International conference on vocational education and training in Asia Pacific region: vocational education and training for all.

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International Conference on Vocational Education and Training in Asia · Pacific Region

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KEYNOTE SPEECHES
New Challenges to Technical and Vocational Education

What we learned from the Second International Congress on Technical and Vocational Education (Seoul, April 1999)

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Background

On the eve of the twenty-first century which will be the era of knowledge, information and communication, the emerging challenges such as globalisation and the revolution in information and communication technology have signalled the need for a new human-centred development paradigm. Technical and vocational education (TVE) as an integral component of life-long learning, has a crucial role to play in this new era as an effective tool to realise the objectives of a culture of peace, environmentally sound sustainable development, social cohesion and international citizenship.

To examine how this area of education must adapt to the new phenomena, the United Nations Educational, Scientific and Cultural Organization (UNESCO) organized the Second International Congress on Technical and Vocational Education in Seoul, Republic of Korea in April 1999. This event whose theme was Lifelong learning and training: A
bridge to the future, attracted more than 700 participants including 39 Ministers/Vice Ministers from 130 countries.

Extensive debate among TVE policy-makers, researchers, trainers and representatives from industry took place on current trends and future orientation of TVE in the new century. At the end, a set of recommendations was formulated and submitted to UNESCO and its Member States for action. This paper attempts to summarize the outcome of this unprecedented world Congress which has been considered a milestone in the development of technical and vocational education.

A new paradigm

The twenty-first century will bring a radically different economy and society with profound implications for technical and vocational education. TVE systems must adapt to these key features which include globalization, an ever-changing technological scenario, the revolution in information and communications, and the consequent rapid pace of social change. The implications of these transformations include the increased mobility of labour and capital, uneven impacts upon rich and poor, and emerging market economies in both rural and industrial sectors. The knowledge-based society which these changes are bringing offers exciting new modalities for education and training. As summarized by the President of the Congress, in the new era, future jobs will require more diverse vocational abilities and knowledge, calling for education reform and a guaranteed system of lifelong learning for all.

Out of the consideration of those social and economic trends as we face the next century and millennium has come the unmistakable signal that
the world needs a new development paradigm. The Prime Minister of the Republic of Korea pointed out that the knowledge-based society is at hand which requires every citizen, in every field, to be equipped with the latest knowledge and vocational skills. Such a new paradigm should be human-centred which holds a culture of peace and environmentally sound sustainable development as its central features.

Accordingly the values, attitudes, policies and practices of TVE must have their foundations in this paradigm which will encompass inclusiveness and wider access, a shift to human development needs, and empowerment for effective participation in the world of work. Its focus must be on the needs and potential of the individual in society. TVE has a crucial role to play in this new paradigm by providing skills for all and should include the poor, the excluded and the unreached so that education remains an accessible basic human right. A new holistic approach is required so that education for the twenty-first century will include all domains of learning incorporating general and vocational education to enable the learner of the twenty-first century to launch into a lifelong continuum of knowledge, values and attitudes, and competencies and skills. The ultimate goal of such an approach would be the creation of a learning society.

In the words of the Director-General of UNESCO, TVE and the skills it imparts will empower youth and adults to play a part in the new development paradigm.

Challenges

The participants of the Congress recognized that there had been a significant number of challenges put before them at the Congress, most of
them issues that were unsolved, or had been neglected, and would need considerably more attention.

For instance, the prospect was raised at the Congress of a necessary synergy between general and vocational education, between education and training, but it was not clear what form this could take. Is it to be total integration, or co-ordination, or recognizing each others passports/visas at the borders of the education sectors? The challenge is how to make it holistic.

There were areas of particular significance but which were so often overlooked: The dimension of the informal sector, the importance of the rural sector, and the complexities of the newly emerging market economies in certain countries.

Other key issues which raised during the Congress include the appropriate mix in the funding of TVE between government, employers and learners; eliminating gender discrimination; qualifications and skills required of a TVE teacher/trainer; reaching the marginalized; appropriate balance between policies to address the supply and the demand side; introducing vocational education into general education system; etc.

The Congress concluded that to address all of these challenges many partnerships were required. In another word, the Yin and Yang of human existence needed to be translated into the world of TVE. The true willingness on the part of the participants to identify these necessary partnerships and to make them work was perhaps one of the greatest successes of this event.
There was a strong notion expressed by the participants during the Congress that the distinct division between vocational education and vocational training is of no use and these two separate systems need to be integrated functionally and physically to establish a more effective human resource development approach. Therefore it is highly desirable to have a common vision and philosophy, a shared value, a declared strategy and an holistic approach among all stakeholders of technical and vocational education and training (TVET) including various government ministries, public and private industrial sectors, NGOs, communities, teachers/trainers and learners.

**Recommendations**

After extensive debate and discussions, the participants of the Congress formulated a set of recommendations to UNESCO and its Member States concerning the orientation of the development of TVE in the new century. They are categorized into the following five areas:

1. **Improving systems providing education and training throughout life**

    Lifelong learning is a journey with many pathways and TVE is an integral part of the voyage. TVE systems therefore should be open, flexible and learner-oriented. In addition to providing the learner with knowledge and skills for specific jobs, they must also prepare individuals more generally for life and the world of work. In another word, TVE is for personal, social and economic benefit.

    All nations require a coherent education policy and co-ordinated education systems within which TVE should develop close interfaces with all other education sectors, particularly schools and universities, to facilitate
seamless pathways for learners. In this connection, each country will wish to pursue its preferred approach to co-ordinate the needs of a general and a vocational education through curriculum, pedagogy and delivery. It is clear that the demands of the twenty-first century require new synergies between these fundamental pillars of education and training systems.

TVE is particularly important in ensuring a seamless transition from the school to the workplace. To achieve this it needs an holistic approach which captures the dichotomies of the academic and the vocational, the theory and the applied, knowing and doing, the use of the head and the hand. This requires effective partnerships with schools and with industry and other economic sectors which embrace shared values, shared curriculum, shared resources, and shared outcomes.

To achieve all of these aspirations for Technical and Vocational Education a number of urgent considerations must be addressed:

- the status and prestige of TVE must be enhanced in the eyes of the community and the media. It requires strong marketing of the capabilities of TVE to its stakeholders, accompanied by publicizing and disseminating models of good practice in TVE. There is a need to promote parity of esteem between vocational and general education, especially in developing countries;
- there must be flexibility in programme administration and curriculum design to facilitate a smooth passage through lifelong learning and provide continuous entry, exit and re-entry points;
- career guidance and counselling is of the utmost importance for all clients of the education and training. Its role should be extended to prepare students and adults for the real possibility of frequent career change which could include periods of
unemployment and employment in the informal sector;

• the lifelong learning continuum will be best sustained if there is a
diversity of funding, a diversity of providers, and a diversity of
delivery mechanisms. Innovative approaches to flexible delivery of
TVE including the use of information and communication
technology and distance learning should be particularly welcomed.

2. Innovating the education and training process

The challenges facing the learner of the twenty-first century demand
innovative approaches in TVE. This is seen most clearly in the need for a
re-oriented curriculum to take account of new subjects and issues of
importance. Obvious examples would include technology, the environment,
the understanding of foreign languages and cultures, entrepreneurial capacity
and the requirements of the rapidly growing service industries connected
with leisure, tourism and hospitality.

The new information technology has opened up a whole new
potential in technology-based learning. It should be possible to use and
apply simple as well as modern technology and the new information and
communication technologies in the TVE teaching and learning process
without losing the valuable aspects of traditional teaching methods
particularly the personal nature of the teacher-learner relationship. The new
technologies must be harnessed to provide widespread access to TVE. They
have the potential to offer flexibility in time and location to TVE delivery,
and should enable TVE to function as a catalyst for the penetration of new
technologies in under-developed regions of the world, particularly in rural areas.

As the workplace calls for more sophisticated skills, a sound basic
education must be provided as a pre-requisite foundation for TVE. This
should involve the acquisition of more complex competencies in school, including enhanced literary and numeracy skills and the ability to understand and communicate through the tools of modern technology.

Given the essential need for innovation in TVE, the role of the teacher remains paramount. A re-thinking must take place as to the qualifications required of the TVE teacher of the twenty-first century, including the optimum balance of training acquired on the campus and in the work place. They must be assisted to develop new and appropriate instruments of assessment, accreditation, articulation and certification standards.

TVE needs an early global warning system and more futuristic studies to enable preparation for changes in the work place and in society. Industry must be involved with Governments and research centres in identifying the knowledge, skills and competencies which will be required by the changing economy so that TVE systems can adapt.

3. Technical and vocational education for all

TVE programmes should be designed as comprehensive and inclusive systems to accommodate the needs of all learners; they must be accessible to all. Special efforts are needed to reach previously marginalized groups. Where specialized programmes are required, these should be designed to facilitate entry into the mainstream, thus ensuring continued access to lifelong learning.

The list of recognized marginalized groups is becoming longer and there are certain to be others which are yet unknown. TVE programmes, both formal and non-formal, must be made available in varying modes of
accessible delivery, to the unemployed, early school leavers, out of school youth, those disadvantaged by distance and location, rural populations, indigenous people, those in the midst of urban despair, populations engaged in informal labour markets with poor working and living circumstances, children working under hazardous conditions, refugees, migrants, and demobilized soldiers in post-conflict situations.

The under-representation of women in TVE is of particular concern. TVE must respond with gender-inclusive learning programmes, both in content and delivery, including measures to attract men into previously female-dominated training and careers. For the promotion of equal access of girls and women to TVE courses, more effective forms of educational and vocational guidance and counselling must be provided, along with gender-sensitive guidance and counselling materials.

People with disabilities frequently have difficulty accessing TVE for a range of reasons. These include the under-estimation of educators and vocational guidance personnel of the ability and potential of people with disabilities to take up competitive paid employment. Those who are able to join mainstream TVE programmes should be assisted to do so while those with more severe disabilities should be provided with special programmes and learning strategies to realize their potential and optimize their participation in society and the work force.

4. Changing role of government and other stakeholders in TVE

Although governments carry the primary responsibility for TVE, in a modern market economy TVE policy design and delivery must be achieved through a new partnership between government, employers, vocations, industry, trades union and society. This partnership must create a coherent
legislative framework to enable the launching of a national strategy for change. Within this strategy the government, apart from actually providing TVE, can fulfil the roles of giving leadership and vision, facilitating, co-ordinating, establishing quality assurance and ensuring that TVE is for all through identifying and addressing community service obligations.

Government and the private sector must recognize that TVE is an investment, not a cost, with significant returns including the well-being of workers, enhanced productivity and international competitiveness. Therefore funding for TVE must be shared to the maximum extent possible between government, industry, the community and the learner. There are also opportunities for fund-raising and income-generating activities through collective effort.

A vibrant economy is best served by a diversity of public and private providers of TVE operating in healthy competition, within a national framework of quality assurance. The balance can be struck in many ways but the government should assume responsibility for ensuring strong basic initial vocational preparation no matter which sector is providing its delivery. Government should also be considered a provider of last resort to ensure that potentially excluded populations are not overlooked and are ensured access to TVE programmes. There is a particular need in all countries to expand employment-based training which is well articulated with institutional training through a national framework which includes individual learning credit banks and records, and multiple and flexible entry and exit points. The private sector has a particularly important role to play in this regard.

Within governments there are often shared and overlapping responsibilities for various elements of TVE amongst departments and
agencies. It is desirable that governments streamline their own public institutional framework to the maximum extent possible to co-ordinate the national TVE effort, create an effective partnership with the private sector and promote TVE for the benefit of all stakeholders.

5. Enhancing international co-operation in TVE

Further co-operation is encouraged between UNESCO and its international partners such as the ILO, The World Bank etc. to enhance TVE, with UNESCO assuming a co-ordinating role through its comparative advantage in the various fields of education.

International financial authorities must recognize the contribution of education, and particularly TVE, to the maintenance of peace and stability and in preventing social dysfunction, and should incorporate the support of TVE in their conditions for assistance to recipient countries.

In the light of the new expanded vision for TVE, which has been endorsed at this Congress and which stresses the need for incorporating a new relationship between the various sectors of education and training, an holistic approach to the preparation for life and the world of work and increasingly seamless pathways in lifelong learning, the Congress recommends that the Director-General of UNESCO, in close collaboration with the ILO, develops a common concept of Technical and Vocational Education and Training (TVET), to guide the UNESCO strategy for the twenty-first century.

UNESCOs International Programme on Technical and Vocational Education and Training

The Seoul Congress produced a new vision of technical and
vocational education and training (TVET). The Recommendations of the Congress constitute the foundation for UNESCOs new long-term programme on TVET commenced in 2000. The Programme will pursue three main objectives:

To strengthen TVET as an integral component of lifelong learning;
To orient TVET for sustainable development; and
To provide TVET for all.

Various international, regional and national activities will be initiated to improve Member States TVET policy-making capacity and institutional capacity building as well as to promote international co-operation. In this connection, special efforts will be made to assist developing Member States to incorporate those newly merging subject content in the cross-cutting areas such as the new information/communication technologies (ICTs), entrepreneurship, environmental issues etc. into their TVET programme for enhancing the effectiveness of vocational disciplines.

In order to promote regional and sub-regional co-operation, the existing UNEVOC network will be strengthened and the title of Regional Centre of Excellence will be conferred on selected UNEVOC centres. Recently, a UNESCO International Centre for TVET has been established in Bonn, Germany which will serve as a repository of TVET information and be the hub of the UNEVOC network. The Bonn Centre will also maintain a dedicated interactive TVET website which will provide online information and technical assistance for the TVET community.

It is hoped that the new UNESCO TVET programme will help its Member States to construct bridges to a more prosperous future in the new century.
1. Introduction

I feel honored and privileged to be invited to deliver this keynote address in this International Conference on Vocational Education and Training in Asia-Pacific Region organized by KRIVET, Republic of Korea, as a sequel to the Second International Congress on Technical and Vocational Education, 1999. Seoul is the ideal location to hold this meeting, as the Republic of Korea has dramatically transformed its economy over the last thirty years, and recovered from the recent Asian Financial Crises in such a short-time. Reforms and innovations in technical and vocational education played a pivotal role in this process.

Coming from the Asia-Pacific region and spending much of my professional life in many of the Asia-Pacific countries, today I would like to focus my attention to the process of globalization which is sweeping through the entire region, and examine its implications for TVET.
2. The Process of Globalization

The Process of Globalization began with the fall of the Berlin wall and the collapse of the Soviet Union in the 90s. When the Cold War Walls came down three fundamental changes occurred. These are: how we communicate; how we learn about new technology and the world of work; and how we finance our investments for industrial development. Thomas L. Friedman (1999) in his book The Lexus and the Olive Tree has characterized these changes as:-

a. The Democratization of Technology  
b. The Democratization of Information, and  
c. The Democratization of Finance

The Globalization process is still finding its bearing in Asia-Pacific Countries. The spread of free-markets and democracy in Asia-Pacific region is permitting more and more people everywhere to turn their aspirations into achievement. New production and communication technologies, when properly integrated and democratically used, have the power to erase poverty and unemployment and improve human development and quality of life. Today's era of globalization is built around falling telecommunication costs, thanks to microchips, satellites, fiber optics and the internet. These technologies mean that developing countries no longer have to trade their raw materials only to the developed countries and get finished products in return with added higher values, but they can become producers of quality products and exporters as well, provided they develop their technical manpower and human resources. Strengths, weaknesses, opportunities and threats of our enterprises are increasingly determined on how well we are connected with other countries, other institutions, and how well we communicate with the rest of the world. In the process of globalizations the
traditional boundaries between culture, technology and ecology are disappearing fast. The challenge in this process of globalization is to find a healthy balance between preserving a sense of identity, honouring basic cultural values, and learning and doing what is best in the world and what it takes to survive in a globalized world.

In the 21st Century, no country in the Asia-Pacific region will be able to ignore the impact of globalized market and globalized communication systems. To be part of the globalized market-economy, technical vocational workers must acquire flexible, board-based competencies and skills with adequate opportunities to upgrade their knowledge and skills through lifelong learning. In the competitive globalized world, multi-national companies will rely on production chains that straddle many countries. Global life-style, global fashion, global TV system, e-commerce etc will enormously influence consumer preference. People become global when as consumers, they have access to information about goods and services.

We have to develop a strategy for TVET for the inter-linked economy of the 21st Century. The challenge for Asia is, efficiently managing a smooth transition to the globalized world. Can we ensure Asia's competitiveness and yet preserve some of the good traditional family values, work ethics, social structure and develop a culture of peace to live harmoniously with other countries and with our neighbours?

3. Innovation In Tvet To Face The Challenges

Recommendations in the Final Report of the Second International Congress on Technical and Vocational Education notes that: "The challenges facing the learner of the 21st century demand innovative approaches in TVE. This is seen most clearly in the need for a re-oriented curriculum to take
account of new subjects and issues of importance. Obvious examples would include technology, the environment, the understanding of foreign languages and culture, entrepreneurial capacity and requirements of the rapidly growing service industries connected with leisure, tourism, and hospitality".

A multi-dimensional innovative approach is necessary to compete in a globalized economy. To work in the global market-economy, the workers must have broad-based generic skills as well as specific occupational and technological skills, and must demonstrate appropriate work-habits and positive attitude towards work. Changing technological scenario and consumer demands will necessitate workers to move from job to job with in the same industry or between industries in a short span of time. Worker may have to move from country to country to serve in the multinational chains.

Formal TVET and enterprise-based non-formal training of the technical labor-force will have significant roles in raising productivity. For example, the world Development Report 1995 sites that enterprise-based training in China and Taiwan has been found to be associated with significant rise in the out-put per worker. Satellite communication, electronic media, telecommunication, computer technology, internet- facilities, on-line distance learning and other emerging technologies are introducing a fundamental shift in the teaching-learning process. The traditional boundaries between formal and non-formal learning is becoming blurred. Applications of new communication technologies in learning situations are to be found in some of the advanced regional countries like Australia, Japan, Korea, Singapore etc. These practices have to be adopted and adapted with careful cost-effective experimentations and make them more widespread in the whole system of TVET. New technologies of learning will have no boundaries of space or time and will integrate the formal and non-formal TVET for life-long learning.
Emerging innovation in TVET for the 21st century include:-

- Development of generic skills of the workers
- Integration of Information Technology and knowledge Revaluation.
- Development of Entrepreneurship and self-employment skills
- Development of attitude, behaviour, non-technical competencies.
- Education and training of TVET teachers
- Standardization, Certification and Accreditation of TVET
- Distance, Open and On-Line education for TVET

3.1 Development of generic skills of the workers.

TVET should develop generic skills of the workers. A study conducted by the Centre for Occupational Research and Development (CORD) in the USA, identified the following generic skills as critical need for business and industries in the 21st century.

- Basic math and language skills, including English as a second language,
- Planning, decision making, critical thinking, and problem solving,
- Interpersonal skills, communication skills, and sensitivity to work-force diversity and cultural awareness.
- Ethics, management, and leadership skills
- Hand-on-training on specific demand occupations
- Computer training including internet training

3.2 IT and Knowledge Revolution

Today world is passing through the IT revolution. By linking IT and knowledge with development, economies in the countries have taken giant
step forward. Accumulation of physical factors alone did not explain the varying levels of economic growth across the nations. Management in the digital-era is about managing knowledge and information so that workers and organizations can access right information at the right time to maintain competitive edge in performance and production. In IT-era industrial workers, farmers, service-sector personnel must become 'knowledge-workers' and 'expand the production frontiers'. World's major growth industries-such as microelectronics, biotechnology, designer made materials, and telecommunications- is already knowledge industries. Knowledge-based productive powers will provide companies with a competitive edge. TVET must be a front-runner in this IT-Age and knowledge-based societies. Full impact of IT and knowledge industry is yet to be understood and usefully harnessed in many of the developing countries. Moreover, there are also wide disparities in access to computers and other information technologies in the TVET systems across the region. These disparities need to be removed.

3.3 Development of Entrepreneurship and Self-employment skills

With changing scenarios for employment, TVET institutions must strengthen and provide facilities for learning enterprise development and self-employment. Necessary knowledge, skills and attitude to develop entrepreneurial capacity need to be inculcated in TVET students to make them productive citizens. Such programs will include:

- Development of entrepreneurial values, attitude and spirit,
- Development of professional and technical competencies needed to work as an entrepreneur or self-employed person;
- Development of managerial and leadership skills to run a business;
Some of the Asian countries like Thailand, Malaysia and India have started promoting these programs and have been technically supported by regional organizations like the Colombo Plan Staff College for Technician Education (CPSC), and the Commonwealth Secretariat.

3.4 Development of Attitudes, Behaviour and Non-Technical Competencies of the workers (ABNC)

It is generally agreed that designing and conducting TVET programmes have been emphasizing on development of job competencies and skills. Though TVET curriculum design and development has received attention in the training of middle level technical manpower, the question of worker's attitudes, values, work-habits, work ethics has not been properly addressed and integrated into TVET curriculum. In the globalized work place of the 21st Century, the teaching and training of work-related attitude, behaviour and non-technical competencies (ABNC) are important aspects to make TVET graduates more flexible, adaptable, productive and trainable in the rapidly changing work-environment. CPSC with the help of Experts from regional countries developed curriculum for ABNC. Further research and development work is needed to make it relevant and country-specific.

It is suggested that six areas of content can be usefully included in any TVET programme for ABNC.

The six basic areas of non-technical competencies (ABNC) identified by the CPSC Expert Group are:-

- Professional work ethics
- Environmental Awareness and concerns
- Communication
- Total Quality Management
3.5 Education and Training of TVET teachers

The role of TVET teachers is undergoing a radical change. Teachers are no longer dispensers of information. They are expected to be curriculum designers, educational resource managers, Internet-operators and vocational practitioners. UNESCO-UNEVOC Round Table Expert Group Meeting (1997) in Curitiba Brazil highlighted the need for innovations and quality improvement in TVET training programme to meet the challenges. The Delors Report (1996) points out that nothing can entirely replace face-to-face teaching. Yet media and electronic revolution is here and we should use it to our best advantage. New technology has created a host of new tools, and techniques for formal, non-formal and distance learning situations.

UNESCOs World Education Report (1998) highlights the necessary changes in the teaching-learning process. Some of the innovations in TVET teacher training will need further research, elaboration and experimentation. These include:

- Establishment of closer links between institutions and industries for skill development of TVET teachers,
- Development and application of competency-based teacher education programs.
- Focus on attitude, values, behaviour, and non-technical
competencies (ABNC) in TVE teacher training programs

- Continuing teacher education through distance learning, on-line learning and modularized teacher training programs

- Development of regional resource centers and Centres of Excellence for use of TVET teachers and teacher trainers,

3.6 Standardization, Certification and Accreditation of TVET Programs

To improve quality and efficiency of TVET programs and institutions skills testing, certification, and accreditation systems are necessary to determine skill standards and competencies achieved by the technicians and craftsmen to ensure their productivity and mobility. Skill standards can act as benchmarks for curriculum development, performance assessment, and occupational classification. In some countries national bodies have been established for accreditation purposes. For example, the National Council on Vocational Qualifications in UK, National Training Board in Australia, National Board of Accreditation under the AICTE in India are important bodies to ensure standards and quality of TVET. Similar accreditation bodies are also needed for setting international or regional standards of TVET programs and institutions. The Scottish Qualifications Authority in UK is Scotlands national body for qualifications- this one body in the country is responsible for the qualifications on offer in Scotlands schools, colleges, training centers and workplaces. It does this by working in partnership with people in education, industry, commerce and government to develop Vocational Qualifications. The model could be examined and adapted to the needs of each individual country in the region.

3.7 Distance, Open and On-line Education for life-long

The concept of learning throughout life emerged as one of the major
concepts in the Delors Committee Report of UNESCO Learning: the Treasure with-in (1996). The concept goes beyond the traditional distinction between initial and continuing education as well as between formal and non-formal education. With rapid changes in communication technology, Distance, Open and On-line learning have become major innovations in teaching-learning strategy for TVET. In India, the Indira Gandhi National Open University (IGNOU) and the National Open School (NOS) have launched programmes for distance education for vocational education. Commonwealth of Learning (COL) Vancouver, Canada, has launched a major programme of vocational training through distance education and providing support to many commonwealth countries. COL is conducting entrepreneurship-training programme for rural women in Bangladesh in cooperation with the Grameen Bank.

In the future, open and distance learning is likely to play a more significant role at all levels of TVET as globalization becomes the norm. Indeed, the application of distance and open learning technologies and methodologies at regional and global scales for vocational education could well be the viable option to meet the demands of the globalized trade, commerce and production arrangements. Further, the potential economies-of-scale inherent in distance delivery systems will play an important role for future TVET teaching-learning and life-long learning.

4. TVET Agenda For The Globalization Era

TVET Agenda for Globalization Era must be carefully conceived by each of the countries in the region according to their national priorities. However, countries must ensure that workers in the globalized world not only remain competitive but also improve their health, quality of life, Human Rights, peace and happiness. Illiteracy, ill health, unemployment and
poverty remain the critical issues in many of the countries, particularly in the South-Asia. In fixing the priorities for sustainable development, the Agenda must included actions for:

- Human Development
- Empowerment of women
- Enhancing international and regional cooperation.

4.1 Human Development

Human development and human poverty are the two contrasting ways of evaluating development process as it changes human lives and limits their choice of options. Since 1990, UNDP Human Development Reports introduced yardsticks of human development. Human Development Index (HDI) has been used as a composite average measure of three basic dimensions of development namely: (i) health and longevity (ii) knowledge and skills and (iii) income generating capacity and standard-of-living. HDI provides the best available basis for inter-country as well as intra-country comparisons of development and a measure of human welfare in the society. Out of the 175 UN member countries, rank of most Asian countries in the HDI Scale is rather low.

In the Human Development Report of 2000, Singapore's ranking is 24 and India's position is 128. Pakistan, Bangladesh, Nepal, Bhutan come even lower in the HDI ranking. Role of TVET in improving the productive capacity of the people and widening the range of their choice need to be fully exploited. Vocationalization of education at primary and secondary levels and expansion of elementary education and expansion of TVET facilities at all levels will enhance the earning capacity and employment of the people and facilitate transition from school to work. Special efforts are
needed to reach previously marginalized groups including the disabled sections of the community.

Globalization and the Internet can bring together people who have never been connected before. But the process of globalization can also expand the gap between the rich and the poor. Bridging the wide gap between poor and rich people in a country, and reducing the gap between high and low HDI ranking nations of the world will be a formidable challenge in the globalization era. The threat of growing inequality must be eliminated. Much larger national and international commitment will be required to meet these challenges of human development and bridging the gaps between the haves and the have-nots.

4.2 Empowerment of women

UNESCO'S policy to promote the equal access of girls and women to technical and vocational education is based on: The Revised Recommendations Concerning Technical and Vocational Education (1989), the Recommendations of the Second International Congress on Technical Vocational Education (1999) and host of other related documents. However, the situation continues to remain critical in many countries in Asia-Pacific region. This calls for specific actions in respect of girls and women taking into consideration their particular needs, national priorities, and the traditional obstacles to overcome. These will include:

- Increasing participation of girls, especially rural girls in primary, secondary and TVET programme.
- Removing gender-bias in TVET from parental thinking, society, and employers.
• Expanding programme of non-formal appropriate vocational training for girls
• Developing entrepreneurship and self-employment skills for women.

Many countries in the region, including Republic of Korea, India, Turkey and UAE have legislation as well as national policies of promoting girls and women in TVET and employment. Keeping in view the cultural, geographical, economic and ecological variations such policy and program interventions need to be expanded in all countries in the region.

4.3 Enhancing International and Regional Cooperation

On the morning of December 8, 1997, The Government of Thailand announced that it was closing 56 of the countries 58 top finance houses. The Thai currency plummeted by 30 percent. Thai currency crises proved to be the first Asian Financial Crises in the new era of globalization. The Thai crises triggered off a general flight of capital out of virtually all the South-East Asian emerging markets, driving down the value of currencies in South Korea, Malaysia, Indonesia etc. With in a few months, the Southeast Asian recession began to have an effect on global economy. Southeast Asia had been an important engine for worldwide economic growth. USA Today summed up the global market place at the end of 1998: "The trouble spread to one continent after another like a virus" ... "People in the barbershop (in USA) actually talked about the Thai Bhat".

Asian Financial Crisis has shown very clearly that in the globalized economy it is important for all countries to enhance international and regional cooperation for economic growth, social stability, peace and harmony.
Based on a decision taken at the twenty-sixth session of the General Conference of UNESCO in 1991, UNEVOC was launched in 1992 as an International Project on Technical and Vocational Education. UNEVOC works mainly in the program areas of:

- International exchange of experience and promotion of studies on policy issues
- Strengthening national research and development capabilities
- Improving data-base and documentation
- Developing UNEVOC network of national centres for information and communication.

Multinational and Bilateral funding agencies have also played dominant roles in financing TVET as well as providing policy directions, particularly for the developing countries. The World Bank and the Asian Development Bank (ADB) are the major multinational funding agencies in the field of TVET. Bilateral funding agencies include: AusAID, CIDA, GTZ, JICA, KOICA, SIDA, ODA etc. Regional organizations like the Colombo Plan Staff College for Technician Education (CPSC), Manila and the SEMEO VOC-TECH Centre in Brunei have made significant contributions in providing technical and financial support to TVET systems.

However, several issues are raised relating to the effectiveness and efficiency of international cooperation programmes. These include:

- Lack of coordination among agencies leading to duplication of effort and wastage of resources.
- Bureaucratic and inflexible rules and procedures hamper implementation and progress of projects.
Donor agencies tend to promote development philosophy and models, which are not always suitable in the local context.

As the Final Report of the Second International Congress on Technical and Vocational Education notes: "international financial authorities must recognize the contribution of education, and particularly TVE, to the maintenance of peace and stability and preventing social dysfunction, and should incorporate the support of TVE in their conditions for assistance to recipient countries."

In the light of new expanded vision of TVET in the globalization process international and regional cooperation with a Regional Centre of Excellence in TVET will be a crucial factor in enhancing human development, empowering women and ensuring peace and harmony in the region. With IT Revolution and Internet facilities this process will be easier.

5. Conclusion

I congratulate KRIVET and the Government of the Republic of Korea and the people of Korea for taking positive initiatives towards this process of globalization and promoting TVET in the region. Together all of us:

We can make a difference for future of a peaceful world order.
Bibliography

Directions of Human Resource Development in the 21st Century

Presented by Dr. Mu-Keun Lee
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I. Characteristics of the 21st century

1. Information age

As the information age accelerates, it is expected that the industrial structure will turn into service a sector which consists of high-tech, value-added, and information-intensive contents. Therefore, the world of vocational education forecasts an increase of occupational categories dealing with information communication and advanced-technology. On the other hand, because of the short life-cycle of jobs caused by rapid changes in industrial structure resulting from advancements in information and technology, it is forecasted that most people will have as many as five different jobs during their working lives.

Therefore, in the 21st century, people will have to learn basic vocational skills to cope with a constantly changing working environment, and to develop the ability to collect suitable vocational information in order to choose his or her own career path. Paradigm change between an industrial society and an information society is occurring, as Table I shows.
<Table 1> Comparison of paradigms between an industrial society and an information society

<table>
<thead>
<tr>
<th>Classification</th>
<th>Industrial society Paradigm</th>
<th>Information society Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production technology</td>
<td>Energy and resource-intensive mass production technology</td>
<td>knowledge-intensive various products</td>
</tr>
<tr>
<td></td>
<td>(industrial technology)</td>
<td>production (information communication technology)</td>
</tr>
<tr>
<td>Government Policy</td>
<td>Market protection and involvement of government, infrastructure</td>
<td>Liberalization and less restriction, open market, new infrastructure</td>
</tr>
<tr>
<td></td>
<td>(roads, rail roads)</td>
<td>(information highway)</td>
</tr>
<tr>
<td>Industrial Structure</td>
<td>Manufacturing, goods-oriented</td>
<td>Service-oriented, data processing oriented</td>
</tr>
<tr>
<td>Corporate activity</td>
<td>Monopoly and vertical unification</td>
<td>Competition, network cooperation</td>
</tr>
<tr>
<td>Employment structure</td>
<td>Physical labor (technical engineer)</td>
<td>Entrepreneur, professional and technical oriented, merchandising, increase dependence on office-work</td>
</tr>
<tr>
<td>Worker and employer relationship</td>
<td>Seniority, centralized plural negotiation, wages based on job evaluation</td>
<td>Performance level, scattered (decentralized plural negotiation, wages based on ability</td>
</tr>
<tr>
<td>International relationship</td>
<td>Cold war system, protective trade policy</td>
<td>Internalization of market and corporate activity</td>
</tr>
</tbody>
</table>


2. Knowledge-based society

A. Concept of a Knowledge-based Society

The term "knowledge-based society" first appeared back in the mid-1960s during the debate over a post-industrial society. In other words, over the type of society that will follow the industrial society. Daniel Bell also described the post-industrial society as being a knowledge-based society. This met with little response at the time however. Only lately has there been increased focus on knowledge and its function in modern society. The work of Nico Stehr should be emphasized in this connection. Stehr deals extensively with the theory of knowledge-based societies and knowledge as the new production factor that takes its place alongside the classical production factors of labor and property/capital.
Knowledge, the central element of a knowledge-based society, is defined by Daniel Bell as a set of organized statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic forms.

A knowledge-based society is a society in which knowledge becomes an increasingly central factor as a prerequisite for reaching agreement on common goals, for ensuring economic development, for social action on the part of the individual and for his position within society. The concept of the knowledge-based society opens up a new perspective for viewing and contemplating modern society by giving knowledge center stage as the shaping force behind human action and, concomitantly, behind society. This offers greater potential for explanations than the concept of the information society which, as mentioned, is the more recent concept. The concept of the information society refers primarily to information and to the means of information technology.

B. Characteristics of knowledge-based Society

The distinctions of an industrial society and a knowledge-based are shown in Table 2.

<Table 2> Distinctions of an industrial society and a knowledge-based society

<table>
<thead>
<tr>
<th>Classification</th>
<th>Industrial Society</th>
<th>Knowledge-based society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin of wealth</td>
<td>Capital</td>
<td>Information, knowledge</td>
</tr>
<tr>
<td>Shift of power</td>
<td>Capital owner</td>
<td>Knowledge holder</td>
</tr>
<tr>
<td>Essence(value) of goods</td>
<td>Goods itself</td>
<td>Knowledge</td>
</tr>
<tr>
<td>Work</td>
<td>Structured task oriented</td>
<td>Knowledge task oriented</td>
</tr>
<tr>
<td>Elements of production</td>
<td>Land, Labor, Capital</td>
<td>Knowledge</td>
</tr>
<tr>
<td>Organizational structure</td>
<td>Bureaucratic organization</td>
<td>Learning organization</td>
</tr>
<tr>
<td>Innovation</td>
<td>Productivity innovation</td>
<td>Management innovation</td>
</tr>
</tbody>
</table>
Therefore, many people should possess creative skills in order to create, improve, utilize, and accumulate knowledge in order to formulate a knowledge-based society. To do this, workers today should be knowledge workers.

3. Globalization

Due to rapid development in communication and transportation technology, ideology collapse, the establishment of the WTO and OECD membership, our economic globalization has accelerated. Therefore, goods, services and human resources can be easily transported to any place in the world.

To meet the challenges of globalization, human resource development should be strengthened by enhancing;
- competitive professional knowledge and skills
- computer literacy skills
- multilingual ability
- understanding of native culture, establishment of subjectivity
- understanding of global culture and multicultural societies
- open-minded behavior and perception

Reviewing the impact of the information age, a knowledge-based society, and globalization, the needs of the necessitate changes in the education paradigm as Table 3 shows.
As Table 3 shows, the teaching-learning system and the educational supportive system should be changed to meet the needs of the information age, a knowledge-based society and globalization.

II. Problems and present condition of human resource development in the knowledge-based society and the information age

1. Problems of vocational education and training

A. Unsuitable environment for human resource development

Disdain of vocational education and training is caused by the concentration on humanity studies(Oh, et al., 1998). The importance of college entrance has been emphasized which has led to inappropriate values and has failed to meet the needs of an employment culture which values ability and performance. One of the major problems is the lack of data dissemination and the absence of a linkage between industry and academic society(Lee, et al, 1998). There is no active cooperation and defined network system between educational institutes and corporations.
B. Insufficient infra-structure for lifelong learning

There is limited retraining and continuing education opportunities for adolescents. Despite an emphasis on self-directed learning ability in secondary school education, the career guidance function is inadequate to support it. For instance, the admission rate to vocational junior colleges and higher educational institutions among vocational high school students has been increasing recently. On the other hand, the criteria for selection and the curricula of polytechnical colleges and vocational junior colleges are mainly focused on regular students and it restricts opportunities for industrial workers to attend colleges and universities. Especially, due to the low rate of adult workers' participation in education, which is compounded by the age-restriction to enter higher education institution, the participation rate adults in regular higher educational institutions is low(OECD, 1997). It is only 20.1 % among college students aged over 25, which is significantly lower than U.S.'s 45.9%.

C. Lack of training infra-structure for value-added specialists

The student ratio of natural science majors including general, vocational, colleges and graduate schools is lower than industry requires. According to OECD evaluation, a preponderance of colleges and the preference for administrative positions impedes the development of an excellent human resource system. In addition, although 72% of doctoral degree holders attend the university, investment for reform is on an unsatisfactory level compared with developed countries. Indeed it is hard to cultivate distinguished specialists through quality educational programs. Compared to developed countries' academic environment, the ratio of professors to students is three times less(1:40), per capita educational
investment amount is one-tenth and the amount investment for basic research is one-third of developed countries (OECD, 1997).

D. Vocational education and training system's rigidity

The reasons for the weakness of linkage between the educational institutions, industrial organizations and the labor market are; a) a supplier-oriented vocational education system, b) passive managerial policy which subsidizes those who enforce government standards which fails to raise excellent research institutions as well as provide systematic training information, and c) theoretic education which fails to develop on-the-job creative skills.

Lack of entrepreneurship education and related systems should also be noted. In the near future, it is projected that there will be an increase in individual enterprises as well as salaried workers. Although there are several colleges running programs dealing with venture organizations, most of the staff focus on theoretical education during the course of study which fails to teach students how to start up a business. The lack of a linkage system among colleges, research institutions and industrial firms inhibit the development of practical skills preparation for high-technology industries and venture capital establishments.

There is an imbalance between the demand and supply of industrial personnel in both academic and industrial areas. Higher education began to focus on humanity studies, which increased from 8.4% in 1981 to 29% in 1997. On the other hand, science and engineering studies dropped from 61.5% to 38.1% in the case of vocational junior colleges. In the case of colleges, humanity studies increased from 28.7% in 1981 to 40.6% in 1997.
which exceeded the ratio of science and engineering studies. In the case of quota and academic subject control of colleges (including junior vocational colleges) government policy rationality and market failure occurred concurrently where, despite the educational level of students, a downward adjustment took place inevitably. In spite of structural unemployment, a labor shortage deepens in some industrial sectors.

**<Table 4> Projection of extra supply of industrial personnel according to the major and the qualification (1999-2003)**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Junior vocational college graduate</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>1.6</td>
<td>14.5</td>
<td>4.0</td>
<td>1.6</td>
<td>21.7</td>
</tr>
<tr>
<td>Machinery, Ship, Aero space</td>
<td>6.8</td>
<td>0.7</td>
<td>1.1</td>
<td>-0.2</td>
<td>8.5</td>
</tr>
<tr>
<td>Electricity, Electronics, Communication</td>
<td>18.9</td>
<td>-2.1</td>
<td>-1.2</td>
<td>-0.4</td>
<td>15.3</td>
</tr>
<tr>
<td>Metal, Material</td>
<td>0.5</td>
<td>2.3</td>
<td>0.6</td>
<td>-0.01</td>
<td>3.4</td>
</tr>
<tr>
<td>Chemistry, Textile</td>
<td>0.9</td>
<td>0.9</td>
<td>-0.1</td>
<td>-0.03</td>
<td>1.6</td>
</tr>
<tr>
<td>Food</td>
<td>-0.4</td>
<td>0.8</td>
<td>0.4</td>
<td>0.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Oil, Energy, Resource</td>
<td>0.03</td>
<td>0.4</td>
<td>0.02</td>
<td>-0.01</td>
<td>0.4</td>
</tr>
<tr>
<td>Other engineering</td>
<td>13.3</td>
<td>12.3</td>
<td>6.1</td>
<td>0.7</td>
<td>32.4</td>
</tr>
<tr>
<td>Total</td>
<td>40.0</td>
<td>15.4</td>
<td>6.9</td>
<td>0.1</td>
<td>62.4</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>41.6</strong></td>
<td><strong>29.9</strong></td>
<td><strong>10.8</strong></td>
<td><strong>1.7</strong></td>
<td><strong>84.1</strong></td>
</tr>
</tbody>
</table>


Note: Criteria are on manufacturing and information technology. "-" implies extra demand.

Lack of autonomous civil vocational education support is also a problem. The strict adherence to government policy in vocational education regarding the selecting of teachers, textbooks, and curriculum has failed to induce spontaneous participation from corporations resulting in budgetary waste on training. The main advantage of training within industry is the ability to cope with a dynamic environment. However, excessive regulations on civil vocational education and training in terms of vocational education

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and training and budget standards hampers the ability to adapt to various changes in vocational education and training.

Lack of investment in human resource development at the corporate level is another problem. Although educational expenses have been steadily increasing in relation to total wages. For example, in 1995 per-capita educational expense was 32,000 Won, the educational expense gap has widened between conglomerates and medium- and small-sized enterprises. Also educational-investment by medium- and small-sized enterprises has lagged that of conglomerates, behind which worsens the skills gap (KRIVET, 1999).

An inadequate qualification system has brought about insufficient human resource mobility. Accreditation of certificates of qualifications, a diploma and bilateral recognition system, and the recognition of ability through a qualification system have yet to be settled.

2. Problems of human resource development in the digital era

A. Maladjustment to the environmental changes in human resource development.

Recognition of the information age is insufficient. It prohibits to enhance effectiveness due to untimely investment in information-oriented business. We also witness the formation of Neo-Luddites who intentionally deny to learn newly developed internet digital environment and information technology instead of adjusting themselves to that environment.

Lack of entrepreneur's(school teachers and administrators) management capability toward information age is one of the barriers. In order to overcome the problem, it is required to raise and train information(data)
engineer or data processing engineer and managers. CIO (chief information officer) needs to be equipped with capability to understand the organization's needs, propose and to execute the appropriate linkage among process, information technology, and organization (Rubin, 1999). Teacher and instructor training program needs to place an emphasis on information training curriculum information technology.

Lack of utilization of information system in organizations (schools) is also a barrier. Effectiveness based on bilateral operation information system or network control system is barely existing. In order to solve the problem, patents and restrictions, which blocks the expansion of information system among corporations needs to be removed.

Lack of industrial manpower in information technology suppliers is a barrier. Informatization requests support from professional technology suppliers requisitely. In order to respond to rapid development and changes, it is required to secure and cultivate the human resources with step by step human resource training plan.

B. Unequal educational opportunity by widened digital gap

In the digital economy, usage of data and information could differentiate the income level largely, and digital gap deepens the opportunity on education and training (US Department of Commerce, 1999). For example, in Japan, workers utilizing more PC tend to be paid better (Samsung Economic Research Institute, 1999). In Korea PC spread gap between high-income group and mid-income group has widen to 32.7% in 1999 from 23.4% in 1998. Wage difference among information communication, information-intensive labors and others has been widening as well. In digital society elders tend to be neglected.
C. Lack of infrastructure for lifelong learning

The system for developing human resources throughout life is not well established. Although preschool education is emphasized, entrance ratio is relatively low and there is a heavy dependence on private schools. Elementary, middle and high schools has operated according to entrance examination. Even though high school graduation ratio is relatively high but there is a huge mutual contradiction between supply and demand. Also, lack of linkage system among industry, educational institutions, and research institutions can be noted. Routine management practices, including conception of lifetime organization, efficiency rating, and wage, failed to motivate self-development and participation of lifelong education among adolescents rated lowest in OECD member countries.

Other factor of the insufficient lifelong learning systems is the lack of support and utilization of vulnerable class human resource development. When establishing human resource development structure, such factors as life cycle of female employment, start-up, nursing an infant, and reemployment. Education and training programs for elders needs to be various and systematic. Active economic participation of youth group is hindered because of late entry to the world of work.

D. Weak in infrastructure for human resource development

Our infrastructure on human resource development is not stable. Korea is rated 24th among 29 OECD members in terms of human resource(including education investment, education and training incentive, lifelong education and retraining, adaptation to the new technology). The labor market flexibility is ranked 26th. Also knowledge-based competitiveness ranked 23rd out of 43 countries. We initially set up the average of 5 developed countries' score for
100. Compared with the score of Korea's knowledge input index recorded average of 90.2, however knowledge outcome index averaged 30, and knowledge process index averaged 45.9, which implies that the knowledge creation structure seems to be inefficient.

<Table 5> Relative numerical indices of knowledge-related index
(Average of 5 developed countries=100)

<table>
<thead>
<tr>
<th>Input Index</th>
<th>Flow index</th>
<th>Stock index</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R&amp;D Investment</td>
<td>Education expenditure</td>
<td>In-house training</td>
</tr>
<tr>
<td>R&amp;D Investment</td>
<td>11.7</td>
<td>101.6</td>
<td>83.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Index</th>
<th>Output Index</th>
<th>Impact Index</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patent application</td>
<td>Publication of paper</td>
<td>Contribution rate of growth</td>
</tr>
<tr>
<td>R&amp;D Investment</td>
<td>54.9</td>
<td>3.4</td>
<td>23.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process Index</th>
<th>Infra index</th>
<th>Utilization index</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer</td>
<td>Host</td>
<td>Man power support</td>
</tr>
<tr>
<td>R&amp;D Investment</td>
<td>45.8</td>
<td>14.7</td>
<td>28.8</td>
</tr>
</tbody>
</table>

III. Human Resources Development Strategy in a Knowledge-Based Society

The following changes are expected to take place in the education system in the knowledge-based society of the 21st century. Learning places and learning methods will be diversified. There will be an increasing number of informal institutes, and the quality of education provided by these institutions will improve greatly. There will be an international mutual recognition system for degrees. The elements of education will be more suitable to the international trend of education. With the rapid increase of information and globalization, not only the world's industrial and employment
structure but also the individual career path will be changed. To meet the phenomena, government as well as individuals and nations must continue to obtain new knowledge and develop value-added services based on this knowledge.

Here are some suggestions for the government, schools, enterprises and learners on how to respond to the need for a knowledge-based society.

1. Government

The recent environments surrounding the government are changing more rapidly due to globalization of the labor market and competition. An emphasis has been placed on the role of government in enhancing national competitiveness. In a knowledge-based society, greater emphasis is put on the role of the government in promoting and expanding knowledge activities such as the creating, accumulating, sharing and utilizing of knowledge in which the practical use of knowledge determines national competitiveness. In this regard, the government must move away from the old paradigm of bureaucratic administration by becoming a coordinator in order to establish the knowledge-based infrastructure essential for the nurturing of a lifelong learning society. To play a role as a coordinator in establishing the infrastructure for a knowledge-based society, the government must carry out the following tasks.

First, the government must propose an integrated plan to prepare for a knowledge-based society and develop a national knowledge system by considering the compatibility of knowledge from various fields.

As a knowledge-based society is not the prospect of the far future but a forthcoming reality, the government must identify the nation's current
situation in terms of knowledge development and must set strategic priorities in its development plan and in mobilizing government resources. The government should first develop these resources in order to enhance its capability of formulating policies focused on supporting knowledge development in various sectors of society.

The government also needs to develop a national information management system in order to avoid waste resulting from the dispersion of knowledge and information, create a synergy effect based on knowledge activities and enhance national competitiveness. The United States and Australia have developed national knowledge systems (GSII (Government Services Information Infrastructure) in the US and Centrelink in Australia) to integrate a variety of public services, formulate policies and maximize the effect of policies by sharing information among ministries. Accordingly, every nation must develop a national knowledge system to expand the sharing of information and knowledge among the government, enterprises, schools and individuals.

Second, the government must establish short- and long-term human resources development plans to realize the knowledge-based society based on national level consultations and opinions collected comprehensively and systematically from experts and researchers from related fields.

The government needs to establish a mid- and long-term vocational education and training (VET) basic plan, such as the manpower development policy of the central and local government, by effectively operating the VET policy council under the authority of the Prime Minister and the VET council, under local self-government heads. Pursuant to Clause 18, <Vocational Education & Training Promotion Act>, this basic plan includes detailed plans concerned with VET such as the promotional plans for the
facility, equipment of VET institutions and cooperation between VET institutions, a support plan for industrial-educational cooperation between VET institutions and industries, an evaluation plan for VET institutions and other VET related matters.

Third, the government needs to promote the expansion of information-communication technology and its infrastructure and knowledge activities.

Major developed countries are concentrating their efforts on retaining their leadership in the world economy by creating information-communication demand and enhancing information-communication networks, thereby raising their national competitiveness. Korea completed the first stage of the High-Speed Information-Communication Infrastructure Development Project (1995-1997) and is now proceeding with the second stage (1998-2002). The development of an information-communication network will become the basis for tele-education and lifelong learning.

Through the expansion of information infrastructure, the government must provide political support for knowledge creation and sharing in each sector, provide a legitimate and systematic basis for knowledge activities and develop and operate regulations and systems that give incentives to knowledge holders including the government, schools and individuals to promote their creation of added value. Also, it should provide strategic knowledge to policy makers by collecting, analyzing and storing the critical data that will become the basis for practical political decisions so that politicians can suggest policy measures and facilitate a cooperative system between industry, schools and research institutes.

The government's role as a facilitator for the development of a lifelong learning society is as follows.
First, it must facilitate innovations in lifelong education and be totally committed to developing a systematic infrastructure for lifelong learning.

Korea has suggested four educational innovation plans in order to develop a lifelong learning society and as a result, Korea's development of a lifelong learning program has started with a systematic infrastructure based on a cooperative linkage structure among the government, people, industry and education, getting away from the dichotomous classification of formal and informal education. For example, the system infrastructure developed by the Ministry of Education to facilitate lifelong learning includes the establishment and organization of regulations relevant to lifelong education, publication of the Lifelong Learning White Paper, research studies in cooperation with KRI VET on vocational education & training for the development of a lifelong vocational education system, appointment and operation of locally based lifelong learning centers, introduction of a credit recognition system for pupils, introduction of a vocational skills recognition system, and a review on the introduction of individual learning accounts. Nonetheless, the government still needs to concentrate on the development of a lifelong learning society through a variety of projects including: the promotion of recognition & social education facilities, facilitating university subsidized lifelong education facilities, fostering professional teachers for adult education, operating and supporting senior citizen education, supporting the establishment and operation of private institutions, fostering a degree acquiring system by self-education and promoting correspondence education and public library-oriented lifelong education.

Second, we need to put great effort into the development of administrative and financial infrastructure for lifelong learning to train talented people who will lead the knowledge-based society.
The government is developing an administrative and financial infrastructure for lifelong learning including the following, listed under <The Lifelong Education Act> (November 26, 1998): expansion of lifelong education facilities, retention of professional manpower, retention of lifelong education financing, facilitation of local lifelong education for the age of educational independence, support for the facilitation of NGO lifelong education, support for lifelong education activity, and the development of a lifelong education evaluation and recognition system. For example, the government organized a legitimate basis for a financial support system for adults continuing education pursuant to the articles and clauses on paid and unpaid learning holidays and tuition support, and will attempt to retain and train lifelong education specialists pursuant to articles and clauses related to lifelong education teachers.

A number of plans for the development of the infrastructure necessary for lifelong education show that the new axis for Korea's lifelong education is closely related to human resources development, one of the necessities of the knowledge-based society of the 21st century.

Third, the government must develop a motivation system to enhance the participation rate in adult learning for the social transition toward a lifelong learning society.

The participation rate in adult continuing education in Korea is only 5.4% whereas in Canada it is 28.0%, in America 34.0%, in France 40.0%, in Germany 33.0% and in England 13.0%. This shows that adult continuing education is not very active here and it implies that there are a lack of opportunities from the perspective of recurrent education, where learners repeat learning, work and leisure in circulation (Ministry of Education, 1998).
It is necessary to understand the current status of lifelong education and the educational demand in Korea in order to motivate adults to participate in continuing education. It is also necessary to understand what type of lifelong education program is needed in each field and the future tendency of supply and demand in lifelong education. Lifelong education programs should be developed and managed based on the above analysis, and the government needs a system that provides incentives for adults who participate in the programs.

2. Enterprises

What are the characteristics of the enterprise that will lead the knowledge-based society of the 21st century? It seems that the answer is the enterprise that operates an expedient and organic network, taking knowledge and information as production elements and is comprised of highly educated and skilled staff. As the intangible assets such as human resources and intellectual capital will be greatly emphasized, enterprises need to intensify their job education and training for workers. In the case of American enterprises, their productivity increased by 8.6% when they increased their level of training by 10%, whereas the productivity increased by only 3.4% when they increased facility investment by 10%. This shows the importance of job education and training for workers (Ministry of Education · KRIVET, 1999). Accordingly, future intellectual enterprises should put more effort and investment into human resources development in order to enhance their productivity and intellectual capital.

Enterprises must implement the following in order to establish a corporate strategy based on knowledge and to develop human resources effectively.
First, the enterprise must promote an open corporate culture in order to facilitate knowledge-building activities such as sharing, creating, accumulating and utilizing knowledge.

The following are the characteristics of Korean corporate culture: lack of opportunities for communication between upper and lower ranks and between workers, employers and employees alike, a refusal to accept criticism or admit failure, the tendency to choose people whose qualifications fit corporate objectives rather than talented people with creative minds in the hiring of new employees, lack of evaluation and reward systems for knowledge-based activities, absence of a function to take complete charge of intellectual management such as an intellectual manager, primary cutbacks on education and training budgets when management performance worsens, etc. All these characteristics show that Korean corporate culture is not conducive to effective intellectual management. To resolve these problems, the enterprise needs to organize and operate an exclusive intellectual management organization comprised of a chief intellectual officer or exclusive knowledge manager, to develop an intellectual management compensation system such as a symbolic incentive wage system like the Buckman Lab (America) in order to foster a knowledge and information-sharing culture, to encourage the zeal for creative and challenging activity, and to create an open corporate culture like that of the Holiday Inn, in which all members of the company from top management to field workers can participate.

Second, enterprises must encourage workers to develop their professional skills and provide them with opportunities to do so, such as through the introduction of a "professional career path" system.

Job rotation systems have the advantage that workers easily understand the tasks in many sectors, but on the other hand, workers cannot acquire
professional skill levels in specific tasks. Adopting a "professional career path" overcomes these disadvantages by providing an environment for highly professional workers to concentrate on their area of specialty without the interference of management work or miscellaneous tasks. Take the master path of a Japanese corporation, Sony for example. At Sony, 20 to 30 workers are recommended every year for the system and only two thirds of them are advanced to a professional position for 2 years. This system really leads individuals to develop themselves continuously. A professional career path infrastructure embedded in the enterprise culture puts great emphasis on the expertise of the employees.

Also, we must support learners to become accustomed to not only the deliberation of official work performance, but also, the overall knowledge required in informal or general organizational activity by facilitating an in-company mentor.

3. Schools

There is a saying that "the 20th century teacher is teaching 21st century students 19th century knowledge", which reflects well the reality of Korea's education and the belief that if education does not change, nothing will change, but if education does, everything will, tells us of the importance of innovation in education. Although the public school's function has been relatively weakened due to the qualitative and quantitative expansion of informal education institutes, regular public schools will still account for most of our lifelong education. Therefore schools must implement the following tasks in order to prepare for the coming knowledge-based society.

First, foster the talent which is needed in the knowledge-based society, and reorganize the school system so that workers may obtain required skills
such as general knowledge, basic occupational skills and professional knowledge.

We need to develop a flexible school education system so that adult learners can develop skills related to general knowledge and so that a variety of adult education institutes can provide lifelong learning opportunities. We need to reestablish school ideology and educational objectives, and reorganize course layouts and curriculum in an innovative way. Also, we need to develop and operate the context of education so that behavioral specificity can be reflected in the public curriculum up to grade 10, while developing an environment that allows diverse and practical teaching and learning.

Academic fields in Germany are separated into 6,000 categories whereas those of Korea are classified into only 1,300. It raises a question about academic expertise in Korea. Therefore we must classify knowledge for the systematization and diversification of professional knowledge, and attempt to professionalize and diversify course layouts and specialize each higher education institute's role and function accordingly.

Second, we must support creative, autonomous and interactive learning between teachers and learners.

The knowledge-based society brings radical changes in the role of learners and teachers. Learners should avoid simple memorization of knowledge but autonomously obtain knowledge by themselves, learn how to learn and create and share sophisticated knowledge. Teachers will be coordinators who avoid the cramming system, but help learners know how to learn. These changes in learners' and teachers' roles must be accompanied by
diverse curricula and teaching-learning methods in order to facilitate creative and autonomous learning for learners through self-led learning.

Third, we need to flexibly manage educational matters and diminish the distinction between formal and informal education through division of responsibilities and mutual recognition between traditional institutions and remote institutions.

P. Drucker(America), predicted that university campuses will disappear and satellite lectures will be universal within the next 30 years. Recently, two-way tele-education such as telecommuting, tele-learning, and in-company learning is being popularized using rapidly advancing information-communication technology. Especially, two-way tele-education necessitates innovations to the existing education system, study content and method. As the demand for lifelong learning increases along with these changes, it is necessary to emphasize flexibility and diversity in managing educational matters so that people of many different classes can have the opportunity to participate in learning in the future knowledge-based society. Examples of the diversity in study methods are the virtual college, virtual training institution and virtual private institution via the Internet. The advantage of virtual schools is that anyone can have the real opportunity to learn and to receive quality education with relatively low cost regardless of when and where.

To popularize these virtual schools, first we need to have a clear division of responsibilities between traditional educational institutions and tele-educational institutions, an administrative device to allow mutual recognition between such institutions through quality control, and to open the management of education matters to the public, so that anyone who wishes to learn can have the opportunity to gain access to education programs.
4. Individuals

An intellectual has been defined in a number of ways according to the times and individuals have been exerting multilateral efforts to become intellectuals. Here, we define an intellectual as a person who has knowledge about objects, propositions and activities or skill and has the intelligence, habits and skills required in the knowledge development process based on the creation, storing, application and sharing of knowledge, and continuously creates value by taking action. We will discuss how people become intellectuals based on our definition.

First, they have to develop their skills continuously through lifelong learning.

To have competitive excellence in a society where knowledge and technology change rapidly, people have to improve and develop themselves continuously through lifelong learning and have the will to organize new knowledge and skills.

Second, they have to be familiar with computers.

Quick response to demands of users and the need to obtain advanced knowledge are accelerating the development of the information infrastructure. In as much as computer skills, the primary tool in knowledge creation, are compulsory for an intelligent worker, learners need to develop computer skills continuously through computer education.

Third, English is compulsory. People need to learn this as a second language.
To have outstanding global competitiveness in an information and knowledge-based society, they need to have the skill to learn advanced knowledge. Especially, in order to use the treasure-house of knowledge, the Internet, they need to have foreign language skills along with their computer skills.

Fourth, they need to have a clear perception about the meaning of what they do.

Learners must be aware of the how and why of what they do and further, they need to reflect fully the demand of users in performing their tasks.

Fifth, they need to have good personal relations with others.

Learners must know who can effectively support their work within the members of the organization (know-who) and they need to have good social skills to cultivate effective support from others.

Sixth, they need to have subjective consciousness.

The sense of responsibility and rights concerning their work, in other words, subjective consciousness, is compulsory for intelligent workers. It is the basic consciousness with which to improve, develop and innovate their work.

Seventh, they need to understand the complexities of multi-cultural societies.

As in this chapter of our lives we face rapid globalization, we need to
understand not only our own culture, but also those of others so that we can live together with citizens of any nationality. We need to foster the ability to understand and interpret a variety of cultures for the beginning of the 21st century, in what will be the 'Age of Culture'. The Age requires an intellectual diaspora, intellectuals who will have access to an experience of a number of cultures and so we need to move away from prejudicial 'ethnocentrism' toward a sense of global culture.
References


SPECIAL SESSION
Koreas Experience in Overcoming the Economic Crisis of the Late 1990s: Employment and Unemployment Measures

Presented by Jai-Joon HUR
Research Fellow, Korea Labor Institute

1. Introduction

Beginning in November 1997, Korean economy underwent a devastating economic crisis. Declining macroeconomic conditions brought about major labor market disruptions in 1998: a quadrupling of unemployment, a fall of 9% in real wages, informalization of the remaining jobs, increased job insecurity, and rising poverty and inequality. Disadvantaged groups suffered a disproportionate impact. The result was not only economic misery but also social pain: increased homelessness, rising crime, heightened school dropouts, an accelerating divorce rate, and an overwhelming sense of social malaise.

1999 marked a major turnaround for Korea. GDP grew by more than 10.7%, and real wages increased apace. Unemployment began to fall as well as long term unemployment. The unemployment rate is now less than half of its peak level. Youth and women are again returning to the labor force and are finding employment.

The rapid decrease of unemployment owes, above all, to the economic upturn at high growth rate since 1999. Low interest rate, depreciated value of won, policy initiatives to bring up venture enterprises, together with favorable international economic environment such low oil price and increased demand of semiconductor chips must have contributed to the rapid recovery. Precise analysis of it will require other separate papers. This paper
focuses on dramatic changes in the Korean labor market after the financial crisis and critically assesses the employment and unemployment measures taken by the government vis-à-vis the labor market turmoil.

Section 2 examines briefly the labor market evolution after the crisis. Section 3 treats, with critical assessments, the government's effort to cope with the adverse shock in the labor market. Summary and some remaining issues are given in Section 4.

2. Labor Market Context

With the adverse shock, Korean labor market fell into an unprecedented turmoil. Unemployment soared up from day to day. Non-regular workers and low-educated workers suffered disproportionately the adverse impact. Jobs were precarized. A disadvantaged hard-core group in the Korean labor market experienced unemployment recurrently even if they did not fall into the long-term unemployment trap.

2.1. Increases in Involuntary Unemployment

Besides the high unemployment, one of outstanding features of the labor market was a substantial increase of involuntarily dismissed workers, in particular, the unemployment due to deterioration of business or no more work. It was the single most prevalent reason for unemployment in the early 1998 (29.7%) and since then dramatically increased to 43.6% by the mid-1998 (Table 1). The number of involuntarily unemployed grew by tens and thousands per month. The Ministry of Labor had to expand the capacity of public employment service agencies to pay unemployment benefits and provide job information.
2.2. Disproportionate Impact on non-regular employees and low-educated workers

Non-regular employees and low educated workers suffered a disproportionate impact of the economic crisis. A dominant portion of the involuntarily unemployed people came out of non-regular workers and low-educated workers. Unemployment rate of the low educated (Middle school and below in (Table 2) ) almost quadrupled between 1997 and 1998. Unemployment rate of high school graduates increased less, but two times and a half as high as the former level.

As of Dec. 1999, the proportion of non-regular employees was about 52.9% of the total number of wage workers. In contrast, they explained about 82.1% of the unemployed wage workers. (Table 3) shows that non-regular employees were principal group who experienced unemployment. Daily workers and large part of temporary workers were not covered by EIS while they have been more in need of a safety net, raising one of the major policy issues challenging current social safety-net system.
Table 2  Unemployment Rates by Age Group and Educational Level

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Total Unemployment</td>
<td>2.0</td>
<td>2.0</td>
<td>2.6</td>
<td>6.8</td>
<td>6.3</td>
<td>3.7</td>
</tr>
<tr>
<td>By educational level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle school or below</td>
<td>1.1</td>
<td>1.1</td>
<td>1.5</td>
<td>5.8</td>
<td>5.2</td>
<td>3.1</td>
</tr>
<tr>
<td>High school</td>
<td>2.5</td>
<td>2.5</td>
<td>3.3</td>
<td>8.2</td>
<td>7.6</td>
<td>4.4</td>
</tr>
<tr>
<td>College and university or above</td>
<td>2.7</td>
<td>2.6</td>
<td>3.0</td>
<td>5.7</td>
<td>5.3</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Table 3  Employees and unemployed employees by employment status (As of Dec. 1999)

|                  | Employees | Unemployed employees by former status |%
|------------------|-----------|---------------------------------------|
| Total            | 13,024   (100.0) | 660 (100.0) |%
| Regular          | 6,131 (47.1) | 118 (17.9) |%
| Temporary        | 4,468 (34.3) | 236 (35.8) |%
| Daily            | 2,426 (18.6) | 306 (46.4) |%

Note: 1) Those who lost their job less than a year ago.
Source: NSO, Economically Active Population Survey database

Box 1  Classification of employees by status

It is a common tradition in the analysis of the Korean labor market that employees are classified into three categories: regular employees, temporary employees and daily employees. Statistically, regular employees are defined for operational purposes as employees whose employment contract spans, implicitly or explicitly, more than a year or is without any fixed term. Temporary employees are defined as employees who have an employment contract lasting between a month and a year. Daily employees are those employees whose contract period is less than a month.
In reality, however, the usage of those terms has nuances other than just demarcation by contract period. Temporary employees can be fixed term contract workers or project based employees. It is not rare that their employment period exceeds one year or is without any fixed term; as is the case with most of part-time employees and dispatched employees. They are highly substitutable with other workers as their jobs do not require professional skills. Employers can freely dismiss them without offering any severance pay. The employer, regardless of regulations in law, does not contribute a social insurance premium for them as their wage is considered to be inclusive of severance pay, social insurance premium, etc. In many cases, the employer does not keep their employment records so they cannot prove their employment career. Temporary employees are, in the usual sense, equivalent to atypical or non-regular employees.

Daily employees in practical usage can be understood as a subset of temporary employees. They are paid on a daily basis and their employment spans a well-defined project. The employment contract is terminated automatically when the project is completed, even if they remain under the same employer or Shipjang. Shipjang is an informal organizer of the manpower pool in the construction industry. He is not an officially permitted employer or business owner but concludes a contract with the construction company as an independent contractor to perform a process of construction. Traditionally, any experienced worker who is able to organize a group of craftsmen and workers in the construction industry has played a role as a Shipjang when he finds a small construction project. They frequently move from one workplace to another. Sometimes it is hard to distinguish them from the self-employed. They conclude a contract as an independent contractor as if they are a self-employed when they have opportunity of getting independent jobs, such as repairing or petty construction.

Regular employees are those whose employment contract period is not fixed. Their employment is stable. Their wage increases on the basis of seniority and they have a predictable promotion path. They fully enjoy the social insurance advantage as regulated by law.
The National Statistical Office takes into consideration these common sense meanings during surveys. When it is difficult to distinguish if an employee is regular or temporary, whether or not he/she is expected to receive severance pay serves as an important criterion during the survey. If an employee is not expected to receive retirement pay from the employer, even if the employment contract is without fixed term, he/she is classified as a temporary employee. If an employee is paid on daily basis even when he/she is expected to work more than a month in a workplace, he/she is classified as a daily employee.

2.3. Increase in Discouraged Youth and Unemployment of Elderly Workers

As commonly observed in other countries, unskilled youth and the low educated are the most vulnerable group in the midst of structural adjustment. With the upbringing of the crisis, firms froze the recruitment, and tens and thousands of new graduates were left jobless. Having searched for jobs in vain, a substantial portion of them (in particular, young female graduates), being discouraged, might have withdrawn from the labor market.

Firms not only restricted the recruitment but also appealed to so-called honored retirement program by providing an incentive in severance payment for those who voluntarily applied for the retirement program. Unemployment rate among elderly workers (55 and over in Table 4), even though not so high as the general unemployment level, abruptly increased from 0.3% in 1997 up to 3.3 in 1998. It increased further in 1999 while unemployment level of the other age groups decreased.
2.4. Precarization of the Work Force

The proportion of regular workers was about 54.1% in 1997 and since then gradually decreased to about 48.0% in Aug. 2000, while the proportion of temporary and daily workers increased from 31.6% and 14.3% to 34.2% and 17.8% respectively during the same span. (〈Graph 1〉). This tendency of non-regular worker increase was observed even before the crisis but the crisis accentuated the trend.

〈Graph 1〉Trends in the Proportion of Wage Workers by Employment Type

The observed composition of the employment indicates that large part of the employment was transformed into unstably employed non-regular employees. Even with the economic recovery, the situation was not improved remarkably. Between 1998 and Aug. 2000, unemployment rate decreased from 6.8% to 6.3% and the number of workers employed increased by 1.3 million. But the number of regular workers decreased by 0.23 million (3.5% decrease), while temporary workers and daily workers increased by 0.44 million (11.0% increase) and 0.57 million (32.9% increase) respectively.

2.5. Recurrent Unemployment

The proportion of the long-term unemployed (6 months and over) steeply increased month after month from 5.7% in 1998:Q1 to above 20.5% by 1998:Q3 and stays at around 14% this year. Long-term unemployment for more than 12 months showed the similar evolution: its proportion increased from 0.7% in 1998:Q1 to 4.1% by 1999:Q2 (〈Graph 2〉).

〈Graph 2〉 Long-term Unemployment as a Percentage of Total Unemployment
Seemingly the cumulative effect of high unemployment did not lead to the perpetuation of long-term unemployment as was predicted by some economists just after the crisis. The percentage of the long term employed is relatively low compared to that of European countries and North American countries (Table 5). It is expected not to increase any more. Unemployment outflow rate has been high despite the unfavorable labor market condition. Large portion of precarious workers are experiencing short unemployment span. However, about a third of those who experience unemployment during Jan. 1998~June, 1999 are found to have experienced unemployment recurrently. As for non-regular employees, 77.5% of them experienced unemployment more than twice during given 18 months (B.Y. Lee, 2000). A disadvantaged hard-core group in the Korean labor market did not fall into the long-term unemployment trap, but a "recurrent unemployment trap".

Table 5: Long Term Unemployment as a Percentage of Total Unemployment, 1999

<table>
<thead>
<tr>
<th></th>
<th>6 months and over</th>
<th>12 months and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>21.4</td>
<td>11.6</td>
</tr>
<tr>
<td>France</td>
<td>55.5</td>
<td>40.3</td>
</tr>
<tr>
<td>Germany</td>
<td>67.2</td>
<td>51.7</td>
</tr>
<tr>
<td>Italy</td>
<td>77.2</td>
<td>61.3</td>
</tr>
<tr>
<td>Japan</td>
<td>44.5</td>
<td>22.4</td>
</tr>
<tr>
<td>Korea</td>
<td>18.6</td>
<td>3.8</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>45.7</td>
<td>29.8</td>
</tr>
<tr>
<td>United States</td>
<td>12.3</td>
<td>6.8</td>
</tr>
<tr>
<td>European Union</td>
<td>63.7</td>
<td>47.5</td>
</tr>
<tr>
<td>Total OECD</td>
<td>46.2</td>
<td>31.2</td>
</tr>
</tbody>
</table>

3. Employment and Unemployment Measures

Faced with high and increasing unemployment, the Korean government put out diverse and intense measures to alleviate the adverse impact of the crisis on the labor market. The measures taken by the government can be classified into five categories: (1) job creation, (2) training for reemployment, (3) UI benefit and social care, (4) job keeping, and (5) public employment services (PES) and labor market information (LMI) system.

To implement the unemployment policy measures, the government allocated about 10 trillion won in 1998, about 15.8 trillion won in 1999. If we count those budget on unemployment measures in proper sense, they were 5.7 trillion won in 1998 and 9.2 trillion won 1999 respectively. They are expected to be 5.9 trillion won in 2000. Approximately 1.4% of GDP on average has been set aside for unemployment policies for three consecutive years after the crisis (<Table 6>).

〈Table 6〉 Budget on Unemployment Measures

(unit: 100 million Won)

<table>
<thead>
<tr>
<th>Unemployment Measures</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
</tr>
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<tbody>
<tr>
<td>Total (% of GDP)</td>
<td>56,672</td>
<td>92,400</td>
<td>59,220</td>
</tr>
<tr>
<td>(1) Public Works Program</td>
<td>10,444</td>
<td>26,218</td>
<td>11,000</td>
</tr>
<tr>
<td>(2) Training for Reemployment</td>
<td>8,351</td>
<td>5,832</td>
<td>3,509</td>
</tr>
<tr>
<td>(3) Social Care for the Jobless</td>
<td>35,993</td>
<td>54,482</td>
<td>40,252</td>
</tr>
<tr>
<td>(4) PES &amp; LMI System</td>
<td>660</td>
<td>1,036</td>
<td>796</td>
</tr>
<tr>
<td>(5) Job Keeping</td>
<td>1,224</td>
<td>4,832</td>
<td>3,663</td>
</tr>
</tbody>
</table>

Note: If the budget on expansion of SOC Investments, support for venture enterprises and support for SMEs are included, total expenditure amounts to 10.1 trillion won in 1998, 15.8 trillion won in 1999, 6.7 trillion won in 2000.

Source: Ministry of Labor
3.1. Job Creation

Measures for job creation includes (a) creating new jobs by supporting and subsidizing new businesses start-ups, and (b) providing temporary or relief works for unemployed workers such as public works program.

To create new jobs by financially supporting new business start-ups, privileged financial credit (300-500 million per business) was provided for starting small business firms and venture enterprises that have good business plans. Newly starting small firms and venture enterprises were exempt from acquisition taxes and registration taxes. The government expanded public SOC investment of which the employment-generating effect was judged to be important.

Public works programs (PWPs) and internship programs were introduced on large scale to provide temporary work opportunities not only for the low-income unemployed but also for new entrants to the labor market who failed to find a job. PWPs had achieved, in this way, two policy objectives: creation of temporary job opportunities enabling job seekers to maintain their connection with labor market, and protection of the basic livelihood of the unemployed.

The PWPs were operated on a three-month unit period basis. They were implemented as a two-stage project in 1998 (Phase I: from May to August; Phase II: from September to December), and as a four-stage project in 1999 (Phase I: from January to March; Phase II: from April to June; Phase III: from July to September; Phase IV: from October to December).

An eligible person could participate up to 3 unit periods. Between consecutive periods a 10-day break was given to the participants. Although designed primarily for male heads of household, the projects also attracted many female workers who were excluded from other job opportunities. At the later stage, female heads were given higher priority.
PWs were divided into the central governments projects and local governments projects. Local governments and ministries of the central government were allowed to propose various PWS. Various database-building and public service projects were performed: forestation, construction of cyber libraries, on-site monitoring of unemployment policy programs, restoration and maintenance of social welfare facilities and public facilities, etc.

Selection criteria could be different depending on the characteristics of the projects. For the projects administered by local governments, screening for participation were made based on scores assigned to the following 9 items: age(10), householder(10), number of dependents (15), property ownership(20), household income(10), female householder(5), handicapped(5), duration of unemployment(10), and participation in previous public works projects(10).

In principle, those who were eligible for PWSs should be 18 to 60 years old at the time of application. They should be unemployed or daily workers without regular income, or the homeless whose status can be verified by the administrative agencies or organizations recognized by such administrative agencies. Recipients of unemployment benefits were not eligible regardless of the amount of their benefits. However, spouses of those who received less than 300,000 won as unemployment benefits were eligible for public works. The daily wage rate for participants depended on the type and difficulty of work.

The expenditure on PWS amounted to 1 trillion won in 1998 and 2.5 trillion won in 1999 (Table 7). About 2.2 million eligible people participated in PWS since it first started in May, 1998. Participants worked less than 5 months on average in the programs. Monthly average of participants amounted to 0.3 million.

The PWPs proved to be very effective unemployment measures. They provided earnings opportunities both to low income families and the unemployed people who urgently needed social protection. More than 50% of the unemployed were found to have participated in the PWPs (Lee and Kim, 2000). Majority of participants were those disadvantaged such as low-skilled, less educated, former non-regular workers, women and elderly workers who were excluded from other institutionalized unemployment measures, such as UI benefits and loan schemes. Their wage level was substantially lower than that of previous jobs. Participants were quite satisfied with the management and outcomes of the PWPs, except for wage level and program duration. They wanted the programs to be continued and preferred the PWPs to unemployment assistance (Lee and Kim, 2000). PWPs were, thus, found to be more effective than expected in providing income support for the unemployed as well as for other low income families.

〈Table 7〉 Budget for Public Works Projects in 1999 and Number of Persons Covered by Project Types

(Unit : 100 million won, 1000 persons)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Phase IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of persons</td>
<td>24,924</td>
<td>4,780</td>
<td>7,456</td>
<td>6,344</td>
<td>6,344</td>
</tr>
<tr>
<td>Covered</td>
<td>1,599</td>
<td>410</td>
<td>450</td>
<td>373</td>
<td>366</td>
</tr>
<tr>
<td>Central</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov't</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of persons</td>
<td>10,624</td>
<td>1,180</td>
<td>3,056</td>
<td>3,194</td>
<td>3,194</td>
</tr>
<tr>
<td>PWP</td>
<td>636</td>
<td>120</td>
<td>170</td>
<td>173</td>
<td>173</td>
</tr>
<tr>
<td>Local</td>
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</tr>
<tr>
<td>Gov't</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of persons</td>
<td>14,300</td>
<td>3,600</td>
<td>4,400</td>
<td>3,150</td>
<td>3,150</td>
</tr>
<tr>
<td>PWP</td>
<td>963</td>
<td>290</td>
<td>280</td>
<td>200</td>
<td>193</td>
</tr>
</tbody>
</table>

Monitoring results and advisory comments were reflected quasi-instantaneously during the program implementation. In the beginning, the wage rate ranged from 22,000 won to 35,000 won a day. The wage rate for PWPs were far higher than the minimum wage and could exert a negative effect on the low-end labor market. Responding to the monitoring results, the government cut the wage rate by 3,000 won on October 1, 1998, and further by 3,000 won in 1999. Currently, the daily wage rate ranges from 19,000 won to 29,000 won.

Programs were not without shortfalls. In the early stage of the program, appropriate screening mechanisms were not well prepared and some well-off people were monitored to be participating in the program, while many poor unemployed people were excluded. The disadvantaged participants had a tendency to be dependent upon the PWPs perennially. This unemployment trap was particularly daunting for people whose chance of escaping from unemployment was underemployment which could be judged worse than participating in the public works projects (Lee and Kim, 2000). A kind of employment illusion was confirmed. Some participants resisted to discontinuation of programs and requested employment security.

As the labor market settles down, the government tries to make PWPs institutionally managed programs with clearer targeting. PWPs need to be linked to active labor market policies such as vocational training and employment services to avoid the negative lock-in effect.

3.2. Job Training for Reemployment

Measures for job training aimed to train the unemployed to enhance their job skills and thus increase their employability: retraining opportunities were provided and/or subsidized for the unemployed; training opportunities were provided at the colleges and universities for new graduates.
Since the onset of the economic crisis, the government has set up training programs available to the unemployed. In 1998, about 0.36 million unemployed participated in and benefited from various government-sponsored job training programs, approximately eight times as many as those in the preceding year. The budget for vocational training amounted to 835 billion won in 1998. In 1999, the Ministry of Labor provided job training opportunities for a little less than 0.36 million jobless workers (Table 8).

(Table 8) Participation in Reemployment Training for the Unemployed

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>362,941</td>
<td>358,351</td>
</tr>
<tr>
<td>Training for the Unemployed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(those covered by EIS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Training for the Unemployed</td>
<td>170,096</td>
<td>226,356</td>
</tr>
<tr>
<td>(those not covered by EIS)</td>
<td>101,709</td>
<td>69,466</td>
</tr>
<tr>
<td>- Training for Agricultural Jobs</td>
<td>5,126</td>
<td>-</td>
</tr>
<tr>
<td>- Training for the Unemployed New Graduates</td>
<td>43,012</td>
<td>21,076</td>
</tr>
<tr>
<td>- Training for Business Start-Up</td>
<td>13,598</td>
<td>7,725</td>
</tr>
<tr>
<td>Manpower Development Training</td>
<td>29,400</td>
<td>33,728</td>
</tr>
<tr>
<td>- Basic Skill Formation Training</td>
<td>14,515</td>
<td>16,817</td>
</tr>
<tr>
<td>- Training for the 3D Jobs</td>
<td>11,000</td>
<td>9,122</td>
</tr>
<tr>
<td>- Paid-Leave Training</td>
<td>3,885</td>
<td>7,789</td>
</tr>
</tbody>
</table>

Note: Employment Maintenance Training under EIS is not included
Source: Kang et al.(1999); Ministry of Labor

The unemployed workers who had worked at the firms covered by EIS were eligible for reemployment training programs. They were allowed to participate in the training and receive training allowances which lasted from
one month to one year, up to three times, until they found a new job. Training allowances are cut in half if they keep participating in the second training course and are reduced to zero for the third training course.

Training allowances were 200-300 thousand won (equivalent to 60-90% of the minimum wage). Trainees who were learning skills for the "3D" (Dirty, Difficult, Dangerous) jobs, which had been facing a labor shortage, received an additional bonus. Similar training opportunities and benefits are offered to the unemployed not covered by EIS.

Job training programs for the unemployed provided for the unemployed opportunities to retrain themselves to enhance their own future employability while training allowances helped alleviate their economic difficulties.

However, moral hazard of some training institutions and trainees diminished the efficiency of the expenditure on training. Some unqualified training institutions made a bad use of the opportunities and participated as program providers purely as a money-making endeavor, i.e. to get reimbursement from the government. Also, some trainees were interested only in 'being paid' the training allowances instead of acquiring skills.

Another inefficiency associated with the programs was the underdevelopment of the labor market information system and the lack of experts to manage the training programs. The qualification of training institutions and programs was made purely upon the preexisting conditions such as available equipment, facilities, etc. Little consideration was given either to changing labor market demands or to the needs of the potential participants. Training institutions tended to routinely provide the same training programs to the unemployed as were previously offered. And as a result, those private programs were not significantly helpful in getting the trainees to be re-employed, which partly resulted from limited job opportunities of labor market.
3.4. Social Care for the Jobless

With severe economic recession and massive unemployment, poverty among the jobless and the low-income families emerged as an important social issue that needed to be immediately addressed. Measures for social care were implemented in two directions. First, in order that EIS could care as many unemployed as possible, the coverage of EIS was extended, qualification conditions were softened, and UI beneficiaries were given extra benefit days of up to 60 days. Second, the low-income jobless were given income or credit support such as loans for living expenses (including family medical and educational expenses), and other public aid benefits.

(1) Unemployment Benefits

In July 1995, before the Financial Crisis, Korea had put into place an employment insurance system (EIS). The three components of this system are traditional unemployment insurance (UIS), job training, and employment maintenance/promotion subsidies.

When EIS was first introduced in July 1995, the coverage of UIS was limited to workers employed at firms with more than 30 employees. Faced with increasing unemployment and widespread low-wage earners at small size firms with high probability of being unemployed, the extension of UIS coverage was deemed critical for widening and strengthening social protection of the unemployed. Thus, the Korean government extended the coverage of UIS to firms with more than 10 employees (January, 1998), to firms with more than 5 employees (March, 1998), and then, to all firms with at least one employee (in Oct., 1998). After the three consecutive amendments of Employment Insurance Law in 1998, only those part-time workers working more than 80 hours a month and daily workers employed less than a month remained legitimately excluded from coverage of EIS.
The extension of EIS coverage could not be enough because being covered by EIS did not suffice for the eligibility for UI benefit. Before the crisis, to be qualified for the benefit, one must be involuntarily dismissed from the covered firms after working (or contributing premiums) for more than 1 year out of last 18 months. Temporary workers and other unstably employed workers working at small firms were hard to satisfy the condition. To better protect those marginal workers and newly insured employees, the government relaxed qualification conditions for UI benefits, which includes relaxing the minimum contribution requirements from 12 out of 18 months to 6 out of 12 months.

The duration of UI benefit varies depending on the insured employment period and the age of the claimant. It ranged between a minimum of 60 days and a maximum of 210 days. However since Korea's EIS was implemented on July 1, 1995, the insured period of employees could not exceed five years and thus the actual duration of UI benefit would not be able to exceed 150 days until June 30, 2000.

Given the limited benefit duration, extended benefit rule was put into operation from July 1998 so that the qualified unemployed could receive up to 60 days longer than the days designated by the benefit duration matrix. And the UB duration matrix with from 60 to 210 days was modified to that with from 90 to 240 days. In this way average duration of UI benefit receipt

(Table 9) Coverage Extension of EIS

<table>
<thead>
<tr>
<th>Date</th>
<th>Unemployment Insurance</th>
<th>Employment Stabilization Program &amp; Job Skill Development Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 1, 1995</td>
<td>≥ 30 employees</td>
<td>≥ 70 employees</td>
</tr>
<tr>
<td>January 1, 1998</td>
<td>≥ 10 employees</td>
<td>≥ 50 employees</td>
</tr>
<tr>
<td>March 1, 1998</td>
<td>≥ 5 employees</td>
<td>≥ 50 employees</td>
</tr>
<tr>
<td>July 1, 1998</td>
<td>≥ 5 employees</td>
<td>≥ 5 employees</td>
</tr>
<tr>
<td>October 1, 1998</td>
<td>≥ 1 employees</td>
<td>≥ 1 employees</td>
</tr>
</tbody>
</table>
increased up to 126 days in 1999 while it was 85 days in 1997 and 91 days in 1998.

Despite all the efforts implemented by the government regarding the UIS, important problems still remain. Even after the extension of coverage, the actual number of insured employees fall far short of the expected number of employees to be covered. As of June 2000, the compliance rate is only 70.6% and only 55.6% of the total wage workers are registered --that is, there is a large gap between coverage de jure and coverage de facto. Many temporary and daily workers are not registered yet and still out of protection.

Even with the expansion of coverage, relaxation of eligibility criteria and lengthening of benefit period, the percentage of the beneficiaries among the unemployed is too small for the UIS to be the primary safety net for the unemployed. As of Dec. 1999, the percentage was about 9.8, which is considerably lower than that of other OECD countries (Table 10). Four reasons can be addressed. Wage workers explain only 61.1% of total employment while UIS, by nature, can not protect non-wage workers against unemployment. The number of registered employees de facto does not exceed 70.6% of those to be covered legitimately and most of temporary and daily employees are still excluded from the UIS. Actual benefit duration is limited because of benefit duration rules and short history of EIS. And finally criteria judging whether or not a claimant is involuntarily unemployed are strict.

Table 10 The Proportion of the UI Beneficiaries among the Unemployed

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of the Unemployed (A)</th>
<th>Number of Beneficiaries (B)</th>
<th>B/A*100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany (1990)</td>
<td>1,971</td>
<td>858</td>
<td>43.5</td>
</tr>
<tr>
<td>Japan (1992)</td>
<td>1,420</td>
<td>395</td>
<td>27.8</td>
</tr>
<tr>
<td>Korea (Dec. 1999)</td>
<td>1,040</td>
<td>102</td>
<td>9.8</td>
</tr>
<tr>
<td>U.S.A. (1990)</td>
<td>6,874</td>
<td>2,475</td>
<td>36.0</td>
</tr>
<tr>
<td>U.K. (1993)</td>
<td>2,900</td>
<td>870</td>
<td>30.0</td>
</tr>
</tbody>
</table>

(2) Livelihood Protection for the Poor

As UIS could not protect large part of the jobless from income loss in the face of massive unemployment, poverty among the jobless and the low-income families had to be addressed with different measures. The preexisting livelihood protection program, based on the Livelihood Protection Act (1961), have provided income support to the poor whose income is below certain level (230,000 won/month per person). In 1997, about 1.2 million people were protected under the program. However cash living allowances were paid only to those who were not able to work (disabled, sick, or too old, etc) and had no income. For all others who possessed work ability, the government subsidized only living, educational, medical, maternity and funeral expenses. In fact, among the 1.2 million less than half of them received cash living allowances.

With the advent of the crisis, the government expanded the program and introduced Temporary Livelihood Protection program in March 1998 in order to protect the livelihood of the poor unemployed who did not qualify for UI benefits. This temporary program also provided low-interest long-term loans for livelihood, support for housing, medical, and educational costs, and low-interest loans for the self-employed (Phang, 1999).

The Temporary Livelihood Protection program relaxed wealth criterion of preexisting livelihood protection program. Those who possessed property worth less than 44 million won, instead of 29 million won, could qualify for the program. In 1998, about 311,000 unemployed people were protected by this program.

The temporary livelihood program, however, was still too restrictive in its coverage and generosity to be a substitute for unemployment benefits. For example, the household of four members could receive 250 thousand won per month under the program, while the minimum living expenses of the same-sized family were estimated to be 880 thousand won. Although the Korean government developed various social safety nets for the unemployed
after the crisis, their absolute level of social protection was judged to be low in the light of basic living standard.

The government revised the Livelihood Protection Act into a new act, called the Act on Ensuring Peoples Basic Living Standards in 1999, aiming to guarantee a national minimum standard of living for all people regardless of their working capacity. The Act became effective on October 1, 2000. The evaluation about it remains to be done.

3.4. Public Employment Services and Labor Market Information System

With rush-in of UB claimants, the number of PES counselors even fell short of UI benefit payment. It was deemed urgent to immediately expand the capacity of public employment service (PES) for both for UB payment and for administrating other programs of unemployment measures.

The number of PES agencies managed by the central government has increased from 52 in 1997 to 158 in 2000. The number of PES counselors has also increased dramatically from 141 to 1,948 during the same period (Table 11).

<table>
<thead>
<tr>
<th>Table 11</th>
<th>Number of Employment Service Agencies and Counselors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(unit : agencies, persons)</td>
</tr>
<tr>
<td></td>
<td>1997</td>
</tr>
<tr>
<td>Local Labor Office</td>
<td>46</td>
</tr>
<tr>
<td>Manpower Bank</td>
<td>3</td>
</tr>
<tr>
<td>Employment Security Center</td>
<td>3</td>
</tr>
<tr>
<td>Employment Service Center For daily workers</td>
<td>-</td>
</tr>
<tr>
<td>Total PES agencies</td>
<td>52</td>
</tr>
<tr>
<td>No. of Job Counselors</td>
<td>141</td>
</tr>
</tbody>
</table>

Note: 1) PES agencies and counselors of the central government only.

2) Manpower Bank are co-invested and co-managed by the ministry of labor and local authorities and specializes in job-matching and job counseling, but does not deal with UI benefits.

Source: Ministry of Labor.
To improve the quality of employment services and to create a user-friendly environment, the government combined in 1998 the employment insurance division and the employment security division of local labor offices into PES centers called Employment Security Centers. These centers were based on the concept of One-Stop Service and were designed to provide job seekers with all kinds of information and services, from job vacancy information to vocational training. The most outstanding advantage of these centers is that an unemployed worker can receive both unemployment benefits and job search assistance at the same place. The government also eased regulations on private agencies for job brokerage and strengthened its support of private agencies, trade unions, and employers organizations for free job placement services.

One must marvel at the progress the Korean PES has made during last 3 years. However, as can be imagined from the motive of the expansion, the capacity of Korean PES is yet insufficient to play an active role in meeting those challenges. One way of considering a PESs capacity is to look at the ratio of workers in the labor force to PES staff. For example in 1997, Germanys PES had a ratio of about 364 workers for each member of the PES. Swedens ratio was 325 and United Kingdoms was 745. Each of these PESs had a relatively high level of capacity. In Korea, the ratio is about 10,910 workers for each member of the PES (Table 12). It would be impossible for Korean PES to envisage offering the range or depth of programs and services which can be offered by the German, Swedish or British PESs unless there is a substantial increase in funding and person-years.
As for the labor market information system, the government launched an electronic labor exchange system in May 1999, called Work-Net, benchmarking Canada's WorkInfoNet. Work-Net, which can be accessed from the Internet at home, provides various information and services such as job vacancies, vocational training program, career guidance information, employment policies, employment insurance, labor market statistics, and labor laws. Almost all of job vacancies registered in public employment agencies can be searched in Work-Net unless employers refuse to let the information be posted. Currently, more than fifty thousand visits the site per day. Users want enhancements to make it more effective and easier to use and the officials responsible for Work-Net have plans for a number of improvements. But additional resources should be provided to expedite those improvements.

3.5. Job Keeping

Measures for job keeping aimed to help firms at difficulty and subsidize firms for keeping their employees during recess and to minimize layoffs. Both credit allocation and subsidy programs were mobilized such as (a) providing viable small-to-medium size firms (SMEs) credit guarantee...
service and bailout credits to protect them from bankruptcy; and (b) supporting and subsidizing firms to adopt qualitative adjustments rather than layoffs if downsizing is inevitable.

By expanding the seed fund of the Credit Guarantee Fund, the government provided more credit to SMEs. Banks were induced to evaluate viability of SMEs and offer appropriate credits. The subsidy programs were mainly funded by Employment Insurance in the form of wage subsidy (employment maintenance subsidy) to the employers who conform to the subsidized plans.

Employment maintenance subsidy is intended to keep dismissals through employment adjustment as small as possible by providing wage subsidies to firms that enact various measures to avoid outright displacement of their redundant workers. In the various measures are included so-called qualitative adjustment methods such as (1) temporary shut-down, (2) reduction of working hours, (3) providing training to redundant workers, (4) providing paid/unpaid leave, (5) dispatching or reassignment of workers. To be subsidized, firms should be in a situation that employment reduction is inevitable for managerial reasons and should adopt the subsidized practices. Subsidies equivalent to 1/2 to 2/3 (depending on the size of the firm) of the wages or allowances paid to their workers are paid for maximum 6 months.

In 1998, 74.7 billion Won was paid for the employment maintenance of 655,150 workers and 5.9 billion Won was given to those firms hiring 5,185 displaced workers. In 1999, 79.2 billion Won was spent for the total number of 370,969 workers and 75.1 billion Won was subsidized for hiring 101,359 displaced workers (Table 13).

Subsidy programs were first criticized on the ground that they could hamper or delay the structural adjustment of the economy by subsidizing

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3 Korean EIS has three pillars: Employment Stabilization Program, Job Ability Development Program, and Unemployment Insurance. See Yoo (2000) for more details of Korean EIS structure.
marginal firms which would be finally liquidated. However, subsidized firms are not necessarily bad firms destined to end in bankruptcy. Good firms can face difficulties in cash flow when financial institutions do not function appropriately and the programs were advocated as an important labor market policy program.

However, the contribution of the employment maintenance subsidy in reducing unemployment should not be exaggerated. The number of workers benefited from the program was around 2,5000 per month on average. Kim et al. (1999) examined the employment maintenance effects of these subsidy programs using employer surveys as well as case studies. The estimated effect was 22.3% on average, which implies that deadweight loss is in the 70% range.

<Table 13> Employment Maintenance Subsidy and others
(Unit : thousand won, persons)

<table>
<thead>
<tr>
<th></th>
<th>1,998</th>
<th>1,999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expenditures</td>
<td>No. covered</td>
</tr>
<tr>
<td>Employment</td>
<td>74,653</td>
<td>655,150</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsidies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiring Subsidies</td>
<td>5,880</td>
<td>5,185</td>
</tr>
<tr>
<td>Employment</td>
<td>16,648</td>
<td>122,843</td>
</tr>
<tr>
<td>Promotion Subsidies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>97,181</td>
<td>783,178</td>
</tr>
</tbody>
</table>

Note: Credit guarantee for SMEs are not included.
Source: Hur et al. (2000).

The subsidy program worked not so much as incentives but as compensation. It is costly, if not difficult, for the labor administration to determine whether the firm applying for wage subsidy is in such a situation
that employment reduction is inevitable. When business is really in a serious condition, wage subsidy program, in most cases, would not work as an incentive strong enough to induce firms to keep redundant workers inside.

Mainly large size firms utilized the subsidy programs. Procedures are complicate enough for small size firms to apply for the program. Small firms do not have enough resource to put workers in reserve. In sum, job maintenance program seems to have contributed to compensating large firms which suffered involuntarily labor slack.

4. Summary and Remaining Policy Issues

With the adverse shock, Korean labor market fell into an unprecedented turmoil. Unemployment soared up from day to day. Non-regular workers and low-educated workers suffered disproportionately the adverse impact. Jobs were precarized. A disadvantaged hard-core group in the Korean labor market experienced unemployment recurrently even if they did not fall into the long-term unemployment trap.

Faced with high and increasing unemployment, the Korean government put out diverse and intense measures to alleviate the adverse impact of the crisis on the labor market. The measures taken by the government can be classified into five categories: (1) job creation, (2) training for reemployment, (3) UI benefit and social care, (4) job keeping, and (5) public employment services and labor market information system.

Even if unemployment decreases and participation rate is increasing, important labor market and social problems remain, requesting policy considerations. In 1999, there were 35.8 million Koreans aged 15 and over. The average number of unemployed in any given month was 1.4 million. Yet, in a typical month, just 0.1 million received unemployment benefits and 0.3 million participated in public works programs. 1.7 million Koreans received Livelihood Protection benefits at some time during 1999. Taken
together, about 0.5 million (around 36% of the unemployed) unemployed had been covered by those assistance programs. This means, despite all that Korea has done, the nation's social protection system still has more holes than net.

The unemployment rate is still twice as high as it was before the crisis. Those who lost jobs have become re-employed in less good ones and face precarious employment and earnings prospects—-that is, rapid expansion of non-regular employment is degrading the quality of working life. Temporary and daily workers are much more vulnerable to unemployment than before. Government regulations are expected to play an active role in meeting those challenges. The crucial policy dilemma is that the Korean government has to attain simultaneously the labor market flexibility and social protection for all workers regardless of its status.

As of June, 2000, there were 12.5 million wage workers in the Korean labor market. Of these, only 6.5 million employees (it amounts to 70.6% of the employees who are supposed to be covered legitimately under the present law and 55.6% of wage workers who should protected by UIS) were working in insured employment—-that is, in jobs that would qualify them for UI benefits in the event of unemployment. The gap in coverage comes from two sources: employees who are supposed to be covered but are not, and employees who are not now meant to be covered.

Thus, one of major problems with Korea's unemployment insurance system is that even if Korea has expanded coverage of UIS to all firms regardless of their size, coverage remains quite incomplete. The main obstacle to covering temporary and daily workers, who are the main source of the gap, with the UIS is that there does not exist any employment career certifying mechanism for them. In order to overcome this, the employment record-keeping system should be refined together with tax administration system (Hur, 2000).
Adapting the training system to a new environment is another important issue to be treated. The restructuring triggered by the crisis continues and the structural adjustment of both private and public sectors affects the labor market. Worldwide factors such as technological change and globalization force continuing adjustments on the labor market. The Korean government has expanded training programs of the unemployed both quantitatively and in the number of programs provided. But the challenges of globalization accompanied by technological change force training system to meet continuous training and permanent education of workers. External labor market is rapidly developing in Korean economy and the extent of traditional employment relation based on seniority is narrowing down. Firms have less incentive than before to train their employees who will soon turn over to other firms. This new environment is forcing the training system to allow more initiatives of workers than training service providers or firms.

The PES capacity has been expanded quantitatively during economic crisis. But the counseling service and the labor market information system such as Work-Net leaves much room to be improved. Counselors do not spend much time in what is considered counseling in PESs of other countries. They are involved in activities such as taking worker registrations, recording job vacancies, providing labor market information and processing employment insurance applications. The PES gave top priority to processing UB claims and in job matching. Most job matching is now handled by private sector agencies and on websites of private dot companies. In the future Work-Net will enable job matching service with relatively little staff involvement. Now that the labor market has settled down, counseling should receive more attention: organized counseling, counseling competencies, group counseling, etc. The PES should dispose of additional resources for labor market information systems especially on an improved occupational classification approach.
During the crisis, the Korean government tackled mass unemployment problems with temporary measures such as large-scale public works projects. As the labor market has found its ancient energy, the need for ad hoc unemployment measures is reducing. It is necessary for Korea to develop a more systematic and comprehensive social protection system with a long-term perspective in order to cater to the needs of the disadvantaged groups.
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Statistics


Korea Labor Institute, KLI Labor Statistics, various issues.
Korea Labor Institute, Employment Insurance Review, various issues.
KLI Database
  CEIOs Employment Insurance Data.
  NSOs Economically Active Population Survey.
Abbreviations

EI : Employment Insurance
EIS : Employment Insurance System
KLI : Korea Labor Institute
LMI : Labor Market Information
MOL : Ministry of Labor
NSO : National Statistical Office
PES : Public Employment Service
PWP : Public Works Program
SME : Small-to-medium size enterprise
UB : Unemployment Benefit
UI : Unemployment Insurance
UIS : Unemployment Insurance System
Korea's Experience in Overcoming the Economic Crisis of the Late 1990s: Private Enterprise Strategies for the Reform of Human Resources Management

Presented by Mr. Cheol Chang
Samsung Electronics Co., Ltd
Republic of Korea
Topic 1

Improving the systems that deliver lifelong vocational education and training
Lifelong Vocational Education and Training as a Response to the Challenges of Human Resource Development in Asia and the Pacific

Presented by Dr. Jeong Taik Lee.
Executive Director
Korea Research Institute for Vocational Education and Training

1. Introduction

The purpose of this paper is to highlight significance as well as future policy challenges of lifelong vocational education and training (LVET) in Asia and the Pacific region. I'd like to undertake this rather adventurous job within the context of human resource development (HRD) in the region.

Hitherto, study of LVET as an important policy tool has been undertaken in both social and economic aspects where a high level of employment, social cohesion and the maintenance of competitiveness is an important notion. One example is development of vocational training as an important instrument policy in response to economic and social change to facilitate adaptation to the changing structure of activity and content of jobs, to integrate young people and other groups into the labor market and to promote equal opportunities.

This paper suggests implementation of LVET which would rather be undertaken within the context of consideration of the challenges of HRD to be in better response to social and economic changes which are most prominently witnessed in Asia and the Pacific region.
Here the key words are LVET and HRD. The regional context of Asia and the Pacific is the choice not only of the reflection of cultural and economic diversities but also of the authors personal interest as Lead Shepherd of the APEC HRD Working Group.

2. The Changing Environment of HRD and Training in Asia and the Pacific

The wide diversity in economic development in Asia and the Pacific region is reflected in the pattern of HRD.1) The first tier of economically highly advanced regions (USA, Canada, and Japan) and economically also developed regions (Australia, New Zealand, and Singapore), rank high in terms of HRD, and the second tier of newly industrialized regions (the Republic of Korea, China, and Mexico) rank the middle, while South Asia, Russia, Chile, and other transitional regions still lag behind.

Furthermore, the first tier has the following characteristics in terms of pursuit of HRD: national strategies for realization of self-directed lifelong learning system, high investment in human capital, emphasis of e-education, efforts toward linkage among qualifications, training, and evaluation, and information technology (IT) as a basis for school renovation. On the other hand, the second tier is trying to catch up while others are still lagging behind in those fields.

Rapid globalization and liberalization and the resulting need to enhance international competitiveness have today been the driving forces behind the

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strong emphasis on HRD and training. Here we have a common theme. In other words, we must answer the question of how effectively we can have a highly flexible and adaptable workforce to meet the challenges of new technology and increased competition due to the effects of globalization.

Lessons from experiences of the financial crisis in Asia and those of digital divide in U.S.A equally emphasize that the benefits of involvement in global markets can accrue on a stable basis only if the country has a well-educated or trained labor force that can adapt its skills quickly in response to the changing demands of the global market place. That is to say that HRD is a universal response to the quickly and diversely changing demands of the market.

To the Pacific Economic Cooperation Council (PECC) HRD Task Force, out of the major issues relating to HRD in the Asia and Pacific, two have in recent years been of particular research interest. They are international labor migration and skill shortages. International labor migration within the Asia Pacific area is playing a key role in helping to correct labor market imbalances within the region. And also the structural changes that come with economic growth in the region require efforts to bring about corresponding shifts in the skills profile of the workforce at both the professional and vocational levels.

In sum, as the countries in the Asia and Pacific region enter the 21st century, they are facing a new and demanding environment which has major implications for the development of human resource. This phenomenon is not unique to the Asia and Pacific zone, but it can be said that it is more phenomenal in the region due to cultural diversities and economic differences.

2. For further detailed information, see Developing Human Resources in the Asia Pacific Region: from Research to Implementation.(http://www.pecc.net/Issue3-HRD.htm)
The environment in the region is largely influenced by three interrelated characteristics:3)

1. rapid economic and structural change as countries take up the opportunities from more open trade and investment;
2. rapid innovation in information and communication technology, and widespread adoption of these technologies in all forms of economic life; and
3. a rapidly growing trend toward greater intensity of knowledge in almost all occupations

My thesis here is that efficient supply of a highly flexible and adaptable workforce both at national and pan-Asia/Pacific level can be secured by adoption of lifelong vocational and training system within the context of HRD in the region.

3. LVET as a Response to the Challenges of HRD in the Asia and Pacific region

Previously I proposed that implementation of LVET be undertaken within the context of consideration of the challenges of HRD in the region. Here we have to clarify the definitions of the two key concepts (LVET, HRD) and their relationship. In addition, we have to define the challenges of HRD and make it clear in what sense LVET can be a response to the challenges of HRD and how.

Firstly, lets start with definition of LVET. The concept of LVET can

3. These characteristics were defined by the Third APEC Senior Officials Meeting held on 21-23 September 2000, Brunei, in Human Capacity Building in APEC: Meeting the Needs of the 21st Century.
be seen from the perspective of lifelong learning.4) Lifelong learning is a broad term which is used to describe the process of continuous learning, personal enrichment and extension of knowledge that takes place over the course of the human lifespan. Learning, by nature, presupposes a process of self-directed, though perhaps economically driven, exploration and discovery of knowledge, skills and abilities. Included in the lifelong learning concepts are formal, non-formal, and informal experiences, such as schooling, on-the-job training, learning by doing, doing by learning, and all other everyday forms of experience.

Secondly, HRD in this paper refers to the activities which are primarily aiming at development and maximum utilization of human resources which are endowed with ability and nature including core competence, technical skill, information skill, moral maturity. (KRIVET, 2000)5) In actual implementation of HRD by individual countries, different visions, implementation strategies, core policy directions, and delivery systems are undertaken by different countries. Thus, HRD might be defined by individual countries in different ways.

For example, the United States emphasize notion of workforce investment in their pursuit of government-initiated HRD. To the Canadian, the concept of human resource is widely used. Singapore prefers manpower. Japan emphasizes lifelong learning and vocational ability.

4. For discussions on lifelong learning, see the following (Lifelong Learning, Workplace Development and Economic Success (Alice lee, 2000); An Empirical Framework for Implementing Lifelong Learning System (Law Song Seng and Low Sock Hwee, 2000); Thoughts on a regional Approach for Lifelong Learning (Jiro Yoshio, 2000); Lifelong Learning in a Developed and Developing Economy (Charles Beaupr, 2000); Articulation and Transfer: Critical Contribution to Lifelong Learning (Frederick C. Kintzer, 2000).
What about policy scopes of HRD? At macro level, the following are important: state visions, implementation strategies, national system for HRD such as HRD network, integrated delivery system of manpower supply and demand, human capital investment, and efficiency, evaluation, and diverse policy domains including education, training, culture, tourism, science and technology, information, and R&D. At micro level, in-plant education and training, organizational development, and career development are important.

Thirdly, it is important to note what are the challenges of HRD. Previously I pointed out three characteristics influencing the environment where HRD is situated. The overall environment carries within it significant economic opportunities and the potential to improve social well being. But the changes are new and complex. Thus, policymakers, business managers and working people alike face considerable pressures as they grapple to comprehend the significance of changes and learn how to take full advantage of them.

The key factors which are underlying the new environment provide a very clear signal: the fruits of future economic success will depend very much on the capacity of people to acquire and use knowledge and on their ability to cope with change. The cost of not addressing this issue is rising and is likely to continue to rise even more rapidly in the future.

To make a long story short, workers in the global economy need to be educated, reeducated and educated again. A carefully designed and comprehensive program of learning opportunities, which encompasses a developed structure for learning at all levels in all places at all times throughout the lifespan, has become crucial in order to prepare the workforce of the future.
Skills and knowledge are the basis for higher wage employment and economic competitiveness. The combination of technological advances and the processes associated with the ever widening integration of the global economy has made it necessary for workers to acquire new skills throughout the lifespan. Innovation, freer trade, and technology are driving educational change, while changes in employment opportunities and living standards are byproducts.

In this context, the challenges of HRD are summarized into the following:

1. there continues to be an unrelenting need to upgrade the quality of skills within the workforce in order to maintain international competitiveness;
2. there will be unprecedented investment in infrastructure and advanced information technology including telecommunications within the region;
3. there are significant risks associated with the fact that rapid development and advances are increasing the gap between the rich and the poor, and that certain disadvantaged groups may be increasingly marginalized and unable to compete in the new environment.

Human resource development today has many other challenges. One of them is related with its conceptual aspect. HRD connotes not only aspect of competitiveness. It does that of human nature such as attitude and value, too. Thus conceptual extension requires multi-disciplinary studies.

Another challenge is linkage among the three elements of education - training, national qualification, and labor markets. In the Asia and Pacific region, except for very few cases, schooling is not linked with training.
Training does not reflect changes of labor market. National skill acquisition does not well fit training. To meet this challenge, reforms are taking place in some advanced countries where investments in IT and those in human capital are placed under national pursuit to go hand in hand.

Fourthly, I propose LVET to be central to the challenges. As mentioned earlier, LVET need to be seen from the perspective of lifelong learning. Within this perspective, methods of LVET should be reexamined. Especially following issues need to be addressed:6)

1. the increasing cost of providing quality formal education;
2. the importance of constantly upgrading the skills of teachers and trainers;
3. the importance of continuing skills development and knowledge acquisition in the work place and
4. the importance of higher quality education and training for rural and provincial communities

These are difficult issues in every country and they are especially challenging in developing countries where both financial and training resources are limited and where the development gap between urban and provincial communities is even more marked.

4. The need for LVET

First of all, Id like to elaborate on the reasons why LVET is a response to the challenges of HRD. For LVET to be a part of lifelong learning, it should be designed as developmental life experiences with cultural and environmental aspects in addition their economic dimensions.

6. See also Human Capacity Building in APEC.
Cultural and environmental aspects emphasize the notion of sharing by individuals, industry, different economic sectors and government in which individuals are empowered to take progressively more responsibility for their own knowledge-management and independent learning while public and private providers ensure programmes that facilitate access to and through the pathways of lifelong learning. (UNESCO:62) By nature, such sharing is intrinsic to LVET.

Thanks to the intrinsic nature, LVET is a path toward skill formation, emphasis of IT in education and training sector, and also gap-bridge between the rich and the poor. LVET contributes to bridging the gap caused by digital divide because LVET has a tendency to strategically target at marginalized or disadvantaged groups.

LVET is also reform-oriented. It tries to give life to openness, flexibility, innovation, and productivity. This is possible because without timely and dynamic adjustment to the changes of labor markets, LVET cannot survive. LVET is self-adjusted to be a fit to co-ordinate the needs of a general and a vocational education through curriculum, pedagogy and delivery. Only by maximizing synergies between education and training systems, it can maintain its life. Therefore, when we say LVET is a response to the challenges of HRD, it means LVET is a nature of market-responsiveness.

LVET is the guiding principle for policy strategies concerned not only with a nations economic well being and competitiveness but with personal fulfillment and social cohesion. They are essential for everyone and have to be made available to all. They apply to all people and nations regardless of their level of development. Absence or insufficient existence of lifelong vocational education and training may cause inequality.
We cant imagine the future of the workplace without lifelong vocational education and training. The workplace with no lifelong vocational education and training means that it may be led by one or few elites trained to lead a growing but expendable army of casual and part-time workers. Traditionally, even in advanced countries, only a lucky few primarily those working in managerial and professional occupations and employees of large have enjoyed access to lifelong vocational education and training opportunities.

Even within the firms where success depends on continuous innovation in processes and products, not all employees benefit from such practices of lifelong learning. Some employers who are more inclined to consider their employees as costs rather than as resources for investment, prefer to limit employees access to skills.

For institutionalization of lifelong vocational education and training system, a wide range of country- and region-specific actors and resources must be marshalled and coordinated. It is here that we need partnership to be forged between trainees, families, employers, trainers, unions, and governments in order to enrich the learning experiences, ease the school to work or even work-to work transition and meet individual needs.

Enrichment of lifelong learning experiences requires transformation of primary education which should be focused on cultivation of basic knowledge and competence. Thus, it should be functional to provide the foundation for further education throughout life. Children should be trained to find ways to develop motivation and capacity for learning.

Government policy for HRD in each country should ensure self-directed lifelong learning system as long as the country would like to
realize a lifelong learning society. One way in which this can be done is by establishing a social partnership among all the stakeholders. Governments need to provide useful resources and overcome institutional and individual inertia and vested interests. In this process, special attention should be given to the needs of private firms and their employees.

5. Building partnership is urgently needed

Today the demand for LVET is expanding rapidly and this demand is increasingly being met by the non-government sector as businesses, educators and trainers create innovative alliances and find greater benefit in investing more either directly or indirectly in LVET. These stakeholders are also beginning to develop new arrangements in which they profitably invest as well as satisfy public policy obligation and the interests of governments in the important areas of LVET. This process need to be further catalyzed and facilitated.

Here I have five areas where stakeholders in the Asia and Pacific region are urged to build partnerships. The first area is the domain of general education and training. In the rapidly changing new environment, the demand for higher quality formal education and knowledge-based skills development is rising. Increasingly, businesses and governments are seeking employees and policymakers who are able to work to established international standards. Existing institutions may not be ready to meet these standards or the demand.

7. Many ideas here were derived from the above-mentioned, Human Capacity Building in APEC. As Lead Shepherd, APEC Human Resource Development Working Group in APEC, the author firmly believes that building partnership among stakeholders in the field of vocational education and training is essential for sustainable and equitable development of LVET in the Asia and Pacific region.
Under these circumstances, the Asia and Pacific countries would benefit from giving a higher priority to facilitating the growing international provision of education services and the trend toward developing cross borders alliances between training and education institutions. And cooperation between governments and providers will help address the commercial and policy expectations in delivering the LVET.

Stakeholders in the region have to identify specific issues for the future for cooperation in linking general education and training to establish LVET. This includes sharing information in management of LVET as well as promoting the use of technologies.

The second is the area of information and communication technology. Specific training for the development of all aspects of information and communication infrastructure and its use in almost all areas of industry is of the highest priority. Many firms are now establishing training programs internationally and their programs reach beyond training for specific employment in an individual firm.

Governments in the Asia and Pacific region need to work effectively with the business sector and other training institutions in this area. The training needs are vast. Therefore, developing stronger partnerships at inter-Asia and Pacific level organizations such APEC and UNESCO regional offices would help leverage up training programs and initiatives with the business sector.

The third is in the area of distance learning. Distance learning can provide unprecedented opportunities to provide LVET to rural and provincial communities and as well across international borders. It requires the same seamless policy environment as e-commerce as well as clarify in the
recognition of qualification.

Governments in the region can facilitate the development of distance learning by working both in cooperation with training institutions and infrastructure providers to give a conducive policy environment. Mutual recognition will be an important element. Several internationally recognized telecommunication firms have specific projects to address distance learning. Under the auspices of them, joint efforts by governments in the region can be made, for example, to link universities and training institutions by high-speed high-bandwidth internet satellites.

The fourth area is forecasting and analysis. Rapid structural change means that it is difficult for both businesses and training institutions to respond to new LVET needs so that expanding businesses can find enough qualified employees. This is an acute problem in the information and communication sectors in most countries. Conversely, if an industry or sector is declining in a particular country, with better forecasting, retraining programs can be anticipated.

All the countries in the Asia and Pacific region would benefit from raising the importance of this issue and supplementing its existing work by developing stronger linkages with businesses and institutions which are providing a vast amount of expertise and information.

The last, but not the least is the area of more responsive labor markets. New opportunities can be taken up and declining industries can adjust more smoothly if labor markets are responsive to the changing demands especially where structural changes is more rapid. This will also provide a smoother and more predictable path for employees. The countries in the region would benefit from sharing experiences and substantive
consultation with each other and with a range of employers to determine what might be the most efficient practices.

So far, we have discussed the five areas where partnerships need to be built. In the rapidly changing environment ahead for LVET, governments, businesses, and training institutions in the Asia and Pacific region will face policy bottlenecks and impediments as well as areas where policy has not yet been adequately considered.

In this climate, the process of joint fora can make an effective contribution for all the stakeholders by being much more anticipatory about policy so that the market mechanism can be used to meet a large proportion of LVET building needs. Partnerships will not only provide a forum for building a more conducive commercial environment but will also enable Asian and Pacific countries to articulate more clearly their own goals.

The most important issue is consultation on the objectives and the outcomes before work proceeds to ensure that joint fora's role and contribution is responsive to the target groups and reflects the needs of diverse participating countries. The process of engaging non-government participants in dialogue should be open and transparent.

The present challenge for LVET is to both prepare for and shape the future. Throughout joint fora, governments in the Asia and Pacific region can use their leadership role in conjunction with leaders in business, training and education to ensure the responsiveness of LVET to the challenges of HRD.
6. Summary and Concluding Remarks

This paper has tried to highlight needs of implementation of LVET in the Asia and Pacific region by juxtaposing LVET within the context of the challenges of HRD. The rationale of the study was that the failure to consider the context of the challenges of HRD by hitherto studies of LVET has placed existing studies in poor response to dynamic changes of labor markets.

Nature of dynamic changes of labor markets especially in the Asia and Pacific region was characterized into three points in this paper. They are: 1. rapid economic and structural change as countries take up the opportunities from more open trade and investment; 2. rapid innovation in information and communication technology, and widespread adoption of these technologies in all forms of economic life; 3. a rapidly growing trend toward greater intensity of knowledge in almost all occupations.

In this paper, LVET was justified as a response to the challenges of HRD in the region. Again, the challenges of HRD were defined into the following three: skill formation, investment in IT, and the gap between the rich and the poor. The paper proposed LVET to be central to the challenges.

More than anything else, the intrinsic nature of LVET was emphasized. In other words, by nature, LVET has the capacity of self-correction or readjustment to respond to the changes of labor markets which are dynamic especially in the Asia and Pacific region. As part of lifelong learning, LVET was also pointed out to be endowed with cultural and environmental aspects of sharing among individuals, industries, training institutions, and governments.
Lastly the paper suggested building partnerships in the Asia and Pacific region as a policy alternative to ensure the responsiveness of LVET to the challenges of HRD. The paper emphasized five areas where partnerships need to be built. Linkage of general education and training, use of information and communication technology, adoption of distance learning, forecasting and analysis of labor markets, and responsiveness of labor markets were chosen for areas for partnership building.

Joint fora among governments, businesses, and training institutes were suggested to be a medium by which such partnership building can be effectively undertaken. Successful implementation of LVET in the Asia and Pacific region means successful meeting of the challenges of HRD. In other words, LVET must contribute to skill formation of the socially and economically disadvantaged workforce, which helps bridge the gap between the rich and the poor. Investment of IT in education and training sector is prerequisite to ensure the success.
Vocational Education for All - Advantage of Curricular Combination at Specialized High School in Japan

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Faculty of Human-Environment Studies
Kyushu University

1. Introduction

1) Background

Japan is one of the countries that have school- and college-based vocational preparation system in post-compulsory education and training. Among them, general education is predominant and popular in upper secondary education level in Japan. Although many of such countries with dominant general education and school-based training system at secondary education level can not escape from the high rate of youth unemployment, Japan has been a rare case with relatively low youth unemployment (OECD 1996a, 1996b, 2000).

In 1990s, Japan has suffered from the long recession. Unemployment rate increased sharply and reached a new-record high of 3.2 percent in April 1995. Youth unemployment of 15-24 age group was reported to come up to 7.5 percent. This is the worst record since 1953 from when statistics became available. Thus, Japan now may seem to be no longer such an exceptional society in this regard of transition.

How are the educational institutions and authorities responding to these changed circumstances? How is possible to preserve the merits of the Japanese school-to-work transition? And how can vocational learning at
upper secondary level be made more attractive to young people against the lasting social pressure of educational expansion?

2) Purposes and Contents

The aim of this paper is analyzing the basic characteristics of secondary education and school-to-work transition outcomes of both types of general/academic and vocational/specialized high schools in Japan, and arguing the recent policies. Japan has still the smooth transition system - transparent and permeable - as a whole, but this trade-off is the quality problem of transition. Vocational indifference, the ignorance on contents of learning, prolonged schooling years and the delay of development of independence. In other words these are problems of vocational competence or literacy.

This paper discusses how we can convert classroom learning into work competence, through Japan's experiences. First, in this paper, developments of secondary education in post-war Japan are described. Second, the process and the key institutional factors of Japanese smooth transition from senior high school to work are analyzed on the basis of longitudinal surveys of graduates. Third, by focusing on recent situation and transition outcomes of both graduates relevance of curricular combination in vocational high school will be discussed.

3) Methods and Data

This paper uses both educational statistics, and survey results, parts of which come from a longitudinal survey research in Japan Institute of Education since 1985 (JIL-HS Survey for short). Six surveys for same samples have been conducted. Three surveys were done at the 1st grade, the 2nd grade and the 3rd grade each in high schools. Number of responses to
the last survey in high school was 2,119. Other three surveys have been done at 1st year, 3rd years and 6th years, each after graduation by interview or mail. Effective replies to the surveys in 6 years after graduation are 962 (NIEVR 1989, JIL 1996).

2. Development of Upper Secondary Education

The main frame of Japanese school education system in the post War period is a 6-3-3-4 single system. Senior High School is a key type of school at upper secondary education, after nine years of compulsory education. It is prescribed to teach both advanced general education and specialized education in School Education Law (1947).

However, more than half of high school students have been studying only advanced general education in a general course, in order to prepare the entrance examinations of higher education institutions. The rest have been studying both as the Law prescribes, in a specialized course, i.e. agriculture, industry, commerce, home economics, nursing, and so on. Many senior high schools have one course. So the school with one general course is usually called a general high school, and the school with one or two specialized courses is called a vocational high school. Now Ministry of Education is trying to revise the common name of vocational high school to specialized high school1), in order to make it more attractive as discussed later (Ministry of Education 1995a).

Why did these two types of courses or schools emerge despite of the prescription of the School Education Law? It is because there were

[Note]
This paper is based on Yoshimoto (1997). Parts of this paper come from collaborative research with Ms. Reiko Kosugi and others in Japan Institute of Labour.

1. Although I agree these policy initiatives, I use the terms, such as vocational course and vocational high school for convenience of description.
tripartite-track secondary schools before the War II, i.e. middle school (for boys), girls' high school, and vocational school. This system had developed under the influence of European countries. As the advancement ratio to secondary schools in those days were less than a half, and as many of middle school graduates went on to upper schools in urban area, vocational schools could enjoy good reputation of the supply of well-educated youth within the located area. So transition from these schools to work was quite smooth. The original features of the good school-employer relationship for recruitment/placement, which is argued later, had already emerged in some prestigious vocational schools.

The new school system had been inaugurated after the War II, under strong influence of United States. As the prescription of School Education Law showed, reformation into one type of comprehensive senior high school

2. The concept of comprehensive high school in those days was not that with comprehensive course but that with plural separated courses.

[Reference]
Ministry of Education, 1995a, The Road to Grooming Specialist
OECD, 1996a, Education and Training-Learning and Working in a Society in Flux
OECD, 1996b, Transition from Initial Education to Working Life, DEELSA/ED(96)14
OECD, 2000, From Initial Education to Working Life
Rohlen, T. 1983, Japan's High School, University of California Press
Thurow, L. 1975, "Generating Inequality", Basic Book
Yoshimoto, K., 1997, School-to-Work Transition and Vocational Learning in Japan, Research Bulletin (Education), Kyushu University, vol.43, pp.119-128
was asked. Many vocational school principals and teachers got fear that the coherence of vocational education would be weakened, if vocational school was merged into a single type of comprehensive course or comprehensive high school. Although some prefectures with strong policy initiatives, like Kyoto prefecture, built up the high school system composed of one type of comprehensive schools, many prefectures built up more single course schools -general high school and vocational high school- than comprehensive schools.

Ministry of Education has issued Course of Study to sustain curriculum standard at each education level. The Course of Study requires all senior high school students to study a certain number of general subjects. These amount to almost a half of 80 credits required for graduation. Thus, vocational high schools do teach both advanced general education and specialized education, in just according to School Education Law.

In the early 1960's, the beginning of high economic growth era, Ministry of Education pursued the policies to expand vocational education and to introduce more specified vocational courses in according to needs and suggestion of industry. Industry asked the schools for specific knowledge and skills and the schools responded with a dramatic increase in new courses and subjects. The number of industry related courses increased from 44 to 228. However, within several years, some of those courses were criticized being too specific, narrow and conventional. In reality, the high economic growth itself had been achieved not under the newly specifically job-demarcated work organizations which needed specified human capital, but under the Japanese work organization with low job demarcation.

Furthermore, parents and secondary school teachers had placed more emphasis on preparation for entrance examinations of universities and colleges rather than specific education and training, because of the belief of a myth of credential. High economic growth, in turn, afforded more students going on to universities and colleges. As educational expansion has been going on, high school hierarchy became clear and as a consequences
vocational high schools became placed in lower prestige status (Rohlen 1983).

As a result, only 24.2% of the high school population goes to vocational high schools; the rest attend general high schools in 1995. Forty years ago, in 1955 vocational high schools had a 40.1% population share, and since then despite the policy initiatives to expand vocational high schools in 1960's, they have continued to lose the attractiveness and the population share.

3. Transition Process From School to Work

In Japan, the mechanism of transition from school to work is still functioning well. On the basis of the JIL-HS Survey, high school students enter into the employment career as follows.

First, when selecting a firm to apply to, high school students are able to decide without much deliberation based on lists of firms in which former students have found jobs. They obtain those lists as part of the school's career guidance program. Most students use the information of school's career guidance program as a major source, in planning their future. The contents of that information are primarily lists of firms where their seniors have been hired. Many schools compile information on graduates in detail every year, and use it as the material for career guidance, providing it to students well in advance. Using the information of previous years' results, students decide quickly where to apply, as soon as the school announces on July 1 (this date is scheduled every year by Ministry of Labour) the recruitment plans of firms for graduates on the following March.

Second, in career counseling, the teacher counselor generally ascertains the student's aspiration, and urges the student to study hard anyway to realize that aspiration. It is well understood by students that the major
criteria in selection for school's recommendation of each student are the academic achievement of general subjects and the disciplined behavior in school life (Figure 1).

![Fig. 1 Criteria of selection within School](image)

Students' Perception

<table>
<thead>
<tr>
<th>Criteria</th>
<th>General</th>
<th>Vocational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior &amp; attitude</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Academic achievement</td>
<td>58.8</td>
<td>57.1</td>
</tr>
<tr>
<td>Student's preference</td>
<td>53.8</td>
<td>54.2</td>
</tr>
<tr>
<td>Aptitude</td>
<td>25.2</td>
<td>28.5</td>
</tr>
<tr>
<td>Extra-curricular activities &amp; others</td>
<td>26.1</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Source: JIL HS Survey done in 1998

Third, most firms make their selection for recruitment on around the same day, at the beginning of the selection period of new graduates (now September 16). Most applicants through school are offered jobs based on those first applications (84.0% of general and 81.3% of vocational graduates who got a job through high schools placement guidance). This is because the selection within each school makes job applicants to each firm nearly equal to its job offers. It become clear by JIL HS survey that vocational and career guidance at high schools provides a placement service and a distribution function, corresponding to Japanese employment practice and the
needs of industry and business society. However, in terms of valuing a 
student's individuality or helping in the choice of a personal career path, it 
can be said that few is done.

In this school-to-work transition process one of key factors is the 
recruitment practice of leading companies. Leading companies in Japan 
recruit and employ fresh graduates all at once. On every April 1, most 
leading companies select new graduates as regular employees. The new 
employees will be put at the bottom of the firms occupational ladder, at 
relatively low wages. New employees are trained on-the-job, get a wide 
range of work experiences, and will be promoted according to seniority, 
obtaining higher wages. This is why prospective employees are selected for 
their trainability (Thurow 1975) rather than for any present specific skills 
and knowledge. The criteria of recruitment which students felt are more on 
personality traits on doing well in groups or academic abilities (Figure 2).

![Fig. 2 Criteria of Recruiting Companies](image)
4. Transition Outcomes - Vocational V.S. General-

1) Educational Expansion and Transition Functions Estimates

The findings of prior sections are more or less familiar to Japanese employers, teachers and parents. They are consistent with peoples preoccupation that general education is not at a disadvantage even for employment at all, and that vocational education is inferior to general education in every aspect.

Table 1

Transition of Youth from Junior High School through General/Vocational High School

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>After Junior HS Course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaving HS</td>
<td>27.7</td>
<td>16.5</td>
<td>6.6</td>
<td>5.0</td>
<td>5.4</td>
<td>5.0</td>
<td>4.8</td>
</tr>
<tr>
<td>COT</td>
<td>0.3</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Enrolled in SHS General</td>
<td>2.2</td>
<td>1.4</td>
<td>2.3</td>
<td>3.4</td>
<td>3.8</td>
<td>3.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Enrollment without Diploma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduation</td>
<td>19.4</td>
<td>28.6</td>
<td>38.2</td>
<td>41.5</td>
<td>44.4</td>
<td>49.1</td>
<td>50.6</td>
</tr>
<tr>
<td>Employed</td>
<td>16.5</td>
<td>14.1</td>
<td>14.0</td>
<td>15.6</td>
<td>14.0</td>
<td>12.3</td>
<td>10.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>4.8</td>
<td>4.1</td>
<td>4.9</td>
<td>4.5</td>
<td>5.7</td>
<td>4.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Vocational without Diploma</td>
<td>2.6</td>
<td>5.3</td>
<td>6.0</td>
<td>5.0</td>
<td>5.4</td>
<td>6.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Graduation</td>
<td>22.9</td>
<td>25.0</td>
<td>22.4</td>
<td>19.9</td>
<td>16.7</td>
<td>14.7</td>
<td>13.9</td>
</tr>
<tr>
<td>Employed</td>
<td>22.9</td>
<td>25.0</td>
<td>22.4</td>
<td>19.9</td>
<td>16.7</td>
<td>14.7</td>
<td>13.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>1.7</td>
<td>2.4</td>
<td>2.4</td>
<td>1.7</td>
<td>1.6</td>
<td>1.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Cohort Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Estimation by Standard Educational Career by criterion of the year of graduation of JHS (Junior High School) eg. Number of Enrollment of Higher Education of 1965 JHS Cohort are estimated using data direct advanced in 1968, enrolled after one year of "Ronin" in 1969, and enrolled after two or more years of "Ronin" in 1970

Abbreviation:
- JSH: Junior High School
- SHS: Senior High School
- COT: College of Technology
- HEI: Higher Education Institution except College of Technology

Source: Ministry of Education "School Basic Survey", each year

However if functions of transition both to upper schools and to work are carefully compared, some problems of general education become clear. Table 1 estimates whole transition flow through various senior high schools in each age cohort, using School Basic Survey. It shows clear tendencies of increasing rates of cohort going on to higher education institutions through general course of senior high schools year by year. Inversely, through
general course, rates of employed have gradually decreased and that of unknown have been a little increased or constant. Thus the ratio of unknown/employed of general course graduates grew significantly. There are certain percentages of general course graduates who could neither go on to higher education institution at last nor get into employment just after graduation. General course may be week in fostering vocational orientation and career awareness of youth.

2) Transition Function between Vocational High School and General High School

Analyses of survey data are critical, to judge the transition function. From JIL HS Survey, 614 samples are selected who was not students in colleges nor had graduated colleges, when last Survey of 6 years after graduation carried out. These high school graduates are analyzed by using three criteria on occupational career after graduation, as Table 2 shows. The first criterion is whether they found employment by April in the year of graduation or later. The second is whether they have ever experienced non-regular or part-time employment after graduation or not. The third is whether they had ever quitted their jobs or not.

The result of Table 2 shows that graduates of vocational high schools experienced smoother transition from school to work than those of general high schools significantly. The rate of graduates employed later in general course is 30.6 percent for male and 20.3 percent for female. Some of them had been looking for employment. Some were Ronin who prepared entrance exam of higher education institution but failed and later employed. The rest were drop-out of a higher education institution. In contrast, that rate is about 10 percent or less for graduates of vocational courses.

Other two criteria also show that general course graduates had
experienced difficult initial career after graduation compared with vocational graduates. General course graduates experienced more non-regular employment and more job turnover.

Some of these bitter results of general courses come from its career guidance paying attention only to university examination and few to students future occupational careers. The finding suggests that Japanese society should appreciate more transition function of vocational courses and thus more work competence created in vocational courses.

Table 2  Initial Career of High School Graduates by courses by sex

<table>
<thead>
<tr>
<th>Course</th>
<th>Sex</th>
<th>1) Late Employed</th>
<th>2) Experience of Non-regular Employment</th>
<th>3) Experience of Job Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>%</td>
<td>(Number)</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>Both</td>
<td>8.5 (614)</td>
<td>19.7 (553)</td>
<td>53.2 (553)</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>11.3 (292)</td>
<td>15.1 (252)</td>
<td>44.0 (252)</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>5.9 (322)</td>
<td>23.6 (301)</td>
<td>60.8 (301)</td>
</tr>
<tr>
<td>General</td>
<td>Both</td>
<td>24.8 (113)</td>
<td>22.6 (84)</td>
<td>57.1 (84)</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>30.6 (49)</td>
<td>21.2 (33)</td>
<td>51.5 (33)</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>20.3 (64)</td>
<td>23.5 (51)</td>
<td>60.8 (51)</td>
</tr>
<tr>
<td>Commerce</td>
<td>Both</td>
<td>4.6 (281)</td>
<td>22.8 (267)</td>
<td>55.8 (267)</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>12.7 (63)</td>
<td>23.6 (55)</td>
<td>43.6 (55)</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>2.3 (218)</td>
<td>22.6 (212)</td>
<td>59.0 (212)</td>
</tr>
<tr>
<td>Industry</td>
<td>Both</td>
<td>5.4 (186)</td>
<td>11.2 (170)</td>
<td>43.5 (170)</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>5.6 (180)</td>
<td>11.0 (164)</td>
<td>42.7 (164)</td>
</tr>
<tr>
<td>Home Economics</td>
<td>Girls (only)</td>
<td>2.9 (34)</td>
<td>31.3 (32)</td>
<td>71.9 (32)</td>
</tr>
</tbody>
</table>

Note
1) Rates of graduates employed at the time more than one month after graduation
2) Rates of employee who experienced non-regular employment such as part-time workers among graduates who employed just within one month after graduation
3) Rates of employee who experienced quitting jobs during 5 years and 8 months among graduates who employed just within one month after graduation

Source: Japan Institute of Labour (1996), JIL HS Survey
3) Duration necessary for becoming a full-fledged worker

Table 3: Job Type and Graduates Skill Formation (Meb)

<table>
<thead>
<tr>
<th></th>
<th>High Skill Job</th>
<th>Not High Skill Job</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>full-fledged</td>
<td>Not full-fledged</td>
</tr>
<tr>
<td>Course general</td>
<td>10.5</td>
<td>18.4</td>
</tr>
<tr>
<td>Commerce</td>
<td>16.7</td>
<td>25.8</td>
</tr>
<tr>
<td>industry</td>
<td>21.8</td>
<td>20.6</td>
</tr>
</tbody>
</table>

Note: High Skill Job: "the Duration to a full-fledged worker is longer than 5 years"
Not High Skill Job: "the Duration to a full-fledged worker is 5 or less years"
Source: JIL-High school survey data recalculated.

Skill formation until growing up to fully-fledged worker is another important area of initial career. Traditionally common idea of Japan's employment practice may lead some hypothesis that specialized knowledge and skills acquired in high school do not help to graduates to become a full-fledged worker and that vocational graduates have no advantage in youth labor market.

Table 3 shows clearly that general course graduates are working for lower demanding job and become less full-fledged worker when working high skilled, than commerce and industry course graduates. Another survey for employers in manufacturing industry also shows that industry graduates are faster in 0.3 year to become a full-fledged worker.

4) Pathways toward Higher Education

In respects to access to higher education, general/academic course have undoubtedly advantage over vocational/specialized course. Vocational course provide graduates around 2/3 general/academic subjects credit compared with general course. Even though, higher education expansion is continuing and young generation size is becoming smaller, so that newly enrollment rates of high school graduates are increasing constantly and a bit accelerated.
As a consequence, vocational graduates go on to higher education more than general graduates in 1960s (Figure3).

Summing up this section, in regards to a wide rage of transition function both to higher education and to work, vocational course graduates has greater advantages over general course graduates. Although this is more precisely to be analyzed, but, curricular combination of advanced general education and specialized education should be undoubtedly regarded as one of key factor of the success of vocational/specialized high school according to the School Law.

5. Conclusions and Discussions

This paper examines both the expansion of general education and the decline of vocational learning. Even upper secondary education became Quasi-Compulsory, transition from school to work is still smooth for most high school graduates. This smooth transition developed through, not only Japanese employment practices which prefer youth newly employed, but also durable school-employer relationships (Jisseki-Ksankei) (Rosenbaum and Kariya 1989).
These distinctive development is observed during the high economic growth period in 1960's. Education expansion also took place working together with this growth. In this period the dependable relationships between high school and employer to secure both job and labor were built up. The model of this relationship was that of vocational high schools highly expected in the local area. After expansion, vocational high schools became no longer selective and prestigious institution, but this transition structure was kept and its institutional support mechanism for transition became spread whole high school system.

The main problems of secondary education in Japan are not the amount of unemployment itself under even this worst recession. Japan will need more young workers with good vocational competence in future, coping with an aged society. However, we found that some youth who could not follow standard educational career pathways have faced significantly more difficult situation for transition to work than others. They are high school drop-outs without any supports from tightly woven safety nets, youth employed later after graduation and others. We need to provide another approaches or supports for them than those traditionally provided. Even graduates who luckily got a job through a good assistance by the school-firm relationship might also have less career awareness and may soon face problems of unsuccessful skill formation, because of their heavy dependences in searching a job. Lack of career awareness leads vocational indifference and the decline of work competence of youth.

Thus, one of major problems to be tackled must be prolonged education or over-education without career awareness, particularly through general/academic education pathways. Ministry of Education is so now quite active for vitalizing vocational education and career guidance in order to facilitate the flexible and attractive transition root and more integrated learning opportunities (Ministry of Education 1995b, 1998). Some of various initiatives and approaches introduced to make both vocational learning more
attractive and transition structure more fruitful, by integrating vocational learning for all at upper secondary education, are as follows.

1) Some Policy Initiatives - Attractiveness of The Specialized Course

In 1995 Research Committee on Measures for Imparting Vitality to Vocational Education published a report titled The Road to Grooming Specialists (Ministry of Education 1995a). It presented some policy measures such as, renaming the name of vocational upper secondary schools to specialist upper secondary schools, expanding university admissions on recommendation, providing high-tech facilities and equipment, having school-community liaison meetings and so on. This may be consistent with future directions of economy, demanding high levels of work competence, and favoring specialists in each division, each firm, and each sector.

2) Establishment of Integrated Courses

In 1994, integrated course has been inaugurated and the number of school with this course is 74 in 1997. It was difficult to provide general course students with a wide range of vocational subjects, or to offer specialized course students a variety of subjects related to post-secondary education. In integrated courses students can study wide range of optional subjects by their own will and choice, as well as minimum core subjects, such as industrial society and human, which is intended directly to foster career awareness.

3) Establishment of The Period for Integrated Studies

According to Ministry of Education (1998), the "Period for Integrated Study" will be added to the existing subjects and then curricula will be
organized for elementary school, lower and upper secondary. The "Period for Integrated Study" will be established in order for individual schools to be able to develop distinctive education and to make efforts to conduct interdisciplinary and comprehensive teaching activities and aims at helping children develop capability and ability to discover problems by themselves and solve those problems properly.

4) Introduction of Work Experiences and Other Firsthand Experiences

Efforts to improve career guidance in upper secondary schools include such a program as Labor Experience Trial Study, which has been introduced in fiscal 1993. According to Ministry of Education (1995b), this program targets in primarily general-course students for heightening their awareness of their own career paths by enabling them to experience the joy of work and social service. The program, which focuses on participating upper secondary schools, involves workplace visits, workplace training, and social service, with the cooperation and collaboration of PTAs, local companies, and other organizations in designated municipalities.

5) Initiatives toward Information Oriented Age
    - Subject of Information Study and Specialized Course/Track of Information

Ministry of Education (1998) has recommended to establish a new subject area and a new course/track for responding information oriented ages at upper secondary education level. Consistent and systematic information education through all stages of school education will require sufficient improvement of related subjects and active use of computers in virtually every subject. Elementary schools will employ computers for children's learning activities in the "Period for Integrated Study" and other classes.
Lower secondary school will require students to learn the information basics including basic computer skills in industrial art and homemaking class. Upper secondary school will establish a new required subject area of "Information Study".

Upper secondary school will establish a new general subject area, "Information Study", as a required area. It aims at helping students develop ability to independently choose, process and send information by appropriately using such information devices as computers and information communication networks. It will also help develop sound mind to participate in the information-oriented society. There will be three subjects established under the subject area of "Information Study". The one is "Information A" on the use of a computer and information communication networks. Another is "Information B" that is for the scientific understanding of the functions and mechanism of a computer. The other is "Information C" on the role and influence of information communication networks on the society. Students can choose one among them.

The specialized courses/tracks of Information inaugurated first in 1970, but the number of them was still 153 in 1985. Since early 90s many prefectures has accelerated the policy to establish new information oriented courses or to restructure old industry or commerce courses into information oriented courses. In 1998 there is 673 information courses/tracks.
Experiences on Vocational Education and Training in New Zealand

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Abstract

With the passing of New Zealand’s Education Act in 1989, it became possible for institutions other than universities to offer degrees. At about the same time, New Zealand established a national qualifications framework which was designed to bring coherence and greater articulation to the wide range of often unrelated qualifications which had previously been offered by vocational education and training providers. These two changes, coupled with the initiatives of a new government which followed a free market philosophy, have led to a decade of change and massive growth for the vocational education and training sector in New Zealand.

This paper highlights some of the benefits and the disadvantages of an enterprise culture permeating tertiary education, and examines some of the experiences that the sector has undergone at national, inter-institutional and intra-institutional levels.
1. Introduction

New Zealand is a relatively small country with a population of 3.5 million. Because of its size, and because the term of government is only three years, changes to national systems can be passed by legislation and enacted quickly and easily. For nine years, New Zealand was governed by a National Government which pursued a competitive free market and user pays philosophy. Many changes were made to the education system, and students were required to pay an increasingly higher percentage of tuition fees. In November 1999 the new Labour Government came into power with a very different approach to education. They are advocating collaboration and co-operation within the sector, and believe that students should have greater access to tertiary education opportunities through reduced tuition fees. At present a major review of the tertiary education sector is taking place, and we expect a number of changes to be recommended over the next year.

Prior to the passing of the Education Act in 1989 most of the post-compulsory vocational education and training in New Zealand took place in polytechnics and community colleges. These were an evolution of technical colleges and technical institutes, very similar to Australias TAFE (Technical and Further Education) sector, which focused primarily on vocational and educational training.

However, in 1990 the Education Act allowed polytechnics and other accredited institutions to award degrees, thus opening up the growth of research within a traditionally vocational and training centred sector. The Act also allowed private training providers to enter the market, introducing a strong element of competition into the sector.

Over this last decade, student numbers in the post-compulsory sector have grown exponentially part of the global trend to massification of education. At the same time, more students have been staying at secondary
school, with the school leaving age now at 16. This growth of tertiary enrolments, coupled with an education funding system which has not kept up with the demand, has placed considerable pressures on tertiary education institutions.

Over recent years, the New Zealand Government has been attempting to encourage the growth of a knowledge economy, with emphasis at tertiary levels placed on development of graduates who are highly skilled and literate in technology. (Vocational and Technical Education: Retrospect and Prospect, 1993)

2. The current systems in New Zealand that Deliver Vocational Education and Training

2.1 Institutions

The post-compulsory sector in New Zealand is made up of universities, polytechnics and institutes of technology, colleges of education, Private Training Establishments, and wananga (Maori tertiary institutions).

New Zealand has eight universities, many with specialist courses in fields such as agriculture, medicine, fine arts, and veterinary science. The newest university, Auckland University of Technology, was previously the Auckland Institute of Technology and was awarded university status at the end of 1999. Its teaching aims to be research-informed and applied in nature. Like many of the cross-sectoral universities in Australia it believes it is important to retain its sub-degree level certificates and diplomas which provide staircasing opportunities for students through to degree programmes.

There are 23 polytechnics, institutes of technology and community colleges throughout New Zealand which offer a diverse range of academic,
vocational and professional programmes, and cover an increasing number of subjects at various levels of specialisation degrees, certificates and diplomas.

Colleges of education are specialised institutions which train primary and secondary school teachers, as well as offering specialised education and continuing education opportunities for teachers. Presently there are four colleges in New Zealand.

Wananga provide tertiary education and training, while assisting the application of knowledge regarding Maori traditions in accordance with Maori custom.

A large number of Private Training Establishments (PTEs) have sprung up since 1990 offering a wide range of courses, often in niche markets. At present there are about 800 PTEs registered with the New Zealand Qualifications Authority, which is a large number for the relatively small size of New Zealand's population.

The following table indicates the total numbers of Equivalent Full-Time Students (EFTS) enrolled in tertiary education institutions during 1999.

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Total EFTS for 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>83,467</td>
</tr>
<tr>
<td>Polytechnics, Institutes of Technology, and Community Colleges</td>
<td>47,188</td>
</tr>
<tr>
<td>Colleges of Education</td>
<td>7,805</td>
</tr>
<tr>
<td>Wananga</td>
<td>1,504</td>
</tr>
</tbody>
</table>

(Source: NZ Ministry of Education Website)
2.2 The New Zealand Qualifications Authority (NZQA)

NZQA was established in 1989 as a crown entity, and is accountable to Government through the Ministry of Education. One of its main purposes is to provide a comprehensive, accessible and flexible National Qualifications Framework, which will assist people to upgrade their qualifications and avoid unnecessary repetition of previous study and assessment.

NZQA has quality assurance responsibility for all unit standards, national certificates and diplomas on the Framework offered the tertiary education sector, as well as those developed by Industry Training Organisations. NZQA provides primary governance, development and maintenance of the National Qualifications Framework, and approves thousands of local courses and programmes. At present there are over 800 providers registered with NZQA.

2.3 New Zealand Qualifications Framework

The New Zealand Qualifications Framework was established through the New Zealand Qualifications Authority in 1989 in order to bring greater coherence to the wide range of qualifications offered in the vocational education and training sector. Based on the Scottish Scotvec model, this Framework consists of qualifications registered at eight levels from year 11 of schooling, or vocational entry, to postgraduate level.

Qualifications are defined in terms of learning outcomes and credit totals. It is a quality assured framework in which qualifications are registered, providers are accredited to assess and award credits, and moderation systems ensure nationwide consistency. (NZQA Website)
One of the major benefits of this framework is that learners can accumulate credits over time and at their own pace, and so work towards a national qualification.

The Framework consists of registered unit standards statements that describe a learners skills or knowledge. Nationally agreed knowledge and skills are transferable between qualifications and providers, thus allowing students to carry any partially completed qualification with them without penalty or loss of credit. The unit standards specify learning outcomes, very often workplace-oriented; outcomes models are endorsed by international bodies involved with funding education systems, such as the World Bank, Asian Development Bank, and the OECD (Organisation for Economic Co-operation and Development).

The standards are established by experts in a field (such as geography, business, hospitality etc), and circulated to stakeholders for comment and contribution. They are agreed to and subject to review on a regular basis. Thus they are continually refined and updated over time.

Unit standards have defined credit values which represent hours of learning, and sit at a specified level on the Framework:

- Levels 1-3 are equivalent to senior secondary education and basic trades training
- Levels 4-6 are equivalent to advanced trades, technical and business qualifications
- Levels 7-8 are advanced qualifications of graduate and postgraduate standard

National Certificates can occur at all levels, but are normally found at Levels 1-4. National Diplomas are at Levels 5 and higher.
The Framework has been adopted by polytechnics, institutes of technology, community colleges, and more recently has been a very important structure for the Private Training Establishments, as their students have been able to continue their studies in a more seamless structure across different institutions. The secondary/tertiary divide has also blurred since the introduction of the Framework, which has served as an enabler, allowing senior secondary school students to gain some transferable credits prior to moving on to full tertiary study. The polytechnics, secondary schools, and most private training establishments are accredited by NZQA and their programmes approved by NZQA or by the New Zealand Polytechnics Programmes Committee (NZPPC). All national certificates and national diplomas are registered on the Framework, as well as 200 degree qualifications offered outside of the university sector.

However, New Zealand universities have not accepted the Framework for their sector. They view it as constraining and more appropriate for skills development, but not suitable for complex learning activities which are reflective and develop judgement. All university courses are approved by a different body - the Committee for University Academic Programmes (CUAP), which is the approval body of the New Zealand Vice Chancellors Committee (NZVCC).

Therefore, a dual system for the recognition of degree qualifications has evolved in New Zealand - one system for universities and another system for all other institutions. This has led to inequitable perceptions of the value and status of various qualifications and has posed difficulties in unifying New Zealand's educational system.

Assessment of learning outcomes is conducted by a representative of an accredited provider (ie a polytechnic or a Private Training Establishment)
or by an assessor who is registered by an Industry Training Organisation. Assessors can use a variety of evidence, including evidence of prior achievements or learning. Systems for recognising prior learning (RPL), or recognition of current competence (RCC), have been introduced over the last 10 years. These have been extremely beneficial for learners who have experienced an interruption to their study, have changed courses or providers, or have never studied at tertiary level before but want recognition for their knowledge/skills, as this recognition is often tied to promotion in their present job. Consistency among assessors is achieved through moderation systems, assessor training, regional panels, and using examples of learners work.

Another benefit of the Framework is that each learner has an official record of their learning documented at a national level, which they receive annually. The assessing institution or workplace assessor notifies NZQA of each unit standard passed by each learner, and these are added to the NZQA database. (New Zealand Qualifications Authority website)

2.4 ITOs and standards bodies

The expert groups which set standards and take part in the accreditation of vocational education and training providers are known as standards setting bodies. Of these, the National Qualification Service, administered by NZQA, represents fields of learning, eg business, humanities, science, whereas Industry Training Organisations (ITOs) represent industries, eg forestry, tourism, manufacturing.

In 1992 the Industry Training Act and an industry training strategy were introduced which allowed subsidised training to be offered and qualifications gained in close association with industry and ITOs. This
strategy has seen 63,000 workers undertake subsidised training since 1992. Skill New Zealand also plays a large part in allocating funding for a large number of Private Training Establishments, especially those offering lower level programmes, for example basic computer training.

However, training demand is now outstripping the resources of the Industry Training Fund which is allocated to the strategy, and a comprehensive review is now underway to look at some of the issues surrounding the scheme. Some of these issues involve ITOs actually providing training, whereas they were originally established to set standards, participate in the accreditation of providers, appoint workplace assessors, and arrange for the provision of industry training. For some ITOs, this dual role has resulted in a conflict of interest a situation which will no doubt be investigated by the forthcoming review (Education Review, 29/9/00, p.5).

Many polytechnics have pulled out of industry training since the industry training strategy was introduced, and some are offering training in competition to ITOs after losing ITO training contracts. However, current Government policy has signalled that it sees polytechnics as being the major industry skills provider in New Zealand, so it will be interesting to see what recommendations are made in the review in relation to the providers of industry training.

Over the last decade apprenticeships have been difficult to obtain, given the competitive economic situation for many employers and there has been a tendency in some industries to employ older trainees. However, a new initiative for apprenticeships has just been announced the Modern Apprenticeship Scheme which will focus mainly on 16-21 year olds and will target skills shortages in the industries of boating, building and construction, dairy, electricity and electrical, engineering, hospitality, printing,
and telecommunications. A key feature of the new scheme is the apprenticeship co-ordinators or brokers who will manage the apprentices, arranging placements, giving guidance and support, and managing the off-job component. It is expected that the new scheme will attract proposals for contracts from polytechnics, private training establishments and industry training organisations (Education Review, 22/9/00, p.4).

2.5 Quality assurance

In New Zealand's vocational education and training system, NZQA has the primary responsibility for accrediting a training provider, often in conjunction with the ITO, by determining whether the provider has sufficient expertise in teaching and assessment, and whether it has adequate quality management systems to deliver what is promised to the learner. If NZQA is satisfied then the provider is accredited.

The process of having vocational education and training programmes approved for delivery is another process, which must include industry input as appropriate. Both NZQA and the New Zealand Polytechnic Programmes Committee (NZPPC) have representative panels which examine proposed programmes rigorously prior to approval. However, many of the larger accredited institutions have comprehensive internal quality management systems and are able to approve and review their own local certificate and diploma programmes.

Moderation systems are a vital part of quality assurance to ensure portability, accessibility, and consistency between and across programme levels, both within and between institutions. There are a variety of models used at various levels: assessment guides, clusters, and interlink providers.
The polytechnic sector, through the Association of Polytechnics in New Zealand (APNZ) is currently developing an audit system for monitoring the quality of sub-degree programmes. APNZ has developed 12 academic standards for use by the polytechnic. When institutions successfully pass this audit process, they will be quality assured for new programmes that have been approved by their own internal processes. However, degree-level programmes will continue to be evaluated by NZQA under current processes (refer APNZ Website). This audit system is similar to one carried out in the university sector by the NZ Academic Audit Unit, under the auspices of the New Zealand Vice-Chancellors Committee.

2.6 Funding

Funding in New Zealand's post-compulsory sector is organised by a system whereby the Government pays the training provider for each equivalent full-time student enrolled (EFTS). The EFTS funding formula is based on an EFTS course factor, where student workload represented by that course is calculated as a proportion of 1.0 EFTS which is the workload that would normally be carried out by a full-time student in a single academic year. This funding system is based on an annual bulk funding cycle.

"Only programmes of study comprising quality assured courses, offered by quality assured providers leading to the award of quality assured qualifications are eligible for EFTS-based tuition subsidies and student access to the student allowances and loans schemes." (NZ Ministry of Education website).

At present the university sector is not funded substantially more per EFTS than the polytechnic sector, although research is tied to the level of a programme. Given that universities are required to carry out substantially more research, there is currently strong debate about this issue.
With recent Government emphasis on user pays and the huge growth in students enrolled in the post-compulsory sector, it has become extremely difficult for the Government to maintain existing funding levels. Consequently student tuition fees have risen now a student will be expected to contribute around 25% of the total costs of tuition and the Government funds the remainder through the EFTS subsidy.

In order to assist students, a student loans scheme was introduced a few years ago, but the ability of students to repay these loans including interest repayments of over 6% per year has become a major problem which the present Government is having to address. The loans scheme has caused many younger students to seek work overseas after graduating, in order to save to pay the loans off or to avoid repaying them. Student debt in New Zealand has increased enormously, and is growing at $NZ1 billion per year.

Increasingly, tertiary education institutions have had to look at ways of cutting costs, using economies of scale, and seeking sponsorship. One innovative polytechnic, Southland Institute of Technology, is about to experiment with a zero tuition fees scheme for students in order to boost the skill base and employment in the region, where there is a population decline. They plan to use local community funding to pay students fees and thus attract more students to the area. (Education Review, 29/9/00)

There has been considerable pressure for tertiary education institutions to remain financially viable in the competitive 1990s, and almost all have actively sought overseas full fee paying students in order to increase their revenue.
3. Inter-Institutional Developments

3.1 Alliances and mergers

Prior to 1990, polytechnics and vocational training institutions were extremely responsive to the educational requirements of their geographic location. Wine-making was taught in Gisborne at Tairawhiti Polytechnic; and fishing and crafts were a major specialisation of the Nelson Polytechnic. However, the drive to attract students and consequently EFTS funding has meant that a number of institutions have suffered from mission drift as they have had to diversify their programmes or seek alliances in order to remain financially viable (APNZ Website).

As a consequence of these constraints, a number of the smaller tertiary education institutions have become insolvent and have been merged with, or been taken over by, larger institutions or by universities. Some have established satellite campuses in other cities in direct competition to existing institutions. Others have formed strong alliances with other institutions. They can therefore staircase their courses more effectively and can provide joint awarding of some qualifications. Some of the colleges of education and polytechnics have merged with universities, while other institutions have set up alliances in order to share best practice, for example the recent TANZ alliance between four polytechnics. Others have formed alliances to avoid direct competition between their educational programmes and to effect economies of scale, as has occurred between the University of Auckland and the Auckland University of Technology.
3.2 Staircasing, Recognition of Prior Learning (RPL), Recognition of Current Competency (RCC), Credit Transfer

The introduction of the Framework in 1989 and parallel initiatives of the Ministry of Education to develop accessible pathways between institutions were based on a philosophy that espoused increased flexibility and responsiveness of the system to improve access to quality education and training. Processes were developed to acknowledge prior learning, to facilitate credit transfers between institutions, and to facilitate staircasing between levels of qualifications. Improved articulation between qualifications ensured that students could move from certificate to diploma, and from diploma to degree with comparative ease, and also between qualifications.

3.3 State versus private sector

Private Training Establishments (PTEs) have recently become eligible for Government tuition subsidies, which has prompted a debate about private providers undermining the viability of some of the state sector by attracting students who would otherwise have enrolled in a state sector institution. PTEs tend to occupy niche markets, such as foundation study, second chance education, and specialist training or degrees. They offer valuable services for Maori learners, and second chance mature learners, particularly in industry. In addition PTEs serve an equity role in small towns, where larger institutions would not be economically viable.

3.4 International/global links

As part of the drive to diversify and broaden the educational programmes that are offered, many New Zealand institutions have developed international alliances and partnerships. Many of these enable overseas qualifications to be obtained through local institutions, primarily by distance education and at
the addition of a growing number of international fee-paying students, these patterns indicate that student language support will have to adapt even further to meet the needs of students who do not have English as their first language. English proficiency is a major challenge, and will no doubt have a major effect on these students' chances to succeed in their study.

With regard to gender, male students declined from 45% in 1993 to 40% in 1999. This trend is in line with other New Zealand vocational education and training institutions, indicating a concern, nationally, about the growing number of males who under-achieve both at school and in tertiary education. The enrolment of increasing numbers of female students indicates the success of recent strategies to encourage female students into tertiary education. A number of institutions have special support systems to encourage women into science and engineering, and to encourage women to return to the workforce after raising families.

4.2 Flexible learning and technology-enhanced learning

In line with international trends, New Zealand tertiary education institutions are now developing more flexible approaches to student learning to improve access and offer varied learning options for students. Many courses and programmes have online and internet-based components in the curriculum, although the trend is for these to be at degree level more often than at sub-degree level. The skills training components in many courses are still perceived as more effectively learned in a face-to-face situation, especially with younger students or less able students. The sector is acutely aware of the need for building up a stronger technological base to its learning environments, as is occurring in Australia, USA and some areas of Asia.
degree or postgraduate level. Two universities have joined international alliances, namely the Global University Alliance, and Universitas 21.

At the vocational education and training level, many New Zealand-international links have been established with institutions in the Asia-Pacific region, and in the United Kingdom and Europe. These involve student and staff exchanges, block courses offered in partner institutions, and the sharing of vocational expertise across countries. It is anticipated this will increase considerably with the burgeoning development of online learning and the increase of internet delivery of programmes.

4. Intra-Institutional Developments

4.1 Changing profile of the student population

The makeup of the New Zealand population has changed dramatically over the last 15 years it has now become multi-ethnic and multi-cultural. This demographic change is more noticeable in Auckland and in the main cities; such changes are reflected, not unexpectedly, on our campuses.

An analysis of the annual reports from Auckland University of Technology since 1993 indicates that the proportion of New Zealand European enrolments has dropped from 71% in 1993 to 56% in 1999, and the proportion of New Zealand Asians has increased to 20% (Chinese, Indian and other Asian combined). Pasifika students show a steady increase from 5% to 7%, while Maori student numbers remain at around 8-9% when 15% of New Zealands population is Maori.

The marked increase in New Zealand Asians is understandable given that 70% of all new immigrants make the Auckland region their home. With
4.3 Teaching practice

Most vocational education and training in New Zealand includes on-the-job training and work experience, and in some specific industries and trades this is organised through the Industry Training Organisations. Most training programmes value the integration of theory and practice, and learning is strongly focused on applied skills. Co-operative education is common, where the students spend some of their learning time in the workforce, commonly built into programmes such as business studies, nursing, allied health programmes, or hospitality.

The focus of much New Zealand teaching practice is student-centred—that is, students are actively involved in the learning process, the teaching is interactive, and students are encouraged to participate, question and critique concepts and practice, and be involved in self-directed study.

Many of New Zealand's programmes now include learning outcomes which demonstrate generic and transferable capabilities as well as the specific skills of their trade or vocation. Examples of such capabilities include: problem-solving, conceptual thinking, use of technology, application of knowledge, ability to communicate. With technology and many skills areas changing so rapidly, the focus for teachers and students will increasingly need to be placed on the processes of learning, and integrating knowledge into work life, rather than just the content of a particular subject area.

4.4 Employability and life-long learning opportunities

The inclusion of generic capabilities (also referred to as transferable skills or employability skills) in many vocational education and training
programmes is one of the key factors in ensuring future and continuing employability of graduates. It is clear that the speed of change in vocational areas is so rapid that people are likely to experience a number of different career directions during their working life.

A growing number of tertiary institutions in New Zealand are providing support for students in terms of career advice and job placement assistance. Auckland University of Technology, for example, has a thriving Career Centre which offers guidance to students on careers and employment at any point during their studies. Many secondary schools organise transition programmes, work days, and taster programmes to assist students in selection of career options.

Another change that is linked with future employability, is the need for institutions to offer retraining opportunities for mature students often short courses which update their skills or redirect them into different vocations at various stages in their working life. Very often these continuing education opportunities are linked with technological change, for example the printing industry which has radically changed in terms of the technological skills that are required in the new millennium.

Such retraining or life-long learning opportunities are often offered on a part-time basis, or in block courses. The demand for intensive periods of re-education has led to the introduction of summer schools and weekend block courses. Both the institution and the students benefit from these initiatives, and institutions can maximise the use of their plant and equipment. Students are able to continue with their employment and therefore require minimal financial support.
5. Challenges for the Future

New Zealand's new Labour Government is undertaking a major review of tertiary education through a Tertiary Education Advisory Commission. This group is currently convening, consulting and reporting to Government on a range of issues, and may well reshape the structures, funding and directions for the future of New Zealand education.

There are challenges to be faced regarding the adequacy of funding to institutions, balanced with the need to maintain equity of access to tertiary education for students. One concern at present is that many polytechnics are placing emphasis on degree level qualifications, while increasingly the lower level areas of vocational education and training are being taken up by Private Training Establishments. There could be a danger of losing much of the strength of national vocational education and training from the state providers, who have provided such excellent learning opportunities for New Zealand students in the past.

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Improving Systems that Deliver Lifelong Vocational Education and Training through Life: the Philippine Experience

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1. The Philippine Education and Training System

1.1 Reforms in the Philippine Education and Training System

Creation of the Congressional Commission on Education (EDCOM). With the passing of Joint Resolution No. 2 on June 7, 1990, EDCOM was created with the directive of studying and assessing all levels of the national education and training system.

EDCOM Findings. Careful investigation and evaluation of the education and training sector by the EDCOM led to the following findings:

1. There is a continuous decline in the quality of education being offered in the country.
2. The basic levels of education fail to impart the competence an average citizen needs to become responsible, productive and self-fulfilling individuals.
3. College and technical vocational education fail to produce the manpower required to develop the national economy.
4. Graduate education the country is mediocre and is unable to generate research-based knowledge that would lead to the creation
of more jobs and growth in production value.

The EDCOM came to the conclusion that the deterioration in the country's education and manpower training is rooted in the following:

1. Inadequacy of the investments laid down in the education system
2. Poor management of the education system

**EDCOM Recommendations.** Several reforms emerged from the recommendations of the EDCOM, the most significant being the tri-focalization of the Philippine educational system. As this allows an in-depth recognition of the specific issues and concerns facing each educational level, it puts forth a more efficient and focused management approach. This yielded an educational sector structure that is characterized by three sub-sectors.

1.2 The Three Sub-sectors of Education and Training

Following the EDCOM recommendation, the educational system has been subdivided into three categories, each manned by an individual agency:

1. **Basic Education.** It is among the recommendations of the EDCOM that basic education in the country be given emphasis in terms of budgetary and talented personnel resources. Basic education is regarded as the means for providing the Filipino masses the opportunity to be functionally literate and numerate. By constitutional provision, basic education in the country is the responsibility of the state. It covers 10 years of free education, with six years compulsory elementary education and four years high school education. This sector is managed by the Department of Education Culture and Sports.
2. Higher Education. Higher education caters to graduates of basic education who are willing to pursue tertiary courses. This involves education and training in community colleges that offer occupation-oriented courses; universities and four-year colleges that offer academic and higher-level professional degrees; and specialized colleges that offer undergraduate or graduate degree in limited areas. Unlike basic education which is given the highest priority in terms of financing, government expenditure in higher education is limited. Thus, State Universities and Colleges are encouraged to be financially self-sufficient through employing alternative sources of funding. The national agency tasked to oversee this sector is the Commission on Higher Education.

3. Technical Vocational Education and Training (TVET). This sub-sector involves post secondary, non-degree technical and vocational education and training and is managed by the Technical Education and Skills Development Authority.

2. The Philippine TVET System

2.1 Role of TVET

In between the basic and the higher levels of education lies the TVET sector. It serves as receptacle to that portion of the population who after graduating from basic education are ill-equipped to pursue college degree education but are willing to learn and undergo training.

This sector is responsible for middle-level workforce development with the end in view of producing skilled and qualified workers, thereby promoting gainful employment and/or entrepreneurship. It is taken to be a mode of developing competencies that enable an individual to be more
productive members of society.

TVET is an integral part of the lifelong learning process. Vocational education and training methods can help stimulate motivation to participate in vocational training for lifelong learning, especially for people unaccustomed to learning. More flexible forms of learning such as apprenticeship and dual training (in-company training), which involve and encourage the active participation of the learner, can stimulate motivation for learning.

2.2 The TVET Clientele

Based on latest data, around 27.2 million (40 percent) of the 68.6 million Filipino population belong to the education sector. Of this portion, around 17 million (62 percent) is accounted for by basic education, around 2 million (eight percent) by higher education and 8 million (30 percent) by post secondary or technical vocation education.

TVET services are mostly availed by school leavers from secondary and tertiary levels and graduates of elementary and secondary education who are not able to pursue degree courses or are in need of specialized skills training not available in their formal schooling. TVET also play host to the demand of returning OFWs and displaced workers for skills training which stand as prerequisite to establishing an alternative means of livelihood. Potential entrepreneurs who are keen on starting their own business are also part of the clientele. An interesting and yet inconspicuous beneficiary of the TVET is the portion of the workforce who subscribe to lifelong learning or skills upgrading and re-training. The brief duration of TVET makes it an effective venue for constant skills upgrading and continuous learning through life.
2.3 Structure

The TVET delivery network is dominated by privately-run technical vocational institutions (1,383 or 85 percent) with only 723 (15 percent) publicly-run. Most TVET institutions offer a wide variety of courses ranging from secondary, technical and degree courses, with TESD programs comprising a small portion of the total courses offered.

TVET delivery in the Philippines may be broadly classified as:

1. *Institution-based.* Institution-based TVET delivery may be school-based or center-based. School-based skills training are channeled through higher learning institutions or TESDA supervised schools. There are 2,106 technical vocational institutions in the country, 80 percent of which are private. Tertiary educational institutions, on the other hand, total to 2,500, majority of which are privately managed. Schools under the supervision of TESDA total to 64. On the other hand, center-based training are provided in TESDA supervised training centers and industry-, NGO-and LGU-run training centers. TESDA alone has 14 regional and 47 provincial training centers.

2. *Community-based.* Community-based training emphasizes skills training for livelihood and entrepreneurship. These type of training are provided by non-government institutions, local government units and civic organizations.

3. *Enterprise- or Industry-based.* In this mode, dual partnership schemes such as apprenticeship, learnership, on-the-job and dual training are carried out through industry training centers and workplace-based training projects. This mode is effective for students and graduates in terms of providing hands-on experience. In the context of lifelong learning, enterprise-based training provide in-plant skills upgrading to
workers whose employers seek higher quality output and up-to-date operational approaches.

2.4 Issues and Challenges in Philippine TVET

The Philippine TVET system is confronted by major TESD issues:
✓ Growing poor population
✓ Rising worker displacement due to global and local factors
✓ Inequitable urban-rural distribution of persons
✓ Low survival rate of students which reflects on the educational qualification of the labor force
✓ Majority of technical vocational institutions located in the urban areas which deprives the majority of the clientele residing in the rural areas of TESD
✓ Problems such as trainerrs capability, outdated curricula and inadequate budget which creates an impact on the quality of TESD provision
✓ Big gap in the effectiveness and efficiency of TESD provision

These issues add to the urgency of installing a TVET system that
✓ is capable of delivering relevant and quality education and training
✓ is responsive to globalization trends
✓ is responsive to governments national development thrusts
✓ highlights the active participation of the private sector and LGUs
✓ defines an appropriate equivalency and accreditation system in middle-level skills development
✓ yields a flexible and mobile workforce through multi-skilling and lifelong education
2.5 TESDA's Role

The creation of the Technical Education and Skills Development Authority was an aftermath of recommendations made by EDCOM to integrate the administration of the TVET system. The created authority is the fusion of the functions of three agencies, namely: (1) National Manpower and Youth Council, (2) Bureau of Technical-Vocational Education of the Department of Education, Culture and Sports, and (3) the apprenticeship program of the Department of Labor and Employment. This serves to reduce the overlapping responsibilities of each agency in manpower development and yields a more efficient and effective management of the sector.

It is tasked to develop a quality assured TESD system and manage the generation of middle-level manpower that is in keeping with the ever changing pace of the local and global labor market and in accordance with the national development goals.

One of the most important developments in TVET since the creation of TESDA is the institution of the TVET Reforms. This is in response to the policy of the State to provide relevant, accessible, high quality and efficient technical education and skills development in support of the development of high quality Filipino middle-level manpower responsive to and in accordance with the Philippine development goals and priorities. The essence of the TVET Reforms is a quality assured TESD system where the most important element is the customer - the subject and object of all TVET efforts. The quality assured TESD system is characterized by the relevance, efficiency, accessibility and quality of the system itself and all its elements. When in place, the package of reforms will revitalize and provide renewed dynamism in the delivery of technical education and skills development activities in the country and ensure that Filipino skilled workers produced by the system are of high quality, productive and competitive in
the global arena. The four major components of the TVET Reforms are: (1) Quality Assured Philippine TESD System; (2) TESDA Occupation Qualification and Certification System (TOQCS); (3) Unified TVET Programs Registration and Accreditation System (UTPRAS); and (4) Philippine TVET Quality Awards (PTQA).

3. Major TVET Initiatives that Contribute to Lifelong Learning

3.1 Community-based Training Programs

TESDA launched the Community-based Training and Enterprise Development (CBTED) program in 1998 under the World Bank Vocational Training Project II. CBTED is one of the program responses of TESDA to the governments thrusts on rural development and poverty alleviation.

Conceptually, CBTED is the marriage of community-based training to enterprise development. This combination is deemed essential to address the issue of after skills training what? . It follows a methodology that starts with the policy of ownership. Making the community folks as legitimate owners of specific project intervention. It espouses a participatory and consultative approach with the community folks addressing development in their own phase and language.

Skills training programs and enterprise development opportunities are identified by and from the people themselves. The identification process is linked with the profile of the community which includes the context within which economic activities operate in the community, sources of income, existing income generating activities, the availability of raw materials,
sources of credit and market activities within the community and neighboring communities.

TESDAs role in the CBTED is entrenched in catalyzing actors and stakeholders in the local area to plan and manage community-based training. In the local government units (LGU) side, the Community Training and Employment Coordinators (CTECs) act as the focal point in the implementation of CBTED programs. Partnerships with non-government organizations (NGOs) have also been established through the organization of Provincial Working Groups (PWGs).

The Barangay-Bayan Concept

The CBTEDs major guiding principle is the barangay-bayan concept. Community-based is defined as sitio, purok, barangay. Coined by the TESDA Director General, he stresses that any community has its history or kasaysayan. Whether that community is coastal, upland, agricultural, urban, rural or slope. The community always carries a story on who is who in enterprise development, the key leaders, existing technologies being used in the community vis-à-vis the infrastructure, locally available materials that can be converted into a product, or a service that can be provided by the people, the forward and backward linkages of the communitys economy. The concept of barangay-bayan illustrates the interrelationship of strategies, the convergence strategies and partners in the entire system.

The main goal of CBTED is to link skills training in the total economic and development structure of the community. Under CBTED, assistance in the creation of micro-enterprise structures in the community starts with skills training. This serves as the entry point to any enterprise.
development. The approach reverses the common order of events wherein employment/enterprise development is expected to follow after training. Instead, it identifies first the economic opportunities before training intervention is undertaken. The approach involves not only skills training but also includes other components such as social preparation, a sound needs assessment and area planning, and a purposive post-training assistance.

As CBTED effects ripple down to create backward and forward linkages in the community economic system, countryside development maybe felt in the long term. If community folks would be able to learn to work together not only as a political unit of society but more important of all, as an enterprising economic community, then poverty may be alleviated.

**Basic Philosophies of CBTED**

**On Poverty** - the problems of poverty are of global knowledge. Poor people are no longer interested in academic analysis. What they want/need are implementation of laws and policies through practical strategies, tools, systems and methodologies which are simple and in which they can understand and actively participate.

**On Training and Employment** - training in itself does not create employment. Employment is a result of investment and the stimulation of all social, economic, political and physical infrastructure in a given geographical area and situation.

**On Development Programs** - any program or intervention in a community, although linked with national goals, should always be community and people centered. It should promote a sustainable system suited to the dreams and aspirations of the community.
On Convergence and Partnership - no one government agency can do it alone. There should be coordination and collaboration between and among government agencies, LGUs, NGOs. NGOs have the flexibility that the government agencies do not have. Through convergence and partnership, there is more focus in the targeting of beneficiaries and resources are maximized and used more efficiently.

3.2 Dual Training System

The dual training system (DTS) is a special type of delivery system in TVET that combines two places of learning: the school/training center and the production plant of an agricultural, industrial and business establishment. In the Philippines, this has been recognized as one of the more effective and efficient means of delivering TVET with the passage of the Dual Training System Act of 1994 (RA 7686) on February 25, 1994. The DTS law aims to encourage the schools and establishments to utilize the Dual System of TVET by providing incentives and clear guidelines on its implementation.

The DTS implementation entails the close coordination between the school and the establishment. They prepare a training plan, identify training stations, establish a joint training agreement, and assign an industrial coordinator.

In implementing the DTS, TESDA has received grants and assistance from the Federal Republic of Germany through the German Agency for Technical Cooperation (GTZ) and other agencies. Over the years, there has been a significant increase not only in terms of number of trainees and graduates but also in the number of cooperating companies and industry partners under the program. The DTS has been modified and adapted to suit the requirements and the economic and social peculiarities of the country.
**Principles of Dual Training System**

**Market-Oriented.** The DTS is market-oriented since it is geared towards the training of skilled workers according to the demand of the employers.

**Partnership.** It is a close partnership between the employment and the educational systems.

**Learning-by-Doing.** It exposes the trainees to the actual work situation and enhances learning under realistic industry conditions.

**Private Sector-Led.** The DTS inherently depends on the private sector leadership. The industries with their concern for maximum productivity and growth dictate the pace of the systems development. Without its leadership and cooperation, the DTS will not work.

**Social Acceptance.** Once a critical mass of industries and communities with positive experiences of the System has been achieved, making the system work becomes less difficult. This is the time that this training delivery system has gained social acceptance from its various stakeholders.

**Cost Sharing Principle.** Companies share the cost of both in-school and in-plant training. This allows the school to give quality theoretical training and allows the establishment and the school to provide the trainees with allowance during the training program.

**Legal Basis.** The basic legal framework will help in the long-term growth and the development of the system by protecting and enhancing the vital roles of all stakeholders.
3.3 Assessment, Qualification and Certification System

The system of skills standards, testing and assessment of skills and certification is well established in the Philippines even before the creation of TESDA. The former National Manpower and Youth Council (NMYC) had a comprehensive process for skills standards development as a basis for Trade Skills Standards (TSS) testing. This testing arrangements commenced in 1974 and TSS and associated tests have been developed for more than 200 occupations in various industry sector. Under the then Bureau of Technical Vocational Education (BTVE), a National Competency Framework was in place for a range of specific skill areas for both public and private providers of training. This framework was developed in 1989 by BTVE for six priority industry sectors as follows: construction, tourism, information technology, garments, metals and engineering and agro-industries. In both systems, the DACUM methodology had been used in the development of skills standards.

With the creation of TESDA, there is a need for mechanisms that will integrate the various TVET delivery systems. Competency (or skills) assessment, qualification and certification is the area where there is the greatest opportunity for the integration between the formal, non-formal and informal sub-sectors of the TVET system. This is the area which should be the unifying aspect of the sub-sectors as the recognition and certification of skills is common to graduates of the system. In this respect, and in line with its mandate, TESDA has established the TESDA Occupation Qualification and Certification System (TOQCS).

The TESDA Occupation Qualification and Certification System

At the core of the TVET Reforms is the establishment of the
competency-based TESDA Occupation Qualification and Certification System (TOQCS). The TOQCS provides a framework for the integration of the various training delivery modes and gives emphasis on the skills and knowledge required to gain a qualification rather than the type and length of the course. It serves as the platform for defining the requirements for training provision and for assessment, qualification and certification of skilled workers.

**Basic Features of the System**

**Recognition of Prior Learning (RPL)**

The system provides a framework that would make it possible for the ease of entry and exit in the educational system through the recognition of skills and knowledge acquired either in school or in the workplace. This means that the workers who want to pursue further schooling relevant to their work, their job experiences can have equivalent units earned in the formal educational system.

The TOQCS recognizes two ways of achieving Certificate and license. The first one being through institution-based learning while the second one is through work-based learning. Although these two ways have their own evaluation system (i.e. learning evaluation for institution-based and performance assessment for work-based), occupational assessment is a must for a qualification under the TOQCS.

**Modularized and competency-based learning**

The system calls for a modularized and competency-based learning such that each level has a set of qualification requirements (i.e. a set of
competencies). These competencies are the identified duties set forth in the occupational competency standards developed and endorsed by the industry.

The duties under the occupation are converted into modules (learning environment), while tasks are converted into learning elements.

**Accumulation of Certificate of Competencies (COCs) towards a license/certificate**

Upon completion of each competency, a Certificate of Competency will be issued attesting that the learner possesses the required skills and knowledge for the particular competency. A learner has to complete all the competencies within a level in order to earn a certificate. Also, a Statement of Competency will be issued upon completion of all competencies within a certain level.

**Self-pacing**

The attainment of a certificate or license is not time-bound since the system will give emphasis on the competency and knowledge required to gain qualification rather than the type and length of training programs.

**Major Elements of the TOQCS**

*Occupational Mapping*

This is a process of defining the occupations and the occupational structure for technicians and skilled workers in a given industry or sector. The occupational map to be developed is based on the priority sector identified by the TESDA Board and the recommendation of the TESDA Advisory Panel (TAP). The TAP is a body created by the TESDA Board to
provide recommendations to the Board on the priority occupations in a particular industry or sector where TVET intervention is recommended. The TAP is a tripartite body composed of representatives from employers, workers and education/training providers.

Under the quality-assured TESD system, the priority sectors identified are in consonance with national development thrusts and priorities. This is to ensure that the types of workers to be developed are relevant to the demands of the economy. These priority sectors are derived from the national development plan and the national TESD plan.

Identification of Priority Occupations for Development

Based on the occupational map, the priority occupations for development are identified. The TESDA Expert Panel (TEP) assists TESDA in this process. The TEP is also a tripartite body composed of technical experts from industry, labor and academe.

Development of Occupational Competency Standards

The TEP is also responsible for assisting TESDA in the development of occupational competency standards. Occupational competency standards are written specification of the minimum stock of knowledge, attitude/work values and skills a person should possess to perform the functions identified in the job description. TESDA uses the DACUM approach in defining the competency standards.

Competency Assessment, Qualification and Certification

One important use of competency standards is to serve as basis for
competency-based performance assessment and certification. Competency assessment is a process of measuring the person's knowledge, attitude/work values and skills relative to a set of competency using an appropriate instrumentation. Certification is the process of verifying and validating the competencies through qualification or competency assessment. As a basic principle, the TOQCS provides a process of certification of skills or competence achievement gained through a variety of means including formal and informal TVET, experience in the workplace and through self-study.

The mechanism and the processes for implementing competency assessment and certification is already in place in TESDA. These include the system of accreditation for assessors and assessment venues and the institutional bodies responsible for implementing the system.

Development of Training Standards

Competency standards also serve as the benchmark for the development of training standards or training regulations. These training standards or regulations provide the guidelines on all aspects of training delivery to include job definition, curriculum design, training plan, faculty qualifications and list of resources. The TEP also provides expert advice to TESDA in the development of training regulations for specific occupations.

Under the quality assured TESD framework of TESDA, there is now a shift to the competency-based mode in terms of training delivery. Moreover, focus on quality is also emphasized.

The TOQCS and its Implications to Lifelong Learning

The fast changing economic order and technological developments have
made the traditional one-time training of an individual inadequate; he now needs to be trained throughout his life. The basic features of the TOQCS clearly illustrate a recognition of the need for workers to have access to lifelong learning opportunities. The TOQCS adopts a modularized and competency-based approach to TVET. This approach offers various possibilities for rationalizing and reorganizing training for many occupations and for arranging training in a variety of ways to meet the changing needs of employment and the learning capacities of an individual for training and retraining. Under the TOQCS, the TESD system is able to provide a wide range of courses to meet diverse needs. Horizontal and vertical mobility is promoted, and movement from the formal to the nonformal sectors and vice-versa is facilitated.

In times of change, the workers must be prepared to anticipate the unexpected and to deal with unforeseen situations. Mere competence in specific skills may be inadequate; knowledge in a broad area may also be required. Technological changes and the increasing interdependence of processes will require workers with multiskill qualifications. Workers must be able to adapt and learn new skills continuously. The flexibility of the TESD system under the TOQCS framework and the ease of entry and exit facilitate the process of acquisition of multiple skills, which are increasingly being required of the workers.

3.4 Labor Market Information, Vocational Guidance and Career Counseling

Improving access to education, training and employment opportunities is significantly facilitated by the availability of information on labor market demand and supply as well as the system of collecting, disseminating and analyzing this set of labor market information. Likewise, vocational guidance
and career counseling are critical in assisting the students and workers to decide for themselves what occupations or career they must pursue given the requirements of the labor market.

In the Philippines, the Department of Labor and Employment (DOLE), has established the Public Employment Office or PESO. This is a multi-service facility established to provide employment information and assistance to the workers and jobseekers. It makes available in one roof the various employment programs and services of the DOLE to enable all types of clientele to know more about them and seek specific assistance they require.

As a means to expand the reach of employment facilitation services of the government, PESOs are established in every province, city and municipality throughout the country. At present, a total of 1,534 PESOs have been established. They are community-based and maintained largely by the local government units (LGUs) and a number of non-government organizations. The passage of RA 8759, otherwise known as the PESO Act on March 5, 2000, however, transferred the control and responsibility of the PESO to the DOLE. Nevertheless, the Act affirmed the commitment of the government in providing the necessary services for the effective and efficient matching of skills and employment opportunities.

To further improve the labor market information system in the country, the DOLE has also operationalized the Philippine Job Network (PhilJobNet) across regions. The PhilJobNet is an automated job and applicant matching system which aims to fast-track jobseekers search for jobs and employers search for manpower. It is now fully operationalized with the employers, LGUs and education and training institutions actively participating.
4. Pathways to Further Education and Employment

Another important means of increasing access for individuals to skills development through education and training is to provide arrangements for the recognition and articulation of training in ways which will enhance the lateral, vertical and geographic mobility of workers and opportunities for progression from the lowest skill through the highest within an industry.

This includes cross industry skilling and the creation of multiple pathways for individuals seeking to gain access to the workforce or to move between occupation. The concept of lifelong learning, which is allied to the policy of equivalency, also calls for sectoral boundaries to be lessened or removed. This concept will become more and more important feature in Filipino society as workers are required to change occupations and careers to keep pace with changes to work environments and the economy.

Articulation

At an industry level, this type of cooperative arrangement for articulation between courses and between sectors of education and training is already occurring in some enterprises and regions in the country. For example, in Cebu, there is a Tri Tech Committee which is comprised of representatives from the school, TVET and higher education sectors, public and private sector and government, who examine curriculum and reach agreements on articulation arrangements to meet local and/or regional needs in the electrical and mechanical engineering field.

An example of this ladder approach to articulated awards at the course or program level includes the following: a one-year junior electricians Certificate program which may be followed by a one-year
senior-electricians Certificate program, then a one year electrical engineering technology Diploma program and a two-year Bachelor of Engineering program in electrical engineering, as part of a sequence of qualifications. This model for the development of industry partnership to achieve better integration between education and training sectors is one which could be pursued under the guidance of TESDA through piloting this type of arrangement in other industries.

**Equivalency**

An example of this more flexible approach to recognizing skills and knowledge attained which is under consideration in the Philippines is in response to the Executive Order (EO) 330 which provides for the adoption of the expanded tertiary education equivalency and accreditation program (ETEEAP) as an integral part of the educational system through CHED. This enables CHED, through its constituents, to assess the skills and knowledge that a person has (i.e. what that person can actually do), however and wherever (e.g. through high level, non formal and informal training) those have been acquired, as a basis for awarding of an appropriate academic degree. It also extends to the determination of possible remedial studies or academic supplementation for individuals who are seeking access to the system.

In addition, EO 330 provides for the development of a range of methods for assessing skills, values, knowledge and levels of competence (e.g. written examinations, practical work, simulations and qualification portfolio assessments) and enables CHED to deputise and/or accredit agencies, organizations and higher education institutions which will conduct equivalency assessments to develop assessment instruments, provide academic supplementation and/or award degrees within their area of specialization.
This concept is a useful one for consideration in the context of increasing access by students and workers to the TVET system, facilitating greater flexibility and increasing mobility. With the necessary quality assurance framework in place, this approach could mean that, depending upon the particular occupational area and/or sub-sector within which the trainee might seek recognition, the concept of equivalency could apply at the competency or skills standard level, at the subject/unit level or at the course/program level.

Presently, however, the implementation of the ETEEAP is still being piloted in the engineering and nursing fields. This is being pilot-tested in selected higher education institutions. There is still much to be done particularly in establishing the link between TVET and higher education.

5. Issues and Concerns on Lifelong TVET in the Philippines

The basic framework and philosophy for lifelong learning in TVET is now well established in the Philippines. This is clearly articulated in the policies and principles of the various reforms, systems and programs instituted that promote quality, efficiency, effectiveness and equity and access. There is a need, however, to address the following issues and concerns:

1. The need to accelerate the setting-up of coherent and concrete mechanisms for lifelong learning
   The TOQCS is envisioned to be the main mechanism by which lifelong learning outcomes are recognized. The system, however, is only in its third year of implementation. Much efforts have been initially done on the setting-up of the institutional infrastructures that are needed to operationalize the system. The TOQCS has not completely established all
the processes necessary to subscribe to the principles of competency-based, recognition of prior learning and self-pacing. Moreover, most of the training institutions have yet to fully adopt the competency-based training approach. There is a need to accelerate the full implementation of competency-based TOQCS if TVET is to be truly a lifelong learning process. While the policy handles for lifelong learning in TVET have been established, the specific processes or mechanisms are not yet fully in place.

2. The need to promote innovative learning approaches

The use of technology, especially information and communication technology, in delivering TVET holds large promise. It improves flexibility and accessibility to education and training. In a developing country like the Philippines, however, where the infrastructure and technological support is wanting, there will be difficulty in promoting this type of learning approach to a wider clientele. There is a need for more government support, in partnership with the private sectors, in ensuring that technology-based and innovative learning approaches are promoted and adopted.

3. The need for closer coordination among the three sub-sectors of education and training

The trifocalization of the management of education and training system in the Philippines has necessitated the closer and wider coordination, collaboration and cooperation among DECS, CHED and TESDA. This is particularly needed in the governance and financing of education and training as well as in establishing the links among the three levels of education and training. The establishment of the National Coordinating
Council for Education (NCCE) on August 7, 2000 by virtue of Executive Order 273 is expected to address this concern. The NCCE is composed of the Secretary of DECS, the Chairman of CHED and the Director General of TESDA. It is tasked to:

(a) serve as the regular forum for trans-subsectoral consultations on cross-cutting policies and programs;
(b) harmonize goals and objectives for the entire education system and to dovetail them to national development plans;
(c) review existing and proposed programs and projects for tighter inter-subsector coordination;
(d) set priorities for the education system and recommend corresponding financial requirements;
(e) pursue and monitor the implementation of the reforms proposed by the Presidential Commission on Educational Reform (PCER);
(f) establish, oversee and monitor the implementation of the National Educational Evaluation and Testing System (NEETS) and its operations;
(g) designate and provide guidelines for Philippine representatives in international and national conferences/meetings with cross-cutting themes and concerns in education; and
(h) convene a biennial National Congress on Education for the purpose of assessing, updating/upgrading and strengthening of the educational system and its components.
What We Have Done to Improve Our Vocational Education and Training Systems to Maximize Efficiency and Effectiveness

Presented by Dr. Young-Hyun Lee
Korea Research Institute for Vocational Education and Training

This paper deals with vocational education and training policies, focusing on the planning national education and training policies. It is based on the experience in its continuing efforts to improve the systems of vocational education and training to maximize the efficiency and effectiveness. First, the current systems of vocational education and training will be described. Second, the challenges that the Korean economy faces and recent reform measures in vocational education and training to meet the challenges will be presented.

1. Systems of Vocational Education and Training

1) School Ladder System

Korea uses a school ladder following a similar track of 6-3-3-4, providing six years of compulsory primary education, three years of middle school, and three of high school, followed by two or four more years in colleges and universities.

Nearly 100 percent of those eligible attend primary schools. There were 3,935,537 students enrolled in 5,544 schools in 1999.

Middle school education is offered for students aged 12-15 with a
duration of three years. All applicants from primary schools are accepted and allocated by lottery to schools within their residential districts. Regular activities are divided into required and elective subjects.

As of 1999, 99.9 percent of all primary school graduates moved on to middle schools. Middle school education is free only in rural areas, and in the near future it is to become compulsory and free for all.

High school education aims at providing advanced general and specific education on the basis of middle school education. High schools are classified into academic, vocational, and other high schools - foreign language, art & athletic, and science high schools. There were a total of 1,942 high schools, of which 762 were vocational high schools in 1999. High schools, both general and vocational, enroll 90.6 percent of their age group.

Students in academic high schools, where advanced general education is practiced, select a major in the second year from the areas of humanities and social sciences, natural sciences, and vocational education. Their selections are based on the students aptitude and interest that, in turn, provide a link with the school courses and their future careers. The majority of students opt to spend the first two years as preparation for university application. Students may transfer to the vocational track at the beginning of the third grade.

The higher educational institutions are divided into 4 categories: colleges and universities; universities of education and colleges of education; junior colleges, the Air & Correspondence University, polytechnic universities\(^1\) and

\(^1\) Open university was renamed polytechnic university based on the Higher Education Law which came into operation in March, 1998. However, open universities are named in various ways depending on the mission and objectives of the university.
other schools (including theological colleges and seminaries). Most higher educational institutions are under the supervision of the Ministry of Education. The Ministry of Education has control over such matters as student quotas, qualification of teaching staff, curriculum and degree requirements. About 63.7 percent of this age group enrolled in higher educational institutions in 1999.

2) The Vocational Secondary Education System

Vocational secondary education is now totally provided at the senior secondary level. Although it was also previously at the junior secondary level before junior secondary education was phased out prior to the mid-1980s.

Vocational high schools aim at educating capable skilled workers equipped with sound vocational awareness and professional knowledge to cope with rapid changes in an information-oriented industrial society. They provide technical-vocational education programs in the specialized fields of agricultural, technical, business & commerce, marine & fisheries, and home economics. These vocational high schools are the major sources of the craftsmanship level of industrial manpower in Korea. In 1999 there were 762 technical and vocational high schools with a total enrollment of 851,751 which accounted for about 37.8 percent of total high school enrollment.

As can be seen in table 1, most vocational students are taking programs in senior secondary schools of business/commerce and technical. Just over 3% are studying in agriculture and fishery/marine.
Table 1. The Number of Vocational High Schools and Students

<table>
<thead>
<tr>
<th>Classification</th>
<th>Schools</th>
<th></th>
<th>Students</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Proportion</td>
<td>Number</td>
<td>Proportion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of vocational</td>
<td></td>
<td>of vocational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>students</td>
<td></td>
<td>students</td>
</tr>
<tr>
<td>Agricultural</td>
<td>26</td>
<td>3.5</td>
<td>17,874</td>
<td>2.4</td>
</tr>
<tr>
<td>Technical</td>
<td>203</td>
<td>26.5</td>
<td>265,837</td>
<td>35.7</td>
</tr>
<tr>
<td>Business/ Commerce</td>
<td>238</td>
<td>31.2</td>
<td>272,650</td>
<td>36.5</td>
</tr>
<tr>
<td>Fishery &amp; Marine</td>
<td>8</td>
<td>1.0</td>
<td>5,607</td>
<td>0.7</td>
</tr>
<tr>
<td>Vocational</td>
<td>75</td>
<td>9.8</td>
<td>57,683</td>
<td>7.7</td>
</tr>
<tr>
<td>Comprehensive</td>
<td>214</td>
<td>28.0</td>
<td>127,335</td>
<td>17.0</td>
</tr>
<tr>
<td>Total</td>
<td>764</td>
<td>100.0</td>
<td>746,986</td>
<td>100.0</td>
</tr>
</tbody>
</table>


The schools operate effective field training programs in cooperation with individual industries. The on-site training can be made and performed for from 2 to 68 units as the extra-curricular activities that are added to the independent curriculum or completely different from the first year depending on the discretion of the principal. The duration of on-the-job training varies, ranging from 1-6 months in agricultural and commercial high schools, 1-12 months in technical high schools to 3-12 marine & fisheries high schools.

3) Formal post-secondary vocational education

Post-secondary vocational education under the formal education system is provided at junior college, polytechnic college, technical colleges and polytechnic universities. Junior colleges are major vocational institutions at post-secondary level.

Junior colleges are two or three year post-secondary programs and are the direct outgrowth of the increasing demand for technical manpower attendant to rapid industrialization. Since their establishment in 1979, the
number of junior colleges has grown to 161 as of 1999 with an enrollment of 859,547 (including students on leave of absence).

The purpose of junior college education is to produce middle-level technicians equipped with a solid base of theories and skills. Their specialized courses are grouped into technical, agricultural, nursing, fishery, health, commercial and business, home economics, arts and athletics, and so on with two or three year programs depending on the courses. The nursing, clinical pathology, physical cure, radiation, fishing, navigation and engine programs require three years of education. The communication program is the only one requiring two and a half years of study and the rest require two years of education.

High school graduates and those with an equivalent academic background may enter junior colleges. Admission to junior colleges is determined on the basis of school achievement, scholastic achievement test, interview, and aptitude tests. 30-50 percent of the freshmen quota is reserved for the graduates of vocational high schools, craftsmen qualified by the National Technical Qualification System and workers meeting a specified amount of industrial experience.

Although junior vocational colleges place emphasis on practical education aimed at producing mid-level technicians, it is not necessarily a terminal point of schooling. Doors are kept open for its students to continue education at universities. For employed youths, it provides avenues to polytechnic universities as well as the Korea Air and Correspondence University. As efforts are intensified to ensure the relevance of junior college education to industrial needs, the percentage of employment among graduates is increasing.
4) Vocational Training

Vocational Training System

The government encouraged private companies to provide in-plant training with the enactment of the Basic Law for Vocational Training in 1976. Large companies in certain industries were required to provide in-plant training for a certain number of their employees. These companies were obliged to pay a training levy if they did not provide in-plant training, or if their training did not meet government regulations. Such a compulsory in-plant training system which was designed to concentrate on the basic training for new entrants to the labor market at the embryonic stage of industrial development, contributed to the provision of necessary manpower to thereby sustaining rapid economic growth of Korea. It was pointed out, however, that the system should have been changed to accommodate the new embryonic trends, especially during structural adjustment and industrial restructuring.

Entering the 1990s, voluntary training by companies has increased greatly. At the same time the number of youth undertaking vocational training has decreased markedly, due to sheer reduction per ratio in the young population and the increasing number of youth entering universities.

The government enacted the Act on Promoting Workers' Vocational Training in 1997 to establish a system for vocational competency development and to encourage enterprises to provide further training for the employed on a voluntary basis. The act has put into effect since January 1999.

According to the act, the Minister of Labor provides financial support to employers who implement vocational competency development programs.
The Minister also support employees who make an effort to develop their vocational competency, i.e., undertaking the vocational competency development training programs, wanting to acquire a certificate or undertaking programs designated in the Education Law. Governmental agencies or local autonomies may provide training for the unemployed.

**Vocational Training Programs**

The vocational training programs are classified into initial training, upgrade training, and job transfer training depending on the curriculum, duration and trainee profiles. However, it does not make clear distinctions among the last two categories. In most cases, further training or in-service training is used to include both two.

Initial training aims to train basic competencies that are required in the workplace and is intended for those newly seeking employment or prospective reemployment workers, such as high school graduates, former soldiers and the unemployed. This type of training lasts for at least one month. Those who are recruited for vocational training and new employees whose length of service is less than one month. Since the law excludes employees whose length of service is between one month and one year from further training, initial training in Korea is principally pre-employment training. Programs of initial training should include (1) general education which is coordinated with practical training, (2) basic training in knowledge and skills common to related occupations which is given by a training institution or in an undertaking on or off the job, (3) specialization in directly usable knowledge and skills for employability.

Upgrading training is provided for workers who have already completed initial training(or those who are deemed to already possess basic
skills) and wish to acquire further skills. The duration of the training is required longer than 20 hours.

Job transfer training aims to assist those who seeking to transfer jobs or unemployed workers develop new skills. The duration of the training program is required longer than two weeks.

Training methods are classified into three categories: institutional training, on-the-job training and on-line training.

The number of persons completing initial training accounts for 5.3 percent of all trainees completing craftsmanship training (Table 2). Of persons who completed in-plant training in 1999, 98.8 percent undertook further training while only 1.2 percent underwent initial training. In-plant training concentrates on further training. As a matter of fact, further training, expressed as vocational competency development indicating the development and the improvement of vocational competency, is regulated by the Employment Insurance Act.

Table 2. Vocational Training by Programs 1999

<table>
<thead>
<tr>
<th>Program</th>
<th>Total</th>
<th>Initial Training</th>
<th>Further Training</th>
<th>Training for the unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>Upgrade Training</td>
<td>Job transfer training</td>
</tr>
<tr>
<td>Total</td>
<td>1,275,049</td>
<td>48,626</td>
<td>867,577</td>
<td>495</td>
</tr>
<tr>
<td>Public</td>
<td>160,456</td>
<td>36,883</td>
<td>82,319</td>
<td>-</td>
</tr>
<tr>
<td>In-plant</td>
<td>1,112,108</td>
<td>9,258</td>
<td>785,258</td>
<td>495</td>
</tr>
<tr>
<td>Trainer Training</td>
<td>2,485</td>
<td>2,485</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Vocational training in Korea assumes two forms depending on training institutions: public and in-plant vocational training. Public training is undertaken by the Korea Manpower Agency (KOMA), the Korean Chamber of Commerce and Industry (KCCI), governmental agencies, local autonomies and the Korea Employment Promotion Agency for the Disabled (KEPAD). It aims to train semi-skilled and skilled workers in programs lasting from three months to two years.

KOMA, KCCI and KEPAD are concerned with trades that are commonly required by manufacturing industry (die-making and machine work), export oriented trades (gem cutting, dyeing and weaving, etc), and trades in advanced and new technology (CAM). Governmental agencies concern themselves with trades such as carpentry, bricklaying and electronic welding, aiming at training for the self-development of prisoners and incumbents, while local autonomies concern themselves with trades necessary for increasing the income of farm households.

In 1999 there were 95 public vocational training institutes of which 40 public vocational training institutes under KOMA which included 20 polytechnic colleges which were placed under the authority of the Korean Foundation for Polytechnic Colleges in December 1998.

2. Recent Reforms in Vocational Education and Training

Since the 1990s the Korean economy has been facing new challenges posed by the changing economic environment, such as the globalization of trade and labor markets, the rapid advancement of new technologies and mass unemployment. These phenomena will foster fast-paced changes in future industrial structures and employment patterns.
The effect on and changes in the labor market are that some jobs are declining significantly, others are growing in importance and some require completely new or different skills. The size of the workforce associated with service and technology, where a high-level education as well as skill is required, will increase while demand will shrink for low-skilled workers. Many employees are likely to change jobs and possibly even careers several times during their working life. The changing nature of labor market trends has significant implications for education. This phenomenon implies the need to provide lifelong learning, continuing and recurrent training, and continued upgrading of knowledge and skills.

Despite the expansion of higher education and intermediate skill training in the 1980s, the present level of education and training is unable to meet industrial demands. The Korean government has recently introduced various measures to improve the vocational training system in order to produce skilled manpower to meet changing industrial demands while reducing the pressure of higher education.

The Presidential Commission for Education Reform (PCER) proposed the Second Education reform Program, including vocational education reform, in 1996. Reflecting the recent trend of higher education, the objective of vocational education reform is to establish a Lifelong Vocational Education System. In order to achieve this goal. Legislation on the credit bank system in 1996 was enacted which allows part-time registration at college on a test-base system. Also, students in vocational high schools and industrial workers are able to undertake further education. Vocational high school students and industrial workers take priority in the selection process for colleges attained associate degrees.

With the introduction of the lifelong education system, junior college
education expanded. Between 1980 and 1999, enrollment in junior colleges increased 5.7 times and programs were diversified in number. Junior colleges are expected to be the center of vocational education in the near future.

To encourage workers to upgrade their skills and knowledge, the government revised the Polytechnic Law in 1997 in order to grant degrees to graduates of polytechnic colleges. The Korea Foundation for Polytechnic Colleges was inaugurated by KOMA with the approval of the Ministry of Education during early 1998. Beginning February 1998, graduates of polytechnic colleges could attain Industrial Associate Degrees.

1) Integration of Vocational and General Education

A new program is looking at integrating vocational education and academic streams in high schools. Schools that wish to do so can integrate and operate the curriculum of vocational and general high schools to enable students to choose from the wide selection of courses irrespective of their field of study. This is to enable students to satisfy prerequisites for further education while at the same time acquire work-related knowledge and skills in high school to enter the workforce directly.

Students graduating from integrated high school programs may decide to go directly to work or to university. Students will also be allowed to change programs of study, if they subsequently change their minds or if circumstances force them to change, to the other path. Integrated courses of study can be organized around broad industries or occupational clusters, such as health occupations, engineering and manufacturing, business and finance, or communication technology.

Schools that integrate and operate both types of curricula will
minimize the number of compulsory courses students must take and increase the number of effective courses. Suggested is to link integrated schools to provide open curricular in which the school curricula are linked to area training institutes or technical schools for lab facilities. The program is being implemented in five schools across the country.

2) School-Industry Partnership

The industries have been providing unorganized and unstructured on-the-job work experience for the technical-vocational high school students and junior college students on a voluntary basis upon request by individual high schools and junior colleges. However, the cooperation and collaboration between vocational schools and industry has been rather weak and loose.

In order to satisfy the needs of a rapidly changing society and to produce excellent industrial manpower, the Korean government has introduced a program to develop partnership between VET and industries especially in the areas of technical educational and training. The main purpose of the program is to improve the efficiency and effectiveness of VET by sharing the resources available in schools and industry.

A new program which is called the dual system or [the Two-plus-one Program] was introduced in 1994. The program comprises two years of vocational education in schools, followed by one year of practical hands-on field training in industrial based companies. In 1998 the program was operated in 40 designated model schools and 9,110 students are taking part in on-the-job training at 1,928 industrial companies. As of 1999, the program was operated in 37 technical high schools with participation of 17,283 students. The content of curriculum is as follows:
Cooperation between industry and colleges has been promoted to provide skilled manpower to meet the industrial demands. Junior college education contributes to the development of industry through the following activities: internship for students, industry field training of junior college faculty, education of industry employees in junior colleges, joint research and exchange of techniques and information between colleges and industry, the establishment and operation of the committee on Cooperation between Industry and College, and the operation of curriculum at the request of the industrial entities.

Based on the Educational Reform Program, a new program which is called the customized training system responding to industrial demands was introduced to junior college. The program was implemented in more than ninety junior colleges of which 59 colleges were provided financial support from the government in 2000.

3) Credit Bank System

On the basis the Proposal, Credit Bank System gained government endorsement through a legal act, passed on January 3, 1997. Between May and December, the accreditation system and standardized curriculum were developed and the first applications for accreditation for educational institutions and curricula were evaluated. In March 1998, the first stage of
implementation began.

As the foundation for the construction of open and lifelong education, this system enables every learner who has completed courses which are subjectively evaluated and authorized to earn college credit. When credits are accumulated and meet certain standards, he or she can receive a college degree.

Each citizen can take part in the credit system, if one wants to take a course for a degree, one should be a high school graduate or equivalent. The way to receive credit are that i) one has finished a certain course of education which is evaluated and acknowledged, ii) one has passed the tests set for self-study, iii) one has the certificate set by the law of certification and iv) one has received credit through part-time registration.

After completing the necessary credit requirements (140 credits for a bachelors degree, 80 credits for a two-year associate diploma, and 120 credits for three-year associate diploma), graduation candidates may submit a Degree Application to either Korea Education Development Institute(KEDI) or their provincial offices of education. These applications are reviewed by the Screening Committee for Academic Credit Accreditation at KEDI, and then forwarded to the Ministry of Education(MOE) for final approval. Candidates can be awarded a degree by the MOE or they may receive a degree directly from a university or college.

4) Web-based Training

Information technology has opened up an opportunity for a new approach to technology-based learning. Technology-based learning should play a crucial role in the development of a culture of lifelong learning with
the capacity to empower learners by providing them with multiple new pathways to meet their education and training needs.

The new technologies must be harnessed to provide widespread access to VET. They should be used to make distance irrelevant and to render curriculum-based knowledge and vocational guidance information more easily accessible to all. They have the potential to offer flexibility in time and location to VET delivery.

There has been widespread recognition that the role of web-based training is on the increase in vocational education and training. The Ministry of Labor introduced a program to support web-based training. In 1998 seven web-based training institutions were designated by the Ministry of Labor as training institutions to be covered by employment insurance law and employers of employees taking web-based training courses were provided financial support from the employment insurance fund. The program was implemented as a pilot scheme in 67 courses with 7,187 employees. After the experimentation of the program for three months, web-based training was stated as a method of vocational training in the Act on Promoting Workers' Vocational Training which has been effective since January 1999.

From the beginning of January, 1999 to the end of September, 1999, the number of employees who took part in web-based training was 35,949. A survey of workers conducted by KRIVET in August of 2000 shows that 2.5 percent of respondents have taken web-based training to upgrade their knowledge and skills.
Topic 2

Innovating the vocational education and training in terms of teacher training, programs, evaluations, etc.
Developments in Australia's Vocational Education and Training System

Chris Robinson Managing Director
National Centre for Vocational Education Research

Presented by Dr Andy Smith
General Manager, Research and Evaluation
National Centre for Vocational Education Research

Abstract

The major developments in Australia's technical vocational education and training (TVET) system over the past 20-30 years are described in this paper. The TVET system in Australia is formally known as the Vocational Education and Training system (VET). So I will refer to the VET system rather than the TVET system throughout the rest of the paper. These major changes over the past 30 years include:

- the establishment of the national VET system with nationally funded Technical and Further Education (TAFE) Colleges in the 1970s
- the establishment of traineeships to complement the traditional apprenticeship system in the 1980s
- the decision to implement competency-based training in the late 1980s
- a raft of more recent reforms and developments during the 1990s, including the development of an industry-led training system and a prominent role played by industry training bodies have played in the development of national training packages.

The structure of the Australian VET system and major trends in participation and outcomes are presented. Key developments are that
total VET participation reached 1.5 million (or 12% of the working age population) by 1998, and the total number of apprentices and trainees reached a record 250,000 during 1999.

The formal publicly funded VET system amounts to some $A4 billion or 0.8% of Gross Domestic Product (GDP). In addition employers invest a further $4.7 billion in structured and unstructured training. The nature of this training is also described.

Details of the VET certification system in Australia is described, including information about the Australian Qualifications Framework, the accreditation of VET courses and programs and the process of registration and accreditation of training providers.

Some of the key and distinguishing features of Australias VET system are then considered. These include

- having a clear national policy for VET
- moving towards lifelong learning
- developing advanced and high-level skills training
- competency-based training
- the development of an industry-led training sector
- flexible delivery and the modularisation of training delivery
- establishing competition amongst training providers
- a strong system of public training institutions
- a framework for the national recognition of VET
- a focus on outputs and outcomes
- the role of research and evaluation to improve VET.

Finally, consideration is given to the likely impact on VET of some emerging issues, which will be critical to the future development of VET in Australia. These are the impact of the changing nature of work, learner and enterprise demands for far more customisation of training, the profound implications of a rapidly aging population and the challenges to be faced in embedding a continuous and lifelong learning culture in society.
1. Introduction

Australia has put substantial reforms into place to its vocational education and training (VET) system over the past 20 to 30 years in order to try to better meet a rapidly changing set of economic and social needs.

Considerable emphasis has been placed on the development of a VET system that is able to develop the contemporary skills of the workforce to enable Australia to better adjust to the rapid technological change and the increasing globalisation of the world economy.

The Australian VET system has evolved over a long period of time. Some of the key developments and milestones are:

- early 1800s the transportation of the craft based apprenticeship system from England
- early 1800s to 1960s
  - the gradual expansion of apprenticeships across different craft areas/occupations, but in a different way in different colonies or states and territories
  - the gradual establishment of mechanics institutes, technical colleges, technical secondary schools and other technical, vocational education and training institutions in different ways in different jurisdictions (with little national government funding)
- 1970s the establishment of the modern VET system through
  - the establishment of a national system of publicly funded Technical and Further Education (TAFE) institutes and the introduction of significant national government financial support for TAFE following the release of the Kangan Report (Kangan 1975)
  - the introduction of national government subsidies for apprenticeships
early 1980's—the National Centre for Vocational Education Research (NCVER) is established, then it was called the TAFE National Research and Development Centre

mid 1980's—the establishment of the traineeship system to compliment apprenticeships following the release of the Kirby Report in 1985 (Kirby 1985)

late 1980's—the decision to implement competency-based training

1990—the number of apprentices reaches a yet to be broken record of just over 160,000 (but traineeships are still less than 12,000 at this time)

1992—the Australian National Training Authority (ANTA) is established

1992—the total number of VET students in Australia reaches 1 million for the first time

1995—the Australian Qualifications Framework (AQF) is established to bring all post compulsory education and training qualifications into the one national system of qualifications

early 1990's—competition to TAFEs monopoly on VET provision is gradually introduced through some tendering of publicly funded VET to private training providers

mid 1990's—the decision is taken to start developing National Training Packages to be introduced across a wide range of industries and occupations

1998—the New Apprenticeship system commences encompassing the former apprentice and traineeship systems, including the commencement of user choice

1998—the Australian Recognition Framework (ARF) is established

1998—the number of VET students in Australia reaches a record 1.5 million

1999—the number of New Apprentices (ie apprentices and trainees) reaches 250,000
These developments and the contemporary VET system in Australia are described in this paper. In doing so the work of Robinson 1999a and Alto et al 2000 is drawn upon. Further information about Australias training system is given in Smith 1998 and 1999. Historical developments in Australias VET system are described in detail in Goozee 1995 and Ray (forthcoming).

Notwithstanding the very significant differences between China and Australia in terms of culture, population size and so forth, there are some considerable similarities in the training issues being faced in both countries. For instance, both countries recognise the importance of training in skilling the workforce to meet the challenges of the information age. This paper has been developed to provide detailed information about VET developments in Australia.
2. The structure of Australia's VET sector

2.1 The pathways for gaining vocational skills

There are many and various ways in which people in Australia gain the skills needed to enter the workforce for the first time, to re-enter the workforce, to retrain for a new job or to upgrade skills for an existing job.

These pathways include:

◆ gaining job-related skills through general secondary education or through a specific VET program run in schools
◆ gaining work skills through undertaking a VET module offered by a Technical and Further Education (TAFE) institute or another registered VET provider
◆ gaining more intensive work skills through participation in a full VET course offered by a TAFE institute or other registered VET provider leading to a certificate or diploma qualification
◆ undertaking an apprenticeship or traineeship with a registered VET provider that usually combines formal training with on-the-job training
◆ gaining of professional skills through a graduate or post-graduate award program at a university
◆ job related skills gained through training provided to employees by employers which may be:
  ◇ formal and lead to a nationally accredited certificate or diploma
  ◇ structured but not articulated to a formally recognised qualification
  ◇ unstructured training provided on-the-job that has no predetermined training plan or organised content

A myriad of other training or adult education programs exist in Australia that are job-related to varying degrees. They are provided on a
fee-for-service basis by various private (registered or unregistered) training organisations and adult and community education organisations.

Australia does not have a widespread system of specialist vocational secondary schools or technical high schools. Several decades ago some parts of Australia did have such a system. However, today specific vocational programs within general secondary schools are becoming increasingly popular, and a few specialist vocational high schools are beginning to re-emerge.

However, not all of the above education and training pathways are considered to be part of the vocational education and training sector in Australia. The VET sector normally refers to a recognised VET program undertaken through a registered training provider. Most VET programs are undertaken in a TAFE institute, although private training organisations and adult community education providers are becoming increasingly important providers of VET. Some enterprises, schools and universities are registered VET providers, although most schools and universities are not registered providers of formal VET programs.

Thus most university programs, general secondary education and instructional training provided by employers and most programs provided on a fee for service basis by private and community training organisations are not considered part of the formal VET sector in Australia. Nevertheless, these other skill formation pathways are also important in the total development of work-related skills in Australia.

2.2 The major organisations involved in VET

Australia has a complex VET system as can be seen from Figure 1. The national system is a joint responsibility of the national (i.e...
Commonwealth) government and the eight State and Territory (ie provincial) governments.

The key national decision making body is a council of ministers responsible for training from the national and State/Territory governments (known as the ANTA Ministerial Council MINCO). This Ministerial Council also takes account of the decisions of a larger national ministerial council namely, the Ministerial Council for Employment, Education, Training and Youth Affairs (MCEETYA). MCEETYA frames national policy across the wider policy sphere of employment, education, training and youth affairs issues.

The key national agency with responsibility for advising on national planning, funding and strategic objectives to achieve a national focus for VET in Australia ANTA. ANTA is a Commonwealth statutory authority that is governed by an industry board.

The national government through the Commonwealth Department of Education, Training and Youth Affairs(DETYA) and each State and Territory training authority have a prime policy and operational responsibilities to implement agreed national VET decisions in their respective jurisdictions.

The training authority in each State and Territory is responsible for:
- on-going management of government providers and registration of non-government providers in vocational education and training
- implementation of the national recognition framework, which is progressively replacing the former national curriculum arrangements
- management of the State or Territory training profile
- allocation of funds to vocational education and training providers to meet targets specified in the State or Territory training profile and ANTA
growth-through-efficiency targets

collecting and reporting information under agreed national reporting arrangements.

An important recent trend has been the combining of State and Territory departments for vocational education and training with State and Territory education departments, as part of the program to promote closer links between secondary education and vocational education and training and to deliver programs which combine education and vocational education and training to students who are still at school.

Australia has a highly developed set of industry training advisory bodies (ITABs) operating at both the national and State/Territory levels. ITABs provide advice on key training issues within a particular industry, and their boards are comprised of industry, business and labour union representatives. National ITABs receive financial support from ANTA to do a variety of things. Most important is to participate in national planning of the VET system and to develop national industry standards for training.

The National Centre for Vocational Education Research (NCVER) is the other major national government VET body in Australia. NCVER has responsibilities for developing and implementing Australia's national VET research and evaluation effort, together with the collection and reporting of national VET statistics. NCVER Limited is a non-profit company owned by Australian Ministers for Training.

Australia's governments have also established a non-profit company called Australian Training Products Limited to develop and publish national training products and materials.
There is also an array of other national advisory bodies and committees involved in the VET sector.

The roles and functions of the major organisations involved in VET in Australia are summarised in Table 1.

Table 1: Major organisations in the Australian vocational education and training system

<table>
<thead>
<tr>
<th>Body or organisation</th>
<th>Acronym</th>
<th>Role and responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministerial Council for Employment, Education, Training</td>
<td>MCEETYA</td>
<td>National policy for all of employment, education, training and youth affairs</td>
</tr>
<tr>
<td>and Youth Affairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministerial Council for Vocational Education and Training</td>
<td>MINCO</td>
<td>National policy for vocational education and training</td>
</tr>
<tr>
<td>Department of Education, Training and Youth Affairs</td>
<td>DETYA</td>
<td>National policy advice, funding, strategic planning etc for education, training and youth affairs</td>
</tr>
<tr>
<td>Australian National Training Authority</td>
<td>ANTA</td>
<td>National policy advice, strategic planning etc for vocational education and training</td>
</tr>
<tr>
<td>State and Territory training boards and training authorities (eight)</td>
<td>Various</td>
<td>State/territory policy, planning, system management etc for vocational education and training</td>
</tr>
<tr>
<td>National industry training advisory boards</td>
<td>National ITABs</td>
<td>Identify and advise on training needs nationally for specific industries</td>
</tr>
<tr>
<td>State/territory industry training advisory boards</td>
<td>State/Territory ITABs</td>
<td>Identify and advise on training needs at state/territory level for specific industries</td>
</tr>
<tr>
<td>Australian Qualifications Framework Advisory Board</td>
<td>AQFAB</td>
<td>Maintains and reviews the Australian Qualifications Framework (AQF)</td>
</tr>
<tr>
<td>Australian Training Products Limited</td>
<td>ATP</td>
<td>Develops and publishes national training products and materials</td>
</tr>
<tr>
<td>National Centre for Vocational Education Research Ltd</td>
<td>NCVER</td>
<td>Key agency for vocational education and training research, evaluation, information and statistics at all levels</td>
</tr>
</tbody>
</table>

Source: NCVER
2.3 The providers of VET

In the past, vocational education and training in Australia was delivered exclusively by TAFE institutes, with overall strategic directions, planning and funding provided by State and Territory training authorities. In 1992 ANTA was established to ensure greater co-ordination of policy and planning in vocational education and training and to co-ordinate the distribution of national funding to States and Territories.

This means in Australia, vocational education and training programs are now delivered by a wide range of providers in both government and private sectors, as shown below (Table 2).

Table 2: Providers of vocational education and training in Australia, by sector

<table>
<thead>
<tr>
<th>Government sector</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical and Further Education (TAFE) institutes</td>
<td>Private providers not in receipt of government funds</td>
</tr>
<tr>
<td>Agricultural colleges</td>
<td>Private business colleges</td>
</tr>
<tr>
<td>Some higher education institutions</td>
<td>Enterprises providing training to their employees</td>
</tr>
<tr>
<td>Multi-sector providers and campuses</td>
<td>Suppliers providing training in product use</td>
</tr>
<tr>
<td>Some secondary schools</td>
<td>Unregistered community providers</td>
</tr>
<tr>
<td>Registered community providers</td>
<td></td>
</tr>
<tr>
<td>Aboriginal education providers</td>
<td></td>
</tr>
<tr>
<td>Private providers under contract to governments</td>
<td></td>
</tr>
</tbody>
</table>

Source: NCVER

Today VET programs are provided by:
- around 100 TAFE or other government institutes (such as agricultural colleges providing VET programs) operating at some 1000 separate locations around Australia
- some 600 community education centres
Almost 1500 other registered training providers such as private training organisations, schools, business enterprises who provide formal training, special industry training centres, etc.

It is important to note that there are over 3500 registered training organisations in Australia, so not all of them are providing publicly funded VET programs in any one year.

Increasingly greater amounts of public VET funding are put up to competitive tendering amongst TAFE, community-based and private training providers.

2.4 The funding of VET

VET in Australia is funded from government and private sources (eg. companies purchasing training for their employees). Individuals also make a contribution through the payment of fees. Government funding of VET in Australia totalled $A4 billion per year in 1997 and 1998. Around 30% was provided by the national government, and the remainder by State and Territory (ie. provincial) governments. At the provider level specific allocations are made by government training authorities to TAFE institutes, other public training providers or a host of community and private training providers for them to provide VET training to industry and individual training clients.

The level of public funding of VET in Australia of $A4 billion represented almost 0.8% of total GDP in 1997. Australian governments spent around 5.7% of GDP on all forms of education and training (ie schooling, VET and universities) in 1994 (Lenahan, Burke and Hing Tong Ma 1998, p19).
3. Australian VET Participation and Outcomes

3.1 Participation in VET

The number of students/trainees in publicly funded VET programs in Australia has grown very strongly over the past decade. Ten years ago under one million people participated in VET in Australia, as shown in Table 3. Today over 1.5 million people are undertaking a publicly-funded VET program. This represents over 12% of the entire Australian population aged 15 to 64 years (ie the working age population).

Table 3: The number of VET students/trainees in Australia: 1988 to 1998

<table>
<thead>
<tr>
<th>Year (a)</th>
<th>Males</th>
<th>Females</th>
<th>Persons</th>
<th>Proportion who are female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>503.5</td>
<td>448.0</td>
<td>951.6</td>
<td>47.1</td>
</tr>
<tr>
<td>1989</td>
<td>492.7</td>
<td>439.6</td>
<td>932.6</td>
<td>47.1</td>
</tr>
<tr>
<td>1990</td>
<td>534.1</td>
<td>432.7</td>
<td>966.8</td>
<td>44.8</td>
</tr>
<tr>
<td>1991</td>
<td>541.1</td>
<td>444.8</td>
<td>985.9</td>
<td>45.1</td>
</tr>
<tr>
<td>1992</td>
<td>572.1</td>
<td>470.4</td>
<td>1042.5</td>
<td>45.1</td>
</tr>
<tr>
<td>1993</td>
<td>606.9</td>
<td>514.5</td>
<td>1121.4</td>
<td>45.9</td>
</tr>
<tr>
<td>1994</td>
<td>612.3</td>
<td>519.2</td>
<td>1131.5</td>
<td>45.9</td>
</tr>
<tr>
<td>1995</td>
<td>672.2</td>
<td>600.5</td>
<td>1272.7</td>
<td>47.2</td>
</tr>
<tr>
<td>1996</td>
<td>706.3</td>
<td>641.1</td>
<td>1347.4</td>
<td>47.6</td>
</tr>
<tr>
<td>1997</td>
<td>756.9</td>
<td>701.7</td>
<td>1458.6</td>
<td>48.1</td>
</tr>
<tr>
<td>1998</td>
<td>790.7</td>
<td>744.5</td>
<td>1535.2</td>
<td>48.5</td>
</tr>
</tbody>
</table>

Notes: (a) Minor changes were made to the collection arrangements or the scope of the series in 1993 and 1994. Moreover, community providers of VET were included since 1995 and private providers since 1996.
(b) Numbers who participated at some time throughout the calendar year.

Source: NCVER, 1998a

Most VET participants in Australia are part-time students. Half of all VET participants in 1998 were enrolled in programs of under 100 hours of
training. Only around 10% of Australia's VET students are undertaking course as full-time full-year students.

As shown in Table 3 the proportion of female students/trainees in VET in Australia has now almost reached 50%.

The proportion of Australia's VET students/trainees who are school age students, early secondary school leavers or entry level trainees is relatively small. Only 20% of all VET students/trainees are under 20 years of age, although they account for one-third of the total training hours delivered (see Table 4).

Most VET participants are adults who are training or re-training for job related purposes. One quarter of all VET participants in Australia are over 40 years of age.

In fact, in Australia a VET student/trainee is far more likely to be an adult who is already employed and upgrading his or her job skills, than a young person who is studying in VET to gain an entry-level vocational qualification.

Australia is a highly urbanised country, yet around one-third of VET participants are undertaking their VET program outside of a major metropolitan area (as shown in Table 4).
Australia has progressively improved its VET delivery to indigenous people, migrants and people whose first language is not English, to the point where such groups are equitably represented in the total VET student/trainee population. However, people with disabilities are still under-represented in VET.

This level of participation has resulted in Australian participation rates
in VET being high. As mentioned earlier some 12% of the entire 15-64 year old population participated in VET in 1997. In terms of the different age groups, VET participation rates in 1997 were:
- nearly 20% for 15-19 year olds
- 17% for 20-24 year olds
- nearly 7% for 25-64 year olds.

This does not include participation in other forms of education such as in schools and universities. Estimates of total education participation rates in all forms of education and training in Australia in the relevant age cohorts in 1995 were that:
- the net primary school participation rate was 98%
- the net secondary school participation rate was 89%
- the tertiary (ie VET and university) participation rate of youth was 72%
  (Lenahan, Burke, Hing Tong Ma 1998, p22).

3.2 The amount and type of VET training provided

The total amount of publicly-funded training provided by the VET sector in Australia is shown in Table 5. The key features are:
- almost 1.5 million VET clients (ie students or trainees) enrolling in a VET program during 1997
- people enrolled in over 1.8 million VET courses during 1997, and between them they enrolled in almost 10 million VET modules
- over 300 million hours of training were delivered by the VET sector in 1997.
Table 5: Indicators of VET training activity in Australia: 1997

<table>
<thead>
<tr>
<th>Indicator</th>
<th>TAFE &amp; other government</th>
<th>Community education providers</th>
<th>Private providers &amp; other</th>
<th>Total of all providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clients (ie students/trainees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number ('000)</td>
<td>1140.8</td>
<td>225.2</td>
<td>92.6</td>
<td>1458.6</td>
</tr>
<tr>
<td>Proportion (%)</td>
<td>78.2</td>
<td>15.4</td>
<td>6.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Course enrolments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number ('000)</td>
<td>1451.1</td>
<td>291.6</td>
<td>99.6</td>
<td>1844.2</td>
</tr>
<tr>
<td>Proportion (%)</td>
<td>78.9</td>
<td>15.8</td>
<td>5.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Module enrolments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number ('000)</td>
<td>8738.7</td>
<td>365.6</td>
<td>776.5</td>
<td>9880.7</td>
</tr>
<tr>
<td>Proportion (%)</td>
<td>88.4</td>
<td>3.7</td>
<td>7.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Training hours delivered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number (million)</td>
<td>272.0</td>
<td>11.0</td>
<td>19.2</td>
<td>302.2</td>
</tr>
<tr>
<td>Proportion (%)</td>
<td>90.0</td>
<td>3.6</td>
<td>6.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: NCVER 1998a

Some two-thirds of all training hours provided by VET in Australia were in just four fields of study, as shown in Table 6. These are:
- business, administration and economics courses account for almost 20% of total training hours in 1997
- TAFE multi-field education (ie general vocational education, languages and preparatory courses) with just over 17% of total training hours
- engineering and surveying courses with just under 17% of total VET training hours in 1997
- services, tourism and hospitality and transportation courses accounting for 12% of total training hours delivered in 1997.
Table 6: The amount of training provided in each field of study in Australia: 1997

<table>
<thead>
<tr>
<th>Field of study</th>
<th>Proportion of training hours provided (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal husbandry, land &amp; marine resources</td>
<td>4.6</td>
</tr>
<tr>
<td>Architecture &amp; building</td>
<td>6.5</td>
</tr>
<tr>
<td>Arts, humanities &amp; social sciences</td>
<td>8.2</td>
</tr>
<tr>
<td>Business administration &amp; economics</td>
<td>19.3</td>
</tr>
<tr>
<td>Education</td>
<td>1.3</td>
</tr>
<tr>
<td>Engineering &amp; surveying</td>
<td>16.8</td>
</tr>
<tr>
<td>Health &amp; community services</td>
<td>8.5</td>
</tr>
<tr>
<td>Law &amp; legal studies</td>
<td>0.6</td>
</tr>
<tr>
<td>Science</td>
<td>4.5</td>
</tr>
<tr>
<td>Veterinary science &amp; animal care</td>
<td>0.2</td>
</tr>
<tr>
<td>Services, hospitality &amp; transport</td>
<td>12.1</td>
</tr>
<tr>
<td>TAFE multi-field education</td>
<td>17.4</td>
</tr>
<tr>
<td>Other</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL HOURS (million)</td>
<td>302.2</td>
</tr>
</tbody>
</table>

Source: NCVER 1998a

Somewhat similar patterns are observed when training activity is considered in terms of module enrolments in each discipline group, as shown in Table 7. Module discipline classifications in Table 7 describe the area of learning for each module undertaken independently from the course in which it is taken (noting the fields of study classification used earlier in Table 6 relates to a classification of VET courses undertaken).

One-fifth of all module enrolments are in the administration, business economics and law area. The other important areas of VET module enrolments are mathematics and computing (13.2%), engineering and processing (12.4%) and social, education and employment skills (12.3%). The overall pattern of VET taken in Australia can be summarised by
referencing the information in Figure 2. Most enrolments are in the trades and skilled training area.

**Figure 2: Course enrolments by type of VET study in Australia: 1997**

![Course enrolments by type of VET study in Australia: 1997](image)

Source: NCVER 1998a

**Table 7: Module enrolments in each area of learning in Australia: 1997**

<table>
<thead>
<tr>
<th>Area of learning (ie discipline)</th>
<th>Proportion of module enrolments (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities</td>
<td>7.2</td>
</tr>
<tr>
<td>Social studies</td>
<td>1.2</td>
</tr>
<tr>
<td>Education</td>
<td>1.3</td>
</tr>
<tr>
<td>Sciences</td>
<td>2.6</td>
</tr>
<tr>
<td>Mathematics &amp; computing</td>
<td>13.2</td>
</tr>
<tr>
<td>Visual &amp; performing arts</td>
<td>3.0</td>
</tr>
<tr>
<td>Engineering &amp; processing</td>
<td>12.4</td>
</tr>
<tr>
<td>Health sciences</td>
<td>8.4</td>
</tr>
<tr>
<td>Administration, business, economics &amp; law</td>
<td>20.2</td>
</tr>
<tr>
<td>Building &amp; environment</td>
<td>4.5</td>
</tr>
<tr>
<td>Agriculture &amp; renewable resources</td>
<td>4.2</td>
</tr>
<tr>
<td>Hospitality tourism &amp; personnel services</td>
<td>9.5</td>
</tr>
<tr>
<td>Social, educational &amp; employment skills</td>
<td>12.3</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**TOTAL ('000):** 9880.7

Source: NCVER 1998a
Table 8: Course enrolments by qualification level in Australia: 1996

<table>
<thead>
<tr>
<th>Qualifications</th>
<th>Number of enrolments ('000)</th>
<th>Proportion of enrolments (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full qualifications(^{(a)}) still under old system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>7.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Associate Diploma</td>
<td>107.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Advanced Certificate – post trade</td>
<td>9.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Advanced Certificate – other</td>
<td>68.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Certificate – trade</td>
<td>85.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Certificate – n.e.c.</td>
<td>273.4</td>
<td>15.3</td>
</tr>
<tr>
<td>Sub-total in old system</td>
<td>551.7</td>
<td>30.9</td>
</tr>
<tr>
<td>Full qualifications(^{(a)}) under AQF framework</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Diploma</td>
<td>28.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Diploma</td>
<td>73.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Certificate IV</td>
<td>69.0</td>
<td>3.9</td>
</tr>
<tr>
<td>Certificate III</td>
<td>130.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Certificate II</td>
<td>99.0</td>
<td>5.5</td>
</tr>
<tr>
<td>Certificate I</td>
<td>54.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Senior Secondary</td>
<td>6.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Sub-total AQF</td>
<td>461.3</td>
<td>25.8</td>
</tr>
<tr>
<td>Sub-qualification level statements of attainment etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statements of Attainment</td>
<td>269.6</td>
<td>15.1</td>
</tr>
<tr>
<td>Certificates of Competency</td>
<td>20.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Certificates of Proficiency</td>
<td>1.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Endorsements to Certificates</td>
<td>3.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Sub-total statements, etc.</td>
<td>294.7</td>
<td>16.5</td>
</tr>
<tr>
<td>Non-award/other</td>
<td>478.6</td>
<td>26.8</td>
</tr>
<tr>
<td><strong>TOTAL COURSE ENROLMENTS</strong></td>
<td><strong>1786.3</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Note: (a) Qualifications awarded or being sought
Source: Robinson 1998

Information about enrolments in courses leading to different qualifications levels in shown in Table 8.

The important point about the information in Table 8 is that only a little over half of all course enrolments in 1996 were in programs leading to a qualification. However, a further 16.5% of course enrolments were in programs
leading to statements of attainment (issued to those partially completing a qualification and indicating the units of competency achieved under nationally endorsed competency standards) or certificates of competency or proficiency, etc.

The remaining enrolments (26.8% in 1996) were in non-award courses and courses not leading to a formally recognised qualification (or not leading to the issue of a statement of attainment, etc).

3.3 Outputs and outcomes of VET

Some 65% of all modules undertaken in Australia's VET system in 1997 were completed successfully as shown in Table 9. This means that a pass or credit for prior learning or studies done elsewhere was achieved in over 90% of cases where modules were both completed and assessed.

<table>
<thead>
<tr>
<th>Module Outcomes</th>
<th>Proportion of module enrolments (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed and successful outcome gained</td>
<td></td>
</tr>
<tr>
<td>Pass</td>
<td>59.2</td>
</tr>
<tr>
<td>Recognition of prior learning credit granted</td>
<td>2.3</td>
</tr>
<tr>
<td>Credit transfer granted for subjects completed elsewhere</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Total successful</strong></td>
<td><strong>64.8</strong></td>
</tr>
<tr>
<td>Assessed &amp; successful outcome not gained</td>
<td></td>
</tr>
<tr>
<td>Fail</td>
<td>4.9</td>
</tr>
<tr>
<td>Result withheld</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Total unsuccessful</strong></td>
<td><strong>6.1</strong></td>
</tr>
<tr>
<td>Not assessed</td>
<td></td>
</tr>
<tr>
<td>Continuing in studies</td>
<td>5.0</td>
</tr>
<tr>
<td>Satisfactorily completed class hours but not assessed</td>
<td>5.7</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Total not assessed</strong></td>
<td><strong>19.5</strong></td>
</tr>
<tr>
<td>Outcome not reported</td>
<td>8.7</td>
</tr>
<tr>
<td><strong>Total modules undertaken (%)</strong></td>
<td><strong>100.0</strong></td>
</tr>
<tr>
<td><strong>TOTAL MODULES UNDERTAKEN ('000)</strong></td>
<td><strong>9880.7</strong></td>
</tr>
</tbody>
</table>

Source: NCVER 1998a
The information in Table 9 also shows that just under 5% of all module enrolments culminated in a fail. Some 20% were not assessed or were enrolments in modules that continued past the end of the 1997 calendar year.

Another facet of the outputs from VET in Australia is the number of qualifications being issued. The number of qualifications reported as being issued in 1997 against the AQF or equivalent is shown in Table 10. The AQF is described fully in Section 5 of this paper.

Of the full VET qualifications awarded in Australia:
- only 15% were diplomas or advanced diplomas
- some 17% were Certificate IV level qualifications
- some 40% were Certificate III qualifications
- the remaining 28% were Certificate I and II level qualifications.

Table 10: VET Qualifications issued in Australia: 1997

<table>
<thead>
<tr>
<th>Type of awards issued(a)</th>
<th>Number (1000)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full qualifications awarded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diplomas and Advanced Diplomas</td>
<td>23.8</td>
<td>7.5</td>
</tr>
<tr>
<td>AQF Certificate IV &amp; equivalent</td>
<td>27.2</td>
<td>8.6</td>
</tr>
<tr>
<td>AQF Certificate III &amp; equivalent</td>
<td>68.5</td>
<td>21.6</td>
</tr>
<tr>
<td>AQF Certificate I or II &amp; equivalent</td>
<td>36.5</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Total Full Qualifications</strong></td>
<td><strong>156.0</strong></td>
<td><strong>49.2</strong></td>
</tr>
<tr>
<td>Sub Qualification Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other certificates and endorsements</td>
<td>12.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Statements of attainment</td>
<td>65.8</td>
<td>20.7</td>
</tr>
<tr>
<td>Statements from courses of less than 50 hours duration</td>
<td>83.3</td>
<td>26.2</td>
</tr>
<tr>
<td><strong>Total sub qualification certificates/statements</strong></td>
<td><strong>161.5</strong></td>
<td><strong>50.8</strong></td>
</tr>
<tr>
<td><strong>TOTAL AWARDS ISSUED</strong></td>
<td><strong>317.5</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Note: (a) Awards reported as being issued
Source: NCVER 1998a
It is important to note that the above qualifications data are incomplete because not all awards issued are reported or because not everyone who is eligible for an award issued with one. Arrangements to improve awarding practices and reporting are currently under review in Australia.

The most important outcome from VET participation is an employment outcome. After all most VET students in Australia cite a job-related reason as the main reason for undertaking VET in the first place. For example the results of NCVERs 1997 TAFE Graduate Destination Survey show that the main reasons graduates gave for undertaking a TAFE course in 1996 were:

- to get a job or start a business (28.8%)
- for interest or personal development (13.6%)
- to get extra skills for an existing job (13.1%)
- to try for a different career (12.3%)
- to get a better job or promotion (12.0%)
- it was a requirement of any job (10.5%)
- to get into another course of study (6.4%)
- other reasons (2.5%).

The same survey traced the employment status of graduates as at May 1997, who had earlier undertook their VET study and graduate sometime, during 1996. As shown in Table 11 some 71% of graduates had obtained employment by 30 May 1997. Most were in full time jobs. The employment outcomes were better for males, with 78% having jobs, than for females, with only 66% having jobs.
Table 11: Employment outcomes of TAFE graduates in Australia: 1997

<table>
<thead>
<tr>
<th>Labour Force Status at 30 May 1997</th>
<th>TAFE Graduates who graduated during 1996 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>Full Time</td>
<td>63.4</td>
</tr>
<tr>
<td>Part Time</td>
<td>10.6</td>
</tr>
<tr>
<td>Employed but type not stated</td>
<td>3.7</td>
</tr>
<tr>
<td>Total</td>
<td>77.7</td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
</tr>
<tr>
<td>Seeking full time work</td>
<td>10.8</td>
</tr>
<tr>
<td>Seeking part-time work</td>
<td>2.4</td>
</tr>
<tr>
<td>Total</td>
<td>13.2</td>
</tr>
<tr>
<td>Not in the labour force</td>
<td>9.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: NCVER 1997a

The survey also shows some 15% were unemployed and looking for full-time or part-time work, and just under 14% were not in the labour force (ie neither employed or actively looking for a job).

Of course not all graduates were unemployed at the time of commencing their course. Some 36% had a full-time job before commencing their course, noting that rate rose to over 47% after graduation. Similarly, some 25% had part-time jobs before commencing their courses. The part-time employment rate fell to 20% after graduation.

These results show there are two key aspects of the employment outcomes being obtained from VET in Australia. These are:
- a significant improvement in overall employment outcomes arises from successfully completing a significant VET course
- an even greater conversion from part-time to full-time work arises as a result of such VET study.

Another feature of the outcomes from VET in Australia concerns the
satisfaction of employers with the training provided, and the impact that such training has had on business productivity.

As shown in Table 12, some 78% of all employers of VET graduates in Australia are satisfied or very satisfied with the VET training provided. Large enterprises with 100 or more employees are slightly more satisfied than are employers running medium or small sized enterprises. Yet the level of satisfaction varies only marginally with the size of the business.

Table 12: Employer satisfaction with VET in Australia: 1997

<table>
<thead>
<tr>
<th>Satisfied or very satisfied with VET training provided</th>
<th>Proportion of employers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large enterprises (100 + employees)</td>
<td>84</td>
</tr>
<tr>
<td>Medium enterprises (20-99 employees)</td>
<td>80</td>
</tr>
<tr>
<td>Small enterprises (1-19 employees)</td>
<td>77</td>
</tr>
<tr>
<td>ALL EMPLOYERS</td>
<td>78</td>
</tr>
</tbody>
</table>

Source: NCVER 1997b

Another critical finding from the NCVERs Employer Satisfaction Survey is that nearly three quarters of employers in Australia who have employed a VET graduate within the last two years have reported an increase in productivity that they attribute to the skills received from VET.

3.4 The apprenticeship and traineeship system

A very significant feature of Australia's VET system is the apprenticeship and traineeship system. The apprenticeship system has been in place in one form or another since 1805 in Australia, having developed from the British system of indentured apprentices that has operated for hundreds of years.

Traditionally, apprenticeships in Australia involved people under 20 years of age, 4 years in a training contract, typically with one day per week
off-the-job training in TAFE college or other VET provider and 4 days per
week training on-the-job. Apprenticeships were restricted to certain
trade-based occupations, largely in the manufacturing, building and
construction, printing and hairdressing areas. Apprentices are paid lower
wages than are fully qualified and skilled tradespersons in the same field.

In 1985 Australia introduced a new form of structured training for
young people called traineeships. The intention was to expand structured
training for young people to a range of new industry areas not covered by
traditional apprenticeships such as agriculture, horticulture, manufacturing
utilities and transport and storage. More recently areas such as sales in
retailing and tourism and hospitality have become more important.

Table 13: Apprentices and trainees in Australia: 1985 to 1999

<table>
<thead>
<tr>
<th>Date</th>
<th>Apprentices</th>
<th>Trainees</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>128.6</td>
<td>0.0</td>
<td>128.6</td>
</tr>
<tr>
<td>1986</td>
<td>130.4</td>
<td>1.0</td>
<td>131.4</td>
</tr>
<tr>
<td>1987</td>
<td>138.9</td>
<td>6.4</td>
<td>145.3</td>
</tr>
<tr>
<td>1988</td>
<td>147.1</td>
<td>9.2</td>
<td>156.3</td>
</tr>
<tr>
<td>1989</td>
<td>151.7</td>
<td>12.2</td>
<td>163.9</td>
</tr>
<tr>
<td>1990</td>
<td>161.0</td>
<td>11.8</td>
<td>172.8</td>
</tr>
<tr>
<td>1991</td>
<td>151.0</td>
<td>9.2</td>
<td>160.2</td>
</tr>
<tr>
<td>1992</td>
<td>142.9</td>
<td>9.0</td>
<td>151.9</td>
</tr>
<tr>
<td>1993</td>
<td>122.7</td>
<td>14.8</td>
<td>137.5</td>
</tr>
<tr>
<td>1994</td>
<td>123.3</td>
<td>7.8</td>
<td>131.1</td>
</tr>
<tr>
<td>1995</td>
<td>122.9</td>
<td>12.0</td>
<td>135.8(a)</td>
</tr>
<tr>
<td>1996</td>
<td>124.4</td>
<td>29.7</td>
<td>154.0(a)</td>
</tr>
<tr>
<td>1997</td>
<td>123.1</td>
<td>47.8</td>
<td>170.9(a)</td>
</tr>
<tr>
<td>1998</td>
<td>na</td>
<td>na</td>
<td>194.2</td>
</tr>
<tr>
<td>1999</td>
<td>na</td>
<td>na</td>
<td>256.5</td>
</tr>
</tbody>
</table>

Notes: (a) From 1995 to 1997 some contracts of training cannot be identified as apprentices
or trainees.
These are included in the totals only.
Sources: NCVER 1998b and 1998c, and unpublished NCVER data.
Like apprenticeships, traineeships involved one day, or sometimes two days, per week off-the-job. Trainees are paid lower wages than fully trained adult workers already trained and working in the same areas.

The number of apprentices and trainees in a contract of training with an employer reached record levels of over 256,000 by June 1999. Such training has grown from under 130,000 in 1985 (as shown in Table 13).

The key features of this trend are:
- a rapid growth in the 4 year apprenticeships from 1985 to the early 1990s
- an equally rapid decline in apprenticeship members from the early to the mid-1990s, with numbers in training at 30 June stabilising since 1993 at around 123,000 to 125,000
- a major expansion in shorter traineeships since the mid-1990s

Another important development has been the removal of any age barriers to participation in apprenticeships and traineeships over the last decade or so. Today only 44% of apprentices/trainees are under 20 years of age. Around one-quarter are more than 25 years of age, as shown in Table 14.

Table 14: Characteristics of apprentices and trainees in Australia: 1997

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number in training<a href="0">^</a></th>
<th>Proportion of age cohort (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contracts ('000)</td>
<td>Males</td>
</tr>
<tr>
<td>15-19 years</td>
<td>60.7</td>
<td>16.9</td>
</tr>
<tr>
<td>20-24 years</td>
<td>58.2</td>
<td>12.8</td>
</tr>
<tr>
<td>25-29 years</td>
<td>9.1</td>
<td>2.9</td>
</tr>
<tr>
<td>30-64 years</td>
<td>9.6</td>
<td>5.2</td>
</tr>
<tr>
<td>TOTAL 15-64 years</td>
<td>137.6</td>
<td>37.8</td>
</tr>
</tbody>
</table>

[^](0): Number in training on 30 June 1997
na - Not available

Sources: NCVER 1998b and 1998c

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The other important issue with the development of Australia's apprenticeship and traineeship system is the shift that has occurred in the type of occupations that apprentices and trainees are engaged in, particularly in the last decade.

As shown in Table 15, some of the traditional trades areas in the metal trades, manufacturing, building and electrical areas, have declined in relative importance. The shifts in the patterns of apprenticeship/traineeship training have in large part followed changes in the occupational structure of the Australian labour market as a whole.

Table 15: Occupational categories of apprentices and trainees in Australia: 1985 and 1997

<table>
<thead>
<tr>
<th>Occupation</th>
<th>November ('000)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers and administrators</td>
<td>0</td>
<td>1.8</td>
</tr>
<tr>
<td>Professionals</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>Para-professionals</td>
<td>0</td>
<td>3.2</td>
</tr>
<tr>
<td>Metal trades</td>
<td>44.5</td>
<td>21.4</td>
</tr>
<tr>
<td>Electrical</td>
<td>18.3</td>
<td>16.8</td>
</tr>
<tr>
<td>Building</td>
<td>21.9</td>
<td>24.3</td>
</tr>
<tr>
<td>Printing</td>
<td>3.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Vehicle trades</td>
<td>6.0</td>
<td>21.2</td>
</tr>
<tr>
<td>Food</td>
<td>11.0</td>
<td>17.1</td>
</tr>
<tr>
<td>Horticulture</td>
<td>(b)</td>
<td>3.2</td>
</tr>
<tr>
<td>Hairdressing</td>
<td>(b)</td>
<td>9.7</td>
</tr>
<tr>
<td>Clerks</td>
<td>0</td>
<td>13.9</td>
</tr>
<tr>
<td>Salespersons &amp; personal services</td>
<td>0</td>
<td>16.8</td>
</tr>
<tr>
<td>Plant &amp; machine operators &amp; drivers</td>
<td>0</td>
<td>2.2</td>
</tr>
<tr>
<td>Labourers &amp; related workers</td>
<td>0</td>
<td>12.9</td>
</tr>
<tr>
<td>Miscellaneous/other</td>
<td>23.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>128.6</td>
<td>175.4</td>
</tr>
</tbody>
</table>

Notes: (a) Numbers in training contracts on 30 June 1997
       (b) Horticulture and Hairdressing were counted in the miscellaneous category in 1995
Sources: NCVER 1998b and 1998c
The most recent development of this system of training in Australia is the establishment of New Apprenticeships on 1 January 1998. The New Apprenticeships system covers all former apprenticeships and traineeship arrangements, and does away with the distinction that formerly existed between apprenticeships and traineeships.

There are now no restrictions on the occupations covered. Flexible, rather than fixed amounts of on-the-job and off-the-job training can now be provided according to employer and trainee requirements. Other important features of the New Apprenticeship system include:

- user choice, where employers can select their own vocational education and training provider for the formal (ie off-the-job) component
- the option of undertaking the formal part of the training entirely in the workplace
- allowing training contracts to apply to part-time as well as full-time employment situations
- the option of commencing the training program while still at school
- subsidies and incentive programs to employers to encourage them to take on New Apprentices, to encourage training at higher skill levels (as measured by the level in AQF), and for successful completion of the training program.

The development of user choice arrangements in New Apprenticeships has been a particularly important new development.

These arrangements were put in place to allow more discretion for individual clients and their employers who had entered into a contract of training (apprenticeship, traineeship) to select their own training provider. Under these arrangements public funds flow to those registered training providers who had been chosen by employers and trainees to deliver the
training. Under user choice arrangements employers and trainees may also
choose how the traineeships will be delivered. They may opt for training to
occur totally on the job or to choose a mixture of on and off-the-job
training.

Although New Apprenticeships are an important part of the Australian
vocational education and training system, and in 1999 approximately 6% of
young people were employed under an apprenticeship or traineeship, the
importance of this mode of training should not be overstated. For example,
in recent years the number of Australians involved in an apprenticeship or
traineeship in a year is only about 20% of the number who undertake
vocational education and training with providers in receipt of public funds.
4. Employer investment in training in Australia

In addition to the formal VET system described above, employers in Australia spend an estimated $A4.7 billion per year in providing training to their employees. Only a small proportion of this training is thought to be under the formal VET system.

As shown in Table 16 over 60% of all employers in Australia reported the provision of some kind of structured or unstructured training to their employees during the year ending February 1997.

According to the Australian Bureau of Statistics (ABS) structured training refers to:

“…all training activities which have a predetermined plan and format designed to develop employment-related skills and competencies. It consists of periods of instruction, or a combination of instruction and monitored practical work. The instruction can take the form of workshops, demonstration sessions or monitored self-paced training packages. It can also include structured on-the-job training” (ABS 1998, p66).

Unstructured training refers to:

“…training activity that does not have a specific content or predetermined plan. It includes unplanned training that is provided as the need arises and training activity that is not monitored such as self training through reading manuals or using self-training computer packages” (ABS 1998, p66).
The provision of structured or unstructured training by employers is widespread in medium and large enterprises in Australia. Virtually all large enterprises (ie with more than 100 employees) provide some kind of training to the workforce, and some 94 per cent of medium-sized enterprises (ie with 20-99 employees) do likewise (as shown in Table 16). However, these enterprises account for only 10% of Australia's enterprises (large enterprises being 2% of all enterprises and medium sized enterprises being 8%).

The small business sector (ie 1-19 employees) accounts for some 90% of all enterprises in Australia. In this sector only a little over half of all small business reported an involvement in some kind of structured or unstructured training during the year ending February 1997 (as shown in Table 16).

The smaller the business, the less likely it is that training (either

### Table 16

Employer provision of structured training in the last 12 months by enterprise size in Australia: 1997

<table>
<thead>
<tr>
<th>Enterprise size</th>
<th>Proportion of employers who provided structured and/or unstructured training (%)</th>
<th>Proportion of employers who provided structured training (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small business sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-4 employees</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>5-9 employees</td>
<td>74</td>
<td>43</td>
</tr>
<tr>
<td>10-19 employees</td>
<td>86</td>
<td>60</td>
</tr>
<tr>
<td>Total small business (1-19 employees)</td>
<td>57</td>
<td>30</td>
</tr>
<tr>
<td>Medium enterprises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-99 employees</td>
<td>94</td>
<td>71</td>
</tr>
<tr>
<td>Large enterprises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 or more employees</td>
<td>99</td>
<td>94</td>
</tr>
<tr>
<td>All employers</td>
<td>61</td>
<td>35</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1998
structured or unstructured) will be provided. As shown in Table 16 only 45% of employers in very small enterprises (with a workforce of 1-4 people) report an involvement in training. These enterprises make up 63% of the small business sector.

Some three-quarters of small enterprises with 5-9 employees provide training to their workforce. These enterprises account for 26% of the small business sector (see Table 16).

Only 14% of enterprises in the small business sector have a workforce in the 10-19 employee range, and 86% of these enterprises provide training to their employees (see Table 16).

In terms of the provision of some kind of structured or unstructured training, a widespread training culture can be said to exist in medium to large-sized enterprises in Australia. However, the pattern is rather different in the small business sector, which accounts for 90% of all Australia's enterprises, particularly in those enterprises with fewer than 5 employees, which dominate the sector.

The provision of structured training by employers gives a better indication of the level of commitment to training amongst Australia's enterprises. Structured training represents a significantly more intensive level of skill formation activity, than simply considering all training activity which includes unstructured training.

Some 35% of employers provided structured training to their employees in the 12 months ending February 1997 as shown in Table 16. However, this masks the very different patterns of structured training provision in different sized enterprises. The overwhelming majority of large
enterprises (94%) not only provide training but also provide structured training to employees. This indicates a substantial commitment to training in Australian, by the corporate sector, and amongst large public sector organisations.

Similarly over 70% of all medium-sized enterprises provide structured training to their employees (Table 16).

Only 30% of small business enterprises are involved in providing structured training to their employees. As shown in Table 16, considerable variation occurs within the small business sector itself, with only 20% of enterprises with 1-4 employees being involved in structured training, whereas 60% of enterprises with 10-19 employees provide structured training to their employees.

There are also variations across industries as shown in Table 17. The government administration and defence industry stands out as one where virtually all enterprises provide structured or unstructured training to their employees. Other industries with a much better than average proportion of enterprises providing training are electricity, gas and water; education; and personal and other services.

Industries that have proportions of enterprises providing training that are near or just above the Australia-wide average for all industries are Manufacturing; Health and community services; Finance and insurance; Wholesale trade; Retail trade; and Property and business services.

Those industries well below the industry average are Culture and recreational services; Mining; Communication services; and Accommodation, cafes and restaurants.
The Transport and storage and Construction industries are the only industries where fewer than half of all enterprises provide structured or unstructured training to their employees.

These variations suggest some clear patterns concerning industry's commitment to training and a training culture. Those industries with a high proportion of large enterprises or public sector enterprises appear to have an ingrained training culture. On the other hand there appears to be a much lower commitment to training in industries with a high proportion of small firms or where there are higher proportions of casual or sub-contracted labour.

(Table 17) Employers providing structured and/or unstructured training in the last 12 months by industry in Australia: 1997

<table>
<thead>
<tr>
<th>Industry</th>
<th>Employers providing training (%)</th>
<th>Employers not providing training (%)</th>
<th>All employers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>54</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Electricity, gas &amp; water</td>
<td>87</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Construction</td>
<td>47</td>
<td>53</td>
<td>100</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>61</td>
<td>39</td>
<td>100</td>
</tr>
<tr>
<td>Retail trade</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Accommodation, cafes &amp; restaurants</td>
<td>55</td>
<td>45</td>
<td>100</td>
</tr>
<tr>
<td>Transport &amp; storage</td>
<td>43</td>
<td>57</td>
<td>100</td>
</tr>
<tr>
<td>Communication services</td>
<td>54</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>Finance &amp; insurance</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Property &amp; business services</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Government, administration &amp; defence</td>
<td>99</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Education</td>
<td>76</td>
<td>24</td>
<td>100</td>
</tr>
<tr>
<td>Health &amp; community services</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Cultural &amp; recreational services</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Personal &amp; other services</td>
<td>78</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td><strong>ALL EMPLOYERS</strong></td>
<td><strong>61</strong></td>
<td><strong>39</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1998
Turning to employer expenditure on training, employers in Australia spent $A1178.8 million on structured training during the 1996 September quarter as shown in Table 18. These results are from ABS surveys of employers training expenditure patterns for the period July to September 1996. Full year training expenditure figures are not available. However, if we extrapolate the survey results to the whole of 1996, then some $A4.7 billion was spent by employers on structured training in 1996.

Table 18 The components of employer expenditure on structured training in Australia: September quarter 1996

<table>
<thead>
<tr>
<th>Item</th>
<th>Actual ($A million)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee's wages and salaries for time receiving training</td>
<td>549.2</td>
<td>46.6</td>
</tr>
<tr>
<td>Cost of wages and salaries of in-house trainers</td>
<td>271.9</td>
<td>23.1</td>
</tr>
<tr>
<td>Fees paid to consultants and other institutions</td>
<td>204.2</td>
<td>17.3</td>
</tr>
<tr>
<td>Other expenditure such as training materials, equipment, travel, accommodation and meals, training venues, payments to industry training bodies</td>
<td>153.4</td>
<td>13.0</td>
</tr>
<tr>
<td><strong>TOTAL STRUCTURED TRAINING EXPENDITURE</strong></td>
<td><strong>1178.8</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1997

Just under 47% of the total expenditure on structured training by employers was for the wages and salaries of their employees for the time they were receiving structured training. The cost of paying fees to trainers accounted for a further 40% of the total spent by employers on structured training. The remaining 13% of the total cost of structured training met by employers was for other items such as training equipment and materials, training venues, accommodation and travel (Table 18).

In terms of total training expenditure, almost 70% was spent on training conducted in-house. Only 30% was conducted by external consultants or training institutions such as TAFE institutes.
This expenditure provided an average of $A185 per employee being spent on structured training by employers during the July to September 1996 period, accounting for an average of almost 5 hours of structured training per employee during the three-month period (Table 19). The $A1.179 billion spent by employers on structured training during the September quarter of 1996 amounted to 2.5% of the total payroll for the period.

(Table 19) Measures of employer provision of structured training in Australia: September quarter 1996

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total training expenditure ($A billion)</td>
<td>1.179</td>
</tr>
<tr>
<td>Expenditure per employee ($A)</td>
<td>185.0</td>
</tr>
<tr>
<td>Training per employee (hours)</td>
<td>4.9</td>
</tr>
<tr>
<td>Employers providing structured training (%)</td>
<td>17.8</td>
</tr>
<tr>
<td>Proportion of payroll spent on structured training (%)</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1997

The really critical issue with respect to the patterns of employer expenditure on structured training is the different patterns between small, medium and large employers (Table 20). Large companies and public sector agencies (with at least 100 employees) spent almost four times as much per employee on structured training than did small enterprises (with less than 20 employees). Large employers spent nearly twice as much per employee on training than medium-sized organisations (with 10-99 employees).

Only 13% of small employers spent money on training for their employees during the September quarter of 1996, whereas 50% of medium-sized employers and nearly 90% of all large employers provided expenditure for structured training during September quarter of 1996 (Table 20).
Table 20: Measures of employer expenditure on structured training by enterprise size in Australia: September quarter 1996

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Less than 20 employees</th>
<th>20-99 employees</th>
<th>100 or more employees</th>
<th>All employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total training expenditure ($A million)</td>
<td>115.0</td>
<td>168.4</td>
<td>895.4</td>
<td>1178.8</td>
</tr>
<tr>
<td>Expenditure per employee ($)</td>
<td>71.0</td>
<td>136.0</td>
<td>256.0</td>
<td>185.0</td>
</tr>
<tr>
<td>Training per employee (hours)</td>
<td>2.4</td>
<td>3.8</td>
<td>6.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Proportion of employers providing training (%)</td>
<td>13.4</td>
<td>50.5</td>
<td>88.3</td>
<td>17.8</td>
</tr>
<tr>
<td>Proportion of total payroll spent on training</td>
<td>1.2</td>
<td>1.9</td>
<td>3.2</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1997
5. The development of national training packages

A decision was taken in the mid-1990s to develop a series of national training packages aimed at covering most industries and types of training activity in Australia's VET system.

This decision was taken to give industry itself (i.e., business and the representatives and other industry organisations) a greater say in what competencies ought to be covered in training programs at different levels in each industry. It was felt that in order to better meet the needs of industry, the opportunity should be given to industry training organisations and other stakeholders to participate in the development of training packages that incorporate competency standards, qualifications and ways of measuring skills into one package or formal document. This package is called a national training package. It describes competencies, assessment guidelines and qualifications for a particular industry or enterprise. These components must be endorsed. It may also include non-endorsed components which describe learning strategies, assessment resources and professional development materials.

In a sense, national training packages are frameworks or training roadmaps. They do not specify detailed training program contexts or curriculum.

ITABs have been very major players in the development of national training packages. This has been a significant part of their broader role to provide an input to the planning and development of training in their industry sector through providing inputs to industry training profiles. ITABs do not, however, have a training purchaser or direct funding role.
By March 2000 there were 51 formally endorsed national training packages (ANTA 2000). These comprised 47 industry packages and 4 enterprise packages. According to ANTA they covered about 85% of Australian industry. At the time of writing there were another 15 training packages that were waiting to be endorsed. The packages that have been endorsed have been grouped according to industry sectors in Table 21.

(Table 21) Training Packages endorsed by November 1999

<table>
<thead>
<tr>
<th>Industry</th>
<th>Employers providing training (%)</th>
<th>Employers not providing training (%)</th>
<th>All employers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>54</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Electricity, gas &amp; water</td>
<td>87</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Construction</td>
<td>47</td>
<td>53</td>
<td>100</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>61</td>
<td>39</td>
<td>100</td>
</tr>
<tr>
<td>Retail trade</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Accommodation, cafes &amp; restaurants</td>
<td>55</td>
<td>45</td>
<td>100</td>
</tr>
<tr>
<td>Transport &amp; storage</td>
<td>43</td>
<td>57</td>
<td>100</td>
</tr>
<tr>
<td>Communication services</td>
<td>54</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>Finance &amp; insurance</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Property &amp; business services</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Government, administration &amp; defence</td>
<td>99</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Education</td>
<td>76</td>
<td>24</td>
<td>100</td>
</tr>
<tr>
<td>Health &amp; community services</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Cultural &amp; recreational services</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Personal &amp; other services</td>
<td>78</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td><strong>ALL EMPLOYERS</strong></td>
<td><strong>61</strong></td>
<td><strong>39</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 1998
<table>
<thead>
<tr>
<th>Industry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity, Gas and Water Supply</td>
<td>Electro-technology</td>
</tr>
<tr>
<td></td>
<td>Utilities - Gas sector</td>
</tr>
<tr>
<td></td>
<td>Utilities – Generation Sector</td>
</tr>
<tr>
<td></td>
<td>Utilities - Water Sector</td>
</tr>
<tr>
<td></td>
<td>Utilities – Transmission Sector</td>
</tr>
<tr>
<td>Construction</td>
<td>Civil Construction</td>
</tr>
<tr>
<td></td>
<td>General Construction</td>
</tr>
<tr>
<td></td>
<td>Woolworths (enterprise)</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>Retail</td>
</tr>
<tr>
<td>Accommodation, Cafe &amp; Restaurant</td>
<td>Hospitality</td>
</tr>
<tr>
<td></td>
<td>Caravan</td>
</tr>
<tr>
<td>Transport and Storage</td>
<td>Transport and Distribution</td>
</tr>
<tr>
<td></td>
<td>Aeroskills</td>
</tr>
<tr>
<td></td>
<td>Automotive Retail Service and Repair</td>
</tr>
<tr>
<td>Communication Services</td>
<td>Telecommunications</td>
</tr>
<tr>
<td></td>
<td>Information Technology</td>
</tr>
<tr>
<td></td>
<td>Museum and Library Information Services</td>
</tr>
<tr>
<td></td>
<td>Printing and Graphic Arts Industry</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>Financial Services</td>
</tr>
<tr>
<td>Property and Business Services</td>
<td>Asset Maintenance</td>
</tr>
<tr>
<td></td>
<td>Asset Security</td>
</tr>
<tr>
<td></td>
<td>Service Technician Portable Fire Equipment (Chubb Fire – enterprise)</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td>Lifts</td>
</tr>
<tr>
<td>Government Administration and Defence</td>
<td>Public Services</td>
</tr>
<tr>
<td></td>
<td>Correctional Services</td>
</tr>
<tr>
<td>Education</td>
<td>Assessment and Workplace Training</td>
</tr>
<tr>
<td>Health and Community Services</td>
<td>Community Services</td>
</tr>
<tr>
<td>Cultural and Recreational Services</td>
<td>Entertainment Industry</td>
</tr>
<tr>
<td></td>
<td>Outdoor Recreation</td>
</tr>
<tr>
<td></td>
<td>P &amp; O Ports (enterprise)</td>
</tr>
<tr>
<td></td>
<td>Racing</td>
</tr>
<tr>
<td></td>
<td>Sports</td>
</tr>
<tr>
<td></td>
<td>Tourism</td>
</tr>
<tr>
<td>Personal and Other Services</td>
<td>Beauty</td>
</tr>
<tr>
<td></td>
<td>Floristry</td>
</tr>
<tr>
<td>Cross Industry Training Package</td>
<td>Laboratory Operations</td>
</tr>
</tbody>
</table>

Source: Australian National Training Authority, 2000
6. The VET certification system in Australia

6.1 The Australian Qualifications Framework

People can enrol in a VET program simply to gain skills from one or more modules (i.e. subjects/short courses) or they can undertake a full program leading to a certificate or diploma qualification.

In Australia there are six different core VET qualifications being offered under a new comprehensive national system of education and training qualifications—the AQF. They are shown in Table 22. A seventh qualification, the senior secondary certificate, is also offered by some TAFEs. The AQF was first introduced in 1995 and has been progressively phased in over a five-year period ending 31 December 1999.

The AQF was designed to provide consistent recognition of the outcomes achieved from education and training across all sectors of senior secondary schooling and universities. The AQF includes recognition of the integration of learning in the workplace with the incorporation of structured training into the system (with apprenticeships and traineeships being Certificates I to IV under the AQF). Moreover, the AQF was designed to provide a clear and rational structure in which an increasingly deregulated training market can operate while maintaining credibility within the overall education and training system.
Table 22  The Australian Qualifications Framework (AQF)

<table>
<thead>
<tr>
<th>Schools sector</th>
<th>VET sector</th>
<th>Higher education sector (ie university)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doctoral degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Masters degree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate diploma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bachelor degree</td>
</tr>
<tr>
<td></td>
<td>Advanced diploma</td>
<td>Advanced diploma</td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td>Diploma</td>
</tr>
<tr>
<td></td>
<td>Certificate IV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certificate III</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Certificate II</td>
<td></td>
</tr>
<tr>
<td>Senior Secondary Certificate of Education</td>
<td>Certificate I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statement of attainment (part qualification)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Australian Qualifications Framework Advisory Board 1999 and 1996

The AQF qualifications can be attained in various ways. These include:

- through the classroom in a TAFE or other registered VET provider as a full or part-time student
- in the workplace through a structured training program
- in an industry training centre
- off-campus modes such as open or distance learning
- various combinations of the above.

The AQF system in the VET sector is designed around a set of competency standards that need to be achieved in different training programs, rather than qualifications being set according to the amount of time taken to undertake a course of study. Thus, different people will take different amounts of time to complete any given VET qualification. Nevertheless, the typical intensity of each AQF qualification is as follows:
Certificate I and Certificate II programs to be the equivalent of around half a year of full-time study to complete

Certificate III and Certificate IV programs typically take the equivalent of one year of full-time study to complete

Diploma and Advanced Diploma programs typically involve the equivalent of two years of full-time study, although some programs involve the equivalent of three years of full-time study.

Students who successfully complete the requirements of a recognised course or training package qualification with a registered training organisation are entitled to a certificate or diploma under the AQF confirming this. Status or credit for subjects or units of competency completed with another training provider, or through recognition of prior learning, should be taken into account when determining entitlement to a recognised qualification. In most instances the certificate is issued by the registered training organisation on application by the student.

Students who have successfully completed one or more subjects or training-package units of competency with a registered training organisation are also entitled to formal certification of their achievement. This is usually provided in the form of a statement of attainment.

Standards for units of competency are specified in national training packages, while for subjects which form part of national courses the standards are specified in curriculum documentation. Teaching staff are required to follow these standards when assessing their students. The use of externally set examinations was once widespread in the TAFE sector (the major provider of vocational education and training) but has been largely superseded by local assessment arrangements, which may be tailored to meet the needs of students and employers while still maintaining the specified standards for competency.
Under the Australian Recognition Framework quality assurance is a responsibility of State and Territory training authorities, and quality assurance requirements are included in the criteria which each training provider must meet. Although external checking of standards is not a major feature of the certification system, feedback from employers via the regular employer satisfaction survey conducted by the NCVER does not indicate any widespread dissatisfaction with standards or with the certification issued to students.

6.2 Accreditation of VET in Australia

A fundamental feature of the Australian vocational education and training system is that training programs which lead to the awarding of recognised qualifications must be accredited. In the past this accreditation was generally given at the State or Territory level via accreditation boards established by the State or Territory training authorities. Occasionally, training programs were also developed and approved at a local level by TAFE institutes.

Since the early 1990s, however, arrangements have been made to ensure that all courses and subjects accredited by the State and Territory training authorities are available for use and formally recognised throughout the whole country. Accreditation under these arrangements was usually for a period of five years, and national courses and modules (i.e., subjects) were listed on a national register. However, these arrangements are now being replaced by a system of national training packages, which are designed to meet industry requirements and are approved at national rather than State or Territory level.

As noted previously, an important change took effect on 1 January
1998 with the introduction of the Australian Recognition Framework (ARF). These new arrangements involved moving the emphasis to the registration of training organisations (RTOs), with associated quality assurance requirements. These arrangements, in conjunction with the implementation of national training packages, will eventually replace the system where each training course was assessed for national accreditation. Moreover, it is expected that the majority of national courses will be replaced eventually by programs structured around nationally endorsed training packages.

However, since training packages are industry-specific, not all vocational education and training activity will necessarily be covered by national training packages. In particular, many general education programs, pre-vocational programs, and programs which are designed as preparation for vocational education and training, may not be covered by national training packages.

In national training packages the focus of training is on outputs, specified in terms of qualifications and units of competency, which are the building blocks of qualifications. The training packages are developed under the supervision of industry training advisory boards and submitted to a national recognition body for approval. Once approved they are published and distributed by Australian Training Products.

Details of national training packages are placed on the National Training Information System (NTIS), an electronic resource which can be accessed via the internet. It includes details of the registered training organisations which are approved to conduct each training program and issue qualifications. The NTIS replaces the former National Register of courses and modules. However, to facilitate the transition to the new arrangements the NTIS also includes listings of those national courses which are still current.
Training package qualifications and units of competency are recognised nationally. Moreover, the new arrangements enable students to move more freely among RTOs and even to undertake one part of a qualification with one RTO and the remainder with another. These possibilities are important in a country as physically large as Australia, where students or workers sometimes travel great distances to undertake their training or to take up employment.

Quality assurance is generally the responsibility of State and Territory training organisations, who have overall responsibility for the management and delivery of publicly-funded training programs and for monitoring the issuing of recognised qualification by non-government organisations. Quality assurance requirements are included in the registration requirements for all RTOs, both government and non-government.

For training providers and students, there are a number of important advantages favouring accredited programs:
- they allow recognised qualifications or statements of attainment to be awarded, facilitating flexibility and portability
- public funding is only provided for accredited programs. This is important for non-government providers who tender on a competitive basis for public funds, while for students, undertaking an accredited, publicly-funded program generally means lower fees
- under the arrangements for the Goods and Services Tax (GST), which were implemented on 1 July 2000, fees charged for accredited vocational education and training programs are exempt from the GST, but non-accredited programs are subject to GST.

Finally, it should be noted that much of the training undertaken in the private sector and by employees takes the form of short, specific-purpose
programs for a particular student group. The majority of this training falls outside the arrangements for formally accredited programs but is none-the-less important in Australia’s total training effort.

6.3 Accreditation of VET providers in Australia

Accreditation of vocational education and training providers is now covered by the ARF, which was implemented from 1 January 1998. Under these arrangements accreditation of both public (ie government) and private (ie non-government) providers is covered by a single framework.

Before 1998, separate arrangements existed for public and private providers of vocational education and training:

- for public providers, no formal registration or quality assurance requirements existed as these providers were established under government legislation or regulations. However, many TAFE institutes were subject to the requirements specified in performance agreements with State and Territory training authorities, and many also sought and obtained endorsement as quality-endorsed organisations under the International Standards Organisation (ISO) 9000 series standards
- registration requirements existed for private and community providers. The specific requirements varied among the State and Territory training authorities. However, in all cases registration requirements had to be met before a provider could receive public funds.

A number of State and Territory training authorities continue to use performance agreements as a means of managing delivery by public providers and to ensure accountability. These performance agreements specify, among other things, the amount and type of vocational education and training to be delivered, the amount of money which will be paid for
the delivery and in some cases include output targets with associated payment provisions.

When private providers receive public funds to deliver training the State or Territory training authority enters into a formal contract with the provider

For private providers, the advantages of being an RTO are:
- it allows the provider to bid for and receive public funds to deliver vocational education and training programs
- it allows the provider to issue nationally recognised qualifications, making the programs offered by the provider more attractive to the would-be students
- under the user-choice arrangements for New Apprenticeship, it allows the provider to deliver or supervise the formal component of the training of New Apprentices, and to receive payment for this service.
7. Some key features of the Australian VET system

In this section the key features of the Australian VET system are examined.

7.1 A clear national policy for VET

The Australian experience suggests that having a clear national policy statement is an essential ingredient in any consistent national development of the vocational education and training system. Agreement was recently reached amongst Australian ministers for training over a new national policy statement for the next five years. The policy issued by the ANTA A bridge to the future: Australia's national strategy for vocational education and training 1998-2003 outlines:

- a national mission statement for the VET sector
- five key national objectives for VET in Australia to underpin the mission statement
- a set of national strategies and agreed processes to achieve each of the objectives
- national monitoring arrangements, including the adoption of seven key performance measures through which to gauge progress in implementing the national VET policy (ANTA 1998a).

This is the third such national VET strategy in Australia. However, the strategy document is not the key issue. Rather it is the process embarked upon to gain widespread consensus about what the key objectives for VET ought to be that is important.

Essential elements of any successful national framework for VET need to include:
widespread consultations about the appropriate direction to take that goes well beyond discussions amongst various government officials or colleges and other training providers

- extensive discussions with the clients of the training system, these being industry representatives and students and trainees
- a consideration of the key issues that are separate from the development of other education policies for schooling or universities so that the work-related nature of VET can be kept fully prominent

- the framing of national objectives for VET that are capable of being measured/monitored so that progress can be reviewed.

7.2 Moving towards lifelong learning

Australia has developed a VET system which is very broad in its coverage and scope. Over 1.5 million Australians or 12% of the entire working age population (ie 15-64 years of age) enrol in a publicly funded VET program each year. Nearly two-thirds of those who enrol in VET in Australia each year are now over 25 years of age. Moreover, most enterprises in Australia with more than 10 employees provide some kind of training to their employees. While there is still much to be done in Australia to improve the scope, coverage, quality and relevance of VET, the notion that skills learning and re-learning must continue throughout ones lifetime is gradually becoming an ingrained feature of Australias economic, social and cultural landscape.

It is no longer sufficient to have a VET system that is mainly focussed on preparation of youth for entry to the workforce. There are two key reasons for this:
first, on the demand side, technological change and other changes stemming from globalisation of economies around the world are now so rapid that people cannot expect to work in the same areas over a lifetime. Even within a work area changes are occurring continuously.

Second, on the supply side, the workforces of most countries are ageing. There will be relatively fewer young people in the workforce than in the past. Skill formation policies must, therefore, also be focussed on the adult workforce.

7.3 Developing advanced and high-level skills training

A feature of the Australian VET system is the diversity and comprehensiveness of its coverage from short programs of training through to intensive advanced VET programs across a wide range of skill areas. Over one-third of the total hours of training delivery in VET each year are advanced level courses (i.e. Diploma, Advance Diploma and Certificate IV programs).

Moreover, a majority of apprentices and trainees undertake a program at AQF level III or higher.

Advanced and high level skills training is particularly important for high technology industries.

7.4 Competency-based training

Australia has been developing and implementing a competency-based training system for the past decade or more. Competency-based training is probably the most critical feature that distinguishes the Australian VET from most other VET systems in the Asia Pacific region.
Competency-based training is aimed at trying to make VET programs much more relevant to meeting the needs of industry and Australia's enterprises.

Under the Australian approach the industry training organisation network (called Industry Training Advisory Bodies or ITABs) has been heavily involved in:

- identification of the competencies required by industry from formal training at different levels
- developing industry competency standards for each training program with a system of national training packages for each industry
- identifying the qualifications that are included in each industry's national training package
- developing assessment guidelines for assessing whether or not required competencies specified in national training packages have been achieved by each trainee.

In Australia there has been widespread agreement with the move to make VET provision more relevant to industry needs, rather than continuing with the previous system where training providers largely determined the content of VET courses.

However, the introduction of competency-based training has not been without controversy, which is to be expected with such a major reform. Certainly the success with which competency-based training has been introduced to date has varied considerably across the sector.

Perhaps the most controversial element has been to shift the focus so heavily away from curriculum content and standard amounts of time in each level of training, towards only assessment of the competencies required in
each case.

Some have argued that this is leading to short-term focus on specific tasks and skills relating to existing jobs, with insufficient emphasis on broader vocational knowledge and the general skills that are required in the continuous shift in technological knowledge, particularly in emerging technologically based industries and occupations.

There have also been criticisms that the development of competency-based training in Australia has been overly complex and focussed on too much detail being prescribed from the national level, with industry bureaucracies replacing the government bureaucracies that once existed.

Incorporation of a focus on the competencies needed in different areas of the labour market is really an essential feature of any world class training system. However, care is needed to ensure general skills and more general vocational knowledge is also included, where appropriate, in vocational programs so that training is not only concerned with the short-term and immediate needs of industry.

Longer term industry and national considerations are even more important. Those skills that will improve the future job mobility of individuals, as nations continually adjust to the unrelenting pressures for structural and technological change, are more important now than at any time in the past.

7.5 The development of an industry-led training sector

Notwithstanding the above discussion, the development of new ways to
ensure the skills being developed in training programs are, in fact, highly relevant to existing and future needs of industry, is an essential core feature of any effective training system.

Australia has embarked upon developing an industry-led VET system at several different levels. These include:

- ANTA being established with an industry board in the early 1990s to promote the national development of Australia's VET sector
- each State/Territory training authority having a high-level industry-based training board
- the full incorporation of a wide array of ITABs across all industries and States and Territories into the process of developing industry standards for the competencies required by each industry at each level of training
- much more recently, the encouragement of TAFE institutes and local training providers to work directly with local employers and industries to provide training programs that more directly meet their needs.

The latter is currently the least developed area in Australia, which probably offers the best prospects of further developing a system which better meets employer needs and which provides individuals with VET programs that will maximise their job prospects in the future.

This needs to be complemented with measures to encourage greater industry investment in training (see Robinson 1999b).

7.6 Flexible delivery and the modularisation of training delivery

Australia has developed a modularised training system. For instance in 1997 some 1.46 million people enrolled in one or more publicly funded VET courses or programs; this amounted to 1.84 million courses. It is
involved enrolment in 9.88 million modules and the provision of over 300 million hours of training but only 55% of enrolments were in programs leading immediately to a Diploma or Certificate qualification.

The modularisation of VET programs involves breaking up longer courses into shorter programs (such as subjects) that are capable of assessment as each element or subject is completed. This has promoted the enrolment of a more diverse range of students in VET, particularly adults who are already employed. Modules have encouraged people to take shorter bouts of training to meet a particular skill acquisition need, without requiring them to immediately enrol in a full VET course leading to a qualification.

More work is needed in Australia to make sure all publicly-funded training is nevertheless capable of articulation to one or more full qualifications programs, should the participant decide to do further VET modules in the future. Similar better mechanisms to record the training already successfully completed, such as the development of a national skills passport system, also needs to be further explored.

Australia's VET system is based on the concept of flexible delivery of training. The various training pathways were developed historically to:
- ensure people from rural and remote areas in Australia could gain equitable access to VET programs
- encourage more adults needing to upgrade skills to undertake VET by providing more part-time, night-time and weekend, and alternate open learning options to participate in training
- provide alternative learning options to some disadvantaged groups of Australians, such as indigenous people, people with special learning needs and people with different language requirements.
More recently, the focus has also been on ensuring that there are more work-based and non-classroom pathways for VET to ensure the skills being gained are more relevant to industry's needs.

These policies have had great success in Australia. Equitable VET participation is now largely occurring between rural and urban Australia and amongst different ethnic groups. More needs to be done, however, to improve VET access to people with disabilities.

7.7 Establishing competition amongst training providers

Australia has adopted a policy of increasing competition amongst training providers. Increasing amounts of funding, that was once exclusively allocated to TAFE institutes and other public training providers, have been made available for competitive tendering. By the end of 1996 nearly 17% of VET clients were enrolled with non-TAFE providers although 95% of the total training hours delivered were still done so by TAFE.

Not surprisingly, such a policy has been controversial. The benefits have been:
- a greater choice of training provider for industry and individual clients
- the development of specialist private training providers in new areas that were previously under-serviced
- competitive efficiencies leading to lower unit costs in some cases
- the development of a competitive environment with a much greater focus on meeting customer needs.

However, some have argued that competition has lead to a reduction in quality because of its focus on cost of delivery, and dissipation of funds that were once directed to the enhancement of the public TAFE system.
The impact of development of a training market in Australia is documented in detail in the book The market for vocational education and training (Robinson and Kenyon 1998).

The key issue is that such policies have produced more focus on the clients of training, which is essential. The Australian experience is also that considerable reform in this area can be achieved by opening up relatively small amounts of funding to the competitive process. It is important also to ensure the continuation of a high quality public training system.

7.8 A strong system of public training institutions

As mentioned above there have been relatively recent moves in Australia to develop competition amongst training providers and to foster the growth of private training providers so that the clients of training can have greater choice in where they obtain their training.

Notwithstanding these developments, the hallmark of the Australian system of VET over the past 30 years has been a policy by successive governments to establish and develop a comprehensive system of public TAFE colleges and institutes across the nation. The overwhelming majority of publicly funded VET training is provided through the 100 or so TAFE institutes and other government provides in around 1000 campuses across Australia.

Australias current VET system involving a very diverse offering of VET training at different levels to such a high proportion of the total population would simply not be possible without a strong system of public TAFE institutes and other public VET providers.
Of course, there is still more to be done to ensure that VET providers, including TAFE, are even more responsive to client needs than is currently the case.

7.9 A framework for the national recognition of VET

A key development in the Australian VET system has been the adoption of the Australian Recognition Framework (ARF).

The ARF:
- is a comprehensive approach to the national recognition of VET across all States and Territories of Australia
- involves the national registration and quality assurance of training organisations seeking to:
  - deliver training
  - assess competency outcomes
  - issue VET qualifications under the Australian Qualifications Framework (AQF).

Organisations can be registered under the ARF to be able to operate in two areas:
- first, the provision of training delivery, assessment and the issuing of nationally recognised AQF qualifications
- second, the provision of skill recognition or assessment services only for the issuing of nationally recognised AQF qualifications.

These arrangements are based on two key principles, which are:
- a requirement for any AQF qualifications issued by a registered training organisations or any State/Territory training authority to be recognised by
any other State/Territory training authority or registered training organisation across Australia
◆ a system of quality assurance to register training organisations.

These arrangements commenced on 1 January 1998 and replaced a system where each training course was assessed for national accreditation, instead of registering the training organisation.

The features of the ARF are described further in the document Australian Recognition Framework Arrangements (ANTA 1998b).

7.10 A focus on outputs and outcomes

A hugely important development in the Australian VET system has been in the focus placed on the outputs from and outcomes of the VET sector. This focus has accompanied the shift in Australia from a largely provider determined training system to industry and demand-led training system.

The outputs from VET refer to the qualifications, skills and competencies achieved from undertaking a VET program. Robinson (1998, p106) described this in the following way:

Conceptually, the key outputs of the VET sector can be viewed in the following ways:
◆ the qualifications attained by people successfully completing VET programs that are valued by employers and widely recognised as currency in the labour market
◆ the skills and competencies gained by individuals to improve their
economic and labour market prospects and/or to improve their skills to enable them to do their current jobs better

the skills and competencies required by business to improve the bottom line of business enterprises in terms of productivity, profitability, etc. and to contribute to Australias overall economic competitiveness.

A deliberate distinction is being made here between the core outputs of VET (ie skills and qualifications) and outcomes from VET such as gaining new employment, obtaining new skills to gain promotions or new jobs or gaining new skills to increase job security in existing employment. In recent years Australia has embarked on a process to develop nationally consistent frameworks for the treatment of VET qualifications through the adopting of the AQF and the ARF arrangements (described earlier in this paper).

Further processes are currently under way to:

- develop a set of agreed protocols to ensure nationally consistent policies are in place in each State and Territory in relation to how qualifications are awarded to VET students and trainees around Australia
- develop a nationally consistent approach to the measurement of outputs at the sub-qualification level (referred to in Australia as units of competence).

The outcomes from VET (as distinct from the outputs) refer to ultimate outcomes from VET for individual students and trainees or for Australias enterprises who rely on the VET sector to meet all or part of their skill requirements. In the case of individuals, the outcomes from VET include:
gaining employment in cases where the student did not previously have a job
improving job prospects through greater job security, gaining a promotion or a better job, more hours of work, moving from part-time to full-time employment, etc.
increasing employment income as a result of gaining new skills.

In the case of employers, the outcomes from VET are:
- improvements in productivity as a result of skills gained from VET
- satisfaction that the VET system is meeting enterprise skill requirements.

The NCVER conducts regular national surveys to gauge the outcomes from VET. These include:
- a Graduate Destination Survey (GDS) to measure the employer outcomes of TAFE graduates
- an Employer Satisfaction Survey (ESS) to measure the level of employer satisfaction with VET provision and to ascertain employers views about the impact of VET on enterprise productivity.

The NCVER has also developed a broader VET Student Outcomes Survey (SOS) that was first conducted in 1999 to look at the job outcomes of all VET students, and not just graduates from TAFE in programs of at least 200 hours in duration.

A highly developed statistical information base is an essential ingredient to developing a training system that better meets the needs of both individuals and industry clients of the sector. It is essential that such systems place as much focus on measuring the outcomes as they do on measuring student characteristics, training activity and the costs of training.
7.11 Research and evaluation to improve VET

Australia is the only country (that I am aware of) that has developed and published a national policy to govern its research and evaluation effort in VET.

The policy called The National Research and Evaluation Strategy for Vocational Education and Training in Australia 1997-2000 (NCVER 1997c) commenced in July 1997. The policy was developed by the NCVER, in conjunction with ANTA, to:

- increase Australia's national VET research and evaluation effort
- prioritise the national VET research undertaken to improve the quality of decision making about VET by policy makers and planners, training authorities and training providers, industry bodies, employers and enterprises, students and trainees, teachers and trainers and others with an interest in the VET sector.

Of particular importance in the policy is the dissemination of research results to interested parties in addition to carrying out various research projects as part of a co-ordinated national program of research and evaluation work. Robinson and Guthrie (1998) reported that nearly 50 research projects were undertaken or commenced in the first year of the policy, and that a further 35 projects have already been agreed to or commenced for 1998-99. National funding of over $A2.5 million per annum is directed towards the policy by ANTA and the NCVER. ANTA also provides further funding in the order of $A1 million per year to fund several dedicated VET research centres.

A comprehensive national program of research and evaluation is
already providing useful strategies for continuous improvement and quality enhancement of the Australian VET sector.

This strategy includes the development of an international VET research information database by the NCVER (called VOCED) which can be accessed on the Internet http://www.ncver.edu.au/voced.htm. This database contains abstracts and other details about 14,000 VET research papers and reports, journal articles, policy documents and published statistical reports from around the world.
8. Emerging issues

The Australian VET sector has undergone a massive transformation in the past 20-30 years. This transformation has seen VET evolve from a set of disparate arrangements across the country to the comprehensive national approach that was developed during the 1990s.

Although much has been achieved, there is still more distance to travel to ensure that Australia has the fully embedded lifelong learning culture that it needs.

There are four 'big picture' issues to which the Australian VET sector needs to address more fully than is the case to date. These issues are:

◆ first, a set of developments that can be grouped together under the heading 'the impact of the changing nature of work'  
◆ second, the demand by learners for far more 'customisation' in training provision than ever before  
◆ third, the impact of the rapid aging of our population and what this means for lifelong learning and training strategies  
◆ fourth, developing new strategies for the promulgation of a lifelong learning culture.

8.1 The changing nature of work

Globalisation and the onset of the information age (or the knowledge economy) are having as profound effect or revolutionising the organisation of work, as did the industrial revolution in the 19th century. Technology is changing at an unrelenting pace (see Maglen 1994).

NCVER research (for example, see Hall and Bretherton (forthcoming), Hobart 1999, Kearns 1999, Van den Heuval and Wooden 1999, Waterhouse
et al 1999, Marginson 2000 and Robinson 2000) suggests that:

- new modes of employment are rapidly emerging, with access to employer-provided training to some of the new categories of workers (i.e., project workers, sessional workers, labour hire company workers etc) being significantly reduced.
- technical skills are having a shorter 'half-life' these days. Gone are the days of acquiring all the technical skills one needs for a working lifetime at the beginning of a working life.
- many of the technical skills that will be needed in the workplace in 20 years time do not yet exist.
- excellent technical, para-professional, or professional skills will no longer be enough.

It is becoming increasingly apparent that many more workers in the new millennium will increasingly need:

- much higher levels of IT literacy
- excellent interpersonal and human relations skills to get the best out of people and work well in team-working situations
- critical analytical and interpretive skills in order to handle and make sense of the enormous amount of information now available
- to be entrepreneurial and enterprising, irrespective of whether they run a business or work for others as an employee, so that new business opportunities are always being sought.
- new skills needed to cope with spending increasing amounts of their working lives in different modes of employment (such as self employed, sessional or project workers, etc).

VET programs must be framed to ensure proper coverage of underpinning vocational knowledge and understanding, not just on competencies for 'the here and now'. Generic skills are probably now even more important than technical skills. Certainly they are no less important.
8.2 Customising VET

US research on looking at what drives customer satisfaction across all types of products and services, ranging from whitegoods to education (eg see Fornell & Johnson 1993, Fornell et al 1996 and Johnson and Fornell 1991), shows two key things:
- quality is more important than price
- customisation is more highly valued than standardisation.

NCVERs research on student and employer satisfaction and ANTA's recent market research on what learners value, bear this second finding out in relation to VET in Australia. The key message is that learners have a very diverse set of needs. One size does not fit all. Diversity, choice and VET tailored to meeting vastly different individual needs will be the key to engaging and re-engaging people in continuous skilling and lifelong learning. Moreover, in the coming years learners will demand much more customisation. As consumers they will be much more discerning and sophisticated than ever before about making choices about how, when and where they wish to learn.

8.3 The aging population

Post school education and training is still largely geared up to providing significant professional or technical entry level training.

Population projections show that over the next 20 years:
- the Australian population is forecast to grow at 1% per annum
- but the number of 15-24 year olds will not grow (remaining at around 2.7 million people)
- whereas the number of 45-64 year olds will grow by over 40% (from just over 4 million today to some 5.8 million by 2020).
The source of new skills in countries like Australia will need to be increasingly developed amongst older and often already employed people. Policy and delivery cannot just focus on the young. This has profound implications for the way we think about education and training delivery.

Again diversity in the type of learning products and services available is the key. Particular emphasis will need to be given to what I call 'delivering VET in bite size chunks'.

VET has made a good start in breaking down curricula from full qualifications into modules that are more easily done by adult learners. This is why Australia has one of the highest rates of VET participation by the over 30's age groups in the world. We need to make sure this capacity is retained in the rollout of training packages.

8.4 Embedding a lifelong learning culture

Robinson (1999c) found that:

◆ over 77% of the economically active component of the Australian population aged 15-16 years is either still at school or has undertaken some form of education or training in the past year
◆ some 80% of wage and salary earners undertook some form of training in the past year
◆ over 60% of all employers provide some kind of training to their employees each year.

Yet it is not clear that all this activity is sufficiently directed to embedding a genuine lifelong learning culture that is capable of providing the new skills needed to drive Australia's economic future.
ANTA has recently conducted a major market research exercise in an attempt to unravel some of these issues.

The results of this work, in terms of a physchographic segmentation of how individuals view skilling, education and training and lifelong learning in Australia, is shown in Table 23 and Figure 3. The preliminary analysis shows that there are 8 distinctive segments in the general community with very different characteristics and very different attitudes towards learning.

**Table 23: General community segments**

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion of adult population (%)</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Might give it away</td>
<td>7</td>
<td>Young and pessimistic, they are learning now only because they feel they have to. Other people expect it. They haven't seen the benefits from learning yet.</td>
</tr>
<tr>
<td>Learn to earn</td>
<td>17</td>
<td>They are actively learning because it's the way to get ahead. Mostly young, they only value learning that brings material benefits and leads to jobs or qualifications.</td>
</tr>
<tr>
<td>Learning leaders</td>
<td>21</td>
<td>They love learning and believe it's the way to reach their goals. They want to learn more but have to overcome their fears and many other barriers.</td>
</tr>
<tr>
<td>Almost there</td>
<td>6</td>
<td>They love learning and believe it's the way to reach their goals. They want to learn more but have to overcome their fears and many other barriers.</td>
</tr>
<tr>
<td>Forget it</td>
<td>8</td>
<td>Their heart is just not in it. The learning they've done hasn't got them very far, they don't love it and anyway, they are not happy with their lot. What more do they need?</td>
</tr>
<tr>
<td>Done with it</td>
<td>14</td>
<td>They valued learning for work but they've achieved what they can. They see no point in learning any more, unless they face a career reversal or some other major work change.</td>
</tr>
<tr>
<td>Make it easier</td>
<td>16</td>
<td>While they love learning, they face the highest barriers to participation. Their focus is on getting by every day. Learning is all too hard, just another stress to contend with.</td>
</tr>
<tr>
<td>Been there, done that</td>
<td>11</td>
<td>They love learning and have already benefitted from it. But it is not on the short-term agenda. They've either achieved their goals or there are just too many other priorities right now.</td>
</tr>
</tbody>
</table>

Source: ANTA
Similarly ANTAs market research has identified three very different segments of employers, with respect to attitudes towards investment in training. There are described in Table 24 and Figure 4.

**Table 24: Employer segments**

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion of employers (%)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High achievers</td>
<td>44</td>
<td>Established, medium-sized firms in the cities, they value all forms of learning—on and off-the-job, work related or not. Learning is the way they deal with the challenges of globalisation, competition and new technology. But they also value the productivity and efficiency of learning.</td>
</tr>
<tr>
<td>Here and now</td>
<td>37</td>
<td>Large established businesses, they are focussed on keeping ahead of the competition. Dealing with new technologies and high turnover, they value on-the-job training that is not directly productive in the workplace.</td>
</tr>
<tr>
<td>Not interested</td>
<td>19</td>
<td>Smaller businesses in manufacturing and service industries, they believe in qualifications. Most other training is a waste of time and money, unless it really increases productivity and reduces costs. They are not in the global game—they are getting by.</td>
</tr>
</tbody>
</table>

Source: ANTA
Figure 4: The proportion of employers in each segment

- High achievers: 44%
- Here and now: 19%
- Not interested: 37%

Source: ANTA
9. Concluding remarks

Any nation's ability to develop new approaches to education and training to meet these and other challenges will be perhaps the most important determinant of its economic and social future. Skills, and the ability to adjust, will be the core determinant of any nation's economic success. Gone are the days when plentiful traditional factors of production - land, labour and capital resources - are enough to guarantee success.

The discussion in this paper is not meant to imply that the key elements of Australia's VET system could or should be adopted in the People's Republic of China. Rather they are described here for the purposes of information.

Perhaps the most significant feature of the Australia VET system has been the journey in recent years to develop an industry-led system. In the past Australia's vocational education system was largely determined by the priorities of education planners and the vocational education institutes themselves.

Responding to the challenges outlined in this paper will be key drivers of Australia's VET system in the coming years. Nothing could be more important than trying to ensure that the skills and vocational knowledge being gained by young people and adults alike are relevant to the nation's workforce and development needs.
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The Development of Chinese Tertiary Vocational Education and Situation of Teaching Staff Into 21st Century

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I. Development Of Chinese Tertiary Vocational Education

The building of socialist market economy accelerated the speed of modernization. Especially with industrial restructuring, the rapid development of the third industry and newly-born industry characterized by hi-tech has great impact on the structure of labor market and meanwhile brings opportunities and challenges to vocational education.

A. Situation Of Chinese Vocational Education

It is known to all that China is the country with the greatest population in the world. And the overwhelming majority of population is peasants. In order to achieve the goal of the modernization, industrial restructuring will be taken as a long-term social development strategy, whose objective is to shift the core of GDP and employment from primary industry to secondary and tertiary industry (See table 1). To this regard, Chinas vocational education focus on training the talents needed by secondary and tertiary industry.

However, because the task of making nine-year compulsory education universal in China is very heavy (and still could not be finished until 2000
years), vocational education has long been concentrating on secondary level. As a result, the tertiary vocational education (TVE) relatively lags behind. By 1999, there were totally 16,377 secondary vocational schools in China (including secondary specialized schools, skilled workers schools and vocational high schools) with a total enrollment of 11.1539 million pupils. There were only 117 tertiary vocational education institutions (TVEI) with a total enrollment of no more than 150,00 pupils.

Over the past two decades, secondary vocational education has provided society with a large number of skilled personnel, which improved the monotonous structure of Chinese education and made great contribution to rapid economic development (See table 2). However, since the vocation education system in China is still far away from full-fledged, most of graduates of secondary VE schools have to go to labor market rather than further study in universities or colleges. With lay-off of redundant functionaries in many enterprises, competition in labor market gets more and more intense, employment prospects for secondary VE student are no longer so favorable as before. This, to a certain extent, impeded development of Chinese vocational education.

B. The Background of Tertiary Vocational Educations Development

Though development of secondary vocational education slew down, tertiary vocational education speeded up due to some new change brought into Chinas society (see table3). The reason for popularity of TVE follows as:

Firstly, more and more people realized that with the advent of knowledge-based era, those armed with the latest knowledge and skills will
probably win an upper hand in the fierce competition. Obviously, the attitude of taking secondary vocational education as final education is no longer acceptable.

Secondly, with Chinas opening up to the outside world, more and more foreign-founded enterprises came into china, at the same time, more and more Chinese enterprises began to be involved in competition of international market. The Globalization of economy brings many new techniques, new designs and new instruments into production and service sectors and also demands new human resources to meet the need of capital-intensive industry and knowledge-intensive industry.

Thirdly, with improvement of Chinese peoples living standard, the peoples interest and demand for life diversifies. Therefore, the enterprises have to take action to improve workers quality and to make them more versatile and flexible in the changing market.

Fourthly, due to influence of traditional culture, most parents in China believe that education is vital to career success, and in some sense a higher academic degree mean a brighter future. Especially because Chinese government adopted the one-child policy since 1970s, most students in secondary level of education now are single children. So it is understandable that parents desire of making children well-educated is so strong. Correspondingly, the competition of college entrance exam is very fierce, which not only results in shift of objective of education from personal accomplishment to passing the exam, but also do harm to development of pupils. To some extent development of TVE would remedy this unfavorable situation, and win wide acclaims from various lines.
Fifthly, with deepening of economic reform, especially with reform of state-owned enterprises, the number of laid-off increased. Developing TVE will not only postpone the employment age of young population, but also stimulate educational consumption which would be beneficial to China's economical development, and thus win the wide support from local governments.

C. The Obstacles Of Tertiary Vocational Educations Further Development

Although Chinese TVE have made rapid development in recent years, there are still some factors hindering the further development.

Firstly, the function of TVE not be clarified. For example, some people often regard the TVE as a kind of sub-degree programs for undergraduate education, other people think that TVE is a relatively independent education system, which not only educate the students in sub-degree programs, but also develop the undergraduates and postgraduates.

Secondly, the management and running system is inadequate. In April 1999, the Ministry of Education issued a document on practicing the TVE with new management pattern and operational mechanism, attempt to combine development of TVE with reform of education, especially with reform of system of education management, provision and investment. But some policy still caused controversy. For example, TVE only allows students from regular high schools, who have participated the national college entrance exam.

Thirdly, education quality of some TVE is not desirable. Although the number and scale of TVE grow rapidly, many aspects of TVE have not
obtained sound development, especially qualifications of teachers. For example the proportion of qualified TVE teachers is still low.

In the following sections, I mainly discuss the general situation of teaching staff in Chinese TVE. I also introduce some new trend on professional development of teaching staff.

II. The Conditions Of Teaching Staff In Chinese Tertiary Vocational Education

In China, according to the regulation of both Law for Higher Education and Law of Vocational Education, there are several types of TVE as follows: the short-term vocational universities; the institutions of vocational technology; the private universities provided with the qualification for conferring tertiary educational certificates; the general tertiary specialized college; the tertiary vocational education institutions (the second-class college) established by the tertiary education institution at the undergraduate level; the key schools with dual missions undertaking both tertiary vocational education and secondary vocational education (tertiary vocational education is restricted only in some main specialized subject), which authorized by Ministry of Education; the adult colleges meeting the requirement set by the state. Corresponding to that, the conditions of the teachers in TVE are too complex to be viewed as a whole. But generally speaking, the following problems exist:

A. Teachers are coming from a unitary channel and qualifications of teachers don't measure up to the training objectives of tertiary vocational education and characteristics of curriculum.
The training objectives of TVE, which are regulated by the government in China, are training people with advanced technology-applying capabilities, who are developing comprehensively in moral, intellect, physical and aesthetic aspects and suit the primary need of manufacturing, serving and managing. The pupils should chiefly acquire the basic abilities and skills for undertaking the practical jobs in their professional fields on the basis of possessing the basic theories and special knowledge, and develop noble professional morals.

Accordingly, the curriculum of TVE lay more stress on training the pupils comprehensive professional abilities and developmental learning ability, attach more importance to the pupils innovative consciousness and practical operational skills, and set the development of pupils professional morals to top priority. Obviously, It is impossible to fully fulfill these training objectives and meet the course demand without large number of high-quality teaching staff. These teachers should not only be well prepared for theories but be also more familiar with the front-line manufacturing fieldwork. They should not only possess abundant knowledge and skills but also more importantly are the paragon of professional morals. Moreover, they should not only be familiar with and competent for the teaching tasks, but also be able to undertake effective investigation and exploration.

Of the teaching staff, nevertheless, there are majorities of people who have no experiences as an engineer in front-line fieldwork and are still accustomed to the theoretic knowledge imparting and monotonous lecturing. It is the reason that they had been either graduated directly from the general tertiary education institutions or worked at the general education institutions in long term. At the same time, although some experts coming from the front-line production and service sectors are appointed by some TVE as
professional teachers, the number of these teachers is very limited, much less of whom are familiar with the teaching theories. Additionally, in view of the proportion of teacher meeting national norms of educational attainment, although the teachers of TVE are required to have obtained at least the Masters degree, the practical ratio of the Masters in the teaching staff of TVE relatively so low that it exerts negative effects on the abilities of the tertiary vocational education institutions to investigate and explore.

B. The special teacher training and continuing education systems are inadequate.

In general, the teachers of TVE dont graduate from special training institutions but mainly from the regular Tertiary Education Institutions. Since there are such fewer opportunities for the former pupils of secondary VE to study in the regular Tertiary Education Institutions that numerous teachers of TVE had been studying in the regular the regular Tertiary Education Institutions. They are lack of clear understanding and sensible experience of the objectives and characteristics of the vocational technology education. Meanwhile, under current education systems, they are mainly returning to be in-service training in the regular Tertiary Education Institutions, impeding the promotion of their practical experiences and skills. In recent years, as the rapid expansion of TVE, the problem of lacking excellent teachers is increasingly prominent, and the promotion of teachers professional qualification has been a decisive factor for TVE to develop steadily.

C. The mechanisms of the teacher management and inspiring are incomplete.

Owing to various historical and realistic reasons, the vocational
education is disregarded in China. General speaking, in same level the social prestige of teachers working in VE is relatively lower than that of those working in regular school, which is a main reason that results in the reluctance for excellent teachers to work in VE. With the exception of that, it is also responsible for the lower level of the qualifications of teaching staffs that the government has adopted no effective measures in teacher’s in-service training, especially in the mechanisms of the teacher management and inspiring, to attract excellent teachers and urge them to promote their professional level themselves.

III. Strategies on construction of teaching staff in Chinese tertiary vocational education into 21st century

In June 17 1999, the Chinese central government issued a document on deepening educational reform and carrying forward comprehensively the quality education. The document points out clearly that TVE is an important part of the tertiary education and major efforts should be made to develop TVE. The document also asks the vocational institutions pay attention to absorbing the excellent engineer and technicians into TVEI, quickening the step to construct teaching staff qualified as teacher and engineer or technicians. And the government and the authorities concerned at various levels, also concentrate on the problem existed in teaching staff, take the steps to improve the quality of teaching staff. At present, The new trends on the construction of teaching staff may appear mainly as fellows:

Firstly, Widening the channels to sources of teacher, especially introducing the competitive procedure into the employment of teacher. for example, many TVEI demand that employees must be postgraduate and having appropriate career qualification needed. Shenzhen Technical College,
an famous TVEI in Guangdong province, south china, giving 1/3 job opportunities to qualified technicians, engineers from the front-line production and service sectors as full-time or part-time teachers.

Secondly, Provide in-service training for teachers, especially for backbone teacher (leading teacher or key teacher) training. For example, Beijing municipal government published a document about quickening the steps to reform and development of vocational education In June15 1999. The government prepared to launch a project named Cultivation of Teaching Staff, which aimed at making a long-term plans on cultivation of managing and teaching staff., promoting the construction of a contingent of excellent teaching staff which features high quality, relatively stability, creativity with rational structure and qualification. The government also decided to establish a comprehensive teacher training center, and several research bases for teachers on specialized course.

Thirdly, Strengthen the TVEI's ties with enterprises to enable teacher to get more experiences from their work at grassroots level. For example, Shenzhen Technical college has made different training plans for different teacher, asking the teachers go to production and service sectors as part-time workers and the technicians to go to study in university.

Fourthly, Improving the working conditions and income of the teacher in TVEI. Although many local governments and schools pay more attention to improving the teachers professional morals, they take the measures to change the egalitarianism in distributing of economical interests formed in the planned economy, encourage teacher (especially young teacher) to work hard to became the key teacher and getting more economical income, thus to improving the quality of teaching staff.
Fifthly, encourage the teachers to take part in research activities in vocational education and educational reform. The Chinese TVE is just in its beginning stage and met with many problems never encountered before, which means we could not resort to any previous experience. So many schools encourage their teachers to take part in research activities organized by some vocational education research institutes, such as The Association of Tertiary Vocational Education Research, The Center of Technical Education, etc. Many school often regard it as a good way to improving the quality of their teachers.

IV. Conclusion

In June 1999, President of China, Jiang Zemin, in the third national conference of education, made a speech on development direction of Chinese vocational education. He pointed out that: it is a systematic project for Chinese to make great efforts to run various types of vocational education. Presently, although the secondary vocational technology education has developed little by little, it is just a beginning. To yield great results, the educational authorities and governments at various levels must still try their best for ten years, twenty years and even more longer. We should strengthen the nine-year compulsory education, the regular high school education and various types of secondary vocational technology education. At the same time, we must on the basis of the need and possibilities, expand the tertiary education with multi-form, especially the community tertiary vocational education, and enlarge the scale of current regular tertiary education institutions and adult colleges to meet the need of the people to receiving tertiary education by any possibilities.

In sum up, there are both great never-occurring opportunities and
challenges in the development of Chinese TVE. The present problems existing in the teaching staffs of TVE are mostly developmental, which are resulted from the rapid expansion of the TVE and can be only resolved by the continuous development and reform of TVE.

Table 1  The Trend of Industrial Structure in China (%)  

<table>
<thead>
<tr>
<th></th>
<th>Primary industry</th>
<th>Secondary industry</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition of GDP</td>
<td>2010</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>21</td>
<td>49</td>
</tr>
<tr>
<td>Composition of employment</td>
<td>2010</td>
<td>36</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>1995</td>
<td>52</td>
<td>23</td>
</tr>
</tbody>
</table>

Sources: ( Li ChengXun, 1997, P.80 ) China Statistical Yearbook, 1997

Table 2 Graduate of secondary vocational school in China (in 10 thousand)  

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>total</td>
<td>1358.89</td>
<td>1186.17</td>
<td>2545.06</td>
</tr>
<tr>
<td>Specialized Secondary school</td>
<td>630.27</td>
<td>406.55</td>
<td>1036.82</td>
</tr>
<tr>
<td>Skilled workers schools</td>
<td>*227.12</td>
<td>287.38</td>
<td>514.5</td>
</tr>
<tr>
<td>Vocational high school</td>
<td>501.5</td>
<td>492.24</td>
<td>993.74</td>
</tr>
</tbody>
</table>

* data for the period of 1985-1991

Sources: (State Education Commission, P.R.China, 1997, P.9) , Beijing Normal University press1997
### Table 3: Demand for Vocational and Technical Education graduates (1999-2005) in a survey for 48 institutes in Beijing

<table>
<thead>
<tr>
<th></th>
<th>Demand 1999</th>
<th>Demand 2000</th>
<th>Demand 2001-2005</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TVTE graduates</td>
<td>SVTE graduates</td>
<td>TVTE graduates</td>
<td>SVTE graduates</td>
</tr>
<tr>
<td>engineering</td>
<td>238</td>
<td>330</td>
<td>321</td>
<td>336</td>
</tr>
<tr>
<td>Finance and economics, management</td>
<td>46</td>
<td>55</td>
<td>56</td>
<td>57</td>
</tr>
<tr>
<td>Medicine</td>
<td>12</td>
<td>0</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>education</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Literature and arts, sport</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>law</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Business and public service</td>
<td>24</td>
<td>83</td>
<td>26</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>334</td>
<td>482</td>
<td>426</td>
<td>495</td>
</tr>
</tbody>
</table>

Sources: (Ma Shuping, 2000, P353), BEIJING EDUCATION PRESS
REFERENCES

State Education Commission, China, 1997, Educational Development In China, BEIJING NORMAL UNIVERSITY PRESS.
Ma Shuping, 2000, The study On The Strategy of Vocational Development and reform In BEIJING, BEIJING EDUCATION PRESS
Recent Innovations in Vocational Education and Training Programs in Indonesia

Presented by Dr. Gatot Hari Priowirjanto
Director of Technical and Vocational Education,
Ministry of National Education, Indonesia
Tajikistan's Efforts and Experiences for the New Millenium in the Area of Skill Development

Presented by Dr. L. Dodkhoudoeva

Tajikistan
Innovating Vocational Education and Training

Presented by Mr. Chris Cawley
Principal, Nauru Secondary School

A Competency Based Vocational Education and Training System was introduced in November 1990 as part of the Australian National Training Reform Agenda. The purpose of this reform was produce a more educated and trained workforce to contribute towards Australias competitiveness in a globalised world market.

Features of Vocational Education and Training

A Competency Based System

A competency based is a flexible system, which enables people to reach competency at different rates. It focuses on what people can do. Competency can be achieved through work and life experiences without having undertaken a training course.

The practical nature of Vocational Education and Training lends itself to a competency-based approach to training and assessment.

What is competency

The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process, and embodies the ability to transfer and apply skills and knowledge to new situations and environments (ANTA, Guidelines for training Package developers, 1997)
National Training Packages

National Training Packages are developed by industry organisations and endorsed by the Australian National Training Authority. Registered Training Organisations base all training on the endorsed components of the packages when tendering for Government funding. Skills developed using the National Training Packages, ensure portability and recognition in all States within Australia.

The Packages have 2 sets of components. The endorsed components which include Competency Standards, Assessment Guidelines and Qualifications and the non endorsed components which include Learning strategies, Assessment materials and Professional development materials.

The Training Packages emphasise the centrality of competency standards in developing programs and especially in delivery, assessment and qualifications. Each Package is specific to an industry and contains a variety of Competency Standards. Training programs can be customised to meet needs by selecting competency standards from within and across industry Packages. Curriculum is then based on the standards.

Qualifications

The Australian Qualifications Framework (AQF) has established 6 levels of training within the VET sector. Pathways and linkages to work and further training are provided for.

Competency Standards

Competency Standards are a critical component of the National Training Packages. The standards state the workplace requirements of industry, the application of knowledge and skills and the standard of performance required.
They are developed as units of competency and to a common format:
- Unit title
- Unit description
- Elements of competency
- Performance criteria
- Evidence guide
- Range of variables

**Competency Based Assessment**

In workplaces, assessment of competence focuses on whether the operator can do the job to the standard. Competence is linked to production, safety and industrial awards. There is an expectation that the job be done to the required standard. Competency Based Assessment is defined as being:

> the process of collecting evidence and making judgment on the nature and extent of progress towards the performance required set out in a standard, or a learning outcome and at the appropriate point, making the judgment as to whether competency has been achieved (VEETEC 1993:13).

A VET system has a clear obligation to assess and report on the achievement of learning outcomes measured against competency standards.

**Key Competencies**

Key competencies are incorporated in all nationally endorsed industry competency standards in Australia. They are underpinning skills considered essential to success in the workplace and lifelong learning. They are generic to all post-compulsory education and training in Australia. There are 7 in total:
- Collecting, analysing and organising information
- Communicating ideas and information
- Planning and organising activities
• Working with others and in teams
• Using mathematical ideas and techniques
• Solving problems
• Using technology

The key competencies are also known as Core skills and Essential Skills in NZ and the UK respectively.

Recognition of Prior Learning (RPL)
This is an important feature of effective modern Vocational Education and Training Systems. RPL enables skills and knowledge gained through formal training, work experience and life experience to be recognised when applying to formalise qualifications against course requirements.

Developments / Trends Associated with Vocational Education and Training

VET in Schools
In recent years Vocational Education and Training in Schools (know as VET in Schools) has resulted in pathways, partnerships and linkages between school, work and further training being established. VET in Schools enables students to combine academic study with Vocational Training.

Types of Programs
VET as part of year 11 and 12 programs these programs enable students to achieve an academic award as well as advanced standing towards a VET certificate
Discrete VET courses these courses lead towards a full VET certificate with pathways in to employment and further training
Dual award where the student gains an academic award as well as a VET certificate
School Based Apprenticeships and Traineeships

School-based apprenticeships, which utilise competency standards from the National Training Packages, enable students to undertake industry training, while remaining at school.

The training is structured with a training agreement between the trainee, the employer and the RTO, entered into. The parties agree on which Competency Standards to base the training. The agreement is valid generally for 12 to 14 months. Students are paid a training wage for their time at work and on job training but is not paid when they attend formal off-job training in an educational institution.

A challenge for schools is to ensure the flexibility required for success in such ventures. There are a number of models. As examples, some schools adapt their hours at senior level to allow students a 4-day academic week and a day a week when students are released to industry. Others schools release students on a 4-week block to industry which incorporate some of the holidays.

The scheme is proving popular. In South Australia in 1998, the State Government piloted 2 programs. 30 students took part across 2 industry groups. By 1999, pilot schemes grew across 7 industry groups with 165 students participating.

Enterprise Focus in VET Programs

Vocational skill programs within schools or training institutions offer excellent opportunity to incorporate a project based enterprise focus into their programs. The project approach creates opportunity to apply previous learned skills to an appropriate activity and promotes holistic assessment.
Enterprise education focuses on enthusing and skilling students to identify create initiate and successfully manage personal, business, work and community opportunities. (DETYA Enterprise Education Reference Group 1997)

This is a dimension to the skill program, which encourages students to identify a business opportunity, to incorporate the skills learned and adapt them to a business environment/opportunity. Importantly it encourages curriculum linkages. E.g. marketing and sales, budgeting, documentation etc.

Such an approach is not new to VET in Australia. Queensland has four, Vocational Agricultural Colleges. They were established to train young people for careers on the land. Several commercial enterprises within each College created opportunity for training as well as generating income and creating workplace reality and timelines standards and pressures. At the Australian College of Tropical Agriculture, where I was previously employed, revenue from the Sugar, Livestock, Cropping and Engineering enterprises accounted for $1.2 Million in 1999.

**Group Training Schemes**

Group training schemes are an important aspect of modern apprentice training and VET in Schools in Australia. Traditionally apprentices were employed, trained and retained by the same company. Increasingly, employers have been unable to cover the scope of training through work experience, required of the apprentice. Group training schemes enable apprentices to cover all required aspects of their training by placing them with a variety of companies.

Group Training Companies are the employer, pay wages, and monitor training and the welfare of the apprentice or trainee (they are subsidised by
The Company places the apprentice with a business or a variety of businesses in order to complete the requirements of training. The businesses utilised in the training pay a fee to the Group Training Company for labour of the apprentice in addition to providing experience.

At the end of the apprenticeship there is no guarantee of a job, unlike previous practice where apprentice training was motivated by a need to train a tradesman for continued employment and production.

**Registered Training Organisations and the Open Training Market**

Until recently, TAFE was the traditional provider of off-job Vocational Training in Australia. Seeking innovation in training delivery through competition and flexibility, Government established an Open Training Market. Private Registered Training Organisations, as well as TAFE now compete and tender for Government Funding to deliver training utilising the National Training Packages.

To better meet the needs of people and organisations, including those in rural and remote areas, and to gain an edge over competitors, flexibility in delivery and assessment methods has become an area for innovative organisations. External audit of the quality of delivery is an integral part of the process.

**Workplace Training and Assessment**

It is current practice in Australian States for Registered Training Organisations to train and assess in the workplace. It can provide trainees with valuable training experience and opportunity to practice in a work environment.

The WA Department of training, 1994 states that competence,
measured against a standard can only be assessed in the workplace. The gaining of a credential or qualification from a learning institution only gives the inference that the recipient will be competent on the job.

Careful, detailed planning and considerable consultation and negotiation skills are required if such an approach is to be successful and meet the needs of all parties. This is not an easy balance to achieve. The effectiveness of this approach in ensuring quality outcomes continues to be debated. Claims include production deadlines pressure teachers to reduce the time students can take to train and practice, some industry based equipment is not appropriate for effective training, and prohibitive cost of sending teachers and resources to remote locations.

It has been my experience that tendering based on sound analyses is critical to a quality outcome otherwise the focus shifts to cost cutting and panic to achieve profit. In summary, achieving effective workplace training and assessment while meeting production deadlines is a challenge for the trainer.

Multi skilling

Technology was once slow to impact on jobs, with skill training resulting in the expectation of life long employment.

Globalisation and modern technology has had a major impact on the nature of work, resulting in an associated climate of rapidly changing industries. Workers require broad basic skills if they are to make the transition to any new roll. The requirement for broad-based skills focuses basic training on a wide range of common competencies before specialisation. It has been estimated that 50% of the occupations that young people will fill in the year 2010 do not currently exist. Consequently it is
vital that our future workforce be flexible, able to adapt quickly and be informed by the latest technological and industrial developments. Department of Education and Employment: Enterprise and Vocational Education,

However, in the Pacific, with limited Government jobs there is a need to develop the self-employment and small business sector. While it is recognised that broad-based skills are desirable, the need to get people into employment in the private sector, may justify narrow banded skills programs.

Simplistically speaking, a modularised program based on competency standards, could enable people to train in specialised skills and then move quickly in to self-employment. Small business training would need to be a component of any program, with a pathway for further training if desired. As an example, a student competent in clutch diagnosis and repair might exit the automotive training program and set up in business in a short time. A modularised program would allow him to move back into training at a later date to train in, for example, brake repair in order to expand his business.

**Lifelong Learning and Flexible Delivery**

The need to ensure a personal and organisational culture of lifelong learning is important. People are under pressure to upskill to meet the changing needs of work while meeting family commitments. The demand for flexibility in course delivery is greater now than before. While variety of remote delivery information based courses, many in English, are being marketed, they presuppose that the learner is literate in the language—a challenge to effective learning in English 2nd language environments.
Issues for Teachers of Vocational Education and Training

With the introduction of Competency Standards as a basis for measuring training and work performance under a CBT system, there are a number of issues confronting teachers and workplace supervisors involved in training.

Catering for the Adult Learner

As a generalisation, adults approach learning differently from children. They seek learning out of a need, self-motivation and generally respond well to a facilitatory approach by the teacher. VET teachers can capitalise on these factors and enhance their teaching practices by recognising levels of practical and academic ability, motivation and the experience they bring to the group.

Interpreting the Competency Standard

Interpreting the standard accurately, mapping standards to appropriate existing curriculum, developing curriculum if there is none available, mapping developing appropriate assessment instruments, developing a workplace training plan in partnership with the workplace employers and measuring skill in the workplace, are issues associated with implementing the Competency Standard.

An appropriate Competency Standard selected from a Training Package, ensures the freedom to contextualise curricula to meet needs.

Technical Skill of Teachers.

With Vocational Education and Training linking into the workplace another issue arises. That of technical currency for those who left trades for teaching. The rapid advance of technology suggests that, some teachers may
be inexperienced with recent practices. The workplace may be intimidating as a result, and especially if teachers are required to go there to train trainees and apprentices.

A professional development scheme that releases teachers to industry and up-skill is a method of addressing this issue and is utilised in Australia and New Zealand.

**Programs and Resources**

Successful and effective practical training requires relevant programs and functional resources that enable effective learning and most importantly opportunity for practice. The cost of effective Vocational Education and Training is high and requires adequate resources and budget if quality learning is to be achieved. Initiative and innovation is required to overcome resource shortages, especially in the Pacific.

Vocational programs must reflect the practical nature of the Vocational Education and Training or teachers risk reliance on imported print-based materials. Why?

1. It is easy to access and requires little planning for delivery
2. A lack of physical resources in the training institutions.
3. Inadequate grasp of concept of Competency Based Training principles.

**Workplace Assessor and Trainer Qualification for VET Teachers**

As a minimum teaching qualification TAFE and other registered training organisations in Australia require teachers and trainers to undergo training in Certificate IV Workplace Assessor and trainer Course. VET teachers in Schools are required to have this qualification, in addition to a degree in education.
The course covers the National Training Packages and Industry Competency Standards, how to interpret them, deliver effective competency-based training, develop appropriate assessment tools and instruments, and link training into the workplace.

Certificate IV Workplace Assessor and Trainer could be delivered and assessed regionally, through a variety of delivery methods, with accreditation from a Registered Training Organisation in Australia. This course is also appropriate for workplace supervisors who train and assess.

**Literacy and Numeracy in VET**

Interpreting and retrieving information is an essential skill in a globalised economy. In the Pacific the majority of trainees are English 2nd Language learners. Imported curriculum may have inappropriate language levels, and not meet the learning needs of the students. Teacher awareness of language learning difficulties is better able to adapt their approach to meet needs, or refer them for help than those who are not.

In the United Arab Emirates, first year students at the Colleges of Higher Technology will fail to progress beyond year 1 if their English is not to the required standard. This is irrespective of whether that student can perform the technical task at that level or not.

**Computer and Internet Literacy**

Computer and Internet literacy is essential if teachers are to expand their resource base beyond the physical confines of their current location especially in remote areas. Teachers are then charged with the additional responsibility of introducing students to the Internet as a research tool.
Graded Assessment

In training institutions there can be a requirement to grade results so that an award may be made or a selection made as to the best student. If graded assessment is required within a CBT system there will be a need to establish criteria for making these graded judgments. It is essential that the competency standard remain as the benchmark - the minimum to achieve for basic competence.

Providing that grading is confined to candidates who exceed the minimum standard, differentiating amongst students on the basis of merit is quite legitimate in a competency based system (Byrne 1993, in reference to Gonczi, Hager and Athanasou).

Pacific Nations Qualifications Framework - (food for thought)

Within the Pacific Region vocational qualifications gained in one country are not necessarily recognised in others. If this is a cause of concern, and I think it should be, it is in need of address. Globalisation of skill standards is desirable in fact inevitable.

A Regional Qualifications Authority could establish standards and develop career pathways and linkages, monitor training quality and certification. Portability, accreditation and articulation of Vocational Qualifications within the region would follow.

A critical process in establishing such an authority would involve in-country analysis of skill shortages and priorities, identification of country training capabilities and development of industry standards of competency as benchmarks. Mapping country needs to training venues in the Region would reduce duplication and minimise costs. I believe UNESCO is addressing this
issue through a taskforce, which is currently investigating the implications of such an approach.

**Vocational Education and Training on Nauru**

**History of Nauru**

The Republic of Nauru is a small isolated Central Pacific island lying some 26 miles south of the Equator at 166°55' East. Ocean Island some 190 miles to the east is its nearest neighbour. Nauru is some 2,500 miles from Sydney.

The island is a raised atoll, with a surrounding reef, which is exposed at low tide. It has a circumference of 12 miles and an area of just over 8 square miles. Most of the population resides along a narrow coastal belt. Coral cliffs cover some 3/5ths of the land area to a plateau 200 plus feet above sea level at its highest point. The plateau covers approximately four fifths of the land area, and contains valuable deposits of rock phosphate.

Nauru became an independent republic on 31 January 1968, from a United Nations Trusteeship of three partner governments: Australia, New Zealand and Great Britain, which was formed in 1947.

The Nauru Phosphate Corporation, a statutory corporation of the Republic, took over mining activities in June 1970, following Independence. In addition to mining phosphate, the NPC also performs community services such as the running of Nauru's desalination plant, which provides fresh water that previously had to be shipped from Australia.

The island is fully electrified, power being supplied by diesel generators maintained by the Nauru Phosphate Corporation. There are over
12 miles of sealed road, consisting of a ring road and a road to Buada Lagoon some distance inland and the phosphate workings. A small narrow gauge railway serves the phosphate workings.

Nauru has no natural port but has excellent deep-water anchorage served by a cantilever system for the loading of phosphate and by lighters for the discharge and loading of other cargo.

**Mining and its Effects**

Over the past century, Nauru has generated wealth from high-grade phosphate rock, which has been mined since 1907. It is however a finite resource.

The phosphate rock on Nauru is among the highest grade in the world. Further, over-mining of the island has led to what is described as an 'oven' effect. The removal of vegetation to facilitate mining has left the plateau with a bald top, which has become so hot that the updraught of air disperses the cloud formation and so less rain is recorded. These droughts have retarded much of the normal growth of the jungle and restricted habitats of local birds.

The rehabilitation of Nauru's mined-out lands is a priority of the Government as mining draws to a close. The objective of the rehabilitation program is to remove the pinnacles, re-contour the land and render the land useable and an area again fit for habitation. Secondary benefits will be the elimination of the 'oven' effect, revegetation and the return of birdlife. This will be a huge earthworks operation, expected to take 20 years.

**Status of VET in Nauru**

Vocational training on Nauru centers on two major employers and one
training institution. Phosphate Corporation Nauru (NPC) is the major employer of Nauruans and Expatriates on Nauru. With a complex mining infrastructure and an export product in Phosphate, Nauru Phosphate Corporation is required to compete on a global market.

NPC has an established traineeship and apprenticeship scheme, which was initiated by the British Phosphate Commission, (BPC) administration before independence. NPC has a huge infrastructure of mechanical, civil and electrical workshops, clerical and administrative office, engineering offices, hospital, and catering/hospitality, medical and marine facilities.

Traineeships and apprenticeships for young Nauruans are actively encouraged. Training schemes however are time-based, resulting in apprentices emerging as tradesmen a after specified period of employment. Trainees and apprentices, depending on vocation, are required to attend block training and some evening courses, at Nauru Vocational Training Center to address the theory and off-job components of their course. Others are required to attend block courses in Fiji or complete study through distance delivery methods. Progression through the stages of training is based on time served with little linkage to competency.

Nauru Phosphate Corporation should be recognised for its efforts in identifying suitably talented and capable trainees and seeking training offshore in Australia, Fiji and NZ, which have resulted in a number of internationally qualified Nauruan tradesmen and engineers. On island training for nurse aids is catered for at the NPC hospital with promising students articulating to training courses overseas.

Much valuable training opportunity is available, on the job, at NPC. With the downturn in the phosphate industry however, sales have slowed
resulting in a shortage of materials and resources seriously impacting on the effectiveness of the training.

Nauru Works Department is the second major employer of apprentices. Skill development is through on-job experience. Off-job training is satisfied through the Vocational Training Center. Apprentices progress to tradesman status after completing a specified period of time on the job.

Nauru Vocational Training Center focuses on the off-job training requirements of trainees and apprentices on Nauru. Currently it caters for mainly trade-oriented vocations and a limited number of small business and administrative skill courses. It also caters for community education courses on a need basis. It is under resourced and under staffed.

Vocational Education at Nauru Secondary School is severely restricted. It is limited to Home Economics for males and females. Currently this involves the practical aspects of cooking and textiles. Students are taught cooking practices and sewing methods. In term IV an enterprise approach to student learning will begin in home economics, textiles and computing. The focus will be on applying practical skills to business opportunity - and succeeding.

Manual Arts and Industrial Arts was taught in the past but has not been offered since 1990 when a storm severely damaged buildings and a large amount of equipment. Past attempts to link the Nauru Secondary School students into wood and metal related subjects at the Nauru Vocational Center have not been successful.

Next term Graphics and a new practical skills program will be taught. The new program will be based around fishing methods on Nauru utilising
the reef and offshore resources. It will begin the revival of practical skill training at NSS. In partnership with Nauru Fisheries Resource Management Authority, it is hoped structured work-placement will become a feature of the program.

With rehabilitation of the topside beginning there is opportunity for the VET and employment sectors to consider and plan for future skill needs. Government is looking to implement a Vocational Education and Training System that will identify and meet these needs.

Further issues impacting on the status of Vocational Education and Training on Nauru are:
- No National Vocational Authority to identify needs, implement and monitor a quality VET system based on Industry Competency Standards.
- No National Vocational Education and Training system to ensure career pathways, linkages and partnerships between school, industry and articulation into further education on Nauru and in the Region.
  - No accurate National manpower plan
  - Wide ranging Literacy and Numeracy levels at school and in the workplace
  - Reluctance by expatriate tradesmen to train Nauruans in Vocational and Trade skills.
  - An workplace culture reliant on expatriate skill and production on Nauru
  - Rehabilitation
Topic 3

The changing roles of the government and other stakeholders
Conditioning the New Roles of the Government and Stake-holders in Vocational Education: Participatory Qualification System Development

Presented by Kioh Jeong
Director General, Office of General Affairs
Korea National University of Education

I. From Authoritarian to Participatory Governance of Vocational Education

In Korea, a system of school-based vocational education developed, during the long period of educational and economic expansion, as a part of the large institutionalized system including more than 1000 institutions. Going abreast with this school-based vocational education is a similarly bureaucratized system of public training system combined with the national technical qualification system. From the beginning of 90's it became clearer that the past vocational education and training system as such could not any more meet the new economic demands for flexible and refined skills, while becoming oppressive of the rising aspirations to individual development throughout life. Vocational education was just a big cluster of the similarly regulated institutions and schools which have little relation with each other. They were different only as prescribed by institutional rules. Actors in the cluster behave in a uniformed way everywhere as they don't refer to each other.

The vocational education reform proposed by the Second Education Reform Proposal (hereinafter "ERP") 1996 includes many policy suggestions to shift the highly regulated institutional systems into an interdependent
complex of autonomous initiatives and practices. The ERP 1996 intended to reorganize the ways of steering the vocational educational education and training which has been organized and governed in a highly centralized bureaucratic manner. The ERP's suggestions were drawn from the judgement that both the vocational education and the training should respectively outgrow the over-institutionalized establishments to form a flexible and integrated skill development sector based on private initiatives and competitions. Debates still continue in the process to implement the suggestions of the ERP. Continuing difficult issues are still raised in the course of the policy development. One must browse some of them to understand what are going on.

At first, the ERP proposed that institutions would contract out interrelations with other actors in the system and that joint initiative by individuals would replace authoritative coordination. By this way, a system of negotiated interdependence is expected to develop among institutions it. According to this scheme, at present, some contractual relations are developing between vocational high-schools and higher education institutions. Participating schools and institutions negotiate on curriculums, facilities, personnels and so on. However, such a practice is a totally new experience for the participants and also for the education authorities. They had been too much accustomed to reactive adaptation behaviors in the highly institutionalized education orders. It will be a difficult and much effort-taking experiment to create some pattern setting models.

Secondly, the ERP suggested that we should promote non-governmental initiatives in assessment and recognition of vocational competence. The qualifications in Korea have long been under overwhelming statutory control. Both the academic qualifications and the technical qualifications are mainly parts of statutory system in Korea. The former has been so since the
establishment of modern education system in this country, and the latter since 1976 when the government enacted the National Technical Qualification Act. The statutory qualification system worked relatively well in the time of nation building and government-driven development. When the Korean society and economy were manageably simple enough such a statutory control was a source of transparency and reliability to encourage human capital formation and transactions. The statutory nature of the system, however, now became rather restrictive than promotive of all the new progressive initiatives in the society. The statutory rules cannot quickly adapt themselves to the compelling occupational and technical changes.

The Foundation Act of Qualification (hereinafter FAQ) of 1996, as proposed by the ERP, declares assessment recognition and certification to be permitted as private businesses. The FAQ provides that government should promote the development of private sectors in these area. The writers of the ERP expected the private qualifications would compete with the statutory qualifications to give the whole system progressive initiatives and flexibilities. However, the change is still at the very beginning stage: interested actors start to mobilise but in vague confusion. Only cumulated experiences and knowledges can make substantial progress.

As seen in the above brief, the ERP's proposals to accomodate stake-holders in running vocational education put more emphases on deregulation than on democratic decision and consultation. At present, one find three major obstacles in implementing the systemic change in Korean vocational education.

1) misconception in regulatory reform

Vocational education and training seems particularly easy to fall in the
trap of the government failure. In this field, people used to imprudently accept government interventions and large scale public programmes particularly when economy contracts. That is what happened in 1990 for vocational highschool expansion. Same imprudence repeats now in the training sector with the scream of economic crisis and unemployment. In that, current economic crisis greatly hampers the progress of the vocational education reform.

Actors of vocational education cannot play the initiatives expected by the ERP without extensive deregulation. Typical examples were seen in the contract based highschool-junior college alliances. As a higher education institution a junior college can negotiates freely with a vocational highschool. The vocational highschool, however, does not have enough discretion to negotiate with the junior college. National curriculum and other rules imposed by the national and local education authorities do not allow the vocational schools having the discretion needed. This imbalance of discretion between the partners of the contract frequently hampers the proceedings of the joint initiatives. Situation is far from better in the training sector than the case of vocational high schools. It is rather worse.

Despite the government-wide regulatory reform drive, the deregulation bears little fruits in increasing individual initiatives. To speed up the deregulation, transforming vocational institutions into independent agencies have been opted by reformists but still in vain. National curricula for vocational high-school has been also under reviews for its possible removal, until now without conclusion. In fact, people do not have a sound picture of the deregulated system and the role of the vocational education authority.
2) lacking signals and incentives for organizational and individual actors

For a system depending more upon decentralized and individual decisions, the supply of necessary informations and incentives becomes more and more important public responsibility. For example, occupational and career informations, informations about learning opportunities and education programmes are now on increasing demands. Investment in building computerized databases and bringing up a lot of trained experts will be enormous but receives very little attention due to the restricted financing under the economic crisis. In this situation, deregulation usually means a world more unpredictable and uncertain. To run deregulated system, the public authority should keep more extensive knowledge-based activities. However we still do not have such knowledge-bases to build new governance.

3) conflicts between education and labour

During the past decade several countries merged the education authority and the labour market and training authority. It seems inevitable as soon as the adult population and adolescent youths come into the focus of education policy. In Korea the conflict between education and labour rose in the discussions to prepare the ERP 1996. Reformists maintained that the two sectors should be closely integrated by introducing extensive choice measures and private initiatives. However labour experts and policy makers insisted on keeping the segregation between the formal education system and the training system. The ERP and succeeding legislations are the result of adopting the reformist's view. However the conflicts and debates still continue in the process of the enforcement of the reform legislations.

Merging the two government authorities has been a frequenting topic
of the discussions on government administration reform. To reach an indisputable reconciliation, those in education and labour have lived too long in different worlds with different languages and outlooks. Though Korea as a nation state has a very short modern history, the fundamental differences between the two sectors had been nurtured for long before they were imported in this country.

The above described confusion was seen particularly in the course of renovating the qualification system. The FAQ envisaged a deregulated system of qualification in which stake-holders could play their roles in the running of the vocational skill formation. The Korean Education Reform Proposal II (1996) includes a picture of vocational education reform. The Reform focused on developing new vocational qualification system. A substantial fruit of the ERP is the Qualification Foundation Act(QFA, 1997). Major Objectives of the QFA are as following:

- Develop various qualifications through private non-governmental initiatives.
- Develop national core qualifications by legislative mandate to the Administration.
- Make flexible the NTQs system to accommodate new industrial changes.
- Encourage businesses in the field of skill assessment and certification.

However, the legislation in fact could not be successfully implemented without enough knowledge-base thereon. Reform always confronts backlashes. The QFA also incurred resistance from the establishments cumulated around the old systems including the NTQs. In retrospect, however, the biggest obstacle came from in the lack of sound knowledge base about the qualifications. The purpose of this paper is to clarify nature of the qualification and its use. Ideas in this paper were from serious discussions.
among the small number of experts involved in earlier preparation of the ERP II. This paper is a trial to develop and to share, in the open market of ideas, some thoughts that were under consideration in drafting the QFA. The QFA expects learning accumulation inspired by qualifications, and for that purpose, introduces measures for expanded participation in qualification development. This paper dealt with the topics that must be clarified in implementing the QFA and in achieving further progress in this field: qualification as a legal property, semiotic nature of qualifications, participatory qualification development, and monetary nature of qualifications. To understand these characteristics of qualifications will be a necessary condition in building a system as envisaged by the QFA.

II. The Qualification as an Asset: Regulatory Bases

1. Regulation in Process, Achievement, and Use of Learning

In defining the qualification, the last point to be mentioned is the benefit of the qualified person forming the fundamental rationale of a qualification system. If there is a system where a qualification is attributed to a person only for other purposes than the person's benefit, the system is totalitarian. There are rules and customs whereby the legitimate actor attributes a qualification to a particular person for his benefit. Countries are different in the rules and customs concerning the ways and the effects of the deed of attribution.

In an economy, people involve themselves in various economic activities to produce new economic values and the unconsumed values in that period add to the stock of existing economic assets. The nature of the whole process in learning hardly differs from that in economic system. People increase their competences and skills through vocational education
and training. Participating in the learning activities, they invest much efforts and existing knowledge capital in creating new values in human assets. There is a process of recycle between learning and knowledge accumulation.

In the world of economy, the economic activities and the acquisition of economic assets are regulated by the private law, that is, respectively the law of contract and the law of properties. The economic activities like production exchange and distribution take place in contractual relations governed by contract law. On the other hand, property laws decide the kind and attribution of the properties produced and accumulated through the economic activities. In this way, the regulatory system of the private law provides the mechanism of incentives to activity and attribution of economic values.

How about in the world of learning? Every country has a set of rules and regulations in this area. Generally speaking, learning takes place in various legal context and then legitimate actors assess and recognize it to the effect that the learners carry the result as their recognized qualification. In that way or other, learning is legalized to variable extent by countries. The effects of assessment and recognition also strikingly differ in countries.

Legal frameworks under which learning activities and the resulting acquisition of qualification are, compared with other field of laws, not fully studied and clarified. Learning is rather largely regulated by cumulated customs and institutionalized wisdom.

In many English-American countries, the procedural aspects of the learning provision have been strictly regulated by the school law or various training regulations while the acquisition of the qualification has seldom drawn government legislators' attention. In these countries, the kinds of
qualification produced through learning, and its attribution are frequently just matters of concern for individual learners and education and training institutions. The qualification mainly serves the informatory purposes.

On the other hand, in continental Europe countries, vocational qualifications themselves have been strictly regulated by joint articulation between governments and professional associations. In these countries, the kinds of qualification and its attribution directly relate to the industrial and social organization. State authority and trade associations in these countries execute very strong power to recognize and validate the qualifications. In these countries, a qualification is usually the passport to related jobs.

To summarize, former countries put regulatory emphasis on learning activities while the latter on results of learning, that is, qualifications. The two approaches in regulating learning and qualification were, in fact, corollaries of their distinctive skills market: the one school based skill-formation the other work-site based skill-formation. The nature of qualification also differentiates: the one a social engineering for transaction-cost saving, the other a legal right to jobs. The table 1 compares the two.

<table>
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<th>(table 1) Regulatory Emphasis by System</th>
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<td>learning process</td>
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<tr>
<td><strong>School Based</strong></td>
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<td><strong>Work Based</strong></td>
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As structural adjustment proceeds in economy, new innovations take place in countries and the traditional approaches to regulate learning and qualifications start to change. Changes in economy transform the world of
work as a whole. New qualification demands for the new economy are hardly met by the existing workforce, which necessitates large scale employment adjustment inevitably incurring unemployment.

The changes in economy necessitate the change of the way governments deal with learning. The regulatory system in this field have to accomodate new skills demand and the unprecedented mobility of skills. Traditional schooling or training regulation cannot afford the changes. Current national and international efforts concentrate on defining the new qualifications and achieving an upgraded profile of workforce. For that purposes they introduce various new ways to recognize learning. The line between the two distinctive past models of regulation in learning and qualifications is blurring.

III. The Qualification as a Sign: Nature and Definition

1. Semiological Nature of Qualifications

The term qualification has been so far, in its use, ambiguous enough to raise concern for a clearer and more operational definition. Researchers and policy experts are trying to set a definition of qualification. One example is as following: "qualifications are the ensemble of knowledge and know-how necessary for the accomplishment of a specific task." while competences are individual and subjective ability to use the knowledge and know-how (Fragniere: OECD, 1996, 46-47). Similar definitions are prevailing but they are still confusing. With such definitions, we cannot go further into fruitful discussions for action. Problems stem from the fact that qualifications go in between the man and the job, and is both a set of human characteristics and of job traits.
It has been frequently said that qualifications play the role of signaling for the participants to labor market. Job seekers prepare themselves following the signal and the employers make decisions according to the signal which gives reliable information. This is the starting point. Qualifications are nothing other than signs, which carry some kinds of information for the learners and employers. Linguists and semiologists, fortunately, have long developed the theory of signs, that is, semiology or semiotics. One would, to study qualifications, utilize a very small part of the accumulated knowledges in that discipline.

For the purpose of this paper, one would define that qualification is a sign attributed to a person. To be more accurate, qualification is an i) institutional signifier ii) coined by the legitimate deed iii) signifying a set of information in terms of knowledge and skills iv) attributed to a person v) for the benefit of the person.

It is not the referred person him/herself but just a separated representer of the represented person so that it can be submitted and put on circulation. The sign is a unit of the system of signs to which it belongs. This sign is coined by legitimate actors according to socially agreed rules and procedures. However, the qualification signs and their system is one thing, a produced concrete certification is the other. To follow the linguistic structuralists' terminology, the former is of <langue> and the latter is of <parole>. This distinction is useful if one tries to build a general theory of qualification separately from an individual qualification development behaviors.

In the mean time, the qualification as a sign is a combination of the carrier of sign (signifier/signifiant) and the information it carries (signified/signifie). The well-known distinction by Saussure between <signifier> and <signified> holds well here. The qualification as carrier is a part of the institutionalized sign systems while the qualification as
information belongs to the world of meanings: meanings put in terms of valuable knowledge and skills in a society.

Now one arrives at the three components of a qualification system: signifier of qualification, signified of qualification, and the qualified person. The relation of the three components can be illustrated in the form of semiological triangle as the picture1 below.

(picture1) Semiological Triangle of Qualification

CULTURE

signified (assessed)
content of the qualification

POWER

signifier (certified and recognized)
appearance of qualification

represented persons
transporter of the qualification

WORK & LEARNING

The above triangular illustration is following the typical triangles developed by the past semantic inquiries (Eco, 1985, 35-38):

- the triangle of reference-symbol-referent (Richards, 1923),
- the triangle of interpretant-representamen-object (Pierce),
- the triangle of Sinn-Zeichen-Bedeutung (Frege, 1892).

The triangular illustration implies that a qualification system is a mixture of the cultural contents, the power relations, and the complexity of work and jobs. Each of the three components of the triangle can be subject to structural analyses because they respectively form three separate authentic
structures composed of their own units.

At first, a qualification system is necessarily based on a set of knowledge, skills, and values which are imbedded in the existing culture. In other words, being the content of qualification, curricula and syllabi are the construct of cultural units like knowledge, skills, competences, attitudes, and values. One can analyses the content structure of a qualification system by the structuralists' methods.

On the other hand, a qualification system is maintained by implementing behaviors like assessment, certification, and approval. The qualification system regulates these behaviors. In that, it is a system of norms and rules which reflect existing power distribution. A stream of American sociology has developed an explanatory framework named as "institutionalization theory of social organizations" and "legitimation theory of education". According to the explanation, providing legitimized classifications of both men and knowledge is the most important function of education systems (Meyer and Rowan, 1979). The triangle of qualification confirms the argument of "legitimized classification" in a different but more direct way. What Meyer and Rowan had in mind, when they argued on functioning of education, is the qualification as a signifier. In the above triangle, the signifier is the active component to signify the signified and to represent the represented.

Learners and workers are users of the qualification system. They use the system in the same way as people use a language. They compose their own careers as people compose a statement or a text. From the users' standpoint, a qualification system is a tool to plan, design, and exchange their career at work and learning. The reservoir for their consideration are, to say, drawn from the various occupations. The ILO, national governments and other organizations are regularly updating their lists of standard occupational classifications (SOCs). The SOCs include classifications of
workers—the represented in the triangle of qualification. SOC's typically have structural nature so that one may apply the structuralists' methods.

Therefore, a qualification system is a system of signs. One can understand the system better by using structuralistic analyses. This is a starting point for those who want to develop a good and effective system of qualifications. Signs are not just reflections of things. They have their own logic and life. The same is true for qualifications.

2. Grammar of Qualification Signifier System

One can easily find the appearance of qualification as a system of signifier in the related legal and executive instruments defining the kind and structure of diploma, certificates, and degrees. This structures have common attributes with linguistic or semiotic structures. For example, the system of the GNVQs and NVQs in England has its own qualification levels and classes. Following in the box is the outline of the GNVQ and NVQ system.

The Qualification and Curriculum Agency (QCA) in UK is running a National Database which contains comprehensive details of all NVQs and GNVQs. Information about each NVQs and GNVQs is held in full detail and includes:

1. A qualification summary
2. The level within the framework
3. The components
   - units
   - elements
   - range statements
   - performance criteria
4. Quality assurance certification procedures
Strategies for High Quality Vocational and Technical Education and Training in the Tertiary Level in Malaysia.

Presented by Dr. Muhammad Rashid Rajuddin
Faculty of Education. University Technology Malaysia.

Vocational education system in Malaysia are based on two specialized streams, namely, vocational and skill. In the vocational stream, a portion of the time is spent on academic subjects of which, this will provide opportunities for those who perform well academically to further their education in tertiary institutions. In the skill stream, programmes on specialized skills are conducted by various training institutions in order to cater the increasing demand of skilled and semi-skilled manpower as a result of the growth of the manufacturing, construction, and industrial sectors in the country. Both of these streams are conducted by private and government agencies.

There are several private vocational and skills institutions which are run by individuals or private companies that usually caters local manpower needs. However, the engineering trade seems to be popular in-line with the development of the industrial and manufacturing sectors of the country. Usually the graduate of these private institutions have very high rate of employment. This is due to the deal being made before conducting the programme. These institutions are set up to fulfill certain needs of manpower by various agencies. The skill and knowledge are tailored to need of certain industries too. Therefore, problems such as skill-mismatch (unrelated skills) do not exist. New courses are constantly introduced to cater for the requirements of employers for new skills as well as to take into consideration of the changing technology. Curriculum are constantly reviewed.
and reorientate their courses to ensure that the training provided is in line with the skill requirements of the industry. Skill upgrading became more necessary with the establishment of heavy industries and high-technology precision-based industries. Public sector skill training efforts is supplemented by the private sector in the provision of in-service and on-the-job training to cater for their own skill needs. Private sector participation in training is also observed through their involvement in the Ministry of Human Resources, National Vocational Training Council in the development of trade standards and syllabi for industrial training.

Semi-government agencies also play an important role in providing assistance to both the private and government vocational institutions. The Centre for Instructor and Advanced Skill Training (CIAST) provide skill upgrading and advanced training skills to various technical fields. The Standards and Industrial Research Institute of Malaysia (SIRIM) undertook training of workers in the use of more modern technology, machinery and equipment.

The Malaysian government through its ministries are also responsible in vocational training which caters the need of the manpower of the country. As in many developing nations early effort at mass education were directed towards academic achievement. The result has been the same as in most countries of the world; a high drop-out rate for those who are unsuccessful, and an over-abundance of students prepared for further academic achievement but not prepared for the realities of the world of work. Through various government ministries, the educational system of the country is attempting to remedy this situation by bringing the needs of the nation and the supporting educational system into sharper focus. To restructure the educational system to be more attuned to the needs of a
modern industrial nation requires massive shifts of priorities, creation of new educational programmes, creation of new institutions and training of instructors and new faculties in the institutions. Among the ministries actively participating in the vocational training programmes are the Ministry of Education, Ministry of Human resources and Ministry of Youth and Sports. Each of these ministries have different objectives and role (yet frequently overlapping), and each cater different target participant.

The Ministry of Education through its Technical Education Department is responsible for the planning, organization and supervision in the lower secondary schools and vocational and technical studies in the upper secondary and tertiary levels of education system. Basic engineering courses such as civil, electrical, mechanical and engineering drawing are taught in the Technical Schools (upper secondary level). Basic vocational subjects are also being taught in these schools (to a different group of students) such as woodworking and building construction, machining, sheetmetal and welding, air-conditioning and refrigeration, electrical installation and maintenance, radio and television, automotive mechanics, commerce, agriculture and home science. At a diploma level, all of these courses are being offered in the polytechnics.

The Ministry of Human Resources have several technical and vocational institutes. Particularly the Industrial Training Institutes (ITI) initially with the assistance of Colombo Plan and the International Labour Organization, has successfully upgrading the quality of industrial workers through their apprenticeship program. The programme has been expanded to include pre-employment training for unskilled youth and for retiring personnel who are seeking in the private industrial sector. The National Vocational Council with a mission to develop resources by providing
opportunity for skill upgrading and career advancement has a very important function, that is, providing Malaysian Skill Certificate through its national skill certification programme. Thus, the Ministry of Human Resources is responsible in maintaining and implementing the National Occupation Skill Standards of the country.

Among other objectives of the Ministry of Youth and Sports, related to the vocational training, is to equip youths with various vocational and entrepreneurial skills through formal training at various institutions run by the ministry. The Youth Training Centres located all over the country conduct three types of training, namely discipline, vocational and business. Trainees are actually dropouts from formal education. Discipline training is conducted military style while vocational training comprises of courses in auto mechanics, construction, agriculture and tailoring. As for business courses, a general business and specialized business course are conducted.

All these three ministries provide manpower (skilled or semi-skilled) to the country. Graduated students are free to get employment in the government or private sector, while some do venture into developing their own business. Other government ministries however, do have their own vocational training programmes. These programmes are usually to cater their own need in the system. Such as, the nursing schools run by the Ministry of Health, is to train qualified nurses for the government hospitals and health clinics.

Reviewing all of the vocational training institutions mentioned above (both the private and government sectors), they all have one thing in common producing skilled and semi-skilled workforce. The type of programmes are from the basic to advance skill courses. With the fast
technological advancement in the world, Malaysia should look head in developing their own technology rather than doing repairs and servicing jobs. Malaysia should produce, and it is time for the curriculum in these vocational and technical institutions be changing its paradigm from a user of technology to a contributor to technology. Although basic skills are still needed, but to be in this competitive world, Malaysia should venture into new concept of education. Engineers are too paper oriented with very minimum manipulative skills, while vocational institutions are too skills oriented with very minimal science and technology foundation. To overcome this phenomena, University Technology Malaysia has put an effort improving the technical and vocational training to a global understanding in relation to the technological advancement internationally.

University Technology Malaysia (UTM), beginning in 1986 introduced a new department in the Faculty of Education, the Department of Technical and Vocational Education. The main objective of this department is to produce graduates technically and professionally competent in specific technical and vocational field with design and innovation approach. As such, they could be the man behind changing the paradigm of the vocational training programme in the country. Thus UTM is currently the only institutions in the country to provide a tertiary level of technical and vocational education, from the undergraduate to the post-graduate certification. Figure 1 is an overview of UTMs students intake and graduates in the employment market.
UTMs Department of Technical and Vocational Education, accepts students from two different academic background; graduates from high school with emphasize on credits in mathematics, science and technical subjects, and candidates with teaching certificate who has teaching experience in various technical and vocational institutions. Upon graduation 4 years of education in the undergraduate level, these graduates can obtain employment by various institutions, namely: teacher colleges, polytechnics,
government vocational and technical institutions, private/public vocational and technical institutions, the industries or venturing into their own business. Since 1986, this Bachelor Degree in Technology and Education (Civil, Electrical, Mechanical and Living Skills) have produced 1408 graduates who are currently employed in various technical institutions and industries.

The programme is designed with the emphasize on providing design and innovative, manipulative skills, maths and science, technology and engineering subjects, technical and vocational education subjects, technology and culture, and research. Emphasis was also placed on the development of managerial and entrepreneurial capabilities so as to enhance employment opportunities in the labour market. Figure 2 shows the outline of the programme.

**Fig 2. Programme Outline in Technical and Vocational Education.**

3. Manipulative skills

4. Maths & science

5. Technology & engineering

6. Tech/voc. education

7. Research

Technically and professionally competent individual (specific knowledge and skills)
"from user of technology to the contributor to technology"

**JOB OPPORTUNITIES**

- technical and vocational administrators/ instructors with technical skills/ design and innovation
- non teaching jobs in various technical areas of industrial setting.
The Approach For Redefining the Program.

Having seen that most of the technical and vocational institutions are concentrating on producing skilled and semi-skill workers, there are demand on the needs of higher level of vocational and technical education with basic skills and also some engineering and technological awareness. Design and innovations too, which requires basic manipulative skills should be taught in order to create an innovative culture among the workers. Thus, the present curriculum of technical and vocational education in UTMs Faculty of Education was formed which take into consideration several factors which will hopefully fulfill the vacancies in many aspect of the vocational education. The curriculum change process is thought provoking and offer the opportunity to gain insights, information, and ideas from professionals and industries. The seven sections of the curriculum (Fig.2) are all inter-related with a concept:

Technical Competency Development:

"whereby students are to update technical skills in their specific technical areas through research and development/technical courses representing new/emerging technologies or in related/complementary technical areas.

The courses centered around developing and reinforcing specific skills and information from selected content areas. This include the understanding and application of technical and manipulative skills of which the students will be able to evaluate, synthesize, invent and communicate the gained information effectively to others. Major factors identified in the objectives of this curriculum are:
- Technical literacy (technology & engineering)
- Networking with industry and education (tech/voc.education)
- Communication skills: writing technical reports, presentation skills etc. (technology & culture)
- Leadership and professional development (technology & culture)
- Technology transfer & assessment (technology & engineering)
- Social and cultural impact of technology (technology & culture)
- Applied science and mathematics (maths & science)
- Research skills and statistical analysis (research)
- Design and innovation ergonomics (design & innovations)
- Basic manipulative skills (manipulative skills)
- Management skills. (tech/voc.education)

Critical to the process of developing the programme was the development of the goals. These goals were developed from the advisory committee which comprises of; the departmental faculty, representatives from the Ministry of Education, faculty from other department, representatives from several vocational institutions, and representatives from industries. Three goals were then identified:

- Improving the existing strengths in the program:
  Provide opportunity for advanced skills development.
- Adapt to change:
  Expanding the core of professional courses.
  Emphasize on research and development process, including the concepts of invention, innovation, and development.
- Prepare for the future:
  promote core skills throughout the programme that develops the students to effectively interpret and manage the system and products of technology by working effectively with others.
Reports on the Graduates Performances in Their Profession.

During the 4-year course in this programme, besides attending lectures and laboratory activities, students have to participate in Teaching Practice as a mandatory activity held at various technical schools and vocational schools. The duration is 8 weeks in the second year and another 8 weeks in the third year of study. These trainees are bound to the rules and regulations of the institutions and will have to teach in the classroom and workshops following the curriculum set by the schools. Although this exposure realizes the trainees on the teaching environment in the technical and vocational institutions, the evaluation was made only on their teaching methodology and their acquisition of knowledge on a specific subject or skills. The trainees ingenuity, innovation and design skills on a specific skill could not be observed. In general, reports from the schools are satisfactory:

- trainees personality is satisfactory.
- theoretical knowledge is satisfactory
- technical skill for the second year students need to be improved, especially on a more advance skill.
- technical skill on the third year students is satisfactory but could be improved.
- discipline and work ethics is excellent.

Another mandatory practical activity is the Industrial Training which is held at the end of the final year. Students are placed in various industries according to their specific field, and the duration is eight weeks. The objectives of this programme is to expose the trainees to the industrial working environment, the work culture and identify the technology use in the industry. Reports from these trainees are then evaluated by the faculty in
search for any amendments need to be change in the programmes curriculum. In general, the trainees ingenuity, innovation and design skills could not be observed because they are being evaluated on the acquisition of the technical skills, discipline and work ethics. In general, comments from the industries are satisfactory too:

- trainees personality is satisfactory.
- theoretical knowledge is satisfactory
- technical skill is satisfactory.
- discipline and work ethics is excellent.
- communication skills is poor.

A research was done on the performances of the graduates from this programme. It was found that these graduates are being employed at various teaching institutions and industries. Their position varies, from being a principal of a school, instructors, junior engineers and entrepreneurs. It was also found that knowledge on design and innovations is widely used in their workplace, such as improvisation on several machineries and tools are commonly being practiced among them.

Principals of technical and vocational institutions are beginning to include technological knowledge with a foundation on science and mathematics. These institutions are changing their paradigm towards a contributor to technology.

Instructors have won several awards on design and new inventions locally and internationally. New subjects on design and innovations have been introduced in the vocational education curriculum. As such design and innovation competition has become an annual activity in the Ministry of Education, technical and vocational education system.
Reports by employers on graduates working as junior engineers were very encouraging. Besides having theoretical engineering knowledge they have good technical skills, which has minimize several working procedures. Thus, Malaysia will then be producing engineers with both hands-on skills and theoretical knowledge.

Entrepreneurs usually deal with marketing new inventions/products design by local Malaysians. Their knowledge on design has benefit them to venture into this business successfully.

**Conclusion**

Vocational education and training is to prepare an individual for an employable skills. However, with the fast development of new technology comes the development of new wants and needs leading to further technological activity. Malaysia is heading towards a developed country, thus, as technological development occur, we must be aware of new possibilities for using these new technology in our everyday lives, and this may create a market demand that will indicate the direction of future technological activity. Thus, Vocational education and training is the foundation to this current phenomena. Inserting this new ideology (design/innovation and invention) into the technical and vocational education training system is not an easy flow. Several factors have to be considered before introducing it into the system, among them are:

- social barriers
- political barriers
- economic barriers
- personal barriers
University Technology Malaysia under the responsibility of the Faculty of Educations Technical and Vocational Education Department is still in an early stage of changing the paradigm of tertiary level of technical and vocational education. Several research need to be done to see the development of this programme in order to participate with the technological advancement of the world. This concept, I believe to be relevance for all technical and vocational education programmes, including in the elementary and secondary schools, technical/vocational teacher preparation, and technical and vocational education at the university level. While technology development has been a central aspect of vocational education programmes (without being aware of it), the curriculum must provide a comprehensive study of technology that covers the entire range from technology development to utilization. The concept and strategies presented in this paper hopefully will provide a starting point for the design of curricula that addresses the importance of technology awareness besides acquisition of skills in the technical and vocational education training. Through a scholarly examination of this paper, we may better prepare ourselves, and ultimately our students, to recognize our contribution to the technology through vocational education and training.
Thai Vocational Education and Training Reform: The Changing Roles of the Government and Other Stakeholders

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Background

Education in Thailand

There are three major government agencies responsible for the provision and development of education in Thailand: the National Education Commission, the Ministry of University Affairs and the Ministry of Education. The National Education Commission is mainly responsible for the educational policies, planning and research at the national level. The Ministry of University Affairs is responsible for the management of state universities while the Ministry of Education is responsible for the provision of basic education nationwide. Its areas of responsibility include the provision of pre-school education, primary education, secondary education, teacher education, vocational and technical education, curriculum development and non-formal education. A small number of specialized schools are operated by the Ministry of Interior, the Ministry of Public Health, the Ministry of Defence and the Ministry of Transport and Communications.

Formal Education

The first formal comprehensive education plan was introduced in 1932. The most recent changes were brought about by the educational plan of
1977, which called for six years of compulsory primary schooling, three years of lower secondary education and three years of upper secondary education for those who wish to enter higher education or a university.

The current system of formal education consists of four levels of education: one or two years of pre-school education; six years of compulsory primary education; six years of secondary education: three years at the lower secondary level and three years at the upper secondary level and higher education.

**Vocational Education**

Realizing the necessity to adapt the educational system to the development and labour needs of the country, vocational education and training has been very much promoted. Various types of courses and training programmes are offered and administered by the Department of Vocational Education and the Institute of Technology and Vocational Education.

**Vocational Education under the National Educational System**

There are eight levels of studies programmed to suit the students previous academic background, ranging from the semi-skilled level, offered to students who have completed the lower secondary level, to technical teacher training programmes (degree level), open to holders of Higher Certificates of Technical Education with high academic records and a desire to become technical teachers at colleges and vocational training centres. Table 1 illustrates the vocational education system in Thailand.
Being challenged by the rapid changes in the world of advanced technologies, especially information technology, education in Thailand is required to play a more challenging and developmental role in preparing the Thai people to cope with globalization movements. Accordingly, the Eighth National Education Development Plan (1997-2001) has been introduced with the following objectives for educational development.

- To expand an extensive and equal provision of basic education for all people; and to extend basic education to secondary education level.
- To improve the equity of education and its relevance to the needs of individuals, communities and the nation, and to enable learners to achieve their full potential for self-development.
- To enhance Thai education in strengthening the national potential for self-reliance, and to contribute to national economic stabilization and the role of Thailand in the global economy.

The Eighth National Education Development Plan

The economic crisis in Thailand since mid-1997 directly affected the implementation of the Eighth National Economic and Social Development Plan, the master plan for national development. It is accepted that the crisis has exposed serious weaknesses in the nation's economy, such as declining export competitiveness and the quality of the human resources required to advance the process of economic transformation. The Eighth Plan was therefore revised to enable it to better respond to the crisis through the introduction of three new guidelines aimed at

- Minimising the effects arising from unemployment
- Assisting the underprivileged groups and those affected by the crisis through assistance measures in the areas of social welfare, education and health
Educational Development

The 1992 National Scheme of Education

Before the full implementation of the first National Education Act (1999) takes place Thai education was still provided in accordance with the 1992 National Scheme of Education, which has been promulgated since 1992 to direct the nations educational provision so as to render the education system efficiently responsive to emerging needs and rapid changes in Thai society. The education was defined as the process to enabling human beings to develop their quality of life, lead a peaceful social life, and make a proper contribution to national development in accordance with contextual changes of the nation. As such the goal of education emphasizes balanced and harmonious development of the individual in four aspects: wisdom, spiritual, physical and social development.
- Preventing and alleviating social problems as well as promoting desirable social values.

**The National Education Act 1999**

Economic crisis has put a great deal of impacts on education sector. In order to mitigate the impact on the development of education, the government has promulgated the National Education Act in August 1999. The first National Education Act was expected to serve as the fundamental law for the administration and provision of education and training in accord with the provisions in the Constitution. Essential features of the National Education Act 1999 are as follows:

- **Ensuring access to basic Education for all**
  Compulsory education and option of twelve years of free education are to be implemented within five years of promulgation of the Act.

- **Reform of curriculum and learning process**
  Credits accumulated by learners will be transferable within the same type or between different types of education, including experiences from non-formal or formal education, vocational training, or from work experience. The establishment and running of all types of lifelong learning sources will be promoted. Curricula at all levels of education will be diversified. The teaching-learning process will aim at enabling learners to develop themselves at their own pace and to the best of their potential.

- **Encouraging participation and partnership in education**
  The state as well as social institutions will have the right to provide basic education. The government will give support and grants, tax rebates or exemptions in bringing up children and providing basic
education. As providers and partners in educational provision, social institutions will mobilize resources, donate properties and other resources to educational institutions and also share educational expenditures.

- **Restructuring of educational administrative structure**
  Public education will be administered and managed at three levels aiming at decentralization of authority to local organizations and educational institutions. Local administration organizations will have the right to provide education at all levels according to readiness, suitability and requirements of the local areas. Private institutions providing education at degree level will be allowed to function with freedom, develop their own system of administration and management, flexibility, and academic freedom. They will be under the supervision of their own council according to the Act on Private Higher Education Institutions.

- **Enhancing educational standards and quality assurance**
  Quality assurance systems will be established in educational institutions as part of educational administration. This is to ensure improvement of educational quality and standards at all levels.

- **Reform of teachers, faculty staff, and educational personnel**
  An Organization for Teachers and Educational Administrators will be established with the responsibility to set professional standards; issuing and withdrawal of licenses; overseeing maintenance of professional standards and ethics; and development of the profession of teachers and educational administrators.

- **Mobilization of resources and investment for education**
  The government and local administration organizations will be authorized to levy educational taxes as appropriate and the government
will be responsible for distribution of general subsidies for per head expenditure of those receiving compulsory and basic education provided by the government and the private sector. There will be a system of auditing, follow-up and the evaluation of efficiency and effectiveness in utilization of the educational budget.

- Utilization of technologies for education
The government will promote and support the production and refinement of textbooks, other publications, materials and technologies for education by ensuring fair competition. It will also promote research and development, production and refinement of technologies for education. The Technology for Education Development Fund will be established through mobilization of resources. A central unit will be established to take charge of proposing policies, plans, promotion and coordination of research, development and utilization of technologies for education.

Educational Reform

The National Education Act 1999 serving as the master legislation on education in Thailand has introduced a nationwide comprehensive reform of education. All agencies concerned have been involved in the preparations for the implementation of educational reform and in the drafting of National Education Act. Committee on Strategic Planning for Education Reform has made various studies to find the effective strategies for educational reform. Three major strategies currently used are: surveys and public hearings; communications through various types of media; and networking of all concerned parties including the general public to mobilize cooperation and resources for reform. To be in line with the Act, three major tasks have to be carried out. They are the reform of educational administrative structure,
the reform of learning and legal measures.

Vocational Education in the National Education Act

It has been stated in section 20 of the National Education Act that vocational education and occupational training shall be provided in educational institutions belonging to the state or private, enterprises, or those organized through co-operation of educational institutions and enterprises, in accordance with the Vocational Education Act and related laws.
Technical and Vocational Educational Reform*

Based on Thailand Secondary Education for Employment-
A Consolidated Report

Issues and Challenges

Market-Driven

In the past decades, vocational education has made a great deal of progress. The statistics 2000 shows that the number of vocational students in certificate level has increased and now compared with general secondary education, the number is almost equal [45: 55]. This leads to several crucial problems e. g. supply driven courses, a shortage of experienced teachers, unqualified graduates, lack of R&D on vocational education and training to develop the curriculum to be relevant to their work. So far the problems have not been satisfactorily improved due to the inadequacy of participation from industries and other stakeholders.

In order to produce graduates with the qualification that suits the needs of labour market, it is necessary for vocational education to focus more on the demand of the industries. Courses offered should be based on employment and student demands. Contents and curriculum of courses should also reflect the national goals of Thailand. Efforts need to be made to find out what skills employers require. Furthermore, occupational standard should be set to ensure the quality of vocational education and training. Thus national vocational standard system has to be developed. Information concerning workshop spaces and other facilities needed should be stated as well.
Administration / Deregulation

Based on the World Bank study, the central government typically has the full authority in secondary and vocational education. Its responsibility includes formulation of curriculum, production of teaching materials, supervision of teaching staff and administrators in terms of discipline and quality. It also allocates budget for operation.

As the National Education Act puts the emphasis on the decentralization to local administration, the proposed Vocational Education Act should clearly delineate the functions of the central government which should focus on setting policies and standards, monitoring and ensuring the appropriate expenditure and equitable distribution of resources.

The central government should be responsible for the following tasks:
- Setting up the framework within which institutions can excel.
- Establishing standards and guidelines to facilitate education and training delivery and to ensure fair distribution of scarce state resources among competing claims.
- Monitoring/assessing results and reporting the performance outcomes to the public.

For local institutions [LEAs], it is necessary that they have autonomy to make decision in resource distribution and delivery at the same time they need to maintain the accountability to higher authorities. Linkages with employers and enterprises which are an underlying principal of the vocational education and training reform can be done most effectively at the local level.
Draft Vocational Education Act

Based on the various studies, surveys and public hearings conducted by the Office of National Education Commission, Ministry of Education and other involved agencies as well as the participation of stakeholders, the Vocational Education Act was drafted and submitted to the cabinet. It is expected that approval would be granted by next year. The main features of this draft paper is as follows:

The rationale

The draft Act stated that vocational education and training must be in line with the manpower development plan of the country and responsive to economic and technological changes. That the aims of TVE is to empower individual knowledge and skills in basic technical and professional of any specialization including conceptual and entrepreneurial skills. The graduate will be able to gain value added, meet international standard and the capability for self-employment and reliance. The vocational system will be operated in collaboration with the public and private sectors, industries and communities. There should be the strengthening of unity in policy and the diversity in the implementation through the decentralization. There will be a development of vocational qualification standard leaded by industry to meet the market demand.

Administration and Decentralization

A National Technical and Vocational Education Council would be set up. The Council comprises the representatives from employers for at least 50% of the committee. Similar organization exists in Australia.
and the United Kingdom. The chairman of the council must be a current active leader of industry or commerce association. Those from private sectors must be from federal industry association, federal commerce association, banking association, trade union, labor union and federal agricultural association and other professional experts. The roles of the proposed council would be:

- Setting national comprehensive policy and guidelines for TVE.
- Determine the national curriculum framework
- Set national vocational education qualification standard, propose guideline for budget appropriation for TVE including financing and resource mobilization and for monetary funding for TVE.
- Monitoring and evaluation research development for TVE system.

For the administration of technical and vocational education, two options are proposed for consideration. One is that those technical and vocational institutions would be under the jurisdiction of Local Education Areas. The other is the TVE network at local level where technical and vocational institutions would be under the supervision of the Vocational Institution. The reason is that TVE is specialized and need professional support. Therefore, it would be most suitable that technical and vocational colleges be administered in the form of network so that resources could be shared and linkages with local labour market could be enhanced.

At institutional level, it is stated that the TVE institutions can provide the program up to degree level or equivalent based on the standard approved by the National Council.

Each institution will form its own council comprising the representatives of college teachers, students parents and communities. The institution will cooperate with enterprises and agencies concerned to create a
network with the purpose to mobilize the resources available to ensure the standard of quality and qualification.

It is emphasized that institutes should, as much as possible, cooperate with employers and private sectors to get involved in technical and vocational training programme. To encourage the participation from the private sectors, incentives such as tax exemption, priority of approval for investment, and etc. would be offered. With the assistance from the German Government, Dual Vocational Training System has been introduced and is being implemented in a number of technical and vocational institutes for several years.

_Promote Quality_

Technical and vocational education standard should be established through standard setting body. This will lead to a quality based educational system. It would be made a requirement for both the teachers and students in technical and vocational education to pass the qualification standard. In so doing it is necessary that the following activities must be carried out:

1) setting clear and consistent curriculum and performance standards for students.
2) assessing, reporting and rewarding students, teachers and schools for outstanding performance.
3) harnessing technology to support the development of both students and educators.
4) supporting teachers and administrators throughout their careers to support student learning.

The standard should be used as a guideline to determine the minimum level of skills and ability students and teachers need to possess.


**Promote Efficiency**

- In organizing the learning process, educational institutions and agencies concerned shall: provide substance and arrange activities to be in line with the learners interests and aptitudes, bearing in mind individual differences;
- Provide training employability skills that comprises thinking skills, communication skills, interpersonal skills, group and personal effectiveness skills. That will enable the student to be a doer and a thinker;
- Enable instructors to create ambiance, environment, instructional media and facilities for learners to learn and be a round person.

**Promote Equity**

It encompasses the cost implications of the reform program and how the program will be financed and what might be the impact on equity. With the coordination of the staff of World Bank, various scenarios and analysis were presented and shown that the number of students is affordable in recurrent-expenditure in terms of opportunity of enhancing efficiency of secondary education. Thailand's reform program focuses not on expansion alone but also on the enhancement of quality and market relevance.
Present Practice: DVT System

More and better school-to-work pathways should be emphasized. This relates learning to the world of work and real life situation. Germany's dual system is a very systematic and practical one for this. For individual trainee: it smoothes transition from school to work in a 2-3 year training period, combines working and learning, explores opportunities and capabilities, and achieves status and income. For company: it obtains competent workforce for tomorrow, enjoys low personnel recruitment costs, and reduces labor cost. For government: it guarantees national qualification standards, keeps the country competitive, reduces public training costs, integrates low achievers, and ensures social stability and social dialog.

The dual vocational training system has been tried out at KMITNB since 1970. In 1983 KMITNB, DOVE, RIT and Department of Labor organized a national seminar jointly with the German Foundation for International Development (DSE) on the dual system. One recommendation
from this seminar was that a National Body should be established to coordinate all types of vocational education and training in both public and private sectors. In 1983 the cabinet established a Joint Public Private Consultative Committee for the Development of Occupational Education with the Prime Minister acting as the chairman. This committee is still in existence today. However, an Act to set up a permanent organization for this has not yet been promulgated.

In 1988, the Federal Republic of Germany gave technical assistance to DOVE to start this dual system. Later on the name was changed to Dual Vocational Training (DVT) to train skilled workers and technicians. In 1997, there were 20,839 students from 130 colleges attending this program working in 2,424 enterprises. For 1999, there were 20,636 students from 202 colleges working in 3,090 enterprises.
In summary it can be said that Thailand, like many other countries, has been facing a number of problems. Critical decisions in management and implementation at institutional level for effective TVE system has to be made. This includes defining the roles that government and private sectors and other stakeholders need to take in the education reform. The important issues discussed in the reform are the policy design and delivery and how to achieve the vision of TVE in a modern market economy through a new and strong partnership among the government, employers, vocation associations, industries, trade union and society. We have learnt a lot from the histories and successful experiences of foreign countries. Due to the differences in culture, socio-economic status us, and others, Thailand needs to learn from others experiences and, at the same time, develop our own way of practice to suit the situation and context.

References:

Partnerships for Vocational Education and Training: an Australian Case Study

Presented by Ms. Di Booker
Manager International, Adelaide Institute of TAFE, South Australia

Policy and national strategies

A bridge to the future: Australia's national strategy for vocational education and training 1998-2003

The Australian National Training Authority (ANTA) developed the strategy in consultation with Commonwealth, State and Territory governments, Australian industries and registered training organisations with all parties taking joint responsibility for its implementation. The national strategy has been agreed by Commonwealth, State and Territory governments (a partnership between all levels of government) and is their statement of the vision, the objectives and the intended outcomes for the Australian TVET system.

The vision statement makes a positive statement of the roles of each stakeholder. For example:

- 'Australian industry...sees training as an investment in maintaining and improving both enterprise and national competitiveness'
- 'Australian workers want, throughout their working life, to update their vocational skills and to acquire new ones'
- 'Australian governments are committed to a goal whereby all young Australians are able to access post secondary education...'
- Australian TVET providers 'respond to the changing needs of their industry and individual clients'
‘Australian schools offer comprehensive, relevant vocational education programs to their students’

‘Australian communities are wellinformed about the nature and benefits of vocational education and training’. (A bridge to the future Summary brochure)

The national strategy includes five objectives, each of which imply developing and maintaining partnerships.

Objective 1—Equipping Australians for the world of work includes providing choices and flexibility in learning opportunities through schools, adult and community education providers, recognised workplace training in addition to conventional TVET providers. The requirement to meet the needs of industry and individual clients also involves the student and his/her employer in this partnership. An obvious example of how this objective has been achieved is the ongoing partnership between industry, through Industry Training Advisory Boards (ITABs) and TVET providers in the development and delivery of training packages. These packages specify the national industry competency standards, assessment criteria and qualifications and to a large extent now replace the traditional curriculum which previously informed the delivery of courses.

This partnership is also often extended into the implementation of the course with industry taking a role in course advisory committees, the provision of practical work experience for students and the use of industry personnel as guest lecturers and tutors for example.

Objective 2—Enhancing mobility in the labour market identifies a seamless post compulsory education pathway as a key component in meeting this objective. This implies partnerships between all levels of educational and
TVET providers. One example of this partnership is what is referred to as VET in Schools where TVET courses are provided for students in the last 2-3 years of compulsory schooling. Students who complete these school-based programs can then either take this qualification directly into the workplace or it can be used to provide advance status in vocational or higher education courses.

Objective 3—Achieving equitable outcomes in vocational education and training addresses equity issues. These can best be met through partnerships between TVET providers and the communities which they serve. This objective specifically mentions indigenous people, women, people in remote communities and people from non-English speaking backgrounds. An example of the partnerships currently being developed to meet the needs of the Australian Aboriginal population will be outlined later in this paper.

Objective 4—Increasing investment in training targets the partnership which needs to be developed with governments, communities and industries. Specifically mentioned in the strategy document are the partnerships between enterprises and registered training organisations and investment in training by small business. The concept of Group Training providers where TVET programs are provided by groups of related industries (e.g. the automotive industry) is a practical example of this partnership at work in Australia.

Objective 5—Maximising the value of public vocational education and training expenditure deals with quality issues and from the experiences of Adelaide Institute of TAFE, this involves the development of the partnership within the Institute, of staff and students to ensure that infrastructure is used effectively and the quality of the training outcome is ensured.
Flexible learning for the information economy: the framework for national collaboration in vocational education and training 2000-2004

The concept of flexible learning has underpinned the Australian TVET system since 1992 with the aim of providing TVET courses using methodologies and at locations and times which suit the learner. The Framework for National Collaboration in Flexible Learning in Vocational Education and Training 2000-2004 is the most recent initiative in this area and as the name suggests, is an excellent example of collaboration. The focus of the Framework is information and communications technologies and it is designed to:

- support accelerated take up of flexible learning modes
- position the Australian TVET system as a world leader in applying new technologies to vocational education products and services.

The Collaborative Framework has been developed by the EdNA VET Advisory Group, which comprises senior representatives of all State and Territory training authorities, ANTA and the federal government Department of Employment, Training and Youth Affairs (DETYA).

Collaboration across the country is seen as a fundamental strategy through which organisations can achieve competitive advantage.

The VET industrys success in developing a highly skilled Australian workforce depends on the ability of Australian governments to create conditions in which VET enterprises around Australia can collaborate, innovate and compete productively. This role is essentially a catalytic one for governments. (Flexible learning for the information economy: the framework for national collaboration in vocational education and training 2000-2004 Summary brochure)

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The Collaborative Framework identifies five goals of strategic importance for VET in Australia's transition towards the Information Economy:

- Creative capable people to build a critical mass of TVET staff who are able to use flexible learning approaches to accelerate Australia's transition to the information economy
- Supportive technological infrastructure to achieve a national TVET system which facilitates access to online services and uses advanced integrated information and communication technologies for learning activities and also administration and management
- World class online content development, applications and services to assist the Australian TVET system to maintain and expand its share of the training market within Australia and internationally
- Enabling policies to ensure that all nationally agreed policies and protocols are designed to facilitate the uptake and usage of flexible learning
- Problem solving regulation in partnership with other education and training sectors to advocate that legal and regulatory issues facilitate the use of information and communications technologies in the TVET system.

Seven principles identified by the Collaborative Framework will guide national collaborative activity over the next five years:

- Shared benefit to all States and Territories
- Strategic use of new learning technologies
- Accelerated take-up of flexible learning methodologies
- Strategic partnerships
- Leveraged investment
- Employee involvement
- Demand driven.
How will this happen? Until 2004, it will be supported by annual implementation strategies and funding of up to $20 million a year. Strategy 2000, the Collaborative Frameworks year 2000 implementation plan, details 26 individual projects and actions that will help to increase flexible learning in VET across Australia. These projects are concrete examples of partnerships which are occurring across the TVET system in Australia. They include:

1. **Online content development, applications and services, for example:**
   - Toolbox Central tools and talk for online training. As a quality assurance framework, this project provides information for teachers, developers, project managers, industry and learners on the development and delivery of online training (www.toolboxcentral.com)
   - Register of online resources
   - TVET web portal through EdNA Online, a virtual gateway to educational resources and services (www.edna.edu.au)
   - Online product development which aims to provide affordable, nationally operable online training resources for all registered training organisations (www.anta.gov.au/toolbox)
   - Online student services project for the development of online support services
   - Access and equity project which is focussing on indigenous people and learners with disabilities or low literacy levels during 2000

2. **Skilled staff, for example:**
   - LearnScope professional development initiative. Currently more than 150 projects have been funded which aim to increase organisational and staff capabilities to provide flexible choices for learners
   - Flexible learning fellowships which provide the opportunity for staff to undertake national and international study tours
   - Flexible learning leaders which aims to increase the knowledge and
skills of leading TVET professionals
- Research projects (e.g. quality of learning and assessment, pedagogy)
- Best practice initiatives
- Conferences and seminars (e.g. Net*Working 2000)

3. Regulation, policy and technological infrastructure, for example
- Preferred standards to support national cooperation in applying technology in VET was published in 1998, currently being reviewed
- Advocacy issues to all state and federal governments, including research projects to investigate the implications of legal and regulatory issues
- Establishment of a technological infrastructure investment fund
- Documentation of policies and best practice
- Performance information framework

Partners in a learning culture: Australia's national Aboriginal and Torres Strait Islander strategy for vocational education and training 2000-2005

As the title of the strategy suggests, the development of partnerships is a linchpin of the strategy, beginning with the vision statement which states:

A vocational education and training which renews and shares an Indigenous learning culture with all Australians in a spirit of reconciliation, equity, justice and community economic development and sustainability...

The strategy aims to achieve this vision, through a partnership between Indigenous Australian communities, governments, industry and training/education providers. We are all partners in building a learning culture. (Partners in a learning culture: Australia's national Aboriginal and Torres Strait Islander strategy for vocational education and training 2000-2005 p7)
The objectives of the strategy are:

1. Increasing involvement of Indigenous people in decision making about policy, planning, resources and delivery at all levels including at the provider and local community levels. Strategies include increasing employment by Indigenous people at senior VET positions, creating incentives for the employment and professional development of Indigenous staff, analysing Indigenous community needs and an audit of skills and ensuring that training is culturally inclusive.

2. Achieving participation in VET for Indigenous people equal to those of the rest of the Australian community. Strategies include increasing school retention rates through the VET in schools program, developing partnerships between schools and the post compulsory sector to generate mechanisms to help people overcome barriers to learning, including student support services, increasing participation by Indigenous people in TVET and higher education including marketing through partnerships with communities, employers and education providers and encouraging and promoting lifelong learning.

3. Achieving increased culturally appropriate, and flexibly delivered training, including the use of information technology, for Indigenous people. Strategies include catering for rural and remote communities, developing electronic and online strategies specifically for Indigenous people and encouraging community expression of their training and assessment needs.

4. Developing closer links between VET outcomes for Indigenous people and industry and employment. Strategies include the development of one-stop training and employment shops, expanding learning opportunities through increased apprenticeships, group training schemes, community development...
programs and small business end enterprise development and training centres, customising training packages for specific local Indigenous needs and contexts.

The value of partnerships at a range of levels as a key to successful TVET programs for Indigenous Australians is specifically recognised under Objective 1. As the strategy states, they are key because they:

- allow benchmarking between spheres of government and community sectors to promote efficiencies
- involve a wide range of stakeholders in the ongoing process of Australian reconciliation
- include Indigenous people as equal partners in TVET
- lead to better learning pathways and employment outcomes.

Partnerships have been shown to produce benefits for individuals including:

- increased skill levels
- increased access to employment
- greater mobility in the labour market
- more supportive and rounded learning environments

Partnerships also result in:

- TVET that is more responsive to community, social and cultural needs
- TVET that is more responsive to industry demands
- more effective policy setting
- more effective public TVET expenditure

(Partners in a learning culture: Australia's national Aboriginal and Torres Strait Islander strategy for vocational education and training 2000-2005 p18-19)
Aboriginal Primary Health Care program

A concrete example of where these benefits of partnerships have had real outcomes is the development and delivery of the Aboriginal Primary Health Care program in South Australia. The program is a distance education course and was developed through the partnership which was established between the South Australian Aboriginal Health Council, local Aboriginal communities and Adelaide Institute of TAFE. Adelaide Institute of TAFE is responsible for the development and delivery of the curriculum and provision of staff and facilities. The Aboriginal Health Council provides the community understanding of needs, advice on the course content and links to other organisations.

The key features of the course are that:

• it has a flexible structure
• participants can choose the content depending on their needs, prior knowledge, skills and experience
• it includes range of specialist pathways
• there are multiple entry and exit points.

The course is 18 months full time and includes 5 foundation modules, 17 core modules and a specialist pathway and work placement program. The specialist pathways include:

• general hospital work
• community health
• womens business (or mens business)
• sexual and reproductive health
• child health
• older people
• youth health
As a distance education program, the methodology used to deliver the course focuses on 23 study centres with tutors and link ups to lecturers through the use of teleconferencing. Lecturers visit each of the sites at various times during the program for face to face lectures, depending on student needs. The course can be studied either part time and full time.

Positive student outcomes have included a very high rate of employability of students (100% generally), increased self esteem, the provision of direct links to other Adelaide Institute of TAFE programs and articulation to higher certificates, diplomas and university degrees. Students also receive support from the Aboriginal Health Council which has direct results on their employability. As an example, the partnership which has developed between the educator (i.e. the staff delivering the program) and employers such as the Murray Bridge Soldiers Memorial Hospital and the Adelaide Womens & Childrens Hospital ensures that the course remains relevant to the workplace and that there are genuine employment outcomes for students.

Community outcomes include a positive contribution to Aboriginal community health issues through the provision of better, professional health services. In addition, these outcomes mean continuation of funding for the educational program.
The critical success factors for this course include that:

- the curriculum is broad and flexible
- has been developed in consultation with communities
- it provides foundation skills and knowledge for specialist areas
- it is culturally appropriate
- it has been customised to meet the needs of specific communities
- key learning materials are written by indigenous people
- the methodology suits the learners
- it is delivered as a partnership with the community, the peak professional body (the Aboriginal Health Council) and the educational provider (Adelaide Institute of TAFE)
- it provides a sound professional foundation for students.

An example of international use of curriculum is that this course is currently being delivered (with some local adaptions) to Burmese refugees in Thailand. We understand that this is a world first as an example of the delivery of a distance education program for refugees. It is a unique example of indigenous peoples of two countries working together.

**International partnerships**

Occasions such as this conference remind us of the importance of the international partnerships which are fostered by organisations such as UNESCO, the ILO and the Commonwealth of Learning. KRIVET is to be congratulated for this initiative which has enabled us to meet once again here in Seoul and refocus on the issues we identified just over twelve months ago as being critical to the development of TVET. Important for all of us are the connections and relationships which we build through these activities and the networks which these organisations sponsor.
The benefits to all of us of being part of the UNESCO TVET Network include:

- sharing research, knowledge and experiences on policy and practice
- sharing information and being able to access policy documents, curriculum, learning materials etc from other countries
- allow us to benchmark our activities with other countries
- sharing solutions to problems
- knowing who may be able to assist us
- building up a network of contacts in the region.

We need then to consider what strategies as a Network we can apply in the regions that will facilitate international cooperation and subsequently strengthen TVET systems. We should be thinking about how we can facilitate cooperative activities such as articulation and recognition of courses across national borders, identifying competencies which are common across countries in regions, and identifying possible cooperative training activities etc.

Not only will international partnerships strengthen the TVET system in the region, but there will also be a strengthening of each of our individual national capabilities.

**Conclusion**

Partnerships do play a key role for all of us in whatever country we work. To paraphrase Dr Kemp, we cannot afford to ignore the potential benefits of business, communities, families, schools, universities, TVET providers and government all working together to help young people make a successful transition from school to adulthood and to create a highly skilled workforce.
A partnership model for the development and delivery of TVET can be the key to successful vocational education and training outcomes because it assists in:

- Increasing the involvement of key stakeholders, at all levels, in decision making about policy, planning, resources and delivery of TVET
- Achieving increased availability of appropriate TVET programs and courses
- Achieving maximum participation in TVET of target students
- Developing closer links between TVET outcomes and industry and employment.

The benefits to us as TVET providers, to our students and to our countries are such that we ignore them at our peril.

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The Changing Roles of the Government in TVET: Bhutanese Case

Presented by Mr. T. Tobgay (Bhutan)
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I. Introduction

Bhutan is a relatively small country. It has a total area of about 46,500 square kilometres, and measures roughly 150 km north to south and 300 km east to west. The country is bordered by the Tibetan region of China in the north and India in the south. The population of Bhutan is about 638,000. Its labour force, estimated at 378,972, represents 59.4 per cent of the total population. Median age is 19.4 years, and 35.5 per cent (226,490) of the population are below 15 years of age. 85 per cent of the Bhutanese live in the rural areas and derive their living from agriculture and other traditional activities.

Bhutan successfully practised a policy of self-imposed isolation until it decided to open up to the rest of the world and begin implementing planned modern development plan in 1961. Since then, the country has experienced rapid economic and social growth between 1977 and 1999, for example, life expectancy has increased from 46.1 to 66.1, number of medical facilities from 79 to 173, number of schools from 112 to 440, and number of students from 14,553 to 123,000. GDP growth averaged about 7.5% per year during the 1980s, and has been approximately 6.3% per year during the 1990s. In 1999, the per capita GDP was estimated at USD 551.

Employment in the modern sectors of the economy is limited, apart
from public services of various kinds, and small-scale trade in the urban areas. Industrial development is as yet limited and does not provide significant employment. The Government has been responsible for the establishment of several productive enterprises, but the private sector is being encouraged to take over these activities.

II. Technical and vocational education and training

Education in Bhutan is free. It consists of one year pre-primary, six years primary (classes 1 to 6), two years junior high (classes 7 and 8), two year high (classes 9 and 10), two year junior college (classes 11 and 12), and three years undergraduate college. The Department of Education under the Ministry of Health and Education is responsible for planning and implementing the education system. Currently the country has about 123,000 students studying in 440 schools and colleges, most of which are run by the government.

Until 1999, the Department of Education was responsible for planning and coordinating technical and vocational education and training (TVET) in the country. It also implemented diploma and certificate level vocational training. In May 1999, the National Technical Training Authority (NTTA) was established to plan, develop and coordinate a national TVET system for Bhutan.

NTTA is an autonomous agency which is composed of members from various TVET stakeholders. Its main functions are:

i. To plan, develop and coordinate the implementation of a national system for TVET;
ii. To formulate policy, plan, coordinate and enable TVET at all levels;
iii. To register, authorize and coordinate all TVET programs of institutes, agencies and all other TVET providers;
iv. To promote and support TVET programs in the general education system;
v. To develop a national system for skills standards, testing and certification of skilled workers; and
vi. To develop partnerships between and among industry and TVET providers.

The NTTA conducts formal trainings through the following training institutes:

i. Diploma-level engineering training at the Royal Bhutan Polytechnic;
ii. Certificate-level engineering training at the Royal Technical Institute;
iii. Drivers' training at the National Drivers' Training Institute;
iv. Training for construction workers at the Construction Training Centre;
v. Certificate-level training in traditional arts and crafts in the Institute for Zorig Chusum; and

Nonformal training is provided through several NTTA programs which include the Village Skills Development Program, School-Based Vocational Training Program and the Special Skills Development Program. These programs have been piloted during the last two years, and are currently being finalised. Informal training is provided through the Apprenticeship Training Program which is also currently being piloted.
Formal and nonformal training is also conducted by several other agencies including the Ministry of Health and Education, Ministry of Trade and Industry, Ministry of Agriculture, Ministry of Communications and the Royal Institute of Management. The private sector is also increasing becoming active in providing training, especially in the IT sector.

III. Issues and constraints in TVET

When Bhutan began modern development forty years ago, the country faced severe human resource constrains as most of the people were engaged in subsistence farming. This shortage of skilled workers has continued throughout the last four decades and has constrained the development of the country, especially the private sector. Furthermore, the critical shortage of skills had developed a training environment which was primarily supply driven, ad hoc and uncoordinated.

Although such a training environment was inefficient, it did produce skilled workers for unquestioning employers, mostly in the government. Now, however, the employment situation is changing rapidly: the number of jobs available with the government is decreasing steadily while much larger numbers of students are leaving the school in search of work every year. Shortages of skilled workers in the past has limited the growth of the private sector, which is now expected to create most of the employment opportunities. An efficient mechanism to prepare school leavers for employment in the private sector is, however, absent.

The biggest constraint today is, therefore, the lack of an effective TVET system which is understood and accepted by all stakeholders. Parts of the system which need to be developed urgently include training policies,
national training qualifications framework, training recognition and accreditation framework, and occupational skills standards testing and certification.

Other specific issues and constraints in the TVET sector include:

i. Continuing employment of large numbers of expatriate workers due at least in part to apparent mismatch between training provision and labour market needs;

ii. Mismatch between full certificate training programs and small enterprise and self employment skills requirements;

iii. Lack of systematic upgrading of labour productivity, particularly in rural agriculture and in construction, through the apparent inability or reluctance to adopt new technologies;

iv. Youth unemployment with increased participation in general education and continuing high rates of population growth. Absorption into the workforce will mainly depend on the capacity and willingness of the private sector to provide employment. Continuing preferences for white collar and civil service employment appear likely to limit potential employability of many young people.

v. Need to improve overall training quality and relevance in program development, standards, links to enterprises, assessment and certification, flexibility, efficiency and economy of delivery and in-system linkages and recognition, in relation to all training and all training providers;

vi. Associated need for system quality upgrading mechanisms and public quality assurances processes;

vii. Need for upgraded planning and management base with full and reliable statistical data base, with linked, nationally appropriate, labour market information systems, for planning of training, career counselling and job placement;
viii. Improved strategies for equity, particularly in regard to employment-linked training for women and girls;
ix. Improved strategies for TVET access, through alternative training modes, particularly for rural communities;
x. Increasing urbanization, and likely associated social concerns, requires both strategies for employment linked training for youth, and increasing rural access to training directed at income enhancement.

IV. The changing role of the government in TVET

The role of the government in TVET has changed significantly in the past few years. It must now ensure that the requirement for the quantity and quality of skilled workers is identified and met. It must also ensure that the increasing numbers of school-leavers have access to relevant skills training. The NTTA was established to fulfill these changing roles of the government. To implement the changing roles of the government, the NTTA will develop a TVET system with a focus on school leavers who will be given opportunities for the development of work related skills and attitudes, skilled workers who will be taught current relevant skills using appropriate technology, and employers who will be involved in identifying the demand for skills.

NTTA will work closely with a number of newly created agencies designed to play a key role in promoting partnerships to stimulate employment opportunities. It will enter partnerships with communities and private sector representatives who are willing to be creative, knowledge-able and productive in identifying and meeting the demand for training and skills development.
NTTA aims to provide work skills, including both technical skills and work values so that all Bhutanese are better equipped/able to contribute in the world of work.

NTTA's role in this area include:

i. Identifying skills for work

To equip Bhutanese for the world of work, NTTA will develop and implement a framework which involves stakeholders in taking stock of existing skills, identifying skill shortages and forecasting longer term demand. The framework will take the broader social and economic goals for Bhutan into account.

ii. Designing training to meet skill needs

To equip Bhutanese for the world of work NTTA will design relevant training packages, which respond to identified training needs. In the design of training programs particular emphasis will be given to work values.

iii. Delivering training to meet industry and individual requirements

To equip Bhutanese for the world of work NTTA will stimulate employment related training demand and with community and industry partners NTTA will identify the range of state of the art options for both formal and informal training. NTTA will address infrastructure requirements and pilot and evaluate innovative delivery to meet partner needs.
Bhutan 2020: A vision for Peace Prosperity and Happiness sets out national goals which focus on human development, culture and heritage, balanced and equitable development, governance and environmental conservation, to ensure the future independence, sovereignty and security of Bhutan. Identity, unity and harmony, stability, self-reliance and flexibility are identified as guiding principles to help attain the national goals.

In order to meet the challenges in the TVET sector and to fulfil its mandate the NTTA has drafted a strategic plan in accordance with the goals set out in Bhutan 2020. The plan seeks to put in place a TVET system orientated to supporting the achievement of Bhutan 2020 by assuming a leading role in the following areas:

i. Equipping Bhutanese for the world of work
ii. Enabling effective training
iii. Promoting awareness of TVET
iv. Increasing participation among stakeholders
v. Optimising the use of public resources

A brief description of changing role of the NTTA and the government in each major area provided below.

1. Equipping Bhutanese for the World of Work

After four decades of development Bhutan has an increasing retention rate for students at secondary school and the number of school leavers forms an exponential growth curve for at least the next decade. Though Bhutan seeks to be self reliant in terms of human resources, shortages of skilled labor, particularly in technical fields, cause significant constraints to development.
iv. Enhancing mobility in the workforce

To provide better value to the Bhutanese workforce NTTA will enhance their mobility in the world of work by providing training opportunities to support vertical and horizontal movement within their occupational sector and between sectors. Employment based training options to encourage work in the private sector and self-employment will be encouraged.

2. Enabling Effective Training

The TVET system delivers formal training through training institutions and a wide range of training institutes conduct about 70 informal courses for different occupational skill groups. Formal and informal arrangements have been largely supply driven and, rely to an extent, on the use of external expertise. Bhutanese values, identity and culture are not integrated into the training.

NTTA's role in this area aims to achieve high skill and productivity levels by ensuring effective design, delivery and evaluation of training to meet the requirements of the Bhutanese workforce.

The role of NTTA in this area will include:

i. Developing a Bhutanese TVET system

To enable an effective training NTTA will ensure that the language, culture and heritage of Bhutan are an integral part of delivery of training by Bhutanese for Bhutanese. A national system for the recognition of training,
accrediting courses, recognising prior learning, and skills standardisation and certification.

ii. Providing high quality support services to training providers

To enable effective training NTTA will ensure sufficient qualified instructors, and a national training materials capability, along with a wide range of flexible delivery methods to support initial training delivery and a wide range of client focussed opportunities for upgrading of skills.

iii. Ensuring the quality of training

NTTA will ensure the effectiveness of training by registering all training providers and developing a framework for quality assurance for all training provision within the TVET system.

iv. Developing links to international TVET centres of excellence

Effective training will be supported by establishing links with world-class TVET centers, for the purposes of developing partnerships and maintaining links between dynamic, proficient people.

3. Promoting an awareness of TVET

The establishment of NTTA in May of 1999 heralds an increased commitment to Technical and Vocational Education and Training in Bhutan. The training system is developing fast to address Bhutans skill shortages and many stakeholders may not be aware of the governments initiatives and the potential for their contribution to a skilled and productive workforce for Bhutan.
NTTA aims to promote the dignity of skilled labor, work values, and professionalism, and to raise awareness of the opportunities for individuals, communities, industry and agencies to participate in increasing the skills and productivity of the workforce.

NTTA's role in this area include:

i. Marketing the TVET system

To raise awareness of the TVET system, NTTA will inform individuals, communities and industry of the opportunities for working together to achieve community access to TVET throughout Bhutan, and effective training to achieve a highly skilled workforce.

ii. Supporting Marketing by Training Providers

To promote technical and vocational education and training NTTA will encourage Training Institutes to put in place their own regionally based marketing programs.

iii. Promoting TVET to professional associations

NTTA will raise awareness of the TVET system by encouraging national and international professional associations to use the system for upgrading of skills, professional development and continuous learning.

iv. Identifying and rewarding excellence

To promote TVET, NTTA will recognize excellence in training
provision through institutes, business, industry and community, and put in place Training Awards at the regional and national levels to recognize excellent trainees.

4. Increasing Participation among Stakeholders

The need for skilled labor has increased, particularly for technical and vocational skills, yet skilled employees are in short supply. Traditionally training has been left to training providers, however rapid changes in technology and therefore in skill requirements mean that for training to be effective stakeholders must play a greater role.

Government, training providers, industry and community must work together to ensure that training programs are effective and practical outcomes result in skills utilization and increased productivity in the workplace.

NTTA's role in this area include:

i. Increasing participation by industry and employment sectors

To increase participation by industry NTTA will develop a framework for industry advice to the TVET system regarding skill needs, standards, shared responsibility for training and financing, and for research and consulting

ii. Developing partnerships with schools.

To increase participation through the schools sector NTTA will plan and negotiate arrangements for introduction to work values, and for
introduction to workplace experience for students in order for them to take advantage of the available training and employment opportunities.

iii. Engaging communities in design and delivery of training

To increase participation by communities NTTA will consult with key community groups to identify demand for training and community priorities for design and delivery of training. Opportunities for partnerships to meet regional demand will be developed.

iv. Developing linkages between Training Providers

NTTA will increase participation by developing strong links between Training Providers to identify areas of collaboration in relation to design and delivery of world class training to support the achievement of the goals of Bhutan 2020.

5. Optimizing the use of Public Resources

The government provides pre-employment training free of charge. This policy is expected to continue and highlights the necessity to make the best possible use of public resources.

NTTA will improve all TVET training by improving the efficiency and effectiveness of the training facilities and resources throughout the TVET system.

NTTA's role in optimizing the use of public resources include:
• Enabling strategic development of training providers

To optimise the use of public resources NTTA will ensure that all training providers have mission and vision statements that are aligned to national priorities. Furthermore training providers will be encouraged to prepare strategic plans which support achievement of the goals, and report against annual plans in a manner which is transparent, efficient and accountable.

• Ensuring full currency and utilization of all TVET Resources

To optimize the use of public resources NTTA will identify priorities, costs and funding strategies to achieve and maintain state of the art people and facilities for the technical vocational education and training system. It will ensure that stakeholders utilize Training Institutes to the fullest extent for skills development and related activities, for example, research and development.

• Increasing production orientated training

In order to optimise the use of funds available for training, NTTA will develop policies and establish pilot projects to support the exposure of trainees to work related training. Where funds are derived from such policies they will be directed to that training.

• Developing world class benchmarks for effectiveness.

NTTA will establish international benchmarks for effectiveness in relation to demand driven training, extent of training provision, quality of training provision, and national training capability, to ensure a world class system and inform an agenda for change.
Conditioning the New Roles of the Government and Stake-holders in Vocational Education: Participatory Qualification System Development

Presented by Kioh Jeong
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I. From Authoritarian to Participatory Governance of Vocational Education

In Korea, a system of school-based vocational education developed, during the long period of educational and economic expansion, as a part of the large institutionalized system including more than 1000 institutions. Going abreast with this school-based vocational education is a similarly bureaucratized system of public training system combined with the national technical qualification system. From the beginning of 90's it became clearer that the past vocational education and training system as such could not any more meet the new economic demands for flexible and refined skills, while becoming oppressive of the rising aspirations to individual development throughout life. Vocational education was just a big cluster of the similarly regulated institutions and schools which have little relation with each other. They were different only as prescribed by institutional rules. Actors in the cluster behave in a uniformed way everywhere as they don't refer to each other.

The vocational education reform proposed by the Second Education Reform Proposal (hereinafter "ERP") 1996 includes many policy suggestions to shift the highly regulated institutional systems into an interdependent
complex of autonomous initiatives and practices. The ERP 1996 intended to reorganize the ways of steering the vocational educational education and training which has been organized and governed in a highly centralized bureaucratic manner. The ERP's suggestions were drawn from the judgement that both the vocational education and the training should respectively outgrow the over-institutionalized establishments to form a flexible and integrated skill development sector based on private initiatives and competitions. Debates still continue in the process to implement the suggestions of the ERP. Continuing difficult issues are still raised in the course of the policy development. One must browse some of them to understand what are going on.

At first, the ERP proposed that institutions would contract out interrelations with other actors in the system and that joint initiative by individuals would replace authoritative coordination. By this way, a system of negotiated interdependence is expected to develop among institutions it. According to this scheme, at present, some contractual relations are developing between vocational high-schools and higher education institutions. Participating schools and institutions negotiate on curriculums, facilities, personnels and so on. However, such a practice is a totally new experience for the participants and also for the education authorities. They had been too much accustomed to reactive adaptation behaviors in the highly institutionalized education orders. It will be a difficult and much effort-taking experiment to create some pattern setting models.

Secondly, the ERP suggested that we should promote non-governmental initiatives in assessment and recognition of vocational competence. The qualifications in Korea have long been under overwhelming statutory control. Both the academic qualifications and the technical qualifications are mainly parts of statutory system in Korea. The former has been so since the
establishment of modern education system in this country, and the latter since 1976 when the government enacted the National Technical Qualification Act. The statutory qualification system worked relatively well in the time of nation building and government-driven development. When the Korean society and economy were manageably simple enough such a statutory control was a source of transparency and reliability to encourage human capital formation and transactions. The statutory nature of the system, however, now became rather restrictive than promotive of all the new progressive initiatives in the society. The statutory rules cannot quickly adapt themselves to the compelling occupational and technical changes.

The Foundation Act of Qualification (hereinafter FAQ) of 1996, as proposed by the ERP, declares assessment recognition and certification to be permitted as private businesses. The FAQ provides that government should promote the development of private sectors in these areas. However, the change is still at the very beginning stage: interested actors start to mobilise but in vague confusion. Only cumulated experiences and knowledges can make substantial progress.

As seen in the above brief, the ERP's proposals to accommodate stake-holders in running vocational education put more emphases on deregulation than on democratic decision and consultation. At present, one finds three major obstacles in implementing the systemic change in Korean vocational education.

1) misconception in regulatory reform

Vocational education and training seems particularly easy to fall in the
trap of the government failure. In this field, people used to imprudently accept government interventions and large scale public programmes particularly when economy contracts. That is what happened in 1990 for vocational highschool expansion. Same imprudence repeats now in the training sector with the scream of economic crisis and unemployment. In that, current economic crisis greatly hampers the progress of the vocational education reform.

Actors of vocational education cannot play the initiatives expected by the ERP without extensive deregulation. Typical examples were seen in the contract based highschool-junior college alliances. As a higher education institution a junior college can negotiates freely with a vocational highschool. The vocational highschool, however, does not have enough discretion to negotiate with the junior college. National curriculum and other rules imposed by the national and local education authorities do not allow the vocational schools having the discretion needed. This imbalance of discretion between the partners of the contract frequently hampers the proceedings of the joint initiatives. Situation is far from better in the training sector than the case of vocational high schools. It is rather worse.

Despite the government-wide regulatory reform drive, the deregulation bears little fruits in increasing individual initiatives. To speed up the deregulation, transforming vocational institutions into independent agencies have been opted by reformists but still in vain. National curricula for vocational high-school has been also under reviews for its possible removal, until now without conclusion. In fact, people do not have a sound picture of the deregulated system and the role of the vocational education authority.
2) lacking signals and incentives for organizational and individual actors

For a system depending more upon decentralized and individual decisions, the supply of necessary informations and incentives becomes more and more important public responsibility. For example, occupational and career informations, informations about learning opportunities and education programmes are now on increasing demands. Investment in building computerized databases and bringing up a lot of trained experts will be enormous but receives very little attention due to the restricted financing under the economic crisis. In this situation, deregulation usually means a world more unpredictable and uncertain. To run deregulated system, the public authority should keep more extensive knowledge-based activities. However we still do not have such knowledge-bases to build new governance.

3) conflicts between education and labour

During the past decade several countries merged the education authority and the labour market and training authority. It seems inevitable as soon as the adult population and adolescent youths come into the focus of education policy. In Korea the conflict between education and labour rose in the discussions to prepare the ERP 1996. Reformists maintained that the two sectors should be closely integrated by introducing extensive choice measures and private initiatives. However labour experts and policy makers insisted on keeping the segregation between the formal education system and the training system. The ERP and succeeding legislations are the result of adopting the reformist's view. However the conflicts and debates still continue in the process of the enforcement of the reform legislations.

Merging the two government authorities has been a frequenting topic
of the discussions on government administration reform. To reach an indisputable reconciliation, those in education and labour have lived too long in different worlds with different languages and outlooks. Though Korea as a nation state has a very short modern history, the fundamental differences between the two sectors had been nurtured for long before they were imported in this country.

The above described confusion was seen particularly in the course of renovating the qualification system. The FAQ envisaged a deregulated system of qualification in which stake-holders could play their roles in the running of the vocational skill formation. The Korean Education Reform Proposal II (1996) includes a picture of vocational education reform. The Reform focused on developing new vocational qualification system. A substantial fruit of the ERP is the Qualification Foundation Act(QFA, 1997). Major Objectives of the QFA are as following:

- Develop various qualifications through private non-governmental initiatives.
- Develop national core qualifications by legislative mandate to the Administration.
- Make flexible the NTQs system to accommodate new industrial changes.
- Encourage businesses in the field of skill assessment and certification.

However, the legislation in fact could not be successfully implemented without enough knowledge-base thereon. Reform always confronts backlashes. The QFA also incurred resistance from the establishments cumulated around the old systems including the NTQs. In retrospect, however, the biggest obstacle came from in the lack of sound knowledge base about the qualifications. The purpose of this paper is to clarify nature of the qualification and its use. Ideas in this paper were from serious discussions.
among the small number of experts involved in earlier preparation of the ERP II. This paper is a trial to develop and to share, in the open market of ideas, some thoughts that were under consideration in drafting the QFA. The QFA expects learning accumulation inspired by qualifications, and for that purpose, introduces measures for expanded participation in qualification development. This paper dealt with the topics that must be clarified in implementing the QFA and in achieving further progress in this field: qualification as a legal property, semiotic nature of qualifications, participatory qualification development, and monetary nature of qualifications. To understand these characteristics of qualifications will be a necessary condition in building a system as envisaged by the QFA.

II. The Qualification as an Asset: Regulatory Bases

1. Regulation in Process, Achievement, and Use of Learning

In defining the qualification, the last point to be mentioned is the benefit of the qualified person forming the fundamental rationale of a qualification system. If there is a system where a qualification is attributed to a person only for other purposes than the person's benefit, the system is totalitarian. There are rules and customs whereby the legitimate actor attributes a qualification to a particular person for his benefit. Countries are different in the rules and customs concerning the ways and the effects of the deed of attribution.

In an economy, people involve themselves in various economic activities to produce new economic values and the unconsumed values in that period add to the stock of existing economic assets. The nature of the whole process in learning hardly differs from that in economic system. People increase their competences and skills through vocational education
and training. Participating in the learning activities, they invest much efforts and existing knowledge capital in creating new values in human assets. There is a process of recycle between learning and knowledge accumulation.

In the world of economy, the economic activities and the acquisition of economic assets are regulated by the private law, that is, respectively the law of contract and the law of properties. The economic activities like production exchange and distribution take place in contractual relations governed by contract law. On the other hand, property laws decide the kind and attribution of the properties produced and accumulated through the economic activities. In this way, the regulatory system of the private law provides the mechanism of incentives to activity and attribution of economic values.

How about in the world of learning? Every country has a set of rules and regulations in this area. Generally speaking, learning takes place in various legal context and then legitimate actors assess and recognize it to the effect that the learners carry the result as their recognized qualification. In that way or other, learning is legalized to variable extent by countries. The effects of assessment and recognition also strikingly differ in countries.

Legal frameworks under which learning activities and the resulting acquisition of qualification are, compared with other field of laws, not fully studied and clarified. Learning is rather largely regulated by cumulated customs and institutionalized wisdom.

In many English-American countries, the procedural aspects of the learning provision have been strictly regulated by the school law or various training regulations while the acquisition of the qualification has seldom drawn government legislators' attention. In these countries, the kinds of
qualification produced through learning, and its attribution are frequently just matters of concern for individual learners and education and training institutions. The qualification mainly serves the informatory purposes.

On the other hand, in continental Europe countries, vocational qualifications themselves have been strictly regulated by joint articulation between governments and professional associations. In these countries, the kinds of qualification and its attribution directly relate to the industrial and social organization. State authority and trade associations in these countries execute very strong power to recognize and validate the qualifications. In these countries, a qualification is usually the passport to related jobs.

To summarize, former countries put regulatory emphasis on learning activities while the latter on results of learning, that is, qualifications. The two approaches in regulating learning and qualification were, in fact, corollaries of their distinctive skills market: the one school based skill-formation the other work-site based skill-formation. The nature of qualification also differentiates: the one a social engineering for transaction-cost saving, the other a legal right to jobs. The table 1 compares the two.

<table>
<thead>
<tr>
<th>(table 1) Regulatory Emphasis by System</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning process</td>
</tr>
<tr>
<td>qualifications</td>
</tr>
<tr>
<td>use of qualifications</td>
</tr>
<tr>
<td>School Based</td>
</tr>
<tr>
<td>strong control on institutional aspects</td>
</tr>
<tr>
<td>weak control on institutional initiative</td>
</tr>
<tr>
<td>informatory transaction cost-saving</td>
</tr>
<tr>
<td>Work Based</td>
</tr>
<tr>
<td>weak control on work-site initiative</td>
</tr>
<tr>
<td>strong control as a part of social order</td>
</tr>
<tr>
<td>regulatory passport to jobs</td>
</tr>
</tbody>
</table>

As structural adjustment proceeds in economy, new innovations take place in countries and the traditional approaches to regulate learning and qualifications start to change. Changes in economy transform the world of
work as a whole. New qualification demands for the new economy are hardly met by the existing workforce, which necessitates large scale employment adjustment inevitably incurring unemployment.

The changes in economy necessitate the change of the way governments deal with learning. The regulatory system in this field have to accommodate new skills demand and the unprecedented mobility of skills. Traditional schooling or training regulation cannot afford the changes. Current national and international efforts concentrate on defining the new qualifications and achieving an upgraded profile of workforce. For that purposes they introduce various new ways to recognize learning. The line between the two distinctive past models of regulation in learning and qualifications is blurring.

III. The Qualification as a Sign: Nature and Definition

1. Semiological Nature of Qualifications

The term qualification has been so far, in its use, ambiguous enough to raise concern for a clearer and more operational definition. Researchers and policy experts are trying to set a definition of qualification. One example is as following: "qualifications are the ensemble of knowledge and know-how necessary for the accomplishment of a specific task." while competences are individual and subjective ability to use the knowledge and know-how (Fragniere: OECD, 1996, 46-47). Similar definitions are prevailing but they are still confusing. With such definitions, we cannot go further into fruitful discussions for action. Problems stem from the fact that qualifications go in between the man and the job, and is both a set of human characteristics and of job traits.
It has been frequently said that qualifications play the role of signaling for the participants to labor market. Job seekers prepare themselves following the signal and the employers make decisions according to the signal which gives reliable information. This is the starting point. Qualifications are nothing other than signs, which carry some kinds of information for the learners and employers. Linguists and semiologists, fortunately, have long developed the theory of signs, that is, semiology or semiotics. One would, to study qualifications, utilize a very small part of the accumulated knowledges in that discipline.

For the purpose of this paper, one would define that qualification is a sign attributed to a person. To be more accurate, qualification is an i) institutionalize signifier ii) coined by the legitimate deed iii) signifying a set of information in terms of knowledge and skills iv) attributed to a person v) for the benefit of the person.

It is not the referred person him/herself but just a separated representer of the represented person so that it can be submitted and put on circulation. The sign is a unit of the system of signs to which it belongs. This sign is coined by legitimate actors according to socially agreed rules and procedures. However, the qualification signs and their system is one thing, a produced concrete certification is the other. To follow the linguistic structuralists' terminology, the former is of <langue> and the latter is of <parole>. This distinction is useful if one tries to build a general theory of qualification separately from an individual qualification development behaviors.

In the mean time, the qualification as a sign is a combination of the carrier of sign (signifier/signifiant) and the information it carries (signified/signifie). The well-known distinction by Saussure between <signifier> and <signified> holds well here. The qualification as carrier is a part of the institutionalized sign systems while the qualification as
information belongs to the world of meanings: meanings put in terms of valuable knowledge and skills in a society.

Now one arrives at the three components of a qualification system: signifier of qualification, signified of qualification, and the qualified person. The relation of the three components can be illustrated in the form of semiological triangle as the picture1 below.

(picture1) Semiological Triangle of Qualification

The above triangular illustration is following the typical triangles developed by the past semantic inquiries (Eco, 1985, 35-38):

- the triangle of reference-symbol-referent (Richards, 1923),
- the triangle of interpretant-representamen-object (Pierce),
- the triangle of Sinn-Zeichen-Bedeutung (Frege, 1892).

The triangular illustration implies that a qualification system is a mixture of the cultural contents, the power relations, and the complexity of work and jobs. Each of the three components of the triangle can be subject to structural analyses because they respectively form three separate authentic
structures composed of their own units.

At first, a qualification system is necessarily based on a set of knowledge, skills, and values which are imbedded in the existing culture. In other words, being the content of qualification, curricula and syllabi are the construct of cultural units like knowledge, skills, competences, attitudes, and values. One can analyses the content structure of a qualification system by the structuralists' methods.

On the other hand, a qualification system is maintained by implementing behaviors like assessment, certification, and approval. The qualification system regulates these behaviors. In that, it is a system of norms and rules which reflect existing power distribution. A stream of American sociology has developed an explanatory framework named as "institutionalization theory of social organizations" and "legitimation theory of education". According to the explanation, providing legitimized classifications of both men and knowledge is the most important function of education systems (Meyer and Rowan, 1979). The triangle of qualification confirms the argument of "legitimized classification" in a different but more direct way. What Meyer and Rowan had in mind, when they argued on functioning of education, is the qualification as a signifier. In the above triangle, the signifier is the active component to signify the signified and to represent the represented.

Learners and workers are users of the qualification system. They use the system in the same way as people use a language. They compose their own careers as people compose a statement or a text. From the users' standpoint, a qualification system is a tool to plan, design, and exchange their career at work and learning. The reservoir for their consideration are, to say, drawn from the various occupations. The ILO, national governments and other organizations are regularly updating their lists of standard occupational classifications (SOCs). The SOCs include classifications of
workers-the represented in the triangle of qualification. SOCs typically have structural nature so that one may apply the structuralists' methods.

Therefore, a qualification system is a system of signs. One can understand the system better by using structuralistic analyses. This is a starting point for those who want to develop a good and effective system of qualifications. Signs are not just reflections of things. They have their own logic and life. The same is true for qualifications.

2. Grammar of Qualification Signifier System

One can easily find the appearance of qualification as a system of signifier in the related legal and executive instruments defining the kind and structure of diploma, certificates, and degrees. This structures have common attributes with linguistic or semiotic structures. For example, the system of the GNVQs and NVQs in England has its own qualification levels and classes. Following in the box is the outline of the GNVQ and NVQ system.

The Qualification and Curriculum Agency(QCA) in UK is running a National Database which contains comprehensive details of all NVQs and GNVQs. Information about each NVQs and GNVQs is held in full detail and includes:

1. A qualification summary
2. The level within the framework
3. The components
   - units
   - elements
   - range statements
   - performance criteria
4. Quality assurance certification procedures
GNVQs are available at three different levels to suit students of all abilities.

Foundation Level - usually taken as a one-year full-time course equivalent to four GCSEs grades
Intermediate Level - usually taken as a one-year full-time course equivalent to four GCSEs grades
Advanced Level - usually taken as a two-year full-time course equivalent to two A levels grades

GNVQs are now available in 14 vocational areas:

NVQs are split into areas and levels:
The NVQ areas are: 1) Tending animals, plants and land 2) Extracting and providing natural resources 3) Constructing 4) Engineering 5) Manufacturing 6) Transporting 7) Providing goods and services 8) Providing health, social and protective services 9) Providing business services 10) Communicating 11) Developing and extending knowledge and skill

NVQ Levels - The following definitions of NVQ levels provide a general guide and are not intended to be prescriptive.
Level 1: Competence which involves the application of knowledge and skills in the performance of a range of varied work activities, most of which may be routine or predictable.
Level 2: Competence which involves the application of knowledge and skills in a significant range of varied work activities, performed in a variety of contexts.
Level 3: Competence which involves the application of knowledge and skills in a broad range of varied work activities performed in a variety of contexts, most of which are complex and non-routine.
Level 4: Competence which involves the application of knowledge and skills in a broad range of complex, technical or professional work activities performed in a wide range of contexts and with a substantial degree of personal responsibility and autonomy.
Level 5: Competence which involves the application of skills and a significant range of fundamental principles across a wide and often unpredictable variety of contexts.

Others and for the allocation of substantial resources feature strongly, as do personal accountabilities for analysis and diagnosis, design, planning, execution and evaluation.
From the outline above one can put forth the following syntax of the GNVQs or NVQs.

In the above picture each box is a GNVQ or NVQ. Learners using the system develop their career composing qualifications in a horizontal direction from low to high level while choosing one area from the set of areas, in structuralists' term <system>. In that, the qualification system is a structured collection of career options so that individuals can choose and construct their careers. GNVQ and NVQ are very different in the way of building the <system>: in GNVQs the system is fixed but in NVQ the system is open to private qualification awarding bodies. But the structure itself is basically the same.

The syntactic structure of qualifications is in a sense a copy of lingual statements.

/He/
Today, /I /play(s) /baseball. →(composition)
/She/
/Tom/
(system)
As seen in the above illustrations both linguistic structures and qualification structures have common nature integrating the compositional sequence and the system of mutually substitutable fields. As men use the linguistic system to speak and write, learners use the qualification structure to develop their careers. An important point to note is the development of the <system>. Contrary to the compositional sequence, the component of the system are mutually parallel and continuously changing by time. By this reason Seussure explained it as the <memory of an era>. Same logic applies to qualifications. Varying entries of a <system> of qualifications are relatively fluid while the sequential relations would not change.

So far, we treated qualifications as a pure structure of signs which is subject to the structuralists' analyses. It means that we didn't consider the qualification in a real world context. Such an approach is worth trying because countries are wrestling with the task of designing, creating or consolidating a qualification system. People expect the system should have the virtue of transparency as well as transferability. Designing such a system would require deliberate works of coding, decoding, ciphering, substituting, replacing, and transferring: in short, semiotic works. One now move on to the issue of production, use, and functioning of qualification.

IV. Coining a Qualification and the Pragmatics of Qualification

1. Participatory Qualification Development

A qualification develops through a series of processes. Once formed through learning activities, it is assessed, and certified, and then recognized. Traditional school-based or work-based system give power and initiative of developing qualifications only to particular monopolistic actors: public education institutions and governmental bodies.
As the needs for skill readjustment intensify, the traditional monopoly in qualification development become unable to meet the new qualification demand. Various innovations take place now. In the field of specialized competences, the innovations are characterized by dispersed roles and powers in qualification development. However, in the areas of generalized vocational qualifications, the state's initiatives are newly introduced. Following are the summarized spectrum of those innovations (KRIVET, 1998).

- Learners' own initiative: Individual Portfolio approaches
- Contracted initiative: French <Contrat de Qualification Professionelle>
- Approved private qualification service initiative: NVQs in UK
- Institutionalized traditional monopoly: School diplomas, German dual system
- Newly introduced state monopoly: GNVQs in UK

One must give attention to the role of the central authorities in the emerging new qualifications. To put it concisely, the central authorities in qualification administer the <grammar> of the qualification structure while the <system> in Seussure's term is delegated to private initiatives. Following outline of the administration of NVQs shows an exemplary case.

NVQs are based on national occupational standards and QCA works with standards setting bodies, including National Training Organisations, to coordinate the development and specification of these standards. The qualifications are unit-based and the number and size of units varies between areas. A unit is achieved when a candidate is assessed as competent in applying all of the skills and knowledge specified within it.

The areas of competence within the NVQ framework result from an analysis of work roles and provide the initial organising structure for competence-based qualifications. Further refinements to the system are being
made as the qualifications are developed and routes for progression/transfer are identified.

Qualifications and Curriculum Authority (QCA) will ensure that NVQs meet particular criteria and are broadly comparable across different sectors. QCA accredits (formally recognises) proposals for NVQ awards developed by lead and awarding bodies and quality assures and audits the activity of the awarding bodies.

Standards Setting Bodies, normally National Training Organisations (NTOs), identify, define and update employment-based standards of competence for agreed occupations. NVQs are based on these standards and criteria established by QCA.

Awarding Bodies have a dual role. With standards setting bodies, they are jointly responsible for the development of NVQs and they are also responsible for the implementation of individual NVQs. They approve centres who wish to offer assessment services towards NVQs. In addition, awarding bodies monitor the assessment process and award NVQs and unit certificates. They undertake external verification to ensure that candidates are being assessed fairly and consistently across all centres.

As seen in the above description, joint private initiatives play the role of developing new NVQs under the rules administered by the QCA. The French way of Contrat de Qualification Professionelle depends on the qualification development upon employer-learner contracts. In America, higher education institutions' enterprising initiatives have developed new professional qualifications, for example, the MBA. In summary, to encourage private initiatives to develop new qualification characterizes the direction in accommodating new industrial demands. As suggested in the table 2, today's
qualification development process should depend on civil participation. One might call it the participatory qualification development.

**Table 2** Framework of Participatory Qualification Development

<table>
<thead>
<tr>
<th>actors</th>
<th>standards setting</th>
<th>Assessment</th>
<th>Certification</th>
<th>Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E&amp;T providers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>employers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>professional associations and</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trade union</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>learners</td>
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<td></td>
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</tbody>
</table>

Innovative approaches, however, tend to sacrifice the stability and transparency which has been a highly appreciated strength of the traditional systems. An approach to overcome these difficulties is for the government to develop a revised and authorized framework of qualification development that would consolidate dispersed qualification development into one over-arching umbrella without sacrificing dispersed actors' initiative. In other words, central qualification authorities should intensify the efforts to develop refined <grammar>. What European Union has to do, with so many different sub-system under its jurisdiction, is of same nature as the central qualification authorities.

So far in the history of work and learning, the qualification system was rather of given institutional construct than of policy parameter. In the history, the modern nation-states removed or disabled various intermediate
organizations depriving them of power to divide it between individuals and the state authority. For those who opted for modern rational approaches in the field of occupational activities, the cultural and historical nature of the qualifications, just being an irrational and oppressive force, only put obstacles in their way. So they attacked and nullified the old qualifications. Instead, they created their own new system, that is, modern schooling.

Now, however, the schooling and other currently existing monopolistic qualifications became again the irrationally institutionalized oppressive orders, which should be corrected by the participatory development in qualifications.

2. Generalized Qualifications and Effectiveness Issues

Qualifications represent not only human traits but by the same token the characteristic of jobs and work. A society includes a vast number of occupations and jobs. We see national and international authorities keep records of standard occupational classification. The huge volume of the records reflects span and depth of the existing culture and civilization of a society. Theoretically speaking, a qualification would correspond to each of occupation in the records. However, a qualification is an abstraction because of its nature as a sign. Due to the abstracting nature of qualification, a qualification can assume many different works. A problem here is that signs as signifier, tend to be arbitrary in its relation with those represented. Therefore, so-called multi-skill qualifications can be erroneously made from a collection of mutually unrelated works. A good sign should match with a well defined meaning, that is, the signified. The multi-skill is not just a combination of different simple skills but a new higher level qualification which has a new set of signified and a new type of represented worker.

As qualifications are the more abstract, for example as we see in the
development of the GNVQs, the more separated a qualification becomes from a particular job. At this time, the qualification is by far nearer to the money. Money is also an higher order abstraction as well as a sign. Therefore, one frequently hear an analogy to the money concerning the nature and functioning of qualifications. When it comes to the nature and functioning of the money, trust and confidence are on the top of the issues list. The qualifications too should be accepted and trusted by the whole community of learning and work. The semiotic nature of qualification is one thing, its acceptance in the world of jobs and work is another.

Qualifications should be circulated, like money, in the world of jobs. The reliability of and the cost saving gain by the qualifications will guarantee the least acceptance. However, in reality, there are many qualification systems de facto in a society. Governments and big firms usually establish their own job classification system. Internal labour markets frequently work on the basis of the qualifications by the job classification. Professional associations used to set up their own qualification system and have strong voice in running the system. School systems also have kept their own system of credentialing qualifications. If one uses the analogy to money, there are many local monies in a system. To consolidate these local qualifications into one whole system would require huge efforts that might not easily be mobilized. What EU try to do now in this area is basically of same nature. Reconciling systems rooted on different culture raises fundamental difficulties to overcome. Considering the difficult task of dealing many different system of qualifications, one has to think about additional, sometimes conflicting, conditions of the good qualification system. Following are the list of such requirements that experts have kept mentioning:

- Qualifications are transparent and stable.
- Qualifications are transportable to everywhere.
- Qualifications are transferable between qualifications.
- The structure of qualifications is flexible to changing demands.

Above requirements closely resemble the requirements for good money. Such a resemblance is natural because both money and qualifications have the common nature as sign of values and as parameter of transactions.
Bibliographies

Office For Standards in Education (OFSTED), Standards in GNVQs in Sixth Forms, London:1996