

# TVET Teacher Education towards sustainable Development: Framework and Initiatives

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## ABSTRACT

*This paper was prompted by the summit meeting of leaders of the Group of Twenty (G20) of the world's most developed economies that was held in Toronto in June 2010. The purpose of the summit was to address global issues with a particular focus on resolving the 'financial crisis' that emerged in 2009. In broad terms, the G8/G20 leaders have acknowledged a collective responsibility to implement reforms to the international financial system and to implement 'promises' to collectively change the ways to create, redistribute, and utilize wealth.*

## INTRODUCTION

*"Two roads diverged in a wood, and I ---  
I took the one less travelled by,  
And that has made all the difference."*

... Robert Frost

Which way should we go now? Once again we, in the international community, are at the cross-roads: one way leading to continuing 'crisis management' of the international economy and lack of jobs; the other leading to a renaissance in human development that puts technology at the service of human well-being in an integrated global society, with a growing demand for human capital. This paper was prompted by the summit meeting of leaders of the Group of Twenty (G20) of the world's most developed economies that was held in Toronto in June 2010. The *purpose* of the summit was to address global issues with a particular focus on resolving the 'financial crisis' that emerged in 2009. In broad terms, the G8/G20 leaders have acknowledged a collective responsibility to implement reforms to the international financial system and to implement 'promises' to collectively change the ways to create, redistribute, and utilize *wealth*.

## WEALTH = HUMAN CAPITAL + FINANCIAL CAPITAL

The ultimate purpose of Education for Sustainable Development is to build human capital for the participants so that all students realize their aspirations for employment and all employers reach their expectations for productivity. It is the productivity that produces the wealth. One of the best ways to consider wealth is to regard human capital as the present value of all wages and expected future wages, including pensions and government security. Generally we start our working life with a lot of human capital from education and training but little financial capital (even debt such as student loans) and during the working years move toward building financial capital while diminishing the human capital. Volatility in the workplace and job losses such as in the present economic crisis can adversely affect human capital and it is best to build on the firm base of TEVT that provides a relatively secure *medium of exchange* in the global labour market.

The summit meeting brought into sharp focus the critical need for global *enablers* to improve the

efficiency and effectiveness of *planning prosperity together*. Protectionism is to be avoided and labour mobility enhanced because human capital is at the heart of creating wealth and well paying jobs are needed to stimulate productivity. Communities or locations with a wealth of human capital must exchange with those rich in financial capital and together exploit natural resources while protecting the environment. This implies that investment planners must embark on a lifelong process of converting their human capital—their earning potential—into financial capital. Globalization of the economy has given rise to increased Human Migration that has reached such proportions that the past 20 years have been called the “age of migration” and only those with competency and skills can expect a fair wage while they contribute to the community at the local and global levels. Past experience shows that education for sustainable development (ESD), particularly in the form of technical education and vocational training (TEVET), is essential to creating wealth. The G20 countries themselves can demonstrate this fact. Some were economic ‘basket cases’ themselves when they undertook educational reforms a few short decades ago. Furthermore, the process has been documented and can serve to show which road they took —*that made all the difference*.

## **WORLD EXCHANGE FOR HUMAN CAPITAL**

The G20 summit brought into sharp focus the critical need for global *enablers* to improve the efficiency and effectiveness of *planning prosperity together*. Protectionism is to be avoided and labour mobility enhanced because human capital is at the heart of creating wealth through well paying jobs that are needed to maintain productivity in a dynamic environment. The system for redistributing financial resources is what is now in *crisis mode* and the way forward requires a global consensus that Education must be specifically geared to ‘sustainable development’. The implication is that education must be *internationalized* so that everyone can work together more effectively. It is now necessary for international educators to work within those broad parameters to do the necessary to make TEVET sustainable. At stake is the livelihood and well being of people everywhere, not only because our economies have become so integrated that no community or region can prosper

economically, or even survive, in isolation, and even more important our natural environment can not stand any more strain from greed and corruption that has no respect for any international boundary. In regard to our natural environment Clean and Green Technologies are within our grasp but the financial issues must be addressed, and then the human issues can be resolved, *provided there is good will*.

## **MIGRATION AND EMPLOYMENT**

The *Society for International Development* (SID) focused the attention on *Human Migration* as the main theme for issues to be addressed in the year 2008. It has been said that migration is the history of the world but the last couple of decades have also been dubbed the age of migration. There are many reasons for human migration but three main categories can be made: between *internal and international*; between *forced and voluntary* moves; and *permanent versus temporary* migration. Some countries, like the Cayman Islands, depend on contract workers to fill more than two-thirds of the all the jobs in the workforce. It is a win-win situation in this case because the workers and the employers benefit from a fair system. The vast majority of foreign workers in the Cayman Islands come from the Philippines, and that country depends on sending workers abroad as the very lifeline of the economy. It is the largest ‘sending country’ with about nine million in the international workforce world wide under a system legally constituted and administered by the Philippine Overseas Employment Agency (POEA). Some rich countries tolerate an irregular system that allows employers to exploit foreign workers by not registering them with the effect that they become ‘illegal aliens’. This is an example of the ‘lose-lose’ scenario in international migration. But one country stands alone as having both internal and international migration on a scale that is unprecedented, and that is China. Internal migration in China has been fuelled by rapid economic growth, particularly in the costal provinces and over 100 million migrants came for the jobs created by the economic reforms enabled by the labour market development designed to facilitate mobility. During the same period international migration picked up as the young internationally mobile cadre chose to live and work abroad. In the best scenario, migration can be a ‘triple-win’ situation that benefits the receiving and sending communities and the migrants themselves. This triple win is

achievable, provided that the migration process is well managed and safeguards are in place to guarantee the dignity, human rights, and welfare of the migrants. This would be the final objective of a *World Exchange for Human Capital*.

There is strong emphasis on *foreign exchange* mechanisms for financial capital as part of the restructuring of the new world trade order and the implication is that there is a comparable need to improve the mechanisms for the *international exchange of human capital*. In particular, the migrant workers whose human capital is based on TVET need a more efficient and fair way have their competency evaluated and recognized and employers need a better way to assess the productive capacity of employees. In the past there have been many successful projects using competency-based programs in TVET. In particular, competency-based training using a modular type of curriculum has proved to be enormously cost-effective because training the teachers obtains a *double-multiplier effect* by increasing the productivity and efficiency of the entire workforce. Ultimately, workers' productivity—the value of what they produce, will determine the wealth of any community.

## **A FRAMEWORK FOR COMPETENCY-BASED TECHNICAL TEACHER TRAINING**

This paper proposes some ways and means to develop or improve a *framework* and build on *initiatives* for creating and exchanging human capital that would mirror the financial arrangements for *foreign exchange*. For example, all World Bank loans are designated in Special Drawing Rights (SDR) based on a 'basket of currencies' consisting of about six currencies and the value of the basket is calculated at the equivalent of the United States Dollar value at the time of loan signing. The purpose and effect is to diminish the uncertainty that may be caused by the exchange rates that vary during the time period of the loan. In human capital the relative values are based on three variables:

1. The relative value of foreign earned educational credentials,
2. The relative value of experience gained in the home country and elsewhere before migrating; and

3. The relative competence in language and intercultural skills.

What is needed is a rational way to set criteria that would then be enhanced by internationalization of education and training so that labour mobility would keep pace with changing needs of the global labour market. The time-lag must be shortened between planning investments and meeting the growing demand for human capital, particularly in the clean and green technologies. Economic globalization has been underway for half a century, but it is only in the last two decades that '*internationalization*' of education and training has emerged as a vital requirement for sustainable human development on a global scale. The most effective way to address this challenge would be through support to existing educational institutions to strengthen their strategic planning capacity related to the basic function and purpose of Clean and Green Technologies including; defining goals and developing policies; planning and development of training programs appropriate to the goals; and establishing the administrative capacity to secure and manage the material and human resources necessary to achieve the identified goals.

## **ADMINISTRATIVE FRAMEWORK**

The implementation of a comprehensive and integrated program requires a framework that remains dynamic to keep pace with changing needs in the workforce. The nature of Administration as it applies to a teacher training program in such a dynamic situations must provide for five interrelated sets of functions:

1. *Administration as Government and Policy Direction:* legislative, executive and judicial functions for establishing and promulgating policy and intent;
2. *Administration as Planning and Resource Allocation:* developing strategic and operational plans to achieve the intended goals and objectives within the technical and financial criteria established as policy;
3. *Administration as Management:* the management of plant and personnel including establishing and maintaining administrative structures and procedures for securing and managing financial, human, physical, and informational resources;

4. *Administration as Supervision and Coordination* : internal coordination and external coordination with other stakeholders in society at the Local, National, and International Levels; and
5. *Administration as Monitoring Evaluation and Dissemination*: and continuous evaluation of results, problem solving, continuous learning from experience, and adjusting to changing needs.

## NEW INITIATIVES

*UNESCO Paris makes TEVET a priority*: In September 2009, the Paris-based United Nations Education and Scientific Cooperation (UNESCO) identified Technical Education and Vocational Training (TEVET) as one of its main priorities in education for the coming years. In this context, a new Section post of Chief of Section was advertised to head this section and lead the implementation of the new UNESCO-TVET Strategy. The strategy includes working with officials and institutions in developing countries as part of an integrated and comprehensive (One-UN) approach that involves working in partnership with other organizations such as the International Labour Office (ILO), Organization for Economic Cooperation in Development (OECD), European Technical Fund (ETF) and the World Bank. In the past, the World Bank supported a Co-operative Education Unit at UNESCO. There was a period of particularly close cooperation between the World Bank and United Nations Education and Scientific Cooperation (UNESCO), based in Paris, during which the Bank provided 75 percent of the funds for a Cooperative program whereby, UNESCO employed a team of educators, acceptable to the Bank, who provided direct technical assistance to developing countries. The UNESCO and Bank staff members were often interchangeable. And demonstrated inter-agency cooperation at the operational level would be most helpful in responding to the current issues in the global labour market. Can we go *back-to-the future*?

*It's time for an energy council*, according to Roger J. Goodman president of Kernow Consulting Inc., Canada. The focus of this new initiative would be on *energy security, foreign policy, and expanded energy trade*. The proposed *Canada-U.S.A. Energy Council* would be a new initiative to improve on the present

ad hoc process that is inefficient and not supportive of mutual economic growth and contributes to environmental degradation. Its *purpose* would be to fulfill the desire for enhanced energy security and the need for clean power in North America. In that regard, Nancy Pelosi, Speaker of the House of Representatives of the USA, visited Ottawa, in September, 2010, for discussions about energy security ahead of the upcoming 'med-term' elections in America. This is an issue that will soon require decisions by *consensus*. At issue is Canada's 'tar sands' oil producing fields that environmentalists view as dirty and the thirst for the oil in America that attracts the 'green-backs'--\$, to Canada. Green-backs attract political animals. Collectively, we have the knowledge, skills, technology, and financial resources necessary to *get the job done*. The missing ingredient is the collective will to make it happen. A step in the right direction occurred in September 2010 when a new *Environmental Professional (EP)* certification took effect in Canada. This brings together all environmental professionals in engineering, geology, geography, hydrology and many others under a single certification. Since 2000, the Canadian Environmental Certification Approvals Board has administered numerous qualifications for specialized environmentalist professionals and the EP certification brings all of those professionals under one umbrella, while allowing them to retain their areas of specialization.

*"Between the big things that we can not do, and the little things that we will not do, the danger is that we will do nothing."*

... Monod

## SYNERGISTIC DECISION MAKING

*Human Synergistics* is the name of a company that produces interactive training materials that promote synergistic decision making based on the philosophy that effective human action in dealing with any kind of crisis or problem is dependent on two key factors: (1) The Resources, both human and material, which can be brought to bear on the situation, and (2) The Process, how the resources are utilized in dealing with the situation. If either of these two factors is missing the chance of success is nil. But, if people work together utilizing their resources rationally and humanely, they can produce results beyond the mere



sum of their inputs. This is what is called synergy--two or more achieving an effect which exceeds anything they could do individually.

*“In anything but the shortest term, the developed economies can have the kind of resources they decide to have because of their technology. It is the **decisions** that determine the **resources**”.*

*...U Thant, Secretary General of the United Nations, 1971*

## **CLEAN AND GREEN TECHNOLOGIES AND FINANCIAL LITERACY**

Rapid expansion has brought about a great diversity in both the level and quality of technical *curricula*. In the minds of educators this has quite naturally led to confusion, misunderstanding, and conflict as to the definition, scope, means and ends of technical education. Once the purpose and scope are determined key issues about *curricula* can then be designated that must include definitions regarding level and quality of educational attainment desired. Then the ultimate quality of a curriculum depends largely upon the quality of its *teachers*.

There is a wealth of knowledge and expertise in the field of clean and green technology but it remains scattered and there is no effective way to bring the technology to bear, particularly across international boundaries, and needless to say the environmental concerns are global. Even the language is ‘new’ and the terminology is not widely understood by non-technical decision makers. Of paramount importance is the financial literacy required for meaningful dialogue about some of the current *initiatives*.

## **DEVELOPING A CURRICULUM**

Proposals on concepts on Clean and Green Technologies are inextricably linked to a better understanding of the technology, based on a general understanding of basic science and mathematics, as well as some appreciation for social science and economics involved. There is a wealth of experience that illustrates that the most efficient and cost-effective way to build human capital in any specialized field is through a Technical Teacher Training program

especially designed for the intended *purpose*. The methodology that has proved most effective over several decades has been designated by the acronym **DACUM**, which stands for **DEVELOPING A CURRICULUM**. It refers to an approach that is based on a philosophy of technical education that believes the best persons to determine what *knowledge* and *skills* are necessary to do any job would be the persons who are doing the job *competently*. The process begins with a job analysis done by a curriculum developer skilled in using the help of the workers and this forms the basis for developing modules of training. The *DACUM Philosophy* is rooted in the belief that a collection of courses do not constitute a curriculum for competency-based instruction. *The curriculum in each case will be based on the job to be done and will not be primarily designed for accreditation as its main objective.*

*‘Those who say it cannot be done should not interrupt the people doing it.’*

*...Chinese Proverb*

## **A DISTINCTION BETWEEN QUALITY AND LEVEL**

A number of training programs have recently been inaugurated. They have a variety of goals and a corresponding diversity of educational levels. Since differences in level frequently seem to be interpreted as differences in quality it is important to make a distinction between the quality of a program and its educational or difficulty level. The level of a program is determined by its “objectives” and the quality by how well it achieves these objectives. Quality training must also involve the development of correct attitudes toward work and an ability to work as part of a team. Increasingly, those teams are multifunctional in expertise and multinational in culture.

## **ATTRIBUTES OF TECHNICAL TEACHERS**

The attributes desirable in TVET teachers are identical with those of all college teachers: intelligence, a genuine interest in developing students, personal and professional integrity, a capacity for communicating ideas in oral and written form, a thorough knowledge

of the subjects taught and of relevant supporting subjects, and skill in the fundamental of teaching-learning process. Where TVET requires special consideration is for faculty members teaching in the technical specialties to have appropriate technical qualifications and skills and they need to remain current in developments in their field of specialization and keep pace with changing technology. They must stay alive in their field of specialization and this presents a challenge that can sometimes be met by industrial attachments or updating programs.

## DO NOT CONFUSE PURPOSE WITH MOTIVE

*The Elements of Administration*, is a reference book, published in 1943, and is based on a series of lectures by Leon Urwick delivered at the Polytechnic London. In June 1942, he spoke about the importance of not confusing one's *purpose* with one's *motive*. He said: "Many businessmen to-day, if asked what was their objective would reply vaguely: 'To make a profit, I suppose.' But profit can no more be the objective of a business than betting can be the objective of racing, making a score the objective of cricket, or eating the objective of living." Economists describe money as a medium of exchange and the true objective of any business undertaking is to make or distribute a product or service which the community needs. What the community gives in exchange that is greater in value than what went into making the product is the profit." A fair exchange or fair trade is sustainable but the process becomes distorted when the *profit motive* becomes the sole *purpose* of the enterprise. When carried to extremes, the result is the worst case of destructive capitalism. In modern times it means that a CEO's purpose is to make a profit for the *shareholders*, only, and ignore the other *stakeholders* including the community at large. This lack of corporate responsibility is largely responsible for the deterioration of our natural environment as well as the exploitation of 'illegal aliens' and other migrant workers. It also suggests, strongly, that corporate responsibility and ethics should be a module in the curriculum for Clean and Green technology courses.

*Evaluating Vocational Training Programs: A practical Guide*, Published by the World Bank (1984) was compiled by experts from multilateral aid agencies who collaborated to develop a uniform methodology

for evaluating industrial training. With funding from the Agency for Technical Cooperation of the Federal Republic of Germany, the Overseas Development Administration of the United Kingdom, the Swedish International Development Agency, and the World Bank. With participation from the Operational Development Section of the International Labour Organization the manual was field tested in Indonesia and then discussed by representatives of multilateral and bilateral agencies at a meeting in London in July 1984 prior to publication. There is no doubt that the ultimate outcome of any project is development, this is the most important dimension of outcome. Therefore the methodology provides guidelines for evaluating internal efficiency, and external efficiency. The criteria used by a project analyst obviously depend on the objectives of a project. The efficiency can be defined in terms of academic performance and also by in terms of skill on the job after graduation. What must not be in doubt is the fact that the ultimate aim of any TEVT project is to contribute to development. It follows that the quality and effectiveness of training can be affected significantly by adequacy and utilization of physical resources. The effectiveness of the school's management can be evaluated by examining the organizational structure and management style and effectiveness of senior staff. In the final analysis the interrelationship of the training institution with industry is probably the most important single indicator of its *efficiency* and *effectiveness*.

## A CURRICULUM SUMMARY FOR CLEAN AND GREEN TECHNOLOGY

The *training needs* of teachers, policymakers, managers and staff who will be involved in implementing clean and green technology strategies need to be identified by a *job analysis* as part of the project identification process. For purposes of this presentation the curriculum has been divided into three major categories:

- (a) **Knowledge and communications:** An endeavour which is badly needed in most countries is an aggressive campaign to help teachers combat a general ignorance about science and technology and the particular confusion regarding conflicting information about clean and green technologies;

(b) **Technical skills:** Refer to skills development require full competence in the fields of specializations and an ability to identify training solutions and maintain networks and application standards. Modules include, (i) Advanced analytical skills, (ii) Train the trainer skills, and (iii) Specialist Computer skills;

(c) **Management Skills:** There are a number of generic management skills which are required by managers regardless of their field of operation. The modules include: (i) Generic skills, project management, policy analysis, policy formulation, financial management, change management, and computer technology, and (ii) Ancillary Skills, negotiation, verbal and written presentation skills, inter-personal and cross-cultural communications, marketing, and public relations skills.

## HOW THE GROUP OF 20 CAME INTO BEING

There was an original Group of Seven, formed in the 1970s, consisting of Britain, Canada, France, Germany, Italy, and Japan, and subsequently joined by Russia, after the demise of the Soviet Union to become the G8. Eventually, due to the rise of emerging economies another group consisting of Brazil, China, India, South Africa, and Saudi Arabia, also called the 'Big-Five' became invited guests as *observers* for some time. As globalization proceeded and economies became more integrated other countries became 'observers'. Eventually it was concluded that the optimum number would be 20. The magic number 20 was chosen because a *consensus* emerged that it was the largest group that could hope to be effective in *decision making by consensus*. The big-five became regular members and some others who had already been observers were invited to 'come to the table' making the G20. The new members are, Argentina, Australia, Mexico, Indonesia, South Korea, Turkey, and--- ... oops, that makes nineteen (19)! Paul Martin was Canada's finance minister at the time of these negotiations and when he was asked why the G20 had 19 members, he quoted:

*"Well as you know, these arrangements are all in the hands of finance ministers, and they are not very good with arithmetic".*

*No Man (or country) is an Island.* Even though there was a security fence, the G20 leaders were not in isolation in Toronto. Back-stopping them were the Heads of the main international organizations that figure prominently in preparing and implementing the strategic and operational plans to achieve the goals of the summit. They include Robert Zoellick, President of the World Bank Group; Dominique Strauss-Khan, Executive Manager, International Monetary Fund; Pascal LeMay, Secretary General, World Trade Organization; and Ban Key Moon, Secretary General, of the United Nations. This is a pretty good indication that no one is in this 'crisis' alone. It also implies that we may need to learn, or re-learn, some lessons from the past.

## A GLOBAL PERSPECTIVE FROM THE ARCHIVES

*"Of all national assets, archives are the most precious; they are the gift of one generation to another, and the extent of our care of them marks the extent of our civilization"*

*... Sir Arthur Doughty, Canadian, Archivist*

I have in my home a library and personal Archives collected over the many years of working at the leading edge of participatory human development and I am particularly pleased to report that the World Bank Group has made improvements recently in encouraging *Alumni of the World Bank Institute (WBI)* to continue, even *after retirement* to contribute to the work of development in any of the following ways: by reappointment to the staff of the Bank as a consultant for short-term assignments; to serve as mentor to younger staff to provide continuity and aid in preserving institutional knowledge; to serve on the roster of The World Bank Group Speakers' Bureau; and to teach development education at Universities that arrange to use learning resources that may be made available by the WBI. Electronic newsletters and regular information bulletins are sent to WBI alumni and by these means the Bank has improved the methods of retaining institutional knowledge and is making past experience accessible. Such *Archives* are a precious resource.

*"Experience keeps a dear school, but fools will learn by no other".*

*... Benjamin Franklin*

## HISTORICAL SKETCH OF SOME KEY INSTITUTIONS

*Partners in development*: is the title of the Report of the Commission on International Development: September 15, 1969, submitted by Chairman, Lester B. Pearson, of Canada, and Accepted by Robert S McNamara, President of the World Bank. It set the stage for member countries to become *partners in development* with the World Bank acting as the catalytic agent or broker.

Lester B Pearson, a Nobel Peace Prize winner (1956), had helped to create the Colombo Plan (1950). These efforts in cooperation have been aided by the fact that technology can be neutral in regard to culture, gender, age, and creed. Internationalization of education gained momentum in 1984, when one of the Commissioners for *partners in development*, Sir Arthur Lewis, of Saint Lucia, was awarded a share of the Nobel Prize for Economics for his work on human capital, particularly in developing countries of the Caribbean. This further strengthened the earlier report of 1969 that had already prompted the World Bank to support education and training as *an integral part of development*.

*The Colombo Plan for Economic Cooperation in the Asia and the Pacific* region was formed in 1950 following a meeting in Colombo, Ceylon (now Sri Lanka). The legacy of the Colombo Plan (CP) is twofold as it provided both a *concept* and a *mechanism* for achieving prosperity together through participatory human development. The concept of the Colombo Plan is based on a shared vision that we are citizens of the world and not just citizens of Nation States and that a cosmopolitan approach to international development would accomplish three main goals:

1. Economic development would contribute to the social and political stability of the participating countries and thus would enhance the prospects for peace in the world;
2. The development of trade is vital for the countries of the area and for the continuing expansion of a world economy based on multilateral trade; and
3. Economic advancement would unlock the cultural resources of the area to the benefit of people everywhere.

The Plan's mechanism was an Administrative Structure that facilitated *Participative Democratic Administration*. Part of the reason for the Plan's success is that it is not a "Plan" in a strictly economic sense. It is in fact a *forum* for the encouragement of self-help and a means whereby bilateral assistance is stimulated. Ethno-centric tendencies give way to consensus gained through discussion and accommodation. Under this plan, over 400,000 people have received long-term scholarships to study in another country and about 130, 000 experts have carried out long-term technical assistance assignments in the region.

*The Colombo Plan Staff College for Technician Education* (CPSC) was added in 1973 when the demand for TEVT emerged as the key factor in building the human capital so necessary to create wealth in any society. The Staff College operates as a specialized agency under the umbrella of the CP but has its own Board of Governors composed of the Ambassadors of the Member Countries accredited to the Host Country of the College, and this gives rise to a *participatory approach* to human development. Specifically, decisions on matters of policy must be by *consensus*-- there shall be no voting. Well over 20,000 senior level staff from 20 countries benefited from the CPSC programs since 1974. Altogether, this helped to create a reservoir of expertise and cultural understanding throughout the Asia Pacific region and contributed to the creation of additional human capital enhanced by 'study abroad' financed by other agencies including international financial institutions (IFIs).

## HOW DID WE GET HERE?--TOGETHER

In 1959, Canada was rich in minerals and poor in human capital. When the external supply of skilled immigrants was exhausted economic development was impeded so a *decision* was made in Ottawa that the federal government would provide funding for up-to 75 percent of the requirements of capital costs for staff salaries, teacher education & instructor training, as well as recurrent costs directly related to the new program. The stipulation was that the funding is only available if the institution responds directly to meet the needs of commerce and industry for the knowledge and skills needed in Canada. The agreement between the Government and the institutions was based on the Technical Education and Vocational Training Act that was administered by



the *Department of Labour*. The Act did not violate the provincial governments' control and constitutional prerogatives in education because participation was voluntary and the money was only made available for competency based programs directly related to the needs of commerce and industry. Canadians became the most productive people on earth in terms of value of the products of their labour and by 1967 Canada was admitted to the Group of Seven. At about that time Canadian International Development Agency (CIDA) was established to professionalize the delivery of official development assistance (ODA). The mainstay of CIDA for about a quarter-century was its human resources development model. A policy document called *Sharing our Future*, declared "*Human Resource Development shall be the lens through which to focus ODA.*"

The policy is no longer in effect. However, much of the technology and the concepts of a comprehensive and integrated approach to TEVT was transferred to several countries through CIDA.

## **SINGAPORE MODEL**

The model for development in China has been called the *Singapore Model* and that model was based on deliberate transfer of the technology from Canada and Sweden to Singapore in the 1960s and 70s. Sweden had implemented competency-based education at about the same time as Canada and established the Swedish International Development Agency (SIDA). Singapore adapted and improved the approach and is currently self-styled as a *Learning Society*. Singapore's carefully planned rapid development after independence from Great Britain in 1963, resulted in the label the *Miracle of Singapore* and in 1994 it was declared the least corrupt country in the world. In 1994, the World Bank published a report that showed that the Newly Industrialized Countries (NICs) of Asia, could be used to demonstrate to other developing economies the value of a well focused and coordinated development plan based on sound policies with effective administration designed to achieve sustainable development. While there were variations in the details there was a common element in the development of the human capital base in the NICs. South Korea, Taiwan, Singapore, Malaysia, Thailand all used investment in TEVT to build human capital and also to support labour mobility. By 1995,

the Trans-national workers were transferring more wealth annually across international boundaries than the amount transferred by trade in all commodities apart from oil. South Korea borrowed heavily from the World Bank to build its human capital base that was devastated at the end of the Korean War. It is one of the Bank's success stories, because it went from a 'basket case' at the end of the Korean War to an industrialized country in the record time of 25 years. South Korea is also a member of the G20.

## **SINGAPORE AND HONG KONG, THE BEST PLACE FOR BUSINESS**

In 2010, Singapore and Hong Kong were evaluated as being in a virtual tie for first place in the World as the best place for business according to IMD Business School, Lausanne, Switzerland. This is the first time that USA has been overtaken in this regard. The World Bank's evaluation of the best places for Employing Workers, rates Singapore in second place after Australia. Hong Kong is no 7 and Canada's ranking in the World is 17<sup>th</sup>. This may partly explain why there are 240,000 Canadians living and working in Hong Kong and another 50,000 in China. Most of these Canadians had immigrated to Canada prior to 1997, when Hong Kong reverted to China, and now find conditions are very favourable. This also implies that the new constitution for "Two Systems One Country" is working well.

## **THE RISE AND RISE OF CHINA**

During the 1980's China awoke: To paraphrase the Great Leader, *Deng Xiao Ping*, he said that "*To be rich is glorious*", but he explained, that: "*China is a poor country and can not become rich over night. It is frozen in time, and just as the ice in a river that is frozen in winter can not move all at once when spring comes, but breaks up into parts that move and eventually these parts cause the whole ice in the river to follow*".

Shortly after the end of the Cultural Revolution, Canada proposed China for membership in the International Monetary Fund and the World Bank Group. Then, starting in 1981, the World Bank Group began a series of projects to provide the financial and technical assistance needed to build capacity in China, particularly in human capital, that had eroded during the Cultural Revolution.

Concurrently, Canada was chosen as the favoured country to serve the educational component of the human development scheme for the emerging new China by admitting students to Universities and Colleges in increasingly large numbers. By 2009, there were over 42,000 Chinese students in Canada, and an additional 16,300 came in 2010. While study abroad was effective to a point it would never provide the specific competency needed in China. Also, it was necessary to achieve a balance between, scale, scope, and skills, needed to implement the chosen economic reforms. By 1995 China and the World Bank began to deepen the reforms. This involved Labour Market Development Project appraised in November 1995 that focused on converting workers in State Owned Enterprises, who had only rudimentary low-tech skills, into competent workers with modern high-tech skills that were demanded in the new economy. Pilot Municipalities were selected by competition and the Project Implementation Plan was based on the Singapore Model. The second response was the Vocational Education Reform Project appraised in May 1996. All key implementing staff from both projects went to Singapore to study and adapt the approach to China's new system. The two projects effectively ended the centralized planning previously handled in Beijing. By this means, China has effectively changed the way technical education and vocational training is planned, financed, and delivered. A Labour Law, 1991, and Technical Education and Vocational Training Act in 1992, are supported by over 50 sets of laws and regulations and labour mobility is facilitated by the Organization for Skill Testing and Accreditation (OSTA). The new system was declared

fully operational in 1999, as 'Labour 99'. Labour mobility is facilitated by a passport system that shows the carrier's Academic credentials as accredited by the Department of Education and Skills competency as evaluated by OSTA. The outcome includes retraining and moving about 100 million people into new jobs and sustaining China's development. The labour exchange system in China is effective and could well serve as a model that could be adapted for a World Exchange for Human Capital.

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## BRIEF BIODATA



Mr. Isaac Thomas Goodine, has contributed to the globalization process by over thirty years of practical experience at the leading edge of international development, including comprehensive and in-depth knowledge of about seventy-five countries. His main fields of work include technical and vocational education, cross-cultural technology transfer through skills development, and economic diplomacy. He is a member of the World Bank Group Speakers' Bureau and General Secretary of the International Vocational Education and Training Association. His career history includes positions as Commanding Officer of the Eight Canadian Hussars, Militia; Principal, New Brunswick Institute of Technology; Principal, Zambia Institute of Technology; Director, National Department of Technical Education and Vocational Training, Republic of Zambia; Director, Colombo Plan Staff College for Technician Education; First Secretary, Development, Canadian High Commission, among others. (Email: [itgoodine20@hotmail.com](mailto:itgoodine20@hotmail.com))