capacity elsewhere in the country, has attempted to gain insight into labour market demand and analysis.

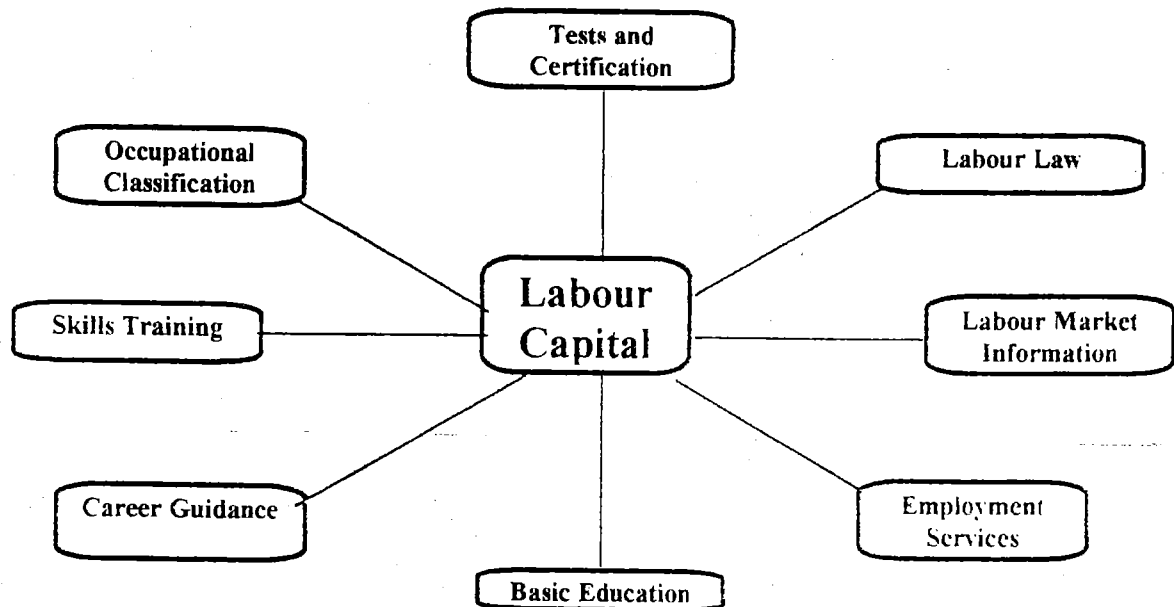
This has led to the tacit assumption of responsibilities by VTC for issues which relate to the national labour capital formation agenda. Those responsibilities have, however, been assumed in the absence of a nationally coordinated policy framework and without the provision of adequate resources. This has diffused the Corporation's focus and its resources and also has serious implications for the national economy insofar as the various elements of a labour capital formation system remain undeveloped and uncoordinated.

Section 6.0 discussed the wider question of labour market dynamics, and the increasing imperative for national economic planners to understand those dynamics, as human capital begins to take precedence over natural resources and financial resources, in terms of economic growth. This section of the report regards labour capital formation as a system, and discusses the question in the context of the present situation in Jordan together with its impact on training providers.

In order to evaluate the sustainability of the present system in Jordan, a sustainability assessment methodology is adopted using the Bellagio principles. This assessment provides clear pointers to actions which need to be taken to accelerate and enhance the development of tools which will assist in achieving system efficiency.

## 7.1 Elements of a National Labour Capital Formation System

For the purposes of this discussion a national labour capital formation system is considered to comprise of the following elements.



This section of the report discusses each component and its relationship to the other elements of the system.

### 7.1.1 Basic Education

Basic education is the foundation required for entering employment, skills training or post-secondary education. It includes fundamental knowledge, skills and abilities, including communications, numeracy, critical thinking, and problem solving, team work, responsibility and initiative, and independent learning. People develop these proficiencies through primary and secondary education, improving their literacy and language skills, and through work experience.

### 7.1.2 Career Guidance

Career guidance services help individuals to make informed decisions about their education, training, career, and employment choices. Individuals with a sound career plan will select programmes in which they are most likely to succeed and proceed to the type of employment that is best suited to them. Career guidance includes a broad range



of information and assistance services such as profiles of labour market sectors and opportunities, education and training opportunities, income levels, and expectations.

### **7.1.3 Skills Training**

Skills training is the process by which individuals acquire the knowledge, skills, and abilities to perform a set of activities associated with employment. This process can occur through:

- institutional training where most training occurs at school through classroom or practical instruction;
- work based training where most of the instruction takes place on the job; Industry and educational institutions work together to design, deliver, and certify training;
- industry training where employers provide specific training in processes and practices to their own employees.

### **7.1.4 Occupational Classification**

Occupational classification provides a systematic taxonomy of the labour market. It is based on occupational research, analysis, and consultation with industry.

The occupational classification system provides the baseline matrix for compiling, analysing, and communicating information about occupations and employment. The classification system is used for human resource planning, occupational supply and demand analysis, the provision of labour market and career information, and related national economic planning.

### **7.1.5 Tests and Certification**

Testing and certification are those procedures required by regulation or by agreement between training providers, professional associations, and industry, which measure and certify that an individual worker has achieved a performance standard necessary for entry into employment at a specified level within a designated occupational category.

### **7.1.6 Labour Law**

Labour law comprises that body of legislation and regulation which protects workers from exploitation or injury and which also provides protection for the public good in terms of health and safety.

### **7.1.7 Labour Market Information**

Labour market information is necessary for national economic analysis and planning; to assist in decision-making by training providers, and to assist in career and employment choices by individuals. Labour market information systems are those processes which use a combination of inputs from census data, sectoral surveys, employer surveys, together with changes in national financial, economic, and political positions to signal changes in labour supply and demand conditions.

### **7.1.8 Employment Services**

Employment services assist employers to find and retain suitable employees and individuals to find and maintain suitable employment. Services can include incentives to employers to increase employment or production, wage subsidies, self-employment assistance, job placement and referral services, and human resource planning data.

## **7.2 Current Status of Labour Capital Formation Systems in Jordan**

This section of the report provides a brief overview of the status of each element of the labour capital formation system in Jordan.

### **7.2.1 Status of Basic Education**

During the past ten years the basic education system has undergone a reform process which has added content to all grades, improved curriculum, prepared texts, upgraded teachers, and importantly in the context of employment, has added a vocational education component to all levels of the primary and secondary programme. The basic education system is providing well prepared young people at the first point in the labour capital formation system.

---

### **7.2.2 Status of Career Guidance**

All levels of the education and training system employ guidance counsellors, but most have limited training in career counselling. VTC provides some career counselling including a video that has been produced to enhance the image of vocational training and the role of the skilled worker. No sectoral profiles are available. Labour market demand indicators for various occupational categories are not available.

### **7.2.3 Status of Skills Training**

The introduction of the comprehensive vocational secondary programme, together with the applied secondary programme, community colleges, private training providers and non-government organisations, constitute a wide variety of options through which young people can acquire skills. As has been noted by employers and confirmed by unemployment data, there is some qualitative and quantitative mismatch between training supply and employment demand.

### **7.2.4 Status of Occupational Classification**

VTC has been developing an occupational classification system for approximately ten years but the system has not yet been adopted by public sector agencies for data collection or analysis, workforce profiling, or demand projections. The system has not been promoted for adoption by employers in either the public or private sectors. Consequently, no standard taxonomy or statistical information base to describe the workforce in Jordan is in use.

### **7.2.5 Tests and Certification**

Testing and certification procedures have been developed by VTC for apprenticeship trades. Certification practices are also in place in sectors such as engineering and medicine. Additional capacity will be needed should the proposed Organisation of Labour Law be enacted.

### **7.2.6 Labour Law**

Labour law currently covers areas including:

- Labour Contracts
- Salary Protection
- Workplace Safety and Health
- Employment Counselling
- Labour Unions and Syndicates.

A proposed Organisation of Labour Law could potentially introduce testing and certification requirements for a wide range of employees. While outside the scope of this study, this proposed law (Annex 17) is considered regressive insofar as it will entail high administration costs with no added value to the economy while also creating rigidities in the labour market.

### **7.2.7 Labour Market Information**

While the need for improved labour market information has long been recognised, responsibility has yet to be assigned to an agency to lead the development of a national system. Individual studies, sectoral surveys and occupational needs analyses have been undertaken by training providers, economic analysts, and others. Their value has been limited by the absence of an occupational classification system and the data which would be assembled within such a system.

### **7.2.8 Employment Services**

Employment services are currently directed at the economically disadvantaged and tend to be a function of external funding programmes. A sustainable national employment services system is difficult to design and justify in an economy with a significant labour surplus.

## **7.3 An Improved Labour Capital Formation System**

While outside the terms of reference of this study, the following section offers for discussion purposes, a responsibility/input/output matrix which shows the interaction between the various components of an improved labour capital formation system which would more fully satisfy the sustainability assessment shown in Appendix A.

The matrix which follows, draws on the analysis shown in the previous section and indicates the roles, responsibilities, inputs and outputs of all contributing ministries and agencies for each system component. This matrix provides the framework for a policy discussion which would rationalise the national approach to labour capital formation.

Roles, responsibilities, inputs and outputs of all contributing ministries and agencies are as shown in the following matrix below.

Responsibility Input/Output Matrix of an Improved Labour Capital Formation System	
<b>Basic Education</b>	
Responsibility	Ministry of Education
Inputs	<ul style="list-style-type: none"> <li>- Facilities</li> <li>- Staff</li> <li>- Programmes</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>- Academic Competencies</li> <li>- Vocational Competencies</li> <li>- Employability Skills</li> </ul>
<b>Career Services</b>	
Lead Responsibility	Ministry of Education
Support Functions	National HRD Coordinator Industry Training Providers
Inputs	<ul style="list-style-type: none"> <li>- Occupational Classification</li> <li>- Labour Market Information System</li> <li>- Industry Profiles</li> <li>- Guidance Counselling</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>- Sectoral Profiles</li> <li>- Career Profiles</li> <li>- Aptitude Testing</li> <li>- Guidance Services</li> </ul>
<b>Skills Training</b>	
Lead Responsibility	Ministry of Education
Support Functions	Vocational Training Corporation Community Colleges Private Training Providers Non-Government Organisations

Inputs	<ul style="list-style-type: none"> <li>- Occupational Classification</li> <li>- Labour Market Information</li> <li>- Employer Defined Competencies</li> <li>- Programmes</li> <li>- Staff</li> <li>- Facilities</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>- Matched Vocational Competencies</li> <li>- Employability Skills</li> <li>- Supply/Demand Equilibrium</li> </ul>
<b>Occupational Classification</b>	National HRD Ministry or Agency Ministry of Planning Ministry of Labour Training Providers Industry Professional Associations Labour Organisations
Lead Responsibility Support Functions	
Inputs	<ul style="list-style-type: none"> <li>- Industry Surveys</li> <li>- Sector Surveys</li> <li>- Household Surveys</li> <li>- National Statistical Data</li> </ul>
Outputs	-
<b>Tests and Certification</b>	Ministry of Labour Education and training Providers Technical and Professional Associations Employers Labour Organisations
Lead Responsibility Support Functions	
Inputs	<ul style="list-style-type: none"> <li>- Occupational Classification</li> <li>- Labour Law</li> <li>- Test Design</li> <li>- Certification Standards</li> </ul>

Outputs	<ul style="list-style-type: none"> <li>- Test Data Banks</li> <li>- Testing and Evaluation Procedures</li> <li>- Certification Bodies and Procedures</li> </ul>
<b>Labour Law</b>	Ministry of Labour Ministry of Justice Ministry of Planning Ministry of Health Employers Labour Organisations
Lead Responsibility Supporting Functions	
Inputs	<ul style="list-style-type: none"> <li>- Industry Profiles</li> <li>- Wage and Employment Data</li> <li>- Health and Accident Data</li> <li>- Employer Consultations</li> <li>- Labour Consultations</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>- Labour Law and Regulations</li> <li>- Certification Procedures</li> <li>- Monitoring and Enforcement Procedures</li> </ul>
<b>Labour Market Information Systems</b>	National HRD Ministry or Agency Ministry of Planning Employers Training Providers
Lead Responsibility Support Functions	
Inputs	<ul style="list-style-type: none"> <li>- Occupational Classification</li> <li>- Census Data on Population and Demographic Change</li> <li>- NHISS Data</li> <li>- Employment/Unemployment Data</li> <li>- Employer and Sector Surveys</li> <li>- Graduate Tracer Studies</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>- Labour force profiles by Sector and Occupation</li> <li>- Labour Market Signals</li> <li>- Demand Forecasts for Training Providers</li> <li>- Demand and Income Forecasts for Employment Counselling and Career Guidance</li> </ul>

<b>Employment Services</b>	
Primary Responsibility	Ministry of Labour
Support Functions	National HRD Ministry or Agency Ministry of Planning Training Providers
Inputs	- Labour Market Information - Employment/Unemployment Data - Income Data - Demographic Data
Outputs	- Employment/Unemployment Data Base - Employment Incentive Programmes - Referral Services

### 7.3.1 Findings and Commentary: Labour Capital Formation System

Using the methodology outlined in Appendix A, it can be demonstrated that the current labour capital formation system in Jordan lacks sustainability and that a reassessment or strengthening of roles and responsibilities is needed in some elements of the system.

Issues requiring urgent attention are those of:

- designation of a ministry or agency of government with lead responsibility for the coordination and implementation of labour capital formation strategies in Jordan
- early implementation of a national occupational classification system to establish the basic framework and taxonomy for collection and analysis of labour market information.
- further examination of issues relating to the proposed Labour Law and Testing and Certification.
- development of a labour market information system.

Without further development of these system components and the information which they generate, vocational education and training providers, as well as economic analysts, investors, industries, manpower planners, and others will continue to make decisions in a labour capital information vacuum.



## **8.0 Transforming Jordan's TVET System**

During the course of the study two interesting phenomena were noted: firstly, a passionate defence of current practices, and secondly a clear recognition of transformation in the external environment bringing about a parallel need to transform the training system to support the achievement of the economic and social development goals of the Kingdom.

This apparently dichotomous situation is not considered unhealthy. It reflects a community with deep-rooted commitment and loyalty on the one hand, but also one which is actively aware of the global dynamic and ready to adapt, on the other. These values provide a firm foundation for managing change.

The following section details the various components of the change process and discusses the study team findings. These findings are used as the basis for recommending an action and investment programme which will address the issues, concerns, or deficiencies identified during the course of the performance review.

### **8.1 The Change Process**

The change process includes:

- a clear recognition of why change is needed
- a vision of where change should lead
- agreement on the need to adopt a systemic approach
- the need for leadership and coordination
- an action plan with assigned responsibilities, accountabilities, and incentives
- implementation resources
- a formative monitoring process which ensures organisational conformity to the vision and goals.

During the course of the study, these elements were discussed with many stakeholders. The following sections provide findings and commentary on each element.

#### **8.1.1 The Need for Change: Findings and Commentary**

Virtual consensus was expressed on the need for change at all levels in the organisations of the two education and training providers and also from students, graduates, and particularly from employers. There is general concurrence as to why change is needed but there is divergence as to the priorities for change.

Change priorities inevitably vary with the point of origin. Previous studies, projects and programmes have identified clusters of issues and parallel clusters of recommendations for change within the Jordanian TVET system. These issues and recommendations have had implications at the policy, management, and operational levels. Frequently the most difficult issues to address are the policy-related questions. This has resulted in attempts to address lower order issues without prior resolution of policy questions.

It is clear from this experience that effective change can occur only within a hierarchical progression which begins with the policy objectives, moves to the articulation of an action plan, designs management and implementation structures, and finally, addresses strategic operational issues.

#### **8.1.2 Need for a Systemic Approach: Findings and Commentary**

Clear consensus was found on the need to adopt a coherent system-wide approach to change and renewal of vocational education and training and the need to ensure that responsibility for the development of each element of the system be assigned appropriately.

As discussed earlier in the report, the vocational education and training system is a sub-system of the labour capital formation system. Neither are currently being addressed in an integrated manner.

A recent initiative has established a committee chaired by the Minister of Education to formulate a national human resources development strategy. This will provide the overarching framework for the development and coordination of the labour capital formation system. Clarification of the status of community colleges and the appointment of a President for Balqaa' University provides an opportunity to adopt a more systematic approach to integration of the elements of the TVET system. Both initiatives will require leadership and coordination as discussed in section 8.1.4.

---

#### **8.1.3 Future Vision for TVET in Jordan: Findings and Commentary**

The process of "visioning" is not widely used in Jordan as an effective mechanism to assist disparate stakeholder groups to focus their missions and goals on a collective understanding of the preferred future. Consequently, different visions of the future of TVET in Jordan were encountered by the study team.

For the purposes of this study, and holding to the view that TVET is a sub-system of a wider national objective, the following vision statement adapted from another educational jurisdiction is proposed.

*"Our vision is that of a coordinated Technical and Vocational Education and Training system which provides access by all citizens to flexible, relevant, quality education and training opportunities that respond to their needs and the needs of the labour market. Government, industry, institutions and communities will work together to enhance employability and employment, thereby contributing to the economic and social development of the Kingdom."*

An overarching vision of the future that is shared by all stakeholders in the system would serve to bring consistency of purpose and direction to TVET in Jordan.

#### **8.1.4 Leadership and Coordination: Findings and Commentary**

All stakeholders recognise the need for leadership if change is to occur. Some of these stakeholders have no incentive, others do not have capacity as they are overburdened with operational responsibility. Many voiced a strong opinion that the leadership role be assumed by NCHRD.

It is widely recognised in strategic management processes that change management requires a "white knight" or "champion" to maintain focus on the vision, coordinate inputs, plan activities, and ensure that effective monitoring occurs. Jordan currently has no human resources ministry and NCHRD's mandate does not extend to assuming operational leadership. NCHRD does, however, appear to enjoy broadly based support among stakeholders in the TVET system. Two options present themselves for consideration:

1. Including a review of NCHRD's mandate as a task of the Policy Forum recommended in Section 7. This review would explore the merits of empowering NCHRD to play a more active policy coordination role and to work with line ministries and agencies to designate appropriate executing agencies to implement operational change.
2. Facilitating an interministerial agreement which would place coordination of the TVET system on the agenda of the Higher Council for Science and Technology with NCHRD acting as a secretariat for this issue. The role of the secretariat would be proactive in formulating strategic objectives, undertaking options analysis and developing action plans for evaluation by the Council.

Either option would constitute a progressive step towards filling the leadership void which many stakeholders perceive to exist at the present time.

#### **8.1.5 An Action Plan: Findings and Commentary**

During the course of the study, many references were made by individuals at the executive, management, and delivery levels of both VET providers regarding plans to address various issues. Many of these plans focused on individual operational activities. Few were found which were designed to introduce systemic change in a coordinated way with goal of qualitative improvement in training.

The central issue in organisational change is recognising the hierarchy within which activities of the change process occur. This hierarchy should be explicit in the action plan and closely monitored during the implementation process. Establishing the hierarchy is integral to strategic planning and strategic management.

VTC senior managers are currently undergoing professional development in strategic planning as part of the EDTS project. This will provide valuable understandings for future planning and implementation activities. Similar capacity building in the General Directorate of Vocational Education would provide an equally valuable foundation.

#### **8.1.6 Implementing Resources: Findings and Commentary**

Resources have been made available to the TVET system from multilateral and bilateral sources. During recent years the priority focus for the use of these resources has been system expansion and hardware investment.

Resources for the change process identified in this study indicate that the investment priority must shift to software (i.e., building human resources and institutional capacity to enhance learning activities of both trainees and the institutions themselves. Recognising that bilateral grant assistance is becoming less accessible, and also the reluctance of the Government of Jordan to use loan funds for technical assistance purposes, a shift from a hardware focus to a software focus may present some challenges for those responsible for managing development funding resources.

#### **8.1.7 Monitoring and Evaluation: Findings and Commentary**

Strategic planning processes form a continuous cycle of planning, organising, implementing, monitoring, and evaluating. The monitoring and evaluation functions

provide the mechanism for continuous observation and learning necessary to ensure that programme activities are meeting programme objectives.

Monitoring and evaluation is not an activity which is integral to the TVET organisational structures in Jordan, this will need to be addressed as an investment component of the change process.

## **8.2 Change Issues Arising from the Performance Review**

The foregoing sections discuss the elements of the change management process, the imperative of addressing action issues within a hierarchical continuum, and supporting those actions with appropriate implementing structures.

The performance review identifies the following change issues as central to the pursuit of the relevance, quality, and efficiency criteria for TVET programming in Jordan.

### **At the Policy Level**

- a need to adopt a systemic approach to labour capital formation and relieve training providers of responsibilities and functions which more appropriately reside with the national human resource coordinating ministry or agency;
- a need to establish an active coordinating body for TVET in Jordan to ensure coherence of programming and, particularly, investment;
- a need to further differentiate the objectives and programming of vocational education and vocational training.

### **At the Management Level**

- a need within VTC to move from process planning and activity management to strategic planning and strategic management;
- a need within VTC to develop and implement a management information system in conjunction with NCHRD. This will ensure consistency between VTC's internal management requirements and the information requirements of the labour capital formation system.

## **At the Operational Level**

- a need to restructure TVET programme frameworks at all levels to more accurately reflect the current and future requirements of the labour market;
- a need to engage in a process of programme renewal using a competency-based approach to enrich programme content, upgrade staff skills, and develop improved learning resources.

## **8.3 Investment Programme to Support Change**

To meet the needs identified in the previous section, the study team recommends consideration the following investment programme. This programme is presented in outline form only in order to illustrate the probable shifts in responsibility and resources required to adopt the preceding recommendations.

### **8.3.1 Policy Issue One: Adopting a Systemic Approach**

#### **Action Steps**

- NCHRD advocates for the approach and seeks endorsement from the Human Resource Development Strategy Committee;
- Responsibility is assigned to the appropriate ministry or agency to develop and coordinate the elements of the national labour capital formation system;
- NCHRD assumes leadership responsibility for development of the labour market information system and the national occupational classification system.

#### **Required Resources**

- financial resources to establish and acquire staff for additional capacity in NCHRD;
- technical assistance either from bilateral sources or HRDSL II.

### **8.3.2 Policy Issue Two: A TVET Coordinating Body**

#### **Action Steps**

- NCHRD in collaboration with the President of Balqaa' University, as leader of the community college system, VTC and the Director General of the General Directorate

of Vocational Education, advocate for designation of an appropriate TVET coordinating body with the Human Resources Development Strategy Committee.

### **Required Resources**

- local resources to formulate a policy options analysis paper.

### **8.3.3 Policy Issue Three: Differentiation of Vocational Education and Vocational Training**

#### **Action Steps**

- NCHRD advocates for the convening of a Policy Forum to examine current global thought and direction relating to the differentiation of vocational education and vocational training;
- NCHRD, together with the Director General of VTC and MOE formulate policy issues for review;
- Three or four senior level international vocational education policy professionals are identified as specialists to support the Policy Forum;
- Information resource packages on the current status in Jordan are forwarded to international policy professionals for review and analysis;
- Policy Forum is convened with presentations on selected policy questions;
- Existing Broadlines are reviewed for either continuing validity or modification in light of the Forum conclusions;
- Programme adjustments are made accordingly.

### **Required Resources**

- NCHRD/VTC/MOE senior management resources to design, convene, and implement conclusions of the Policy Forum;
- Financial resources to support convening the Forum and the international participants.

#### **8.3.4 Management Issue One: VTC Strategic Management**

##### **Action Steps**

- VTC formulates a Briefing Paper for ratification by VTC Board of the rationale, intent, and process steps associated with the adoption of strategic planning and management processes;
- VTC Director General reviews the current senior management team and assigns leadership responsibility for implementing all aspects of a strategic planning/management process commencing in January, 1998;
- Ministry of Planning identifies bilateral technical assistance resources for medium-term duration to formulate and operationalise the first strategic plan;
- VTC assembles the planning team and initiates the project.

##### **Required Resources**

- VTC senior management resources to focus on the issue and nurture its development to the point of implementation;
- Medium-term bilateral technical assistance resources.

#### **8.3.5 Management Issue Two: VTC Management Information System**

##### **Action Steps**

- VTC formulates a Briefing Paper for ratification by VTC Board of the rationale and probable investment associated with the development of a Management Information System;
- VTC designates suitably qualified senior management leadership for system development;
- VTC and NCHRD coordinate the identification of information categories and products necessary to serve internal information requirements as well as those of the proposed labour market information system;



- VTC identifies a local systems analyst consultant to recommend the system architecture, hardware, and software;
- VTC initiates the formulation of a sub-project proposal if the activity is to be funded from multi-lateral loan funds;
- VTC procures hardware and software. Software is customised to the local MIS requirements with the assistance of the systems analyst consultant;
- VTC initiates staff training and mobilises the system;
- Historical data is transferred to the new system as appropriate.

#### **Required Resources**

- VTC senior management resources to undertake initial research, and formulate broad briefing paper;
- VTC, NCHRD, and MOP senior management resources to determine the internal and external information product needs and formats;
- Financial resources for local systems analyst consultant;
- Financial resources for hardware and software procurement;
- Financial resources for staff training.

#### **8.3.6 Operational Issue One: Programme Framework Review**

##### **Action Steps**

- VTC consolidates existing occupational specialisations for the apprentice programme into more broadly based occupational categories built on generic competencies within those occupational categories;
- VTC assigns senior management leadership for this strategic objective;
- VTC and MOP identify technical assistance resources to undertake the programme framework review;

- VTC identifies productive sector partners to participate in the review;
- Revised frameworks are developed and ratified for progressive introduction commencing with the 1998 academic year.

### **Required Resources**

- VTC senior management resources to manage the review process;
- Technical assistance to support the review process;
- Resources to access appropriate productive sector personnel to support the review process.

### **8.3.7 Operational Issue Two: Training Programme Renewal**

#### **Action Steps**

- Based on the output from the programme framework review, VTC selects one occupational family for programme renewal;
- VTC creates a programme renewal team drawn from TDI, the Programme and Curriculum Directorate, Training Centre instructional staff, and productive sector representatives;
- The programme renewal team creates a vision or template for a model programme outlining the expected level of detail for programme aims, structure, content, competencies, instructor guides, student learning resource materials, workshop exercises, tests, and evaluation. This model would recognise the realities of fiscal limitations and available instructional resources in its design;
- VTC identifies financial resources to commence renewal of programmes in accordance with the revised framework and broad approved model;
- VTC identifies appropriate technical assistance support from bilateral or multi-lateral sources;
- VTC implements programme renewal with a parallel programme of technical upgrading of instructional staff.

## **Required Resources**

- VTC senior management resources to design and develop the project documents and sub-project proposals for funding;
- Financial resources for the work of the programme renewal team;
- Financial resources for the acquisition and probable translation of learning resource materials;
- Financial resources for upgraded workshop equipment for delivery of programmes to be piloted;
- Financial resources for technical upgrading of staff;
- Financial resources for technical assistance to programme renewal process.

### 1.0 Introduction

Section 7.0 of the report strongly recommends a systematic approach to labour capital formation in Jordan. Each element of the system is identified and its current status examined. A conclusion is reached that the labour capital formation system is not sustainable in its present form.

Recognising that evaluating sustainability is an evolving discipline, this Appendix outlines the most current thought on the subject and uses the methodology to identify those actions which would lead to the progressive development of a more sustainable system

### 2.0 The Bellagio Principles

The issue of the sustainability of human ecology and economy was brought into renewed focus for present generations by the work of the 1987 World Commission on Environment and Development. In its conclusions this Commission called for new ways to measure and assess progress towards sustainable development. This call has subsequently exercised the minds of nations, communities, international organisations, academics, corporations, and NGO's.

In November 1996 an international group of measurement practitioners and researchers from five continents came together at the Rockefeller Foundation's Study and Conference Centre in Bellagio, Italy to review progress to date and to synthesise insights from practical ongoing efforts. The result of this gathering was the articulation of a set of principles which became known as the Bellagio Principles to serve as guidelines for assessing the sustainability of any activity, institution, system, or organisation.

The principles address the whole of the assessment process including the choice and design of indicators, their interpretation, and communication of the result. They are interrelated and are intended to be applied as a complete set.

These principles deal with four aspects of assessing progress toward sustainable development. Principle one deals with the starting point of any assessment -- establishing a vision of sustainable development and clear goals that provide a practical definition of that vision in terms that are meaningful for the decision-making unit in question. Principles two through five deal with the content of any assessment and the need to merge a sense of the overall system with a practical focus on current priority issues. Principles six through eight deal with the key issues of the process of

assessment, while principles nine and ten deal with the necessity for establishing a continuing capacity for assessment.

The Bellagio Principles read as follows:

## **Guidelines for the Practical Assessment of Progress Towards Sustainable Development**

### **1. Guiding Vision and Goals**

Assessment of progress toward sustainable development should be guided by a clear vision of sustainable development and goals that define that vision.

### **2. Holistic Perspective**

Assessment of progress toward sustainable development should:

- include review of the whole system as well as its parts
- consider the well-being of social, ecological, and economic sub-systems, their state as well as the direction and rate of change of that state, of their component parts, and the interaction between parts
- consider both positive and negative consequences of human activity, in a way that reflects the costs and benefits for human and ecological systems, in monetary and non-monetary terms.

### **3. Essential Elements**

Assessment of progress toward sustainable development should:

- consider equity and disparity within the current population and between present and future generations, dealing with such concerns as resource use, over-consumption and poverty, human rights, and access to services, as appropriate
- consider the ecological conditions on which life depends
- consider economic development and other, non-market activities that contribute to human/social well-being.

#### **4. Adequate Scope**

Assessment of progress toward sustainable development should:

- adopt a time horizon long enough to capture both human and ecosystem time scales thus responding to needs of future generations as well as those current to short term decision-making
- define the space of study large enough to include not only local but also long distance impacts on people and ecosystems
- build on historic and current conditions to anticipate future conditions - where we want to go, where we could go.

#### **5. Practical Focus**

Assessment of progress toward sustainable development should be based on:

- an explicit set of categories or an organizing framework that links vision and goals to indicators and assessment criteria
- a limited number of key issues for analysis
- a limited number of indicators or indicator combinations to provide a clearer signal of progress
- standardizing measurement wherever possible to permit comparison
- comparing indicator values to targets, reference values, ranges, thresholds, or direction of trends, appropriate.

#### **6. Openness**

Assessment of progress toward sustainable development should:

- make the methods and data that are used accessible to all
- make explicit all judgments, assumptions, and uncertainties in data and interpretations.

#### **7. Effective Communication**

Assessment of progress toward sustainable development should:

- be designed to address the needs of the audience and set of users
- draw from indicators and other tools that are stimulating and serve to engage decision-makers
- aim, from the outset, for simplicity in structure and use of clear and plain language.

## **8. Broad Participation**

Assessment of progress toward sustainable development should:

- obtain broad representation of key grass-roots, professional, technical and social groups, including youth, women, and indigenous people - to ensure recognition of diverse and changing values
- ensure the participation of decision-makers to secure a firm link to adopted policies and resulting action.

## **9. Ongoing Assessment**

Assessment of progress toward sustainable development should:

- develop a capacity for repeated measurement to determine trends
- be interactive, adaptive, and responsive to change and uncertainty because systems are complex and change frequently
- adjust goals, frameworks, and indicators as new insights are gained
- promote development of collective learning and feedback to decision-making.

## **10. Institutional Capacity**

Continuity of assessing progress toward sustainable development should be assured by:

- clearly assigning responsibility and providing ongoing support in the decision-making process
- providing institutional capacity for data collection, maintenance, and documentation
- supporting development of local assessment capacity.

## **3.0 Sustainability Assessment of Jordan's Labour Capital Formation System**

This section of the Appendix provides a preliminary assessment of Jordan's Labour Capital Formation system through the window of a sustainability matrix using the elements of the system as one axis and the Bellagio Principles as the second axis.

The indicators of positive, neutral, and negative are clearly broad and have been applied using data, information, and insights gained during the study. Consequently the analysis is impressionistic as opposed to definitive, but is, nevertheless, considered helpful in identifying priorities and responsibilities for an improved system.

# Sustainability Matrix for the Labour Capital Formation System in Jordan

Sustainability Matrix										
Belaggio LCF system	Vision	Holism	Essential Elements	Scope	Focus	Openness	Communication	Participation	Ongoing Assessment	Institutional Capacity
Basic Education	P	P	P	P	O	O	P	O	N	N
Skills Training	P	N	P	N	N	O	O	O	N	P
Tests & Certification	P	O	O	O	P	P	O	O	N	P
Occupational Classification	N	N	O	N	P	N	N	O	N	
Labour Law	N	N	P	P	O	P	O	O	N	N
Labour Market Information	N	N	N	N	N	N	N	N	N	N
Career Services	O	N	O	N	N	O	P	N	N	O
Employment Services	O	O	O	O	O	O	O	O	O	O

P = Positive    O = Neutral    N = Negative



This assessment provides an overall perspective on the state of development of the system as well as a qualitative characterisation of the actions that need to be taken for future development. Interpretation of the qualitative assessment also provides indicators of where responsibility for leadership and support to system development should rest if sustainability is to be achieved.

Taking the issue of occupational classification as an example, there is no nationally subscribed vision (Principle 1) of the structure, value, or intent for the occupational classification system. It is not used as the taxonomy for labour market data collection, it is not widely used by the productive sector to classify its own employees, and has not been adopted by all education and training providers. An assessment of the characteristics of Holism (Principle 2) in the current occupational classification system indicates that it does not embrace "the whole system as well as its parts", or allow for flexibility to consider "direction and rate of change" within the system.

A similar form of analysis can be conducted for each element of the Bellagio Principles, the sum of which would lead to the conclusion that this important element of the national labour capital formation system, should receive high priority and that primary responsibility could more appropriately be assigned to the ministry or agency responsible for national human resources development coordination rather than to a vocational training provider. Similarly, the assignment of sole responsibility to training providers to demonstrate relevance of training and to ensure the employability of graduates is unachievable in the absence of labour market information. This has negative impacts on the sustainability of the entire labour capital formation system.

It is not the intent of this Appendix to provide an exhaustive analysis or detailed commentary but to illustrate the areas of weakness which are currently limiting the sustainability of labour capital formation in Jordan and to suggest a potential methodology for decision-making on system realignments, responsibilities, and planning priorities.

## LIST OF ANNEXES

- Annex 1 Terms of Reference for a Study to Undertake a Performance Review of VTC and Related Linkages Between Training and Employment in Jordan
- Annex 2 Specializations Available to Comprehensive Vocational Secondary Students
- Annex 3 Third Broadline for Secondary Industrial Education (Comprehensive and Applied) Objectives
- Annex 4 VTC History and Mandate - A Working Paper in Support of an NCHRD Performance Review of Vocational Education and Training Providers in Jordan
- Annex 5 VTC Training Centres and 1996 Enrollment Levels
- Annex 6 Vocational Training Corporation Organization Chart
- Annex 7 Regional Vocational - Training Directorate Job Description
- Annex 8 VTC 1996 Programme Profile
- Annex 9 School-to-Work Policy Insights from Recent International Development
- Annex 10 VTC Training Units for the Welding and Metal Shaping Specialization
- Annex 11 Representative Training Unit for Carpentry
- Annex 12 Survey Questionnaire for Library and Audio-Visual Resources in the Vocational Training Centres
- Annex 13 Motive Power in-School Curriculum for the Specialty Trade - Motor Vehicle Mechanics
- Annex 14 VTC's Professional Development and Technical Assistance
- Annex 15 TD1 Training Activity Profile
- Annex 16 TT1 Training Activity Profile
- Annex 17 Proposed Law of 1995 Organization of Vocational Labour Law
- Annex 18 Study Plan for the Secondary Comprehensive/Vocational Education Stream (Commercial Branch)

## Bibliography

1. Letter No. NCHRD 116/15/10/384 of 9/7/1997 to VTC Concerning Technical Assistance, Grants and Expenditure Areas and the Response of VTC In Their Letter No. VTC 4/8/..../3739 Of 28/7/1997.
2. VTC History and Mandate, Suad Farkouh, NCHRD, July 1997 A paper.
3. Hashemite Kingdom of Jordan Report No. 12675-JO - Poverty Assessment - VOLUME 1: Main Report, Population and Human Resources, Operations Division - Country Dept. II, Middle East and North Africa Region - Document of the World Bank October 28, 1994.
4. HKJ Report No. 126 75-JO - Poverty Assessment - VOLUME II: Labour Market, Document of the World Bank, October 28, 1994.
5. Report No. 12645 JO - Jordan Consolidating Economic Adjustment and Establishing the Base for Sustainable Growth (VOLUME I Main Report), August 24, 1994 - Country Operations Division - Country Department II. Middle East and North Africa Region, Document of the World Bank.
6. Report No. 1265 J) - Jordan Consolidating Economic Adjustment And Establishing The Base For Sustainable Growth (VOLUME II: Annexes and Statistical Appendixes), August 24, 1994 - Country Operations Division -Country Department II - Middle East and North Africa Region, Document of the World Bank.
7. VTC Expenditure Breakdown as of Aug. 1, 1997 - EDTS P T66 B.D.
8. VTC - Letter No. 8/1/4/3894 or 14/7/1997 - Letter from the Ministry of Planning to NCHRD on the estimated Cost for a trainee abroad.
9. VTC - Developing Small and Medium-Sized Enterprises - A Newspaper Clipping from Ad-Dustour Newspaper of Sunday, August 10, 1997, Page 18 (On Industrial Extension Project).
10. Technical and Vocational Education and Training as Part of Human Resources Development (JOR/94/01A) - A Consolidated Report Based on a UNDP Technical Support Inter-Agency Mission, ESCWA, FAO, ILO, UNESCO, UNIDO, Agency 1996, HK Jordan.

11. School - To - Work Policy Insights from Recent International Developments, Centerfocus Number 14/January 1997 - University of California at Berkeley.
12. Curricula & Textbooks and their Response to the Challenge of the Age. A paper presented by Dr. Talal Al-Zu'bi for the Seminar organized by the Souman Cultural Forum, May 1997 - MOE - Amman
13. Teachers' Professional Development (Educational Certification and Training), Prepared by the General Directorate of Educational Training, May 1997 - MOE - Amman.
14. School Building and Equipment - A paper presented at the Seminar on "Present Educational Situation in Jordan and Future Challenges", Prepared by DG. of Educational Technology - MOE, Amman, May 1997.
15. Broadlines for Secondary Industrial Education (Comprehensive and Applied), Prepared by the National Team for Secondary Industrial Education, General Directorate of Curriculum and Educational Technology, 1991.
16. The Comprehensive School: Its concept, objectives and technique of implement - How to transfer secondary schools into comprehensive ones, MOE, 1997.
17. Broad Guidelines for the Secondary Education Curricula, Amman, 1992 (with English translation of some).
18. Royal Advice to Start Preparation of a New Educational Development Plan (A newspaper clip with Eng. translation).
19. Tables Indicating Student Cost Compared with Self-Production Revenues in the Vocational Education Stream (Eng. Translation of headlines), Moe, 1990-1994.
20. Ministry of Education Organizational Structure 1995-1996 (with Eng. translation of the General Directorate of Vocational Ed.)
21. Acceptance in the first secondary vocational education branches in both MOE & VTC for 1996/1997, prepared by the Graduates Tracing and Employment Division, MOE, 1996 - Amman.

22. Curriculum for Industry and Practical Training - Air Conditioning and Refrigeration Specialization - first & second secondary vocational comprehensive (Industrial Branch), 1994, prepared by engineers Adnan Faris, Refa'at Abdul-Latif, Moh'd Sakhnini, Moh'd Amin Qadiri & Rushdi Rashid.
23. Strategy for increasing social productivity and overcoming poverty, Ministry of Planning, 1997.
24. Project Work Component 2311 - Vocational Training Corporation Management Review, Mission Period July - November 1995. Final Report Prepared for the Association of Canadian Community Colleges (ACCC) and VTC., by Ms. Brenda Cooke.
25. Law No. 30, 1987 - The Higher Council for Science and technology.
26. The Jordanian Experience in Reinforcing Vocational Education, Training and Certification for the Youth - Prepared by Engineer Ahmad Shadid Huwitat/Director of Vocational Production - MOE, Amman - (A working paper for the workshop on "Reinforcing Ed. & Training Opportunities for the Youth in the Arab Countries" 2/3 - 4/3/1997.
27. The Educational Statistics Report, MOE 1995 - 1996.
28. Training and Development Institute (TDI) - Establishment and Organizational Structure (English).
29. TDI Employees With Name, Age, Date of Employment, Job Title, Qualifications and Notes (English), 1997.
30. A Proposed Plan for the TDI Work in 1996 (Arabic).
31. A Summary of TDI Annual Report for 1996 (Arabic).
32. Standards Testing and Training Centre Project Proposal (English).
33. 1997 Annual Plan for TTT (Arabic).
34. UNDP/ILO Industrial Extension Services Project: JOR/92/001 SME Needs Assessment Survey-Executive Summary of Survey Report.

35. UNDP JOR/92/001 - Development of Vocational Training and Industrial Extension Services, April 9, 1992.
36. TTI Employees with Names, Age, Date of Employment, Job Title, Qualifications and Notes, (Arabic), 1997.
37. Testing and Training Institute (TTI) - Objectives, Training Courses and Participants in 1996 - (English), Hisham Da'ajeh, NCHRD, 1997.
38. Training and Development Institute (TDI) - Objectives, Training Courses and Participants in 1996 - (English) Hisham Da'ajeh, NCHRD, 1997.
39. Test and Training Institute (TH): Tasks, Activities & Programmes.
40. By-Law No. (56) of 1996 - Labour Inspectors By-Law, Issued According to Article 7 of The Labour Law No. (8) of 1996.
41. Law No. (8) of 1996 - Labour Law.
42. VTC Letter No. 15/3/Kh/8292 of 16/6/1997 Concerning the Formation of a Committee to Coordinate TVET Work with Other Concerned Parties.
43. Fanshawe College Graduate Employment Survey Report 1995. Published Jan. 1997 - Fanshawe College, London - Ontario.
44. TVET Proposed Strategy, Action Plan and Investment Programme (1995-2000) - Draft Preparation Mission Report, Nov. 1994.
45. Three-Year Development Plan 1973 - 1975, National Planning Council, The Hashemite Kingdom of Jordan.
46. Letter No. 1/15/13H3 of 5/9/1995 Concerning The Decision To Change NCERD to NCHRD Upon Decision No. (116/95) of the Higher Council for Science and Technology in its Session No. 28 of 27/7/1995.
47. VTC Headquarters Employees: Names, Qualifications, Date of Appointment, Present Job and Training Courses Attended.
48. A Discussion Seminar on Modern Development in Concept and Techniques for Developmental Planning in the Arab Countries: A development of the Concept of "Sustainable Development & its Reflections on Planning in the Arab countries -

- the Environmental & Human Perspective". Dr. Jamil Taher, Tabat - Morocco, 24-26/4/1995 (Arabic).
49. A study of drop-outs for the academic year 95/96 - September 1996 - Apprenticeship & Medium Term Programmes.
  50. Trainee dropouts in 1st, 2nd & 3rd years in all VT Centres for the Apprenticeship & Med. Term programmes - Tables.
  51. Trainee Drop-Outs 1996/1997 - Apprenticeship & Medium Term programmes.
  52. Data sheet for Drop-Outs of 1994/1995 Entrants into Apprenticeship & Med Term programmes.
  53. Number of Entrants into the Apprenticeship programme for 1996/1997 in all specializations.
  54. 32 publicity brochures for 10th grader son vocational counselling & guidance.
  55. Five Year Plan for Economic and Social Development 1986 - 1990, Ministry of Planning, H.K.J. (English Version).
  56. Five Year Plan for Economic and Social Development 1981 - 1985, National Planning Council, Amman - Jordan (English Version).
  57. Vocational Training Corporation Management Skill Development, final report - Dr. Robert A. Bigsby, June 1996.
  58. Temporary Law No. (35) of 1976 - Vocational Training Corporation Law.
  59. By-Law No. (13) of 1974 - Vocational Training By-Law, issued according to Article (117) of Educational Law No. (16) of 1964.
  60. An Assessment of vocational and technical Ed. in Jordan. Publication No. 13 - NCERD, May 1992.
  61. Regional Study on Labor Market Oriented Training - Country Monograph - Technical Education and Vocational Training in Jordan, Heidelberg, April 1995.

62. Training Needs Survey in Basic Occupational Levels in the Industrial Sector and Services (Hotels, Restaurants & Bakeries), July, 1991.
63. Regional Study on Labour Market Oriented Training - Summary of the 9 Monographs, Heidelberg, Sept. 1995 - revised edition.
64. Law No. (11) of 1985 - Law of the Vocational Training Corporation, (Arabic).
65. VTC Annual Report - 1996: Accomplishment and Annexes.
66. Report of the Committee on the Educational Policy in Jordan, January 1987 (Arabic).
67. Training and Development Institute, Amman Jan. 1994
68. The 1997 Plan for Training Courses to be held in the Three Institutes of the VTC, Amman, 1997 (Arabic).
69. Tests and Training Institute VTC - A Brochure.
70. Occupational Safety and Health Institute, VTC - A brochure.
71. A Proposed Law for Organizing Vocational Work, 1995 (Arabic and a draft translation in English) - 2 copies of the translation
72. Note on the latest developments related to VTC Law No. (11) of 1985.
73. The Status Quo of Vocational Education and Training - Specialists Committees Report, MOE, 1987.
74. Training in the Private Sector, Dr. Zaki Ayyoubi, Chamber of Industry.
75. Samples of International Experiments in Vocational Education and Training in the Double System of the German Republic, Ali Nasrallah.
76. A Strategic Plan for Vocational and Technical Education and Training for Adults in Jordan, Salim Ahmad Amin, NCHRD.
77. Effects of the Mass Media in Reducing the Negative Attitude Towards Vocational Work, Rima Rashad Abul-Failat & Suleiman Qaryuti, VTC.



78. Statistical Study for the Industrial training situation in Jordan, Dr. Mahmud Abu Ali & Dr. Salahid -Din Abdallah.
79. Vocational Training Costs and Financing Sources - A Case Study/VTC, Ali Nasrallah & Farouk Al-Nimr, VTC. (2 copies).
80. Small and Medium-Sized Enterprises and their Support Services, Daoud Shakbou'ah, VTC.
81. Vocational Training Corporation Institute Services for the Vocational Training Centres and the Jordanian Labour Market, Hisham Rawashdeh, Dr. Abdul - Aziz Arabiyyat & Moh'd Abdul - Muttaleb.
82. Partnership between the Public and Private Sectors in Offering and Financing TVET, Zaydoun Al-Rashdan, Ministry of Planning.
83. An American Study on Labour Requirements and Higher Education Husni Ayesh - Member of the House of Lords/MP.
84. Imported and Exported Workforce, Kamal Salah, General Statistics Department, Ammah.
85. Communication and Training, Dr. Ibrahim Abu Arqoub, Jordan University of Jordan.
86. Report on the Workshop held by VTC and NCHRD, Hani Khleifaat.
87. The Petroleum Refinery Training Experience, Moh'd Sweisah, Petroleum, Refinery.
88. Ten Brochure About Ten Specialisations Offered in Different VTCs.
89. Information and training, Jabir Hajjaat, Radio & TV Corporation.
90. Vocational classification in Jordan:: From Theory to Practice, Hani Khleifaat, VTC.
91. Status Quo and Prospects of Training at VTC, Farouq Nimr, Moh'd Ibrahim & Hadirah Al-Bakhit, VTC.

92. International Experience in Vocational Training, Dr. Ashour, Arab Centre for Vocational Training and Trainer Preparation, Lybia.
93. The Status Quo of the Jordanian Labour Market, Adel Lutfi, Ministry of Labour.
94. Training in the Armed Forces: Status Quo & Prospects, T. Hassan Othman Hassan.
95. Tourist Training in Jordan, Sireen Jankaat, Abeer Mubayyidin & Dr. Nazih Dabbag, Ministry of Tourism.
96. The Jordanian Woman & Vocational Training. Hiyaam Kalimaat, Queen Alia Fund.
97. Public & Private Sector Partnership TVET, Zaydoun Rashdan & Ahmad Al-Wakid, Ministry of Planning.
98. Influence of the Audio-Visual Media in Reducing the Negative Attitude Towards Vocational Work, Dr. Abul-Rahman 'Addas - University of Jordan.
99. Training as Preparation for Work - for Personal and Small-Scale Enterprises, Dr. Abu Bakr Abdin Badawi, International Labour Organization (ILO).
100. Preparation of the Methodology for Training Modules at VTC, Samih Jaber, Omar Azayzah & Allaam Al-Souss, VTC.
101. Training in the Construction Sector, Atif Al-Doughmi, Arab Contractors Union.
102. Recommendations of the Conference on Development of Vocational Training in Jordan (Arabic with Eng. translation).

---

103. Vocational Education in Jordan, Dr. Muthar Al-Masri Al Al-Beit Foundation. 1993 (Arabic)
104. Final Report of the Workshop on Curriculum and Programme Preparation for Vocational and Technical Training, 1996.
105. Draft Plan for the Advancement of Vocational and Technical Education in the Nineties, Lebanon, 1993.

106. Secondary Vocational Education: Comprehensive and Applied in the MOE schools (Status Quo and Aspirations), Ali Nasrallah, 1993 - an article in Risalatul - Mu'allim, Issue 2 & 3, Vol. 3, Sept. 1993, Amman.
107. UNESCO Statistical Yearbook 1195 - UNESCO Publishing and Berman Press, 1995.
108. Report No. 602 - Appraisal Report for the Irbid VTC and the Tafileh VTC Complex (Male and Female), NCHRD, Sept. 1992.
109. Matching the Outcomes of the Educational System with the Labour Needs to Serve the Goals of Expanding the Economic Base, Ministry of Planning & UNDP, April 1995 (Arabic with an English Abstract).
110. Secondary Vocational Education in Jordan - "Overview" University of Jordan Study, July 1996.
111. Summary of the Study on Evaluating Vocational Education and Training in Jordan, Salim Amin, 1992 NCERD (Arabic) - as approved by the Intermediary.
112. The Jordanian Labour Force and its Needs of Manpower, a paper by Dr. Hussein Shakhateh, Ministry of Planning, 1993, Amman. (Arabic).
113. Amman Standard Testing and Training Centre Subproject (ASTTC) Report No. 601, NCERD, Sept. 1991 (English).
114. Secondary Vocational Comprehensive Education in Jordan - An Evaluative Study; Dr. Suleiman Rihani, et. al, University of Jordan, July 1996 (Arabic).
115. Project Documents - Occupational Safety and Health Institute (OSHI) Proposed Plan for Development, Dr. Breckin and Abdel-Rashim Abdel Jaber, Dec. 1984.
116. List of employees at OSIII, 1997.
117. OSHI Activities and Accomplishments (1984 - 1996).
118. Studies Carried Out by OSHI (1984 - 1995)
119. training Programme for Health and Safety Supervisors (brochures).
120. OSHI - A Brochure (English).

121. A Syllabus for Supervisors of Industrial Safety Training Programme (Arabic).
  122. training Services Offered by OSHI - a brochure (Arabic).
  123. Names of Jordanian institutions, addresses and number of employees, (Arabic).
  124. Report on safety matters at Marka Vocational Training Centre (Arabic), 1988.
  125. Report on safety measures at the Supervisors and trainers' Institute,(Arabic), 1988.
  126. Report on safety measures at Ain-el-Basha VTC, 1988.
  127. Names of Participants in the Industrial Safety Supervisors' Training Programme (2/11/1996 - 2/8/1997).
  128. Safety in the Institutes/Centres of the VTC Corporation, Letter No. /248/10/2 of 14/4/1997 (Arabic with Eng. translation).
  129. OSHI's 12th Annual Report for 1995 (Arabic).
  130. OSHI's 13th Annual Report for 1996 (Arabic).
  131. OSHI's 9th Annual Report for 1992.
  132. OSHI's 10th Annual Report for 1993.
  133. OSHI's 11th Annual Report for 1994.
- 
134. OSHI Project #726-Canadian project report from 1989/90 - 1991/99.
  135. VTC's Annual Report, 1992, Amman.
  136. VTC's Annual Report, 1993, Amman.
  137. VTC's Annual Report, 1994, Amman.
  139. VTC's Annual Report, 1995, Amman.

140. VTC's Annual Report, 1996, Amman.
141. Cost and Cost-Efficiency Issues, MOE Schools, Publications Series No. 31, NCERD, Dec. 1993
142. Education and Training in Jordan: A Descriptive and Financial Survey, Publications Series No. 30, NCERD, Dec. 1993..
143. Staff Appraisal Report, Report No. 13790-JO, Documents of the World Bank, Second Human Resources Development Sector Investment Project, March 3, 1995 (TVET).
144. The Five Year Plan 1976 -1980, National Planning Council, Jordan (English and Arabic Version).
145. The Basic needs of the Jordanian Populations Until Year 2005 and Their Link with Demographic Factors, Dr. Abdallah Zu'bi, Dr. Hussein Shakhathreh and Dr Moh'd Al-Arabi, Amman 1994 (Arabic).
146. Issues and Models in Vocational Education. Munther W. Masri, 1987
147. The Five Year Plan for the Period 1993 - 1997 - Ministry of Planning.
148. Tracer Study for 1986 Graduates in the Apprenticeship Programme of the VTC in the Labour Market, VTC 1992 (Arabic)
149. A Guide to the Training Programmes, VTC Jan. 1996 (Arabic).
150. Meeting the Challenge - Vocational Training: Current Status and Future Perspective, Mazen Hashweh et. al, Swiss Agency for Development and Cooperation, Jerusalem, Jane 1996 (English).
151. Human Resources Development, (An Abstract) of the workshop held in Oct. 1995 - Amman by the MENA Economic Summit, Moderator: Baroness Perry. Cambridge University, U.K. (English)
152. Privatization, (An Abstract) of the workshop held in Amman by the MENA Economic Summit, Moderator: Abdel Rahman Saidi, Minister of Privatization, Morocco.
153. "Small and Medium-sized Enterprises in Creating New Work Opportunities", An Abstract presented at the MENA Economic Summit, Moderator: Micahel Kailis - MG Kailis Group, Australia.
154. Evaluating Vocational Training Programs, A Practical Guide, Gordon Hunting, Manual Zymelman & Martin Godfrey, A World Bank Publications, Washington, D.C., 1986.

