ACKNOWLEDGEMENTS

INTRODUCTION

The labour competency approach has been spreading in the Latin American and Caribbean region since the second half of the 1990s. It is to the birth of this idea that we can trace the extraordinary capacity of the vocational training institutions in the region to acquire, accumulate, transform and apply useful knowledge in the development of training programmes.

This conceptual and practical progress in vocational training has also been made possible by a large number of experiences and applications of the new concepts, and by discussions and achievements on questions like the connection between education and work, support for the philosophy of lifelong learning, the recognition of competencies, and other matters which have to do with the development of human talent in the countries in the region. These subjects have now been consolidated in ILO Recommendation 195 concerning human resources development. What this new Recommendation does is bring together many areas which have been part of the progress in training in such a way that it became the framework in which this book was written.

One outstanding event in the dissemination of the competencies approach was the International Seminar on Training and the Standardisation of Competencies in Guanajuato, Mexico, which was held in May 1996 and was jointly organised by the CONOCER, Cinterfor and the ILO. María Angélica Ducci of the ILO, in her concluding remarks at the seminar, gave a clear account of the extraordinary diversity of experiences all over the world which were presented to almost the whole of the training community, comprising institutions and ministries of labour and education from the Latin American region.

She also emphasised the importance of understanding and adopting a new approach to the transformations taking place in the world of work, and she underlined the importance of dialogue between social partners, governments, employers, workers and educators for innovation in their institutions and national arrangements for training.

Seven years have passed since that seminar, and it could be regarded as a starting point. The Mexicans, with that typical generosity they are famous for, opened the door of the region to a new experience in which they were ready to

take the lead. The Mexican government had signed free trade treaties, and this great challenge to the nation's competitiveness spurred them on to commit themselves to a programme of modernising technical education and training.

Today there is no doubt that the chain reaction that was initiated by that experience had a lot to do with the development and innovation taking place in the field of training in the region. All the countries in Latin America, with their different national preoccupations and with great variety in the initiatives and actors involved, have not only felt the impact of new technologies in the organization and distribution of work, but have also registered the need to innovate and modernise their educational practices and the methodologies used in adjusting to the new realities.

It was clear to all in the 1980s that there was a need to modernise training, and many institutions came in for considerable criticism because in no way were they responsive to the demands for training that were being formulated in the economic sphere. Their methods for preparing occupational profiles, and their very good work in designing curricula which had lasted for decades, turned out to be obsolete in the face of the rapid changes taking place in work techniques and the way that work was organised.

It was at that time that the competency approach first made available to institutions a new way of approaching the definition of programmes, the recognition of knowledge, and the harmonisation of the training offer at different levels and from various sources. Since 1996 a number of training institutions have taken it upon themselves to update their programmes and to prepare other new ones using processes oriented by labour competency.

Over time, other institutions which had kept up to date noted the advantages which could be derived from focusing training on results rather than on tasks, and also noted the impact of this focus on developing people's competencies and on recognising the importance of basic competencies and flexibility which is implicit in a number of aspects including modular design.

The orientation towards labour competency has generated considerable debate which, fortunately, is still going on. Competency-based training involves entrepreneurs and workers in the task of establishing content and programmes, and this capacity to generate dialogue has also promoted discussion and the exchange of ideas. Subjects like the participation of workers in the definition of competencies and the setting up of personnel management models inspired in competencies were, and still are, areas for analysis and negotiation.

Although this discussion about the application of the labour competency approach has not yet come to a conclusion, what has come into being in the region in recent years is a veritable critical mass of knowledge and good practices

to do with training and its relation to subjects like productivity, employment and income.

Now, seven years on, this book gives a perspective on the application of this approach, and presents a compilation of experiences not from outside the region but solely from Latin America and the Caribbean.

A number of training institutions in this region have been incorporating the competencies approach at different rhythms but always with a clear orientation towards improving pertinence and quality, that is to say, in an effort to strengthen themselves as institutions. Many ministries of labour have adopted the competencies approach in the execution of their active employment and training policies. The competencies approach is the core element in the guidelines and content of technical education programmes oriented by ministries of education. Various projects with international backing that are geared to promoting training and the development of sector productivity have embraced the competencies approach as an effective formula for attaining tangible results in training. More recently, national education policies in various countries have been painstakingly designed to create an educational model which develops the philosophy of lifelong learning.

This book was written with the valuable support of the Skills and Employability Departament of the ILO . It gives an overview of the rich panorama in the region today. Obviously it is not an attempt to reflect the whole spectrum of the enormous amount of knowledge and experiences that have accumulated, certainly many experiences have not been included, but it is an initial effort to present the current situation of our information using a systematic approach, which in this case involves three different perspectives.

The first of these is the trend towards organising national training frameworks, genuine systems of national reference for all levels of competencies, along with the definition of areas of performance and mechanisms to allow mobility, both upward and lateral, in these structures. This is an effort which many countries in Europe have begun, and already there are a number of national and sector examples in Latin America.

The second perspective examines the increasing interest in key competencies, that is to say competencies which allow people to perform in a wide range of labour areas. These competencies are sometimes associated with basic education and sometimes with personal characteristics. In this book they are called key competencies, but in the literature they are variously described as basic competencies or generic competencies.

The third perspective focuses on the development of procedures for recognising and certifying labour competencies. It should be pointed out that the

concern with giving formal recognition to capacities acquired from experience pre-dates the arrival of the competencies approach. As long ago as 1975, Cinterfor/ ILO ran a project centred on occupational certification to make programmes more effective and to stimulate people to learn in the workplace.

What this book gives the reader is a descriptive account of these three per-spectives on the progress of the labour competencies focus in the region. The author would like to acknowledge the support he received from the Skills and Employability Departament, and from each and every one of the information sources he consulted.

I. LIFELONG LEARNING:
Development of national qualifications frameworks in Latin America and the Caribbean

Members should develop a national qualifications framework to facilitate lifelong learning, assist enterprises and employment agencies to match skill demand with supply, guide individuals in their choice of training and career and facilitate the recognition of prior learning and previously acquired skills, competencies and experience…

ILO Recommendation 195 concerning human resources development, 2004.

Introduction

Although it is true that no national qualifications frameworks (NQFs), in the full sense of that concept, have been set up in the region, the experiences that have been implemented over the past seven years or so indicate a trajectory which includes applying the competencies approach at different levels and with varying scope. An essential element in developing so-called NQFs is to define them with reference to levels of labour competency. Therefore the path which a country must take to attain a national reference framework which values capacities in terms of levels of competency including education, experience or a combination of both, begins with adopting the labour competency approach.

In this section we analyse the trend towards adopting NQFs in Latin America through the implementation of the labour competencies approach in vocational training. First there is a general description of its emergence and development, then an account of some experiences that correspond to the gradual development of a classification, ranging from experiences that are limited to enterprises and sectors to others of a national character associated with a training institution, and then to the most recent applications on the strategic level whereby countries commit themselves to coordinated development programmes in which many actors take part. The objective here is purely descriptive, the aim is to facilitate comparisons and to review the progress of the competencies approach in the region.

1. UNDERSTANDING THE CONCEPT:
WHAT IS A NATIONAL QUALIFICATIONS FRAMEWORK?

The concept of a national qualifications framework (NQF) came into use relatively recently. Its adoption reflects the implementation of a national policy in which all a person's learning achievements are recognized, whether they were attained in the educational system or outside it, and whether they were learned formally or informally. In every case they are duly evaluated and given recognition with a certificate.

The concept of NQF has a direct connection with the objective of lifelong learning which "encompasses all learning activities undertaken throughout life for the development of competencies and qualifications".[1] One of the greatest benefits of an NQF is that it facilitates a reference for lifelong learning and for progress in work and social life.

Lifelong learning is understood as training activity that takes place throughout a person's whole life and is aimed at improving the knowledge, skills and competencies from personal, social and labour perspectives. This definition encompasses all forms of learning since they are sources for active citizenship, for social inclusion and for labour insertion.

The adoption of NQF also means that a country has a single system to express the competencies of its workers, and that there is an accepted mechanism for matching formal education levels with competency levels. Normally countries which have NQF express the capacities of their people in terms of competency levels. These levels can correspond to a particular stage in formal education, and they show that a person has a certain collection of knowledge, skills and labour capacities obtained at this educational level or recognised through a process of certification which acknowledges experience as a source of competencies. It is also common for there to be a high level of systematisation of occupational or labour performance areas, and these are usually given different names such as sectoral areas, vocational sectors, professional fields, etc. In general these are spaces which almost always

> The National Qualification Authority of Ireland has defined a national qualifications framework as "A single body, nationally and internationally recognized, through which learning achievements can be measured and related to each other in a coherent way, and which defines the relation between education and training certificates".

---

1   The ILO Recommendation concerning human resources development, 2004.

correspond to a sector of the economy in which that particular labour performance takes place, and which has its own identity and more or less precise limits that mark it off from other sectors.

To sum up, NQF expresses the institutional arrangements which define the links and connections between different levels of training and the ways of entering, re-entering and recognizing paths for progress in educational itineraries, and areas and levels of competency.

Countries which have a developed NQF include England, which has a framework with levels of qualifications which of course take account of equivalences between the academic route and that of competency standards; New Zealand, whose NQF has nine levels; Ireland; Australia and South Africa.

The Latin American countries that are making progress in this direction include Mexico, Brazil, Chile and Colombia.

2. FROM COMPETENCY-BASED TRAINING TO NATIONAL QUALIFICATIONS FRAMEWORKS
Finding a way in Latin America

In Latin America there are many examples of efforts to develop human resources, and these are being organised by different kinds of bodies. Ministries of education and labour are both active in developing skills for work, but there are also institutions that specialise in providing training, and these have a lot to do with developing and modernising training for work.

Vocational training in Latin America has a strong distinctive characteristic which has contributed to the implementation of innovations, including the application of the labour competency model. The speed and solidity with which the competency model has spread is largely due to the capacity to innovate that training institutions have. In the following section we will give a brief outline of this characteristic and then go on to describe the extent of the labour competency approach in the region.

2.1. The institutional structure has contributed to the development of the competencies approach

Vocational training in the Latin American region is characterised by a high degree of institutionality rather than by the application of the labour competency approach itself. Most of the countries in the region have organizations that have been set up and financed with the express purpose of supplying vocational training.

The model of institutions specialised in training, independent of the formal educational system and with their own finance and autonomous management started in the 1940s with the creation of the SENAI (1942) in Brazil, and spread rapidly.

The SENAI concentrated on the industrial sector, and it was followed by the SENAC (set up in 1946) which specialised in the commercial sector, the SENA in Colombia (1957), the INCE in Venezuela (1959), the SENATI in Peru (1961), the INA in Costa Rica (1963), the INACAP in Chile (1966) and the SECAP in Ecuador (1966). Afterwards, in the 1970s, other countries adopted the institutional model of training for work. The SNPP in Paraguay was set up in 1971, and then came the INFOP in Honduras (1972) and the INTECAP in Guatemala (1972). More recent creations are the INFOTEP in the Dominican Republic (1980), the SENAR in Brazil (1991), the INATEC in Nicaragua (1991), the INAFORP in Panama (1993) and the INSAFORP in El Salvador (1993) (for more details see annex).

Today most of the countries in the region have at least one national training institution. This would be just another statistic were it not for the fact that these organisational arrangements have, throughout their history and especially in the last ten years, demonstrated an extraordinary capacity for innovation.

This capacity for change is what lies behind the rapid adoption of one of the most outstanding innovations in the training ambit in the last decade, the modernisation and updating of training programmes in such a way that they now express labour competency, that is to say the capacity to achieve a result in performance.

In the region, accumulated knowledge about vocational training has always been expressed in the capacity of institutions to develop training programmes and their associated components, such as study materials and the means for didactic support like workshop design and materials for self-teaching.

In the 1960s and 1970s the ways in which work was conceived and explained was in step with the so-called principles of the scientific administration school.[2] Training institutions approached the sphere of enterprises through developing occupational analysis methodologies to study job posts. Not infrequently this led to the production of detailed manuals that reflected the precepts of time and motion studies, the specialisation and organization of work into tasks and operations.

Coming into the 1980s technical change was progressing at an impressive rate, work was being organised in new ways, there were economic reforms in the region which meant that more imported goods were coming into Latin American

---

2 Which was based mainly on contributions from Frederick Taylor and Henry Fayol, pioneers in the analysis of the application of work in organizations.

and Caribbean markets to compete against local goods, and the technologies used in production and services were being modernised. All of this made the earlier training programmes obsolete. Vocational training institutions were faced with the challenge of having to update their response, and, after a troubled period which was mainly due to the fact that their reactions were slow, we now see that the vast majority have shown their capacity for innovation by adopting new focuses, methodologies and technologies for training.

Certainly training institutions did not incorporate the labour competency approach only so as to update and modernise their training programmes; very often they did so in the framework of a far-reaching overhaul and reorganisation, and this will be described below.

2.2. Ministries of labour and education have also promoted the development of the competencies approach

The development of competency-based training has also been undertaken by ministries of education and labour in the region. In most of the countries there is a stage in secondary education oriented to technical training which has given rise to what is called secondary technical education. This prepares people for labour performance, and in some cases also allows them access to higher levels of education.

A number of ministries of education have conscientiously opted for the competencies approach in technical education. Attempts have been made to harmonise and establish equivalences between this space in education and vocational training, which in many countries is classed as non-formal education. Some countries like Brazil have included in their definitions of educational content at the secondary technical level a framework of references of competencies that are to be developed.

Besides this, ministries of labour have played an active role in the training of human resources, and some of them, like in Chile for example, support the definition of competency-based occupational profiles.

Although it is true that in the region the dynamic of work undertaken by ministries in the area of vocational training varies from country to country, a number of experiences have been documented in which the labour competency approach has been fully promoted in the framework of defining active employment policies.

The panorama before us, then, shows great variety. Different public actors are intervening and their aim is to bring about more and better training for more workers. To this end they have incorporated a variety of forms and work meth-

odologies which facilitate access to employment, and these include the competencies approach.

Although the fact that there are many different actors sometimes creates a need to harmonise their interaction, it is precisely this variety which makes the development of the competencies model so dynamic in the gradual shift towards national training frameworks.

In this book, therefore, experiences are presented and analysed in a way that takes account of initiative, scope and coverage, and therefore of the greater or lesser extent to which these experiences can be said to make up an integrated effort in a national framework.

To this end, the experiences will be presented gradually, moving from the most focalised and sectorally-specific towards those that are wide-ranging and give national cover, and involve the coordinated integration of the efforts of different actors. Strictly speaking, what is described is the development of reference frameworks for training from the sectoral to the national level.

2.3. An approach to the analysis: three levels on the path towards a national qualifications framework

To undertake an analysis of experiences which illustrate the way in which the region is making progress towards setting up national reference frameworks for training means developing a methodology of analysis. The experiences in question have different degrees of scope and coverage, many social actors are involved, and the focus and the objectives are new, so an alternative kind of analysis must be sought, one which allows this panorama to be described in the best possible way.

Therefore it has been decided to analyse the experiences by considering the scope and coverage of each one. In this, three levels of development of the labour competency model can be distinguished, ranging from the most immediate and localised application (usually in a specific sector of economic activity) to national efforts whose objective is to set up a framework of reference for the whole country.

At the first level there are the experiences with the least coverage. These are usually sectoral and may be geographically restricted. These experiences normally involve enterprises or groups of enterprises in a particular branch of economic activity. Normally their funding comes from an external source, is tied to one specific project, and is of limited duration. These are usually pilot applications of the labour competency approach, and their objectives are demonstrative and involve learning. The sustainability factor is crucial in these experiences.

On the second level there are experiences with national coverage that are generally promoted by national training institutions. These have national scope and they usually cover different sectors of economic activity and therefore different occupational areas.

At the third level there are experiences which involve all the social actors: employers, workers, the government sector (usually ministries of labour and of education) and training institutions. This level has been progressively reached by countries that have taken the discussion about the development of human resources to the national ambit and have managed to involve the most representative actors from the government as well as from the labour and entrepreneurial sectors. These kinds of experiences incorporate a national human resources policy, and come closest to the creation of a national framework in its original sense.

LEVELS OF COVERAGE OF EXPERIENCES TOWARDS NQF
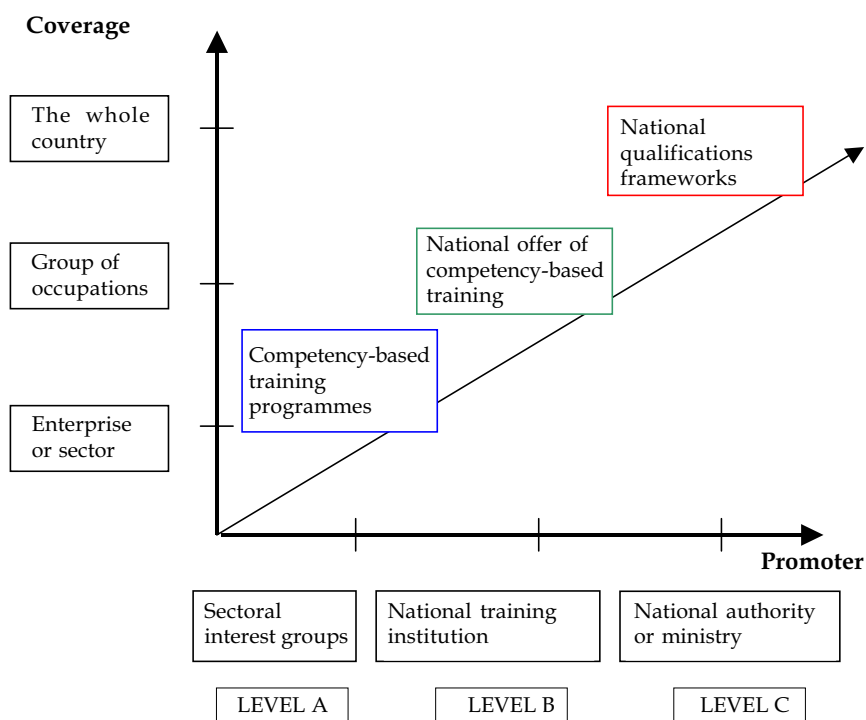
The definition of these levels represents different degrees of progress towards the development of national experiences. The last stage will be to have a fully operational NQF, but along the way there are experiences of gradual development.

Some experiences from each of the different levels will be described below. Obviously this account will not be exhaustive, it is only intended to give a representative idea of how frameworks of reference for qualifications are being generated on the different levels outlined above.

2.3.1. Experiences with sectoral application, usually focused on enterprises or branches of activity, and limited geographically to local spaces

These are experiences centred on developing a framework of competencies to be applied immediately to an occupational area or sector of activity. There are numerous experiences at this level under way in the region, and in this study some representative cases are examined.

Examples at this level include the experience run by the Paraguayan Chamber of Construction (CAPACO), the competency-based training programme run by CENFOTUR for the tourist sector in Peru, and the experience of the Labour Competencies Programme in Argentina.

These experiences are usually rooted in one or more sectors of the economy. A framework of competencies is set up, and this is used as an example for preparing competency standards or profiles, training programmes and certification systems.

The diagram below shows the cycle which is usually followed.

THE PHASES OF APPLICATION OF THE LABOUR COMPETENCY APPROACH
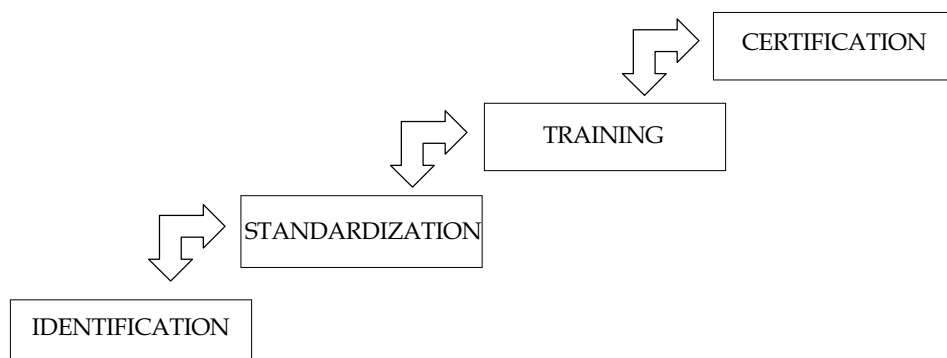
The efficiency and competitiveness programme in the construction industry in Paraguay

In this programme, the competencies were identified and a framework of occupational families was set up for which the associated competencies were identified. These competencies will be used as a framework for training and certification in this sector. The Paraguayan Chamber of Construction (CAPACO) supports this process and participates in it.

FRAMEWORK OF COMPETENCIES IN THE CONSTRUCTION INDUSTRY
CAPACO – PARAGUAY

OCCUPATIONAL FAMILIES	ASSOCIATED FUNCTIONS
1. Preparation of preliminary work	1. Carry out preliminary work 2. Demolish existing structures 3. Clear the site 4. Make the layout 5. Level the site
2. Construction of structural elements	1. Construct masonry structures 2. Construct structures in simple and reinforced concrete 3. Construct paving structures in accordance with plans and specifications
3. Plumbing installations	1. Install plumbing system
4. Electrical installations	1. Install electrical system
5. Finishing and coverings	1. Carry out the placing of coverings 2. Carry out waterproofing work
6. Earth-moving work	1. Carry out earth-moving work 2. Carry out cutting and excavations 3. Do embankments and filling 4. Transport materials
7. Counselling of work personnel	1. Counselling on environmental, safety and health aspects in the construction

Source: CAPACO, 2002.

The identification of competencies is done in consultation with representatives of entrepreneurs and workers using functional analysis methodology. After this, the competency standards for each of the units defined are established. Based on these standards, the programme assumes responsibility for producing didactic material for the training, and material for evaluating workers' competencies which includes recognising knowledge that was acquired previously.

The social actors involved are mainly the entrepreneurs from the CAPACO[3] who have obtained financing for the competencies standardization and certification programme from the Inter-American Development Bank (IDB). This can therefore be classed as an experience promoted by the private sector.

Besides using the functional analysis focus in identifying the competencies in question, which are shown in the table above, the programme aims at developing curricula for training, and supplying these to training institutions. It is also responsible for instructing teachers and bringing them up to date in line with the competencies and methodologies of training and evaluation designed.

The broad objective is to improve quality and productivity in the sector through human resources training. An attempt is being made to set up mechanisms to coordinate with the institutions responsible for vocational training in such a way that the competencies framework can be used by other training actors. This is just one of the key points of the programme: that the application of the competencies framework should transcend the programme's ambit of action and should be taken as a reference by other labour training institutions.

The programme is financed with funds from CAPACO and from the Multilateral Investment Fund of the Inter-American Development Bank (IDB). The estimated duration of the project is four years, and after that it is expected that conditions of sustainability will have been generated through the training and certification processes.

---

3   A civil non-profit association set up in 1967. It is made up of engineers, architects and enterprises in the construction sector in Paraguay.

The training programme for the hotels and tourism sector in Peru

This programme is run by the Tourism Training Centre (CENFOTUR).[4] The following group of competencies have been established:

FRAMEWORK OF COMPETENCIES FOR TRAINING
IN THE HOTELS SECTOR - CENFOTUR PERU

	HOTEL MANAGEMENT		TOURISM	
Areas of labour competency	Lodging	Food and drink	Commercialisation and tourist activities	Transport
Levels of training and competency	Basic level (competency level 1)			
	Technical level (competency level 2)			
	Professional level (competency level 3)			
	Second specialisation level (competency level 4)			

One noteworthy aspect of the definition of competencies for the tourism sector is the adoption of levels of competency and their relation with the different levels of training given. The vocational training model proposed by CENFOTUR sets up four grades of training for the hotels and tourism sector, and these grades correspond to levels of labour competency. The labour competency levels correspond to the five levels which are normally used in the qualifications frameworks in the English system. The training which CENFOTUR gives does not include a level 5 (the highest of all) because it does not extend to the university level.

To make this clearer, the table below gives a description of each of the competency levels.

---

4   A decentralised public institution set up in 1978.

DESCRIPTION OF THE COMPETENCY LEVELS IN TRAINING
CENFOTUR - PERU

	Technical Area	**Organisational Area**
Level 1	Carrying out operations in the productive process under supervision and in accordance with established procedures.	Reporting on technical problems which occur, finding out about corrective action.
Level 2	Carrying out and supervising operations in the productive process, controlling their own tasks and developing supervision of their activities.	Identifying technical problems and carrying out specific corrective action.
Level 3	Organising, carrying out and supervising their activity considering the technical and material resources required in the production of goods or services. Demonstrating the capacity to supervise lower level tasks.	Resolving technical problems in processes with alternatives and in emergency situations which occur during the productive process, and applying the appropriate techniques.
Level 4	Planning and organising global activities leading to the preparation and development of the productive process, taking into account human resources, materials available, and the legislation and validity for meeting production targets. To be responsible for production objectives.	Resolving technical problems and emergency situations which occur during the productive process. Proposing new solutions, taking the appropriate technical decisions.

Source: CENFOTUR, 2002.

The labour competencies certification and training programme in Argentina

This programme is run in the framework of a project whose main objective is to establish institutional bases and methodologies to develop a national labour certification and training system based on the labour competencies approach. The programme is aimed at developing a framework of labour competencies which will be taken as the basis for preparing training programmes and for competency certification in the graphics, metallurgical, mechanical, automotive, and cake making and associated trades sectors.

One interesting aspect is the role of the social actors who are involved in the programme. The government sector gives support through the Ministry of Labour, facilitating the conditions under which the project team works and promoting conceptual progress and dialogue with the other actors in order to make progress towards the goals of the project.

Different actors from the private sector are involved. In the case of the graphics industry there is the Gutenberg Foundation – the Argentine Institute of Graphic Arts – which is a training centre patronised by entrepreneurs in that industry. Essentially the centre is a co-executor of the programme. In the metallurgical sector the actors involved are the Association of Metallurgical Industries of Rosario and the "José Censabella" Occupational Workshop, a civil association which operates in the area of training for work. The automotive sector is represented not by an employers' organization but by workers, the Union of Automotive Transport Mechanics and Associated Workers. And lastly, the cake making and associated trades sector is also led by a workers' organization, the Pastry, Confectionary, Ice Cream, Pizza and Biscuit-making Workers' Union.

It can be seen that this is an experience in which different actors participate so as to set up a sectoral framework of competencies to be applied in the improvement of training programmes and the development of the recognition of competencies acquired in work.

The programme is financed with contributions from the Multilateral Investment Fund of the Inter-American Development Bank and contributions from each of the private executors, and the participation of the two parties is usually in the order of 50% each.

The occupational map of the graphics industry
prepared by the Gutenberg Foundation

The table below shows the "occupational map" of the graphics sector and also the details of the competencies framework for various occupations. This competencies framework applies to a productive process of transformation in which the different stages of the technical process are combined with the typical occupations in each of those stages. Besides this, the different occupations are described with reference to the most characteristic products of the graphics industry. In fact, the preparation of a particular type of graphics product involves utilising different technology, and so calls for technical competencies of another kind.

MAP OF OCCUPATIONS IN THE PROCESSES OF THE GRAPHICS INDUSTRY

	OCCUPATIONS			
	Digital Preparation		**Production of printed forms** Magazines and Books, Packaging, Posters	
PRE-PRINTING	Designer Assembler Layout	Scanner Retoucher Photo-colourist Screen operator Specific systems operator	Photopolymer copier Gravure copier Setter-copier of offset sheets	
	MAGAZINES BOOKS	**FLEXIBLE CONTAINERS**	**TRADEMARKS AND LABELS**	**POSTERS**
PRINTING	**Offset sheet** **Offset roller** Assistant Operators	**Flexography** **Gravure** Machinist Assistant	**Offset sheet** Machinist Assistant	**Offset sheet** **Silk screen printing** Machinist Assistant
POST-PRINTING	**Folding** Machinist Assistant **Binding** Machinist Assistant **Finishing** Set up Operators	**Laminating** Machinist Assistant **Circular cutting** Machinist Assistant **Finishing** Operator	**Hot stamping** **Varnishing** **Embossing** Machinist **Cutting** Machinist Operator **Finishing** Operator	**Folding folios** Assistant Operators **Set up** Operator **Finishing** Operator

Source: Adapted from the map prepared by the Gutenberg Foundation, 2002.

We can note how the occupation titles "assistant", "operator" and "machinist" appear again and again. These allude to different degrees of skill and the extent to which these skills are applied in the process. The most basic level of competencies is called "assistant", then comes "operator" and finally "machinist". Sources in various enterprises that are representative of the sector participated in identifying the competencies in question.

Using this framework of occupations as a basis, the corresponding training programmes are being developed for different occupational profiles including flexography printer machinist, digital graphics preparation, stereotype set up, offset printer machinist, gravure printer machinist, binding, offset sheet set up/copier and originals digitaliser for different reproduction systems.

The labour competencies certification and training programme in Argentine is also making progress in the identification of other competency frameworks in the pastry-making area, and a map which shows a process centred on client service has been drawn up. This is a typical case of occupations in processes in the foodstuffs production sector. The framework is shown in the table below.

OCCUPATIONAL ROLES IDENTIFIED IN THE PASTRY-MAKING AREA

AREA	KEY AIM	LABOUR ROLE
CAKE MAKING	Preparation of farinaceous products	Master cake maker
		Pastry maker
		Trained workman
		Assistant / Apprentice
	Preparation of savoury products (sandwiches)	Sandwich maker
		Assistant

Source: Adapted from the map drawn up by the Argentine Federation of Pastry, Confectionary, Ice Cream, Pizza, Biscuit and Fast Service Workers, 2002.

Some characteristic features at this level

In general, entrepreneurs and workers figure prominently among the social actors involved in these experiences, and usually the government sector, through the ministry of labour, gives logistical support and does some follow-up on the results.

In most cases sectoral competency models have one specific source of financing, usually a co-financing scheme with contributions from an international funding body complemented with contributions from local counterparts. These counterparts may be public training organizations such as CENFOTUR, employers' organizations like CAPACO or the Gutenberg Foundation, or workers' organizations such as the Argentine Federation of Pastry Makers and Associated Workers.

The coverage is nearly always dependent on the occupational ambit of the economic sector in which the experience is carried out. It should be noted that these experiences are still in the process of development and that their sustainability has not yet been put to the test.

The challenges that these experiences face, besides achieving sustainability, are their capacity to achieve national and general recognition of the competency frameworks that are set up. This very often means agreements with public authorities, the insertion of their curricular design into public training programmes, and frequently that these profiles should be taken into account in the execution of active employment policies, which includes the execution of subsidised training for workers. This is so for action which involves the recognition of prior learning, for example. This will be analysed in another study but it is usually developed at this level, and is based on labour competency profiles.

There is clearly a need for greater coordination between the private and public initiatives of competency-based training and recognition of competencies. For the workers, this coordination can facilitate labour mobility based on the recognition of competencies which would permit them, when necessary, to seek new employment in another sector, with suitable recognition of their capacities and skills.

2.3.2. *Experiences in which the competencies approach is developed with national scope, and its application is organized and promoted by a vocational training institution or at the ministerial level (ministry of labour or of education)*

In general these experiences are on a national scale and usually they are promoted by national vocational training institutions (VTIs). Another characteristic is that, unlike the experiences analysed in the section above, their coverage is multi-sectoral. The VTIs take charge of developing qualifications frameworks which are applied throughout the country and in various occupational performance areas. Eventually some of the competency profiles they develop are made available to other training institutions that are separate from the national VTI.

A number of examples will be analysed, the INFOCAL in Bolivia, the SENAI competencies model and the guidelines from the Brazilian Ministry of Education, the SENA experience in Colombia, INTECAP in Guatemala and INSAFORP in El Salvador.

Bolivia: A National Occupational Classification (NOC) with a gender perspective

The national VTI in Bolivia, the National Institute for Labour Training (INFOCAL), brought the "National Occupational Classification" up to date because there was a need for a guiding map of the different occupations in the country and their different levels of competency and functions. This is an attempt to match supply with demand and to establish an integral curricular structure to ensure mobility between the different educational levels, and also alternation between the education system and the productive system, thus contributing to the objective of lifelong education for the people.

Support and financing for this comes from the "Regional Programme for Strengthening Technical and Vocational Training of Low Income Women" (FORMUJER), which is financed by the Inter-American Development Bank and is coordinated technically by Cinterfor/ILO.

A preliminary version has already been published as a proposal, and as such it is open to improvement. The guiding philosophy of this work is that the new classification should serve as a reference for broadening the instruments for identifying sectoral competencies, and the result of this will provide inputs for preparing or modifying training curricula so as to orient the offer towards training based on the labour competencies approach, and thus contribute to modernizing the country by training highly competitive human resources.

In the introduction to this INFOCAL publication, it says, "Although the CIUO-88 defines competency as "…the capacity to perform the tasks inherent in a determinate employment…" which are shown at different levels, and which are mainly but not exclusively determined by the degree of education required for the exercise of that occupation, and which are connected to the breadth of knowledge required, the implements and machinery utilised, the material that is worked with and the nature of the goods and services produced, this does not make the concept operational since it does not make a connection between the people with the competencies and the large groups identified, but tends rather to separate them in accordance with the qualification required.

It even becomes a crystallising element of the composition of the work market by sexes since it does not take account of the undeniable fact that the occupations are defined in terms of results and functions, etc., regardless of whether they are exercised by men or by women. On the other hand, the concept of competency, to the extent that it focuses on results and performance, becomes especially pertinent for helping to overcome the prejudices and the segmentation which lie at the root of the division of labour by gender, and the consequent differentiation and/or hierarchisation of occupations according to whether they are exercised by men or by women."

The NOC "…is a system for classifying data and information (about occupations) which facilitates a framework for the analysis, aggregation and description of the contents of jobs, and also a system of levels for ordering occupations in the job market."

It was constructed with the following components:

- the "Performance Areas", which have to do with the type of activities or the nature of production which make the occupational objective feasible;
- the "Competency Level" required for the exercise, which is identified through the "Occupational Area";
- the "Occupational Field", which is the group of related occupations;
- and the specific denomination of the occupation.

It also describes in a succinct way the main functions inherent in the performance of each of the occupations identified.

Nine "Performance Areas" are identified in the NOC:

1. Finance and administration
2. Natural and applied sciences and related fields
3. Health

4. Social sciences, education, religion and government services
5. Art, culture, leisure and sport
6. Sales and services
7. Primary and extractive exploitation
8. Trades, operating equipment and transport
9. Processing, manufacturing and assembly

In the structure adapted in Bolivia there is also an "0" level, a special category for management occupations.

The utilisation of the NOC in Bolivia

- An instrument for guidance in training
- A reference for extending the range of instruments for identifying sectoral competencies
- An input for producing or modifying instructional curricula in the institution
- To contribute with this to modernising the country through training highly competitive human resources.

One noteworthy aspect in the Bolivian scheme is that it is concerned with the gender approach. With this perspective the work team makes an in-depth review of the titles and descriptions of occupations so as to neutralise the traditional effect of describing an occupation in male or in female terms. Thus the title of an occupation tries not to evoke the person who performs the job but rather the name of the occupation itself. Some examples of job titles that have been updated are:

- Secretariat instead of Secretary
- Reception instead of Receptionist
- Operation instead of Operator

Without doubt this is an important contribution in a tool which is designed to serve as an orienting instrument in the labour market.

One of the expectations of the NOC in Bolivia is precisely that it will become a national framework of reference for developing training programmes. Other actors like the Ministry of Labour or the Ministry of Education are working towards implementing it. It currently enjoys support from the Bolivian Confederation of Private Entrepreneurs, which will facilitate it being taken as a base for eventual dialogue leading towards its general use.

COMPETENCY LEVELS IN THE BOLIVIAN NOC

LEVEL CODE	GENERIC TITLE	CHARACTERISTICS
...0	Top management	No specific competency level has been assigned here since very often it is factors other than education or training which are most determinant in the exercise of the occupation, like capital, membership of a group or family connections.
...1	Competencies in research, design and/ or instrumentation with high operative autonomy	The requirement for access to these occupations is to have completed a university course and obtained a first degree, professional qualification, master's degree or doctorate. The functions are usually very varied and complex, and to perform them demands a high degree of autonomy, responsibility for the work of others, and sometimes allocating resources.
...2	Competencies in complex operative functions with supervised autonomy	These occupations require technical or technological studies. They include occupations with supervisory responsibility and ones that require creative and artistic aptitude. At this level the functions are generally very varied, and to perform them a considerable degree of autonomy and evaluative judgment is required. There is usually responsibility for other people's work.
...3	Competencies in functions involving diverse technical execution	The requirement for exercising these occupations is to have completed a learning programme, secondary education plus training courses, training on the job or experience. Performance at this level combines physical and intellectual activities which are sometimes complex and are carried out with a certain degree of autonomy.
...6	Competencies in routine, repetitive and subordinate functions	These occupations require a minimum of education (primary level) and a minimal amount of work experience or none at all. The functions to be performed are simple and repetitive, mainly physical, and involve a high degree of subordination.

Source: National Occupational Classification, INFOCAL, 2002.

Brazil: the labour competency profiles developed by the SENAI

The Brazilian National Industrial Training Service (SENAI) is running a training model based on labour competencies. For this, it has a national strategic project with two main objectives: one, to produce profiles and competency-based training programmes, and two, to set in motion a process of recognizing competencies acquired in work experience.

For the project, nine regional departments have been selected in nine different states (Bahía, the Federal District, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina and Sao Paulo) to run pilot applications for the identification, standardisation, training and certification of competencies.

The concept of labour competency in the SENAI:

"To mobilize the knowledge, skills and professional attitudes necessary to perform typical activities or functions in accordance with the standards of quality and productivity required by the nature of the job."

The project works in the technological areas of foodstuffs, automobiles, civil construction, electricity, electronics, telecommunications, textiles and metal working. Groups of managers, professionals and technicians, in collaboration with instructors, have used a strategy of institutional work which involves the above-mentioned regional departments, and have participated in workshops which have resulted in the following methodological papers:

- Sectoral technical committees: structure and functioning
- The production of vocational profiles
- The production of curricula based on competencies
- The evaluation and certification of competencies

The process of identifying competencies is based on setting up sectoral technical committees. The committee in a particular field facilitates a participative process which leads to greater pertinence in detecting training needs and defining occupational profiles.

The experience of social dialogue in the SENAI technical committees

The committees are conceived as technical bodies to support the updating and operation of the vocational education system. The objective is to establish competency-based vocational profiles. Each committee is made up of a manager from the operative unit of the SENAI, specialists from the technological sector, representatives from the productive sector, from SENAI and from the academic sphere, specialists in research and in vocational education, representatives of union federations and enterprises, and technical reference associations from the segment in question and from the public authorities. The manager of the operational unit of reference in the technological area being studied is in charge of coordinating the unit administratively.

At the moment the project for defining competency-based training is in its expansion phase. The work teams that contributed to defining methodological documents will become propagators to ensure that the other regional departments start work competency-based training.

A key result for the SENAI is to have definitions of the levels of qualification of the training given. The relation of these levels, which is a fundamental part of the whole national qualifications framework, is given below:

DEFINITION OF THE SENAI QUALIFICATION LEVELS

LEVEL	DESCRIPTION
1	Execution of simple jobs that are mainly manual. The vocational competencies have a low level of complexity and can be acquired easily and quickly. The capacity to take decisions, autonomy, responsibility and initiative are limited, and there is a high degree of dependence. *Equivalent level in vocational education: basic.*
2	This corresponds to a complete occupation and covers some well-delimited vocational activities which require, above all, to execute a job. This means the capacity to utilize instruments and use techniques that are implicit in the work and involve a medium level of difficulty. The worker executes the activity with a certain degree of autonomy, initiative and responsibility, but is under direct supervision. *Equivalent level in vocational education: basic.*

LEVEL	DESCRIPTION
3	The field of work generally requires the application of techniques which demand a medium to high degree of specialisation and whose content demands equivalent intellectual activity. The worker carries out functions and tasks with a considerable degree of autonomy and initiative, which can include responsibilities for controlling the quality of his work and that of other workers, and/or coordinating work teams. Both specific and portable vocational capacities are required. *Equivalent level in vocational education: technical.*
4	This level involves activities which are technically and intellectually highly complex. The worker discharges functions of integration and coordination of his or her own work and that of co-workers, and also organizes this work. He or she carries out vocational activities that involve a high degree of autonomy or initiative, and develops competencies which include responsibility for supervision and quality control, solving technical problems and their application. *Equivalent level in vocational education: technical and technological.*
5	These are complex vocational activities, very often heterogeneous, which involve a high degree of technical mastery of the scientific bases of the occupation. The worker has a high degree of responsibility for planning, organisation and decision making, both in carrying out the vocational activities and in managing human resources. *Equivalent level in vocational education: technological.*

Source: SENAI, 2002.

SENAI is also working on the design of a certification system which will allow competencies acquired through work experience to be recognized, and thus facilitate access to training for those areas of performance in which the worker does not have the required competencies. To do this there is a work team in charge of analysing the different possibilities, making contact with other institutions in the certification field, and carrying forward the construction of a model. More information about this aspect will emerge in the study of the recognition of prior learning.

**Brazil: The areas of performance and competencies
established by the Ministry of Education.
A challenge in the construction of a national qualifications framework**

The Brazilian Ministry of Education has formulated a framework of competencies for the vocational training ambit[5] which also has national coverage. In 1999, the National Board of Education promulgated national curricular guidelines for the technical level of vocational education. These guidelines are defined as a coordinated group of principles, criteria, definitions of general vocational competencies for the technician by vocational area, and procedures to be followed by teaching systems and by schools in the organization and planning of courses at the technical level.[6]

The diagram below shows the relations between vocational training in Brazil and the educational cycle. The curricular guidelines cover vocational education at the technical and technological levels.[7] Remember that the SENAI defined the levels of competency, clarifying their equivalences to levels in secondary education.

VOCATIONAL EDUCATION IN THE BRAZILIAN EDUCATIONAL SYSTEM

---
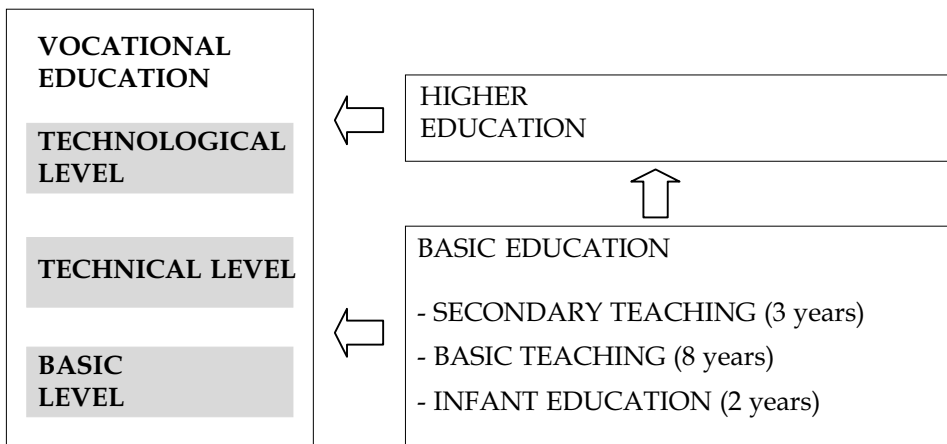
5   In the legislation in Brazil this is called 'vocational education'.
6   The organisation of education in Brazil is laid down in the Law of Basic Guidelines (Law 9.394 of 1996). The basic guidelines are issued in compliance with that law.
7   For further information, see www.mec.gov.br/semtec

These guidelines must be followed by all institutions that offer training for work at the technical level. One characteristic feature is that vocational education is organised into twenty areas, and these are as follows.

FRAMEWORK OF VOCATIONAL AREAS IN VOCATIONAL EDUCATION IN BRAZIL

1. Agriculture

2. Arts

3. Commerce

4. Communication

5. Civil Construction

6. Design

7. Geomatics

8. Management

9. Personal Image

10. Industry

11. Computers

12. Leisure and Social Development

13. Environment

14. Mining

15. Chemistry

16. Fishing Resources

17. Health

18. Telecommunications

19. Transport

20. Tourism and Hospitality

> Vocational education, integrated with the different forms of education, with work, and with science and technology, leads to the lifelong development of aptitudes for productive life.
> Single Paragraph: the student who matriculates or leaves basic, secondary or higher education, and also the young or adult worker, shall have the possibility of access to vocational education.
> Article 45. Basic Educational Guidelines Law, Brazil.

For each of these vocational areas "Curricular References" were developed in which the competencies which constitute the area in question are specifically set out. The references include the required competencies, skills, and technological, scientific and instrumental bases. All of this makes up a "Reference Matrix", an example of which is given below:

REFERENCE MATRIX
OF THE VOCATIONAL AREA OF COMMUNICATION

VOCATIONAL AREA: COMMUNICATION **Competencies, skills and technological bases (given as an example)**	
COMPETENCIES: To research, identify or select significant or defining elements of the identity of the object to be created in its context, to be expressed in the project of visual, graphic or info-graphic communication.	**SKILLS:** To utilise the tools of graphic computation in a fluid way.
TECHNOLOGICAL BASES: Fundamentals and principles of semiology, elements, sources, symbols of iconography. **INSTRUMENTAL BASE:** Basic techniques of editing printed material.	**SCIENTIFIC BASES:** Elements of physics, the study of light and colour, the electromagnetic spectrum, primary colours, colour modulation, chromatic and achromatic scales. Ministry of Education, Brazil.

Brazil is a significant example because it has undertaken two great initiatives for competency standardisation and competency-based training, that of the national VTIs and that of the Ministry of Education. Although the law of basic educational guidelines is considered to be the national framework, and is therefore taken into account by the SENAI, we cannot yet say that there is a comprehensive and coordinated national qualifications framework which includes the different offers and levels of competency in vocational training, nor can we say that the interaction between the world of academic education and that of training has defined all the possible routes in the way in which the national frameworks in the European countries have.

Towards a national system in Brazil

In 2003 the discussion about the possible coordination of a national certification system in Brazil came to life again. This would mean not only transparent and legitimate mechanisms for recognising workers' competencies but also the need to have a national qualifications framework as a national reference.

Positive signals in favour of such an initiative have come from the Ministries of Labour and Education and from the VTIs. A recent publication from the National Board of Education analysed different Brazilian and international experiences and posed a number of questions about the setting up of a system. In Brazil the legal foundations are very solid and they include the recognition of competencies. Between 2000 and 2002, the ILO Office in Brasilia, along with Cinterfor/ILO and the Ministry of Labour and Employment, made progress towards the framework of a project whose objectives included setting out the possibilities of progress towards a national system.

Besides this, SENAI recently participated in the updating of the Brazilian Classification Occupational, which has also been mentioned in statements made by the National Board of Education as a possible input.

There are great possibilities, but the challenge lies in discussions which will take place in the near future about setting up concrete measures towards establishing a national qualifications framework in Brazil.

Colombia: the SENA National System of Training for Work, and the use of the National Occupational Classification

The National Training Service (SENA) it is building a national system of training for work. Some of the most important characteristics of the system are:

• SENA has developed a new National Occupational Classification (NOC) which serves as a framework for the offer of training. The basis on which the Classification has been set up is the concept of competency levels.

• The institution is run by a tripartite national council which has representatives from the government sector, workers and employers. This helps to facilitate dialogue about training and the participation of entrepreneurs and workers.

• SENA is promoting the use of competency standards on the part of other public and private training bodies. These are offered options to train their teachers in pedagogic areas, and training programmes based on competencies.

• SENA is also actively promoting an understanding with the Ministry of National Education so as to facilitate the mobility of workers between education and vocational training.

The SENA National Occupational Classification has been produced to supersede the old CIUO-88 in meeting the institution's need to modernise its employment information services.

The SENA has been using the NOC as an efficacious instrument in its processes of information for seeking employment, and increasingly as a tool for detecting needs and adapting its responses in terms of training programmes. The latter is an innovative departure from the traditional utilisation of the Classification. A national framework has been set up which is based on an occupational reference in which levels of competency and areas of labour performance are considered.

Definition of the NOC in Colombia:

This consists of a systematic classification of the occupations that feature in the job market in Colombia, organised in accordance with two criteria: the labour performance area and the level of qualification.

The performance area is not a reference for one particular sector of the economy, rather it has to do with the type or class of activity which has to be carried out in order to be able to meet the demands of an occupation.

The level of qualification includes a description of educational level and/or the amount of experience that is usually present in the exercise of the occupation in question. It also includes a description of the attributes of the occupation in terms of autonomy, complexity, and responsibility for materials or values and for the work of others.

SENA. Employment Office.

SENA: Performance areas in the National Occupational Classification

1. Finance and administration
2. Natural and applied sciences
3. Health
4. Social sciences, education, religion, and government services
5. Art, culture, leisure and sport
6. Sales and services
7. Primary and extractive exploitation
8. Operation of industrial and transport equipment, and general trades
9. Processing, manufacturing and assembly

Source: National Classification of Occupations, SENA, Colombia, 1997.

QUALIFICATION LEVELS
IN THE SENA, NATIONAL OCCUPATIONAL CLASSIFICATION

LEVEL	DESCRIPTION
0	These occupations are characterised by the complexity and variety of the functions involved in the administration and management of enterprises and organisations, and this involves a high level of discernment for taking decisions and a maximum degree of autonomy. Top management includes the executive, legislative and judicial levels, and management personnel in public and private administration.
A	This covers occupations which require university studies at the professional, degree, master or doctorate level. The functions to be performed are usually very varied and complex, they demand a high level of autonomy, they generally involve responsibility for the work of other people, and occasionally for the allocation of resources.
B	These occupations generally require the accreditation of studies at the technical or technological level. They include occupations which involve the allocation of some responsibility for supervising other people, and which presuppose creative and artistic aptitudes. The functions are usually very varied, and to perform them a considerable degree of autonomy and evaluative judgment is needed.
C	The occupations at this level generally require the completion of a programme of learning or of basic education complemented with training courses, on-the-job training, or experience. The functions involved in these occupations combine physical or intellectual activities with a low level of autonomy in performance.
D	Access to occupations at this level usually requires a minimum of education, equivalent to the basic level, and little work experience. The functions to be carried out are simple and repetitive, are basically of a physical nature, and there is a high degree of subordination.

Source: National Occupational Classification, SENA, Colombia, 1997.

In this way SENA is trying to create a common language for managing different subjects which include the design of labour competency standards, training programmes and the recognition of competencies.

The national classification of occupations can be set out in a matrix like the one below.

THE SENA NATIONAL OCCUPATIONAL CLASSIFICATION - COLOMBIA TOWARDS A NATIONAL TRAINING FRAMEWORK

PERFORMANCE AREAS	1 FINANCE AND ADMINISTRATION	2 NATURAL AND APPLIED SCIENCES AND ASSOCIATED OCCUPATIONS	3 HEALTH	4 SOCIAL SCIENCES, EDUCATION, GOVERNMENT SERVICES AND RELIGION	5 ART, CULTURE, RECREATION AND SPORT	6 SALES AND SERVICES	7 OCCUPATIONS EXCLUSIVE TO PRIMARY INDUSTRY	8 TRADES, EQUIPMENT OPERATORS, TRANSPORT AND ASSOCIATED OCCUPATIONS	9 OCCUPATIONS EXCLUSIVE TO PROCESSING AND MANUFACTUR-ING INDUSTRIES AND THE PROVISION OF GOVERNMENT SERVICES
0 Management occupations									
Level of preparation A									
Level of preparation B									
Level of preparation C									
Level of preparation D									

Colombia: towards a national network of vocational training bodies

SENA's proposal for a national system of training for work involves two lines of action that are currently under development. The first is to strengthen a national network of training organizations, and the second is to create a nexus of coordination between vocational training and formal education.

A **Network of Training Bodies** is in the process of being set up. It is based on the central ideas contained in the new ILO recommendation concerning human resources development which is being widely disseminated by the SENA. These ideas are as follows:

- The right of everyone to education and training, and the effort to guarantee access for everyone to education and lifelong learning which is being made in collaboration with the social partners.

- To establish and maintain a coordinated educational and training system.

- To guarantee the pertinence and maintenance of constant quality in the programmes of education and training prior to employment.

- To guarantee the development and consolidation of vocational training systems so as to offer suitable opportunities for the development and certification of the qualifications required in the job market.
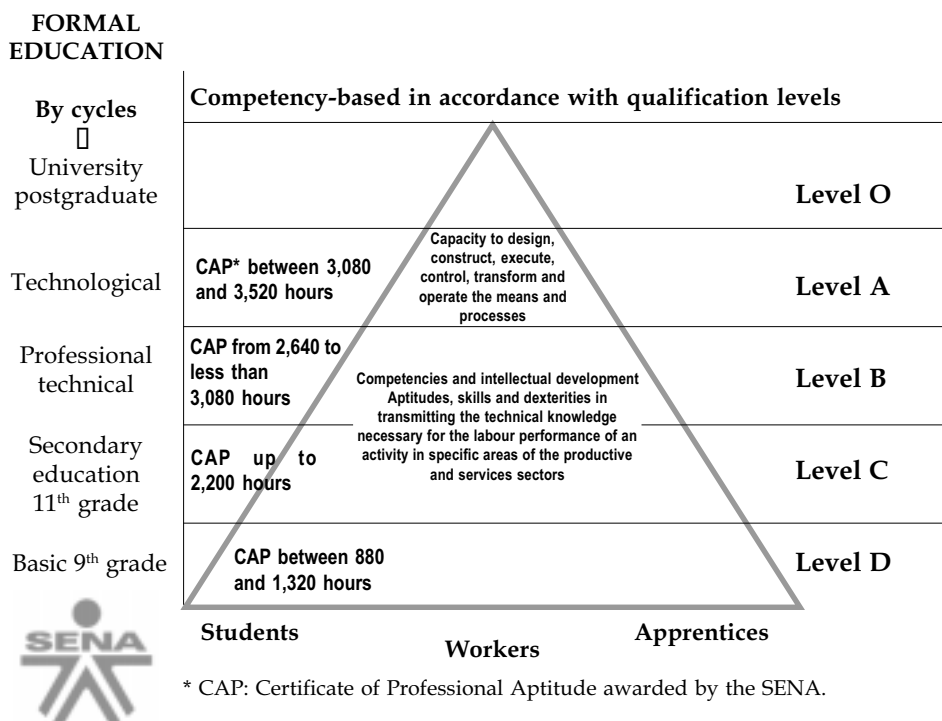
The organisation of "sectoral committees", reinforcing social dialogue in vocational training

The SENA has a total of 1,238 labour competency standards which have been developed by 31 "sectoral committees", spaces in which representatives of enterprises and workers produce competency-based profiles. Based on competency standards, they have produced 174 curricular structures for training programmes. The institution's support for the network is based on a conviction that the standards and training programmes should be shared and disseminated free of charge, and on the idea of helping to improve the quality of the offer of training for work. The fact that entrepreneurs and workers are involved has contributed considerably to this objective, and the effort has improved the quality of training programmes.

The SENA will make available to organizations which voluntarily join the network the 1,238 competency standards and all the curricular structures, and it will also give them advice on how to prepare their training programmes and training services for teachers in pedagogic areas, and about the design of competency-based training.

The coordination between vocational training and education: this is actively promoted in the relation between SENA and the Ministry of Education through periodic contact which has even led to a proposal for mobility and equivalence between the levels of vocational training and the cycles in formal education. This is shown in the diagram below.

41

THE EDUCATIONAL SYSTEM AND THE SYSTEM OF TRAINING FOR WORK
THE NATIONAL SYSTEM OF TRAINING FOR WORK

FORMAL EDUCATION

By cycles
⬇
University postgraduate

Technological

Professional technical

Secondary education 11th grade

Basic 9th grade

Competency-based in accordance with qualification levels

Level O

CAP* between 3,080 and 3,520 hours

Capacity to design, construct, execute, control, transform and operate the means and processes

Level A

CAP from 2,640 to less than 3,080 hours

Competencies and intellectual development Aptitudes, skills and dexterities in transmitting the technical knowledge necessary for the labour performance of an activity in specific areas of the productive and services sectors

Level B

CAP up to 2,200 hours

Level C

CAP between 880 and 1,320 hours

Level D

Students   **Workers**   **Apprentices**

* CAP: Certificate of Professional Aptitude awarded by the SENA.

It can be seen in the table above that the training given by SENA can be equated with levels in formal education, and both have equivalences with the qualification levels of the NOC, considered as a national framework. The work of the education authorities and that of the SENA will most probably lead to a national qualifications framework being set up.

One case in the SENA offer of competency-based training.
Towards a qualifications framework for the graphics industry

The SENA set up a sectoral committee for the graphics industry, and this has facilitated the construction of a genuine sectoral framework of qualifications for this industry which is very dynamic in Colombia in both production and in ex-

ports. The creation of this space for social dialogue on training brought together employers' associations, enterprises, workers, the educational sector, technological research and development centres, SENA training centres, public support institutions, and the ministerial level.[8] The committee appointed a president, a vice president and a technical secretary, and the table below shows how it is made up.

INSTITUTIONS BELONGING TO THE SECTORAL COMMITTEE IN THE GRAPHICS INDUSTRY

REPRESENTATIVE	ORGANIZATION
Entrepreneurs' associations	Colombian Association of Graphics Industries ANDIGRAF National Association of Colombian Newspapers ANDIARIOS Colombian Printers Federation FEIMPRESORES Colombian Association of Small Industries ACOPI
Workers' associations	General Workers' Confederation of Colombia CGTD
Enterprises	CARVAJAL S.A.
Educational institutions	Don Bosco Industrial Institute
Institutions of non-formal education	Carvajal Institute of Human Development Taller Cinco Educational Corporation
Institutions of higher education	University of the Andes. Programme of specialization in management of graphics production
Technological research and development centres	Institute for Technological Training and Development in the Graphics Industry IFTAG
Government sector	Ministry of Economic Development
National vocational training institutions	Head of the National Centre of the Graphics Industry. CENIGRAF of the SENA

---

8   *Caracterización ocupacional de la industria gráfica colombiana.* SENA. Mesa sectorial de la industria gráfica. Bogotá. 2000.

A basic stage in defining the qualifications framework for the sector is to do a study to characterise occupations. The committee for this sector already had one that was made in 2000, and this allows systematisation of the information about the economic and occupational situation of the sector, its relation to the national and sectoral competitiveness strategy, and its prospects. It describes the economic, technological, occupational and educational aspects which affect the recent and expected evolution of the sector, and it concludes with a specification for the functional map[9] of the graphics industry.

What stands out in the study is the relation to the "Forestry Productive Chain, Pulp, Paper and the Graphics Industry", a concept which represents vertical integration in the sector and is utilised in the competitiveness policy defined by Colombia. This vision of productive "linkage" has allowed very good integration between sectors that are usually considered separate because of their different object of production or productive processes, but which in practice make up a group of activities which are connected in the same productive procedure. Therefore, in a vision of national productivity and competitiveness, it is vital to analyse the relations between sectors which provide the raw materials (forestry), those which process it (paper production) and those which take advantage of this to generate products (the graphics industry).

The occupational characterisation of the Colombian graphics industry includes defining sectoral productive processes which have been established as planning and production. The production phase is divided into design, pre-printing, printing, post-printing and distribution.

In the section about the occupational aspect, the study gives interesting data on how the sector is made up, such as the fact that there is greater demand for training in its composition by occupational levels. In fact, it has a higher percentage (15.7%) of vocational personnel than the national average in industry (12.7%), and also of technical personnel (9.7% against 7.2%) and of trained workers (24.3% against 20.8%).[10] It is clear that the increasing utilisation of modern printing technologies, the use of computers and the digital treatment of images, among other factors, involve a greater demand for qualifications which have a more intensive technical content than the national average in industry.

What comes next in the study is a matrix of employed personnel according to their jobs in the phases of the technical process that they are assigned to. This classification shows the areas in which the generation of employment has expanded or narrowed, and the job titles clearly show the new situation in the sec-

---

9   This is utilised in the methodology of 'functional analysis' as a basis for determining competency standards and competency-based training programmes.
10   SENA. Op. cit.

tor and how technology has progressed (scanner operator, digital set up, digital colour re-toucher, digital technical chief).[11] However, old levels of intervention and autonomy with job titles like "auxiliary", "assistant", "operator" and "supervisor" still continue in use. This is without doubt a key information factor in taking decisions about human resources training and development in the sector. The different levels of competency can be associated with different educational levels, and the committee has representatives from secondary technical education and higher education. They provide the bases to generate mechanisms for training, mobility and recognition in career development, in addition to the products already produced in the field of vocational training at the technical and technological levels.

But perhaps the most important product when it comes to the qualifications framework for the graphics industry is the functional map. It is essential for defining occupational standards, which, in turn are the basis for the design of programmes of competency-based training and certification, and also for producing competency standards for the processes of pre-printing, printing, post-printing, binding, finishing and distribution.[12]

The table below shows a general vision of this map up to the second level of disaggregation, which is entitled "main function". The next level, "specific function", expresses those elements of competency which serve as a base for the standards.

We should bear in mind that there are considerable advantages of having an agreement about the functional structure of the sector sponsored by entrepreneurs, workers and government. In this way the SENA has generated a process of accumulating knowledge whose codification is expressed not only in products for analysing competencies (the functional map and competency standards) but also, and above all, in the training programmes which have been updated and which now meet the needs of the sector. This has been achieved on a nation-wide scale and gives coverage to the whole sector, and it represents the construction of a reference framework for key processes like the training and certification of competencies, and in fact for the development of human resources in this sector.

---

11 Remember the painstaking typesetter, the Ludlow machine operator – who worked casting letters in moulds made of a tin alloy.
12 In 2001, the committee's work resulted in three publications with the standards for each of the processes.

Partial vision of the functional map of the graphics industry in Colombia

KEY AIM	KEY FUNCTION	MAIN FUNCTION
To transform the client's communication needs into products and services, using processes of graphic reproduction, conversion and connected activities	A. Identify and satisfy the client's communication needs	Carry out market research to identify demand Develop graphic products and services Develop strategies to offer products and services that clients demand Develop sales in line with agreements reached with the client
	B. Provide the resources necessary to meet the client's needs	Manage the purchase of supplies Purchase the technology Establish relations with suppliers
	C. Convert communication needs into graphic products and services	Determine and organize the productive process Manage work with the client that is compatible with the characteristics of production Prepare graphic images for incorporation into diagramming Compose elements of the page for final production Produce the final product for printing with the required quality[13]
	D. Administer the resources available in the enterprise to reach the objectives established	Recommend utilisation, do follow-up, and control the use of resources Plan, allocate and evaluate the work done by teams and people Seek, evaluate and organise information for the enterprise's work Contribute to seeking and selecting personnel Exchange information to resolve problems and take decisions Create, manage and improve effective work relations Form teams with workers to improve performance Promote the development of the organization in accordance with sectoral standards of competitiveness and the environment Carry out administrative activity in support of production
	E. Maintain machinery and equipment in condition to help in achieving production	Plan preventive maintenance in line with production conditions Maintain and repair machinery Carry out preventive maintenance of equipment in line with company policy

Source: SENA. Occupational classification of the Colombian graphics industry. Sectoral committee of the graphics industry. Bogotá. 2000.

13 Only some of the functions are included to provide information. For a complete version see the original SENA study at www.sena.edu.co

Guatemala: INTECAP and competencies for different programmes

The Technical Institute for Training and Productivity (INTECAP) in Guatemala has incorporated the labour competency approach into its institutional management, and it has set up the "NORTE" model for the technical standardisation of competencies.

The model is being applied in the design of plans and didactic materials, in the evaluation and certification of competencies, and in consultancy processes in human resources management.

Thus, since 1988, the INTECAP has been developing a model for evaluation, certification and training with labour competencies in its structure and institutional activity. This model is mainly based on technical standards which

> **Definition of labour competency in INTECAP:**
> The collection of attitudes, dexterities, skills and knowledge required for the quality execution of determinate productive functions in a labour context. The capacities and functions are defined by the productive sector and must be measured by the worker's labour performance.

INTECAP recognises three types of competencies

Basic: Those of a training nature which the person needs to be able to perform any productive activity, such as the ability to read, to interpret texts, to apply numerical systems and to be able to express him or herself and to listen.

Generic: These are skills and knowledge connected to the development of different occupational areas such as analysing and evaluating information, working in a team, contributing to the maintenance of safety and hygiene in the workplace, and planning work. These competencies can be acquired through educational and training programmes or in the workplace itself.

Specific: these are competencies that have to do with knowledge and skills of a technical nature and which are necessary to execute a productive function. They generally involve a specific language and the use of particular instruments and tools, such as welding with oxyacetylene equipment, preparing the mill for hot laminating, or evaluating a candidate's performance. They may be acquired and developed through a training process, in the workplace, or they may be self-taught.

show the requirements for the quality of human resources for a productive function, and thus cover the current training needs of the productive sector of the country. Experiences have been compiled from countries such as Mexico, Colombia, Brazil and Venezuela, as well as European countries like Italy and England, so as to obtain a general framework of the methodology from different points of view and areas of application.

Because of the importance and the numerous applications of labour competencies, the INTECAP has assumed responsibility for developing not only the management of the competency-based training model which falls within its mandate, but also the competency-based human resources management model.

This model is called NORTE, and it consists of five components:

- Standardisation
- The design of vocational training
- Evaluation
- The development of training events
- Certification

In 2002, INTECAP intensified its participation in the development of the competencies approach and produced the following publications:

- *Basic and generic competencies*
- *Competency-based human resources management*
- *Examples of competency-based human resources management*

These publications centre on the development and application of the competency approach and, as can be seen, this focus has been broadened to include human resources management. This is a sign of the INTECAP working jointly with enterprises.

The INTECAP experience represents a model of institutional modernisation based on the convergence of two processes: the incorporation of a labour competency model and the quality management model. The latter has enabled the institution to genuinely update its structure and functions, and this has been complemented with a new competency-based training offer.

INSAFORP in El Salvador and its competency-based training model

As part of its five-year plan for 2000-2004, the Salvadorian Vocational Training Institute (INSAFORP) has undertaken a process of organisational development which is concentrated on training based on labour competencies and the design and promotion of a national training and certification system.

The area of work of the "Competencies Standardisation and Certification System" (SNCC) has the following general characteristics:

- It is demand driven and based on results.

- In the middle term, it makes greater institutional coordination possible, and also allows greater permeability between enterprises and training services.

- It is a competencies standardisation and certification system which provides the market with correct and timely information about what individuals are able to do in the work ambit.

- It allows better quality flexible programmes that are more pertinent to the needs of the population and the productive sector.

- It is easier to update and adapt.

- It is a system in which training is seen as a long term process which encompasses the whole of an individual's productive life and facilitates the development of competencies to give workers greater opportunities for personal and career progress.

- It involves the execution of pilot programmes in different sectors of the national economy. They are aimed at defining the regulations and processes which will then feed back into the design of the programme for subsequent implementation at the national level, and progressive implementation in all sectors of the economy.

> "The Technical Labour Competency Standard give workers references against which they can measure their intellectual capital in terms of what the productive sector expects for efficient quality performance in a productive function. On meeting the standard, the worker gives a guarantee to employers that his performance is efficient and of quality, and it allows him or her to better understand the processes of change and adaptation which modern organizations demand."
>
> INSAFORP

The key elements of the plan are:

• To define and integrate technical labour competency standards.

• To establish a competency certification system which enjoys social credibility and wide acceptance in the job market.

The system conceived in this way has the orientation of a tripartite body and will accomplish its mission of improving the competencies of human resources in the context of criteria of human and technical performance. The objective is to generate greater competitiveness in the productive sector and better conditions of employment for workers, in a situation in which regional integration, economic opening and the globalisation of the economy are taking place.

The design of the system involves developing five sub-processes: standardisation, training, evaluation, certification, and the study, research and monitoring of the labour market so as to be able to give follow-up and evaluate the results of vocational training.

At the moment a pilot plan is being run which covers various representative enterprises that will initially incorporate some occupational areas. The pilot plan covers four productive sectors: textiles, metal working, electricity and the automotive sector. The labour competency standards already developed are as follows:

SECTOR	TITLE OF TECHNICAL LABOUR COMPETENCY STANDARD
AUTOMOTIVE	Repair diesel and petrol engines and the mechanical system of the engine
	Repair the brakes, suspension and steering systems of automotive vehicles
GARMENT MAKING	Carry out the assembly of garments
	Carry out the maintenance of machinery and equipment for the garment-making industry
METAL WORKING	Turning metal-mechanical pieces
	Milling metal-mechanical pieces
ELECTRICITY	Carry out the installation and maintenance of electrical circuits in residences
	Construct and maintain electricity distribution lines

Source: www.insaforp.org.sv

It should be noted that INSAFORP does not directly execute training. Its role is to utilise the public funds at its disposal to contract public and private organizations to give training. Thus the development of competency standards is a move towards the idea of a national framework that organizations that offer training subscribe to. To the extent to which these standards become national references, the idea of having a national reference framework will become clearer.

We can highlight a number of characteristics that are common to all the experiences analysed in this section:

- The focus on labour training.
- That they are promoted by VTIs with national coverage.
- The relation to the idea of facilitating mobility between the educational system and the system of training for work.
- The work with methodologies for identifying competencies to produce standards that will be applied nationally.
- They all have mechanisms that are developed in and that enhance social dialogue about training, their directing bodies have a similar structure, and they are important in the national context.

One challenge is the need to achieve effective coordination with the world of education to be able to progress towards the goal of a lifelong training model. What still has to be overcome is the traditional idea that vocational training is an alternative for people who have not been able to continue their studies in formal education and who are not able to re-insert into academic education. It is also necessary to get the academic sphere to value competencies acquired through work.

2.3.3. *Experiences which involve the participation of all actors, enterprises, workers and government, in arranging for the incorporation of competencies in a conception of lifelong learning*

We will analyse experiences which are considered to be nearer to the setting up of a national qualifications framework because, besides involving a national effort directed by the state, other characteristics are involved like setting up a national framework for labour training, and the open attempt to create mechanisms to overcome the separation between formal education and vocational training.

Mexico: The Occupational Competency Standardization and Certification Council (CONOCER)

One of the characteristics of training in Mexico is that the institutions which impart vocational training are very diverse. The biggest ones are mostly public institutions, and they have an extensive network of centres throughout the country and specific programmes for different target populations. The diversity in the offer of training is even greater when we consider private training providers. In 1993, public training institutions had 465,000 students at the technological level of secondary education, 93,000 in training for work and some 210,000 in secondary technical education.[14]

The CONOCER was set up in Mexico as the result of a government initiative. It is a tripartite organization with its own strong identity, and it functions as a rector body.[15]

CONOCER came into being as the coordinator of a scheme through which people can accede to schemes for continuous training based on standards that are set consensually by the productive, labour and educational sectors.

Using the certified labour competency model it is possible to:

- Recognize people's experience through official recognition which certifies that the person is qualified to perform a productive function.

- Open up possibilities for continuing training throughout a person's productive life so that he or she will not be made redundant because of the technological progress and the lack of training to be able to cope with it.

- To keep the relation between the content of training and the requirements of the labour market constantly up to date.

- CONOCER is itself defined as a quality organization, and its objective is to improve quality in enterprises, in workers, and in training institutions in the country.

---

14 These are the General Board of Training Centres (DGCC), the National College of Vocational Education (CONALEP), the General Board of Industrial Technical Education (DEGETI), the Industrial Technical Teaching Centre (CETI), the Science and Technology of the Sea Education Unit (UECyTM), the General Board of Agricultural Technological Education (DEGETA), the General Board of Technological Institutes (DGIT), and the National Polytechnic Institute (IPN).

15 For further information see www.conocer.org.mx

CONOCER is defined as an organization which has competency standards and which promotes the generation of labour competency qualifications and also certification in these qualifications based on the real requirements of enterprises. It is itself defined as a quality body, and its objective is to improve quality in enterprises, in workers, and in training institutions in the country.

The Council came into being in the framework of the Technical Education and Training Modernisation Project (PMETyC), which was financed by the World Bank. In the diagnosis of vocational training which was carried out in that project, the situation in Mexico was described in the following terms:[16]

- Deficient preparation of workers on the part of vocational training and education.
- Supply driven programmes, which meant they lacked flexibility and relevance to the changing work market.
- Uneven quality in training programmes. A lack of measurable objectives to make it possible to evaluate the quality of their products.
- Deficient institutional framework for the private sector to participate in the design or provision of training.

The PMETyC was designed with the following components:

A. A standardised system with labour competency certification
B. Transformation of the training offer
C. To stimulate the demand for training and the certification of competencies
D. Information, evaluation, studies and research.

CONOCER was developed basically in response to component A above, but there is a close relation to component B because of the impact which labour competency standards have on the modernisation of training. In fact the design of the project involved continual interaction among all the components.

CONOCER drew up a matrix of qualifications which constitute

The standardisation committees are groups made up of entrepreneurs and workers who are usually from economic sectors that are representative of a specific labour activity (for example shoemaking or sugar production) and who, with technical support from CONOCER, work on identifying competencies and establishing them in standards.

| 16   World Bank, Technical Education and Training Modernization Project, Mexico, 1994, (www.worldbank.org)

the national reference framework for setting competency and certification standards, so as to develop a coherent process for producing competency standards geared to certification.

The qualifications matrix has five levels of competencies and twelve performance areas. The competency levels in the matrix are as follows:

Competency levels designed by CONOCER in Mexico:

Level 1: Perform a small group of varied work activities that are mainly routine and predictable.

Level 2: Perform a considerable group of varied work activities carried out in different contexts. Some of the activities are complex and not routine, they involve responsibility and autonomy, and often require cooperation with others or working in a team.

Level 3: A wide range of varied work activities performed in different contexts. These are frequently complex and not routine, there is a high degree of responsibility and autonomy, and often controlling and supervising other workers is involved.

Level 4: A wide range of complex work activities (technical or professional) performed in a wide variety of contexts. There is a high degree of responsibility, autonomy, responsibility for the work of others, and occasionally for allocating resources.

Level 5: This involves the application of a considerable range of fundamental principles and complex techniques in a wide variety of contexts which are often unpredictable. There is a high degree of personal autonomy, and frequently responsibility for allocating resources and for analysis, diagnosis, design, planning, execution and evaluation.

Source: CONOCER

The columns of the matrix which make up the national competencies framework correspond to twelve occupational areas conceived to encompass all possible work posts and jobs in the Mexican labour ambit.

The occupational areas are as follows:

Occupational areas designed by CONOCER:

1. Agricultural, agro-industrial and forestry cultivation, stock-rearing, exploitation and processing.
2. Extraction and exploitation
3. Construction
4. Technology
5. Telecommunications
6. Manufacturing
7. Transport
8. Sales of goods and services
9. Financial, management and administrative support services
10. Health and social protection
11. Social communication
12. Development and expansion of knowledge

A first vision of the qualification matrix is given below.

QUALIFICATION MATRIX

Areas		Extraction and exploitation	Construction	Technology	Sales of goods and services
LEVELS	5				
	4				
	3				
	2				
	1				

The table below gives a better illustration of the concept of qualification used by CONOCER. It shows the configuration based on the sum of various types of competencies in an occupational area and with a determinate level of competency. In fact each qualification is reflected in a technical standard of labour competency.

> A technical standard of labour competency is a collection of knowledge, skills and dexterities that are applied in the performance of a productive function, based on the requirements for quality that the productive sector demands.

The technical standard of labour competency include:

- What a person must be able to do

- The way to gauge whether what he does is done well

- The conditions under which the person must show his aptitude

GRAPHIC VISION OF A QUALIFICATION

Areas		Extraction and exploitation	Construction	Technology	Sales of goods and services
LEVELS	5				
	4				
	3		**Qualification**		
	2				
	1				

Basic competency units
Generic competency units
Specific competency units

Source: CONOCER, September 2002.

One of CONOCER's first tasks was to set up the standardisation committees and train its own consultants. The committees' work was based on the qualifications matrix which would guide them in identifying labour competencies and producing the technical standards of labour competency.

WHAT IS A QUALIFICATION?

A labour qualification is a collection of competency units and their elements. It specifies the criteria and the ways in which the knowledge, skills and dexterities required for the competency are to be evaluated.

As of 2002, some 601 Technical standards of labour competency had been produced. This standardisation and certification system has led to the setting up of 32 certification bodies and 1,273 evaluation centres.

The qualifications matrix below shows the results of the production of standards for each competency level and occupational area.

IMPACT ON THE QUALIFICATION MATRIX

Levels \ Areas	Cultivation, stock rearing	Extraction and exploitation	Construction	Tech, mech., elect., electronics	Telecommunications	Manufacturing	Transport	Sale of goods and services	Finance, management services	Health and social protection	Social communication	Development and expansion	Total
5								2	1				3
4	2	1	1	1	1	2	3	6	5	1		1	24
3	19	2	5		11	20	7	19	11	12	4	3	113
2	44	14	16	41	5	82	12	25	7	11	7		264
1	5	3		1		19	2	5		1			36
Total	70	20	22	43	17	123	24	57	24	25	11	4	440

Source: CONOCER, data from 2002 with 440 qualifications.

CONOCER's technical standards of labour competency have national coverage and have an institution and a legitimacy that supports them. Certification is voluntary, and, as is analysed in the document about the recognition of prior learning, it is here that the main bottlenecks in the process have appeared.

CONOCER has generated a very efficient process for producing competency standards. They have been prepared in one way or another for almost all the occupational sectors in the labour market in Mexico. Recently the public sector became interested in developing a competencies approach for state employees, and work on this was done in coordination with CONOCER.

However, the certification market and the extent to which workers and employers appreciate it are only just beginning to develop. The number of competency units certified recently exceeded 100,000.

The concept of technical standards of labour competency is having a series of effects on other actors in training. It has made it possible to start work on the modernisation of many training programmes whose previous orientation was not closely geared to the needs of enterprises, and also to begin reorganisation in the enterprises which participated in producing the standards and which initi-

ated their human resources management with a competency approach. Today a number of well known enterprises have considerably improved their productivity indicators through incorporating the concept of competent labour performance.[17]

Another step towards a national framework:
The Council of Education for Life and Work

More recently the Mexican National Council of Education for Life and Work (CONEVyT) (www.conevyt.org.mx) was set up, which is focused on coordinating the efforts of different institutions so as to create an ambit of lifelong learning. This is still in its early stages but it has its roots in a concept which will undoubtedly facilitate interaction between training and education, namely "lifelong learning".

CONEVyT in Mexico and lifelong training

- submit plans and study programmes for continuing education for life and work to the Secretary of Public Education;

- coordinate and harmonise the policies and mechanisms of the different public institutions that are involved in non-school education and in work training for young people and adults in the country;

- harmonise, promote and foment additional sources of finance from the public, social and private sectors, and also from international bodies connected to education;

- evaluate the quality, efficiency and impact of educational programmes and models, using information and indicators from qualified third parties;

- encourage research into how to improve educational processes;

- promote the diffusion and spread of a culture of open, flexible and distance systems;

- promote the establishment and application of flexible systems and structures for accreditation, certification, equivalences and the revalidation of studies and of labour competencies.

---

17   For example, bread production in the foodstuffs industry, or the sugar industry.

CONEVyT plans its activity around the following strategic areas:

1. The integration of training for adults into the national educational system
2. New formulas for helping people who fall behind in education
3. To promote research and innovation in education
4. Research and recommendations about the new information and communications technologies in support of education

It can be seen that one aim is to facilitate a return to school for people who joined the labour market early and who are finding it difficult to remain in employment or obtain new employment because they lack the basic competencies which come from education. We should bear in mind that the average schooling of workers in Latin America barely exceeds eight years.

Chile: the lifelong learning project "Chile Califica"

One of the most interesting current trends in the ambit of training is the move towards generating training options that are connected to the philosophy of lifelong learning.

What are emerging are experiences that are more structured and wider-ranging, like the "Chile Califica' (www.chilecalifica.cl) programme, which has been in operation since 2002. This project is an attempt to coordinate in various ways the world of education with that of work, promoting the levelling of studies for adult workers, the recognition of competencies derived from work experience, and the development of technical education and competency-based training.

"Chile Califica" is a joint initiative from the Ministries of Education, of Economy and Labour, and it is co-financed by the Chilean government and the World Bank. The aim is to set up a lifelong learning system which will contribute to the development of the country and to improving people's opportunities to progress. The project targets that sector of the active population which needs to raise its level of competencies and its level of literacy and schooling, but it also embraces young people and workers at the level of technical education and technicians at a higher level.

The diagnosis which gave rise to the formulation of this lifelong learning project revealed a number of shortcomings in education and training for work in Chile. As well as the problem of youth unemployment (28% in the 15-19 age range) it also focused on the levels of academic achievement of young people over 15 who, in the lowest income decile, only complete 7.4 years of education in contrast to more than 13 years in the highest income decile. The problem is even worse among adults over 45 years old in the poorest decile; they average less

than 5.7 years of academic education. The educational system does not facilitate either the level of these workers' competencies or the recognition of competencies acquired through work experience.

The components of the programme are as follows:

The levelling of studies: To increase opportunities for the levelling of adults' basic and secondary studies, to make it easier for those with low levels of schooling to update their knowledge and obtain the certificates and the competencies that are necessary and equivalent to basic education. The idea is to allow training for work to have the same weight and validity as ordinary education, and as such to be eligible for a certificate of schooling that is recognised by public authorities.

This component is geared to developing new lifelong learning possibilities that reach the adult population with open and flexible educational modalities and with finance mechanisms to give an incentive to the levelling of studies and the utilisation of public financing schemes, such as the tax exemption system that is in operation in Chile.

Vocational training: By improving workers' access to vocational training opportunities and utilising current tools like tax exemption and the promotion of e-learning, the project will orient noticeable increases in investment in human resources which will improve literacy levels, especially among the active population, in an attempt to rectify the shortcomings of the educational and training systems in meeting the development needs of the country.

Improving technical training: The effort to improve technical training to make it more effective in meeting national development needs, taking account of the problems of coverage, quality and curricular coordination among the different levels of training. To seek to gear technical training to the demand from the productive sector, using networks of agreements between the world of training and the productive sector in a specific region or in a particular productive sector. To foment technical training itineraries which will set up avenues for mobility from one modality or level of training to another. To work on improving and updating technical teachers.

The certification of labour competencies: To develop the labour competencies required to insert, remain and grow in the world of work. One of the objectives of the project is to create a "national system of labour competencies" which will render a certification service regardless of the ways or places in which competencies have been acquired.

It also covers the ambit of the recognition of competencies, developing evaluation and certification mechanisms in a national system to facilitate training so as to generate mechanisms to respond to needs that are detected. Thus through evalu-

ation and certification it will reinforce the improvement in the quality of the training offer.

The plan is to develop a national system of competency standards and technical training itineraries which include setting up a national framework of labour competencies, guaranteeing the quality of the training offered, and improving and adapting the training offer and technical training programmes that are connected, open and sequential.

The project also involves training teachers and setting up an information system about education and training. It has not yet produced a national framework because it only came into being recently. At the moment, pilot applications are being run in every component, the technical and legal mechanisms to facilitate a national standardisation and certification system are being prepared, and a national qualifications network is being set up in line with the plan.

Chile: The national curricular framework in secondary technical education. Progress towards a national qualifications framework?

In Chile, secondary technical vocational education takes place in the four years that come after the eight years of basic education. When secondary technical vocational education was established in the 1980s it was defined as "an alternative orientation to work life, but legally open for progress to higher studies".[18] In recent years more than 40% of the total secondary school population has been in technical secondary education.

The reform in secondary technical vocational education that was initiated in the mid 1990s was intended to make it more pertinent to the needs of the productive sector. This reform was oriented towards training that was more general than specialised, which was a move away from considering it as preparation for a specific job and orienting it more to the competencies required in a general occupational area. This involved adopting a criteria according to which secondary technical vocational education was seen more as a differentiation in secondary education than as a modality, which is the traditional way it had always been regarded and handled.

The reform had two main goals, one was to improve the quality of the educational offer, and the other was to make the structure and the organisation of curricula more flexible so as to make it easier to adapt to changes in the productive sphere.

---

18 Miranda, Martín, '*Transformación de la educación media técnico-profesional*', in *Políticas Educacionales en el Cambio de Siglo. La Reforma del Sistema Escolar de Chile*, Santiago de Chile, Editorial Universitaria, 2003.

To work towards these objectives, a curricular framework was defined and work was begun on developing mechanisms to promote upward movement from secondary technical vocational education into higher technical education. These two aspects are precisely what makes this experience part of the move towards a national qualifications framework.

The move to design a curricular framework sprang from the conviction that operating without a national reference could negatively affect the quality of the educational offer. This applies in particular to countries like Chile where there is great demand for access to this option in secondary education. The curricular framework proposed had to meet the challenge of being flexible enough to allow adaptation to different local situations, and adaptation to changes in technology and in the organization of work.

The establishment of the curricular framework involved wide-ranging consultation. Work commissions were set up which were composed of representatives of employers and workers for each sector, educational institutions, teachers, and members of public bodies in the field in question.

Based on this process, and on technical support from the Ministry of Education, methodologies were developed for producing vocational profiles to graduate in each of the specialisations considered. In this way a framework was constructed, and although it is limited to secondary technical vocational education it reflects very well a process of involving social actors in constructing competencies that are in harmony with demand.

The table below shows the framework of sectors and specialisations in secondary technical vocational education in 2002.

Economic sectors and specialisations in differentiated technical-vocational training in secondary education, 2002

ECONOMIC SECTORS	SPECIALISATIONS
TIMBER	1. Forestry 2. Wood processing 3. Wood products 4. Cellulose and paper
AGRICULTURE	5. Agriculture
FOODSTUFFS	6. Industrial preparation of foodstuffs 7. Collective foodstuffs services
CONSTRUCTION	8. Building 9. Finishing of constructions 10. Industrial set-up 11. Roads and infrastructure works 12. Sanitary installations 13. Refrigeration and air conditioning
METAL WORKING	14. Industrial mechanic 15. Metal construction 16. Automobile mechanic 17. Tool making 18. Aeroplane maintenance mechanic
ELECTRICITY	19. Electricity 20. Electronics 21. Telecommunications
MARITIME	22. Merchant and special ships 23. Fishing 24. Aquaculture 25. Port operation
MINING	26. Mining 27. Extractive metallurgy 28. Assistance in geology
GRAPHICS	29. Graphics 30. Technical drawing
TEXTILES	31. Fabric 32. Textiles 33. Clothing and textile 34. Leather products

ECONOMIC SECTORS	SPECIALISATIONS
ADMINISTRATION AND COMMERCE	35. Administration 36. Accountancy 37. Secretarial 38. Sales
SOCIAL PROGRAMMES AND PROJECTS	39. Child care 40. Attention to older adults 41. Nursing care 42. Social and recreational attention
CHEMISTRY	43. Chemical plant operation 44. Chemistry laboratory
HOTELS AND TOURISM	45. Tourism services 46. Hotel services

Source: OEI, *"Estado de avance de la reforma educativa de la educación media técnico-profesional en Chile"*, in *Cuaderno de Trabajo* No. 5, OEI, www.campus-oei.org/oeivirt/fp

This definition shows that, in the case of Chile, the Ministry of Education realised how useful it would be to have a reference framework for preparing training programmes and so as to be able to certify academic achievements, although at the moment it is only utilised in the curricular ambit in secondary technical vocational education.[19]

At the present time the work being done in the lifelong learning project "Chile Califica" is facilitating the development of experiences to create bridges between the different educational modalities, specifically between secondary technical and vocational education and higher technical education. But also, and here lies the greatest challenge, it remains to be seen how this base can be used in the construction of a national qualifications framework, which, among other things, would involve using it as a reference to facilitate mobility and the recognition of competencies acquired in vocational training or through work experience. The work to promote vertical mobility could constitute a basic itinerary which could be gradually extended to other ambits, such as access to high level technical education for people who do not have the secondary level training currently required, or those who do have it but in a different area of specialisation. This would in-

---

19 The curricular framework was promulgated in *Fundamental objectives and obligatory minimum content for secondary education,* Supreme Decree 220, 1998. Ministry of Education. For further information see www.mineduc.cl

volve establishing mechanisms to recognise learning acquired through work experience and training, and facilitating certification at the secondary level for different modalities, which would allow easier access for adults and for workers in related fields.[20]

This is a big challenge, but the work strategy adopted by "Chile Califica", in which the Ministries of Education and of Labour are actively participating, favours the development of pilot experiences to integrate the different modalities of education and to recognise competencies acquired in different ways.

The English-speaking Caribbean: towards a regional qualifications framework

The English-speaking Caribbean is the region that has made the most progress towards the establishment of a coherent national qualifications framework, even with a regional scope. In that geographical space, the role which training institutions play in technical and vocational training is highly institutionalised and is centred on the work of the national training agencies (NTAs).

The NTAs grew out of a series of innovative reforms that were implemented at the beginning of the 1990s with the aim of making technical education and vocational training more effective. Created with the objective of closing the gap in skills, they have proved to be efficient in cooperating with unions and employers and in promoting the development of a national qualifications framework for the countries where they are in operation, and they have wide projection in the English-speaking Caribbean.

Some characteristics of the NTAs in the English-speaking Caribbean

- Tripartite consultative councils
- Links with employers and union federations
- Strong tendency to share competency standards
- Desire to produce and disseminate a standard national classification of occupations
- Demand driven competency-based training
- Willingness to share the general framework of competency levels

---

| 20   Chile Califica, '*Diseño de itinerarios de Formación Técnica*'. Working document, Santiago de Chile, 2004.

The NTAs that are already in operation in Barbados (set up in 1993), Trinidad and Tobago (1999) and Jamaica (1991) share the same organisational design and the focus on labour competencies in their conceptual framework. Other countries such as Santa Lucia are progressing rapidly towards setting up their own national agencies.

The NTAs in Jamaica, Trinidad and Tobago and Barbados have joined forces with the aim of training a competent labour force through establishing vocational qualifications (with nation-wide application) based on competencies. These vocational qualifications have been developed through tripartite initiatives, and they are comparable to international standards so there is a guarantee that the final product is in line with the requirements of industry. The NTAs are also working together to bring about the mutual recognition of their respective skills, competencies and qualifications, the ultimate goal being to formulate vocational qualifications that are applicable throughout the Caribbean area (Caribbean Vocational Qualifications). Insofar as these initiatives deal with common occupational standards and accreditation they are ahead of the current debate in the Caribbean Community (CARICOM) about the free movement of competencies.[21]

Although the initial model of competency levels adopted by the Jamaican HEART/NTA[22] was based on the English model, the HEART has shared its framework of competencies, its experience and its accumulated knowledge with the other NTAs.

In addition to this there is a genuine regional strategy to develop a qualifications framework with regional scope. The ILO sub-regional office for the Caribbean recently described this trend as follows, "One activity in particular which stands out in bringing together government, employers and unions to better coordinate the linkage between competencies and jobs has been the development of common vocational qualifications, a process which the NTAs in the Caribbean have undertaken with great commitment".[23]

---

21 We should note that the Secretariat of the Caribbean Community (CARICOM) is promoting a regional strategy for technical education and vocational training. The creation of the NTAs is part of this strategy.
22 HEART: Human Education and Resources Training, set up in 1991.
23 Gamerdinger, George, *Vocational qualifications: experiences in the Caribbean*, ILO Sub-regional Office for the Caribbean, 2000.

**The competency levels utilised by the NTAs
in Barbados, Jamaica and Trinidad and Tobago:**

Level 1. Insertion. Apprentice, supervised worker
This includes competency in a considerable range of labour activities performed in different contexts, from simple routine operations to tasks that are more complex and not routine, and which involve a certain degree of individual responsibility and autonomy, and which often require cooperation in a group or a team. Considerable supervision is required, above all during the early months, but later there is greater autonomy.

Level 2. Day labourer. Independent specialized technician
This competency involves a wide range of labour activities that are technical and complex, performed in different contexts and with a considerable degree of personal responsibility and autonomy. Often there is responsibility for the work of others and for allocating resources. The individual is able to work on his own, and he or she has aptitudes to resolve problems, plan, design and supervise.

Level 3. Technician/supervisor
This competency involves a wide range of labour activities that are technical and complex, performed in different contexts and with a considerable degree of personal responsibility and autonomy. Often there is responsibility for the work of others and for allocating resources. The individual is able to work on his own, and he or she has aptitudes to resolve problems, plan, design and supervise.

Level 4. Master craftsman/manager/entrepreneur
This competency involves the application of a considerable range of fundamental principles and complex techniques throughout a wide and unpredictable variety of contexts. There is considerable personal autonomy and frequently there is responsibility for the work of others and for allocating important resources, and also the personal capacity to analyse, diagnose, design, plan, execute and evaluate.

Level 5. Graduate, professional and/or manager
The capacity to exercise personal professional responsibility for the design, development or improvement of a product, process, system or service. Certification is a recognition of technical and managerial competencies at the highest level, and can be conferred on those who have occupied positions of the highest professional responsibility and have made a significant contribution in the promotion and practice of the profession.

Source: HEART/Trust/NTA

Competency-based training includes the following activities and good practices:

Trinidad and Tobago – National Training Agency

- The definition of thirteen occupational standards in April 2001, in branches like welding, food and drink services, computer technology, industrial instrumentation and procedures operator. So far the organizations of training for industry have prepared 22 standard projects.
- A web page has been set up which allows interested parties to seek information about vocational and socio-industrial qualifications, accreditation standards, etc. (www.ntatt.org)

A bill that deals with competencies is being drawn up for submission to parliament, the aim being to finance workers who wish to improve their knowledge and skills.

Barbados – The TVET Council

- The council proposes to introduce national vocational qualifications in the near future, and it is working in cooperation with the rector bodies for industries in the fields of computer technology, tourism, and hotels and client service. In this way it expects to obtain qualifications that are in line with international models, in order to meet local needs in Barbados.
- The council administers the Employment and Training Fund (ETF), which offers a programme of grants and loans to support training and the improvement of the work force.

Jamaica – The HEART Trust/NTA

- This institution has served as a forerunner in the Caribbean in the development and application of occupational standards and competency-based qualifications.
- In September 2004 the Vocational Training Development Institute (VTDI) of the HEART Trust initiated a four-year course for a bachelor's degree in education, with specialisation in technical teaching and vocational training.
- The HEART Trust/NTA is sharing its information and the specialised knowledge with other institutions, and this has made it a focal point in the region for technical teaching and vocational training.

Latest developments:
The Caribbean Association of National Training Agencies[24]

The community of VTIs in the Caribbean works as a social alliance between workers, employers and government. It subscribes to the philosophy of competency-based training, and puts it into practice. This system is grounded in international competency standards which are used, and which have been validated locally. These competency standards describe the specific knowledge, skills and attitudes which people must acquire and demonstrate to be certified at any particular level and occupation in the national qualifications system. This means that anybody in the region who is certified in an occupation under this system is as competent as any other person certified under this system in the same occupation anywhere in the region.

The community of VTIs in the Caribbean has also developed an important experience, demonstrating its capacity to accredit training programmes and institutions, and to evaluate and certify people in a system that includes competencies acquired as the result of experience. The effective coordination of the system with the different levels of employment, based on the competency levels certified, gives workers real motivation and contributes to developing human capital, and also individual and regional competitiveness. The national training authorities allow the countries in the region flexibility to respond on a national scale, facilitating training and re-training to react when new occupations emerge or current occupations and competencies become obsolete. This is a clear trend in vocational training in the Caribbean.[25]

The VTI community in the English-speaking Caribbean questions the very common practice of segmenting learning and training into the different categories of academic, technical, vocational, formal and non-formal. The community believes in education as a lifelong process through which each person learns to learn, learns to do, learns to live and work productively with other people, and also learns to be. On this point we can cite the profile of the citizen-worker that CARICOM promulgated in 1997:

---

24 Based on remarks made by Mr Robert Gregory, Executive Director of the HEART Trust/NTA, to the leaders of the CARICOM, about the creation of the Caribbean Association of National Training Agencies (CANTA). The Association covers the VTIs in Jamaica, Trinidad and Tobago and Barbados, and it will be associated with the regional market in the Caribbean, the Caribbean Single Market and Economy (CSME).
25 Gamerdinger, George, *Trends in the recognition and certification of qualifications: the role of training based on competencies. The Caribbean perspective*, Cinterfor/ILO Bulletin 152, Montevideo, 2002.

CARICOM's ideal citizen-worker:

- Is capable of taking advantage of the economic opportunities which are appearing because of globalisation.

- Has many competencies which include a foreign language, independence, and critical thought.

- Has developed the capacity to create and take advantage of opportunities to control, improve, maintain and promote his or her physical, mental, social and spiritual welfare, and also to contribute to the health and welfare of the community and of the country.

- Nourishes the full development of his or her own and other people's potential without any gender stereotyping, and accepts the differences and similarities between men and women as a source of mental strength.

- Has an informed respect for his or her cultural heritage and for that of other people.

It is clear that in the English-speaking Caribbean a radical transformation is taking place for all the people and at all levels in that now education is measured in terms of standards, learning achievements and competencies. Many job profiles, both in job descriptions and in advertisements for employment, pay special attention to competencies and delineate them in their three components: knowledge, know how and skills, and attitudes; in other words they involve the cognitive, psycho-motor and affective domains of learning.

The competency-based training model used by the VTIs in the Caribbean is structured in line with criteria that are specified in standards which are developed in the workplace. Evaluation for certification is based on criteria and conditions under which each achievement will be evaluated. These criteria and conditions are established, explicitly stated, and made public beforehand.

This focus has widened access to training and certification since it means that candidates can know in advance which competencies and learning achievements they will have to demonstrate and in what way the evaluation will be done, so they can decide if they need training or if they can be evaluated straight away. This saves them from having to take courses whose content they may have already mastered.

Bearing these considerations in mind, Mr Gregory proposed that the Council for Human and Social Development should:

- Approve the creation of the Association of VTIs in the Caribbean as a tool for implementing a regionally coordinated mechanism for technical education and vocational training.

- Give the Association of VTIs in the Caribbean and its constituent VTIs a mandate to facilitate the offer of competency-based training through the Caribbean market (CSME) and the offer of evaluation and certification services, at the level of national standards and at the level of Caribbean standards. This means setting up a mechanism that is practical and cost-effective to allow the free movement of certified workers throughout the regional economy of the Caribbean, the CSME.

- Give the Association a mandate to explore other possibilities for developing and maintaining the competency and competitiveness of all adult citizens/workers in the Caribbean market. The point of reference in the Caribbean is international, the competency demonstrated is accepted world wide, and the Association is ready to support the transformation of the Caribbean market into a competent, competitive and prosperous region.

3.   SOME LESSONS AND PROBLEMATIC ASPECTS IN THE CREATION OF NATIONAL QUALIFICATIONS FRAMEWORKS *

The fact that there are different experiences in the move to set up national qualifications frameworks makes it possible for us to synthesise a series of valuable lessons, and comment on some of the problems.

3.1. Lessons learned

In the Latin American region, national qualifications frameworks are just in the process of being set up. Many countries began modernising their vocational training programmes with the labour competency approach rather than creating a national qualifications framework. This concept has permeated almost the whole of the institutional structure of training, but the creation of new training programmes and didactic materials still remains to be consolidated.

The VTIs in the region have undertaken to train their teachers, to re-design their programmes and to re-initiate dialogue with workers and employers, which in some cases had become weak, and all of this amounts to an enormous effort. One of the great advantages which institutionalised vocational training in the region has demonstrated is its capacity to learn and to mobilise knowledge applied to developing new modalities of training and didactic materials and systems.

---

*   This part was written inspired by the valuable suggestions of Mrs. Akiko Sakamoto (IFP/Skills Department).

The need now is to complement the progress that has been made and implement the means to develop competencies which will be available throughout a worker's life. The idea of education "from the cradle to the grave" poses a challenge to the traditional organisation of training and has put the spotlight on subjects like adult training, the development of social competencies for young people, and the idea of having training that alternates with work, in a cycle which continues throughout the whole active labour life.

The path towards setting up a national framework of references for educational achievements has involved a lot of teamwork on the part of those in charge of education and formulating employment and education policies. This is a central point in delineating systems for lifelong learning because transparency and the recognition of the different levels of competency in those systems makes it necessary to break away from traditional ways of classifying and certifying educational achievements.

3.2. Strengths identified in the different experiences

Social dialogue with interested parties, employers and workers, gives validity and dependability to the progress made in training and certification. The subjects of training and organising better programmes always constitute a rapid and effective route for dialogue. In the current situation in Latin America, with the immediate prospect of trade integration at the sub-regional and continental levels, questions about training and the development of competencies have come to the centre of the debate.

**Structures for social dialogue
on the path towards a national qualifications framework:**

SENAI Brazil: National strategic project for the certification of competencies. Advisory councils in centres.

National Training Agencies in the English-speaking Caribbean: Sectoral advisory councils.

SENCE Chile: Technical standardisation groups associated with pilot applications.

SENA Colombia: Sectoral committees, central technical committees, vocational training committee.

CONOCER Mexico: Standardisation and labour competency councils.

The experiences involving work on training frameworks at the local, sectoral or national levels which have achieved the most concrete results have done so with the support of consultation and work groups made up of entrepreneurs and workers. The institutional organisation of the work towards developing reference frameworks for training, evaluation and the certification of competencies carries with it a guarantee of sustainability when entrepreneurs, workers and the government sector all take part.

This holds true both at the level of developing national qualifications frameworks in sectors and when the initiative comes from national training institutions or via experiences promoted by the government sector through ministries of labour and/or education.

A good strategy to make progress towards a national qualifications framework is to run more pilot experiences. These generate a series of chain reactions which awaken interest on the part of new sectors. There is a desire to acquire and develop knowledge about the competency approach, there is concern about the quality of training, and overall there is a critical mass which motivates actors to work on this subject.

In general, social dialogue on training is facilitated and leads to real concrete results when the subject under discussion is the setting up of reference structures like a national qualifications framework. This means that progress is made in areas like the design of training programmes, and the evaluation, recognition and certification of competencies.

The national training institutions have succeeded in overhauling their offer and they now have the competencies approach as a reference for modernising programmes and constructing a national qualifications framework. The institutional framework provided by a national institution favours the generation and accumulation of knowledge about the competencies model and also the construction of a reference for competencies and for their levels. In the same way, work on a national competencies framework by specialized institutions constitutes a guarantee of sustainability since training institutions usually incorporate the new curricular designs into their regular offer and design, and offer the certification of competencies within this new framework.

In general, all the experiences analysed take account of the need to improve competitiveness and productivity through the training and development of workers. In these experiences, priority sectors that have strategic value in the national economy have been identified, and this gives better guidance to policies for developing human resources and competitiveness. Some examples of this are the mining sector in Chile, the Brazilian tourist sector, and fruit and vegetable production in Colombia. There have been attempts in these countries to set up genuine lifelong learning systems which will make it easier for workers to move

between different levels of training and education, to enter and re-enter a sector, and to receive modular training. In short, these are mechanisms of lifelong learning.

Other factors which facilitate continuity in institutionalised experiences geared to developing a national qualifications framework are the availability of permanent financing, some familiarity or facility for establishing mechanisms of dialogue and participation with social agents, and the fact that the experiences tend to play a demonstrative role for other training providers. However, this requires a clear institutional policy, action that is flexible, and real interest in the subject, otherwise there is a risk that the experience will lose credibility among interested parties.

Training and certification models which have been tested and adapted to national, sectoral or local realities tend to yield better results. This is why, in cases of sectoral development, from the very beginning of the activity there tend to be high levels of participation and commitment from the actors involved. The best results are directly connected to variables such as the participation of a representative collection of actors at the level that the work takes place (whether it be sectoral, local or national), the interest shown by employers in valuing competency certificates in their human resources management processes and in promoting learning in their enterprises, and the interest and commitment of workers in areas like participating in the identification of profiles, promoting continuing learning and training, and accepting the need for and the value of training for personal and vocational performance and development.

When international experiences are not suitably analysed and adapted, there is a risk that the sustainability of the structures set up may be highly dependent on current sources of finance, and there is a danger that these may be temporary. This could discourage social actors who have a legitimate interest in the project.

One final consideration: Which of the different stages in the development of national qualification frameworks seems to enjoy the most credibility among social actors? Firstly, regardless of the level in question, experiences in which the objectives are most clearly defined, and in which these aims are understood and pursued by all the actors, are usually the most successful. Experiences which attract genuine participation on the part of actors have a better chance of yielding good results. When enterprises allow their trained workers time to participate in the standardisation groups and to play an active role in designing occupational profiles, they are without doubt making a priceless contribution to success. The same is true when workers participate in dialogue and other activity geared to constructing occupational content. The credibility factor is crucial since good credibility ensures not only active participation but also the success of the results.

Experiences which are promoted from the national level need a greater initial effort to attract and guarantee participation on the part of some sectors which may not be very aware of the aims and advantages of a national qualifications framework. On the other hand, experiences which are initiated at the sectoral or local level have the advantage of proximity, and they enjoy immediate participation on the part of the actors. Thus, for example, national programmes like the one in Chile are using a strategy of pilot applications at a local and sectoral level so as to begin on a micro level what will be subsequently applied across the board.

A fundamental lesson to be learned is that work should not be done until it is certain that employers and workers have fully grasped what is going on, and are disposed to work with the competencies approach because they intuit and understand that it would be beneficial for both parties. This applies above all to programmes which are initiated with national coverage and promoted from the government sector. If people do not participate with conviction they will just be going through the motions and making a token appearance at the meetings, and this will jeopardise the programme's sustainability.

3.3. Shortcomings in the development of qualifications frameworks: Some weaknesses and aspects that need reinforcement

The shortcomings dealt with in this section are poor coordination, the need to improve connections between national and local effort, and the need to improve the technical capacity of the public organizations involved.

Coordination among participants is a key aspect to be taken into account. There is no doubt that developing a national qualifications framework cannot be left to only one ministry or one single training institution. One of the main advantages of competency frameworks is their mainstreaming. Key competencies are portable and a worker can literally "take them along" when he moves from one job to another. However, this advantage is lost if there is no validation system to enable the levels of education and the different modalities of vocational training to "talk to each other".

One of the most critical points in a national qualifications framework is the coordination between the education and the labour authorities. In some experiences great progress has been made in this area, but in others the question remains unresolved. In a number of countries there are legal frameworks, like the Brazilian Law of Basic Guidelines for Education, that have incorporated training for work into their prescriptions and have defined the ways that people can progress through the different levels. Nevertheless some aspects, like the recognition of competencies acquired through work experience, or the movement be-

tween one training system and another, have still not yet been completely resolved, and this applies particularly to the problem of establishing equivalences between levels in training for work and those in formal education.

Programmes like "Chile Califica" are doing their utmost to solve this problem. On this programme, a strategy for mobility between the different educational systems has been designed in different regions and for different sectors. This was done by setting up a network of work groups that are responsible for making an economic analysis of the sector in question and of its occupational character, and taking charge of defining the competencies there and designing mechanisms for the recognition of competencies and for horizontal and vertical mobility in the framework of the educational ambit and also of training for work.

The connection between local and/or sectoral efforts and national training policies is a weak point that is complementary to the problem of coordination. This is perhaps the most important challenge and the gravest weakness because there may be many applications and experiences in the countries in the region, they may have different sources of funding, and to make the situation even more complicated, work initiatives can come from different sources either in the public or the private sector. The problem with having so many initiatives is that a greater effort is needed to coordinate them to achieve a synergy of the results on the national level. One particular sector may decide to construct a competencies framework, but how much of this experience is taken advantage of for a national framework, or as a guarantee that the competencies of a worker who moves from one sector to another are "portable", is another question.

It is essential that sectoral or local experiences can be taken advantage of when it comes to constituting a national framework. The competency classification, the training programme, evaluation instruments and certification processes that may emerge from local or sectoral experiences should be amenable to mainstreaming and to application at the national level so as to facilitate mobility for workers and avoid duplicating efforts. This task would seem to belong in the ambit of bodies with national scope like national training institutions and ministries of labour and/or of education.

Greater development of social dialogue on training and education can enormously facilitate the construction of a lifelong learning scheme and consequently of a national qualifications framework. Social actors in the Latin American region are more and more coming to see training as a subject on which there can be fruitful and fluid social dialogue. It is easier to make progress in this area because it is more neutral than other subjects that are tackled in labour relations. Dialogue on training has much to do with the perceptions that the actors have. Very often entrepreneurs demand evidence that negotiation and dialogue can be successfully extended to the ambit of training and personnel development, in

workers' associations there is some progress towards making the right to training effective, and the role of the state in promoting and encouraging the two sides to come together is expanding.

The interpretations that the different actors have can help or hinder progress towards a national competencies framework. The greatest difficulties arise from positions that regard training as being of little value for promoting competitiveness or productivity, from opposition to the competencies approach based on extreme ideological positions, and lastly from the eventual weakness in the formulation of training policies. Very often these positions can be moderated and become more mature through dialogue and negotiation. In the region, the ground is already being prepared to set up national qualifications frameworks in various countries.

It is vitally important to develop the technical capacity of ministries of labour and national institutions. There are two main reasons for this. First, because the subject is important on the medium and long term institutional agenda, and second, that technical teams should be capable of making progress in the work needed to move towards a national qualifications framework. In fact, very often priority on the institutional agenda is given to subjects that are more pressing in the short term such as unemployment, work conditions, child labour, etc. Action is needed to strengthen the capacity to formulate and construct middle term strategies, policies and programmes which are geared to modernising training and developing a national qualifications framework.

It is also vital that the technical teams from the ministries and national training institutions should be trained and up to date. Very often a lack of knowledge about the characteristics and stages in the design of a national qualifications framework impedes dialogue between the authorities and social actors, and this dialogue is a vital factor in making national experiences sustainable.

3.4. Key subjects on the path towards a national qualifications framework

The vital needs are to coordinate education and work, and to establish an institutional design for lifelong learning.

The need for fluid communication between education and work. Education at the secondary technical stage is oriented to competencies for labour performance, and vocational training institutes are also oriented to developing labour competencies. The problem is that what is acquired in vocational training is not always recognized in formal education, and in some cases formal education and vocational training seem to be two separate paths which never meet. In some countries training policies oriented by the ministry of labour include participa-

tion in the training and updating of workers. How can training be made to seem more a lifelong continuum than a series of branches that are independent of each other and valued in different ways in society and in work?

This is a critical question which involves getting two great systems, education and work, to communicate with each other so as to facilitate the mobility of workers and the recognition of competencies within the concept of lifelong learning. This key subject underlies a number of the national efforts mentioned in this study. For example, it can be clearly seen in the progress in Mexico towards constructing a system of lifelong learning through CONEVyT, and also in the determined efforts of "Chile Califica" to coordinate different levels and educational achievements with training for work in a concept of lifelong training. The SENA training system is also promoting the setting up of a training chain which coordinates different levels and modalities.

However, there is still a need to make a great effort to bring the educational and work training systems closer together and to design and operate mechanisms which foster coordination between the different levels of education and training within the concept of a national qualifications framework.

Developing national qualifications frameworks and maintaining equality of opportunity in access has become a challenge for the countries in the region. Offering opportunities for workers to have their competencies recognised frequently requires a parallel effort to facilitate the means of access to evaluation and certification. Defining whether the access mechanisms that there are in the region, which are often free of charge, should be conserved, and to what extent they should be combined with processes which involve payment on the part of the beneficiaries, is closely connected to subjects like equity and accessibility.

Another challenge is the need to facilitate the recognition of competencies and skills, and to develop them for all workers. This need has become more pressing in the light of the increasing globalisation of economic activity. All the countries in the region should consider the need to give their workers the tools that would improve their employability and enable them to take better advantage of the employment opportunities which can emerge from the new trade pacts. This means intensifying efforts towards setting up national qualification frameworks to facilitate the progressive acquisition of competencies and make the philosophy of lifelong learning a reality.

The design and management of national qualification frameworks: the need to define an institutional model. It is vital to have a good institutional base which will allow clear definitions of the roles in the different activities involved in defining and running a national qualification framework. The key question in many countries is "What is the best institutional model?"

In tackling this question, the choice is whether it is better to transplant a foreign system or to adapt training and certification models which may be successful in other countries but which, in the situation of the country in question, might be difficult to implement insofar as they do not take advantage of local strengths. The region has a valuable asset in its institutionalised vocational training structure. National training institutions should continue to make progress and to demonstrate their ability to adapt and incorporate the new demands for knowledge and skills that stem from the information and knowledge society.

At the national level, the institutionalisation of bodies which direct the running of training systems has become a critical point. These bodies have to maintain and improve the dialogue between the different actors, and also lead them in the direction of generating better programmes, more access to training, and having a transparent and recognized system of competencies. In the national training institutions the management councils have played this role, and they have made efforts to coordinate with other bodies in the ministries of education and labour and with representatives of workers and employers. In some experiences it was decided to adapt and mould the tripartite management bodies so that they would play the role of "rector bodies", and this facilitated agreements about training levels and modalities. In other cases a rector body was created to succeed the national institutions. This point is particularly sensitive in countries where there are training institutions that need to improve their positioning and response.

The countries in the region are still meeting the challenge of maintaining their training institutions up to date. Whereas in the 1980s this challenge was accentuated because of economic opening and industrial restructuring policies, now it has re-emerged and is made more pressing by the prospect of global competitiveness and the imminent establishment of free trade areas, a state of affairs which puts considerable pressure on the competencies that people possess.

The need to have national frameworks which facilitate lifelong learning has become even more important because of the need to improve national productivity and competitiveness to effectively integrate into the new regional spaces and world trade. National efforts to consolidate and modernise training institutions should have a positive impact on the training and updating of workers throughout their lives. However, in building this new institutional structure, experiences and accumulated knowledge should be creatively considered. It is necessary to adapt the innovative characteristics which have made labour competency systems desirable and operative so that the benefits reach entrepreneurs and workers and open the way for progress in the economy as a whole.

II. KEY COMPETENCIES AND EMPLOYABILITY

The term "employability" relates to portable competencies and qualifications that enhance an individual's capacity to make use of the education and training opportunities available in order to secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions.

ILO Recommendation No. 195 concerning human resources development, 2004.

Introduction

The rapid changes in the structure of employment and in the organisation of work have drastically altered the form and the content of jobs. In recent years a collection of labour capacities have come to light which contribute to performance in a large group of occupations, and are portable from one to another. This section gives a brief conceptual survey and re-examines some of the experiences of developing key competencies in Latin America.[1]

1. KEY COMPETENCIES: CONCEPTUAL APPROACH

The transformations resulting from changes in the organisation and content of work have put the spotlight on certain kinds of skills and behaviour in work. In recent years many researchers have focused their attention on describing the kinds of skills and competencies which help the worker cope with the new demands. What is it that enables a worker to assimilate a change from mechanical to electronic technology on the production line? What are the characteristics required for efficient performance in a work ambit where there is a high degree of group interaction? These are just two of the questions that the competencies approach is helping to solve.

| 1   These are sometimes called basic competencies, central competencies, or competencies for employability.

**Key competencies and educational results:
The International Adult Literacy Survey**

More and more people are realising that education has the capacity to generate key competencies. The experience of the OCDE since the 1990s illustrates the interest that there is in finding a new group of indicators for people's real capacities. These indicators must have greater power to explain and to yield information that goes beyond the traditional indicators of schooling, coverage, drop out rate, etc.

In 1994, after a number of studies in the framework of the 'Definition and Selection of Competencies' project (DeSeCo), the International Adult Literacy Survey (IALS) was carried out in line with the idea that literacy incorporates something more than just the capacity to decipher written symbols, and therefore exceeds the traditional concept of reading as it is learned at school.

The IALS defined the concept of literacy as '*The ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one's goals, and to develop one's knowledge and potential.*' The concept of literacy includes the capacity to carry out tasks based on documents in daily life (for example, the instructions to operate an electrical machine), tasks which involve arithmetical operations such as those which appear every day in written form (for example, calculating simple interest rates), and also being able to understand selected pieces of prose.

The IALS concept of literacy consists of three categories:

Prose literacy: The knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures and instruction manuals.

Document literacy: The knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts.

Quantitative literacy: The knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a chequebook, figuring out a tip, completing an order form or determining the amount of interest on a loan from an advertisement.

The IALS was carried out in Chile (1998), and today the results are reflected in a good proportion of the educational plans and programmes which have been designed in that country in recent years.

Source: OCDE, *Literacy in the information age: Final report of the IALS,* Paris, 2000. (www.ocde.org)

There is no one universal definition of the notion of "key competency' but there have been many conceptual contributions. It is common to find references to this concept through the utilisation of attributes such as "generic', "portable", "key", "central", "essential" or "basic". They all carry the idea that these competencies lie at the core of the individual's capacities, and they enable him to successfully integrate into labour and social life, which is beneficial not only for the individual but also for society as a whole. In addition, this group of competencies includes the capacity to continually update knowledge and skills in order to keep abreast of constant and rapid change.

In fact, in this conception, systems of basic education play a big role in developing these competencies, and this is clear in various kinds of occupations in the European Union and in the OCDE.[2] As will be seen below, a central group of key competencies are concentrated in the capacities to read, write and operate with numbers. But the concept of key competency goes beyond the simple capacity to translate written symbols into verbal structures since it also involves the capacity to interpret and apply what is read. Essentially this is the concept of reading as a competency in which the ability to read is necessary but not sufficient, since what is also needed is the capacity to interpret, utilize, apply and integrate what has been read. These aspects form part of the concept which has been promoted in the international survey of adult literacy.

However, the concept of key competencies goes beyond literacy, or rather, the concept of literacy as a key competency also encompasses a group of competencies linked to the way the person relates socially, and more recently it has been broadened to include competencies in information and communication technologies and mastery of a second language.

The competencies involved in information and communication technologies are the capacity to utilise and apply computer technologies, networks and computerised systems. The competencies involved in knowing a second language go beyond being familiar with and having knowledge of other cultures; they also involve the possibilities that this presents for personal development and for social interaction.

The analyses carried out in the Latin American region to identify labour competencies have led many countries to describe different groups of competencies. For example, the description of competencies which was produced in Mexico at the request of the Occupational Competency Standardisation and Certification Council (CONOCER) defined three groups: basic competencies, generic competencies and specific competencies (see box). The importance which a group of key competencies for employability have for success in work was also recog-

---

2   Eurydice, *Key competencies. A developing concept in general compulsory education*, Belgium, 2002.

nized in the FORMUJER programme.[3] The common denominator is that these competencies are valuable for performance in a labour context in general, that is to say beyond one single occupation.

Possession of these competencies, which are usually called key competencies,[4] lies at the heart of the answers to the questions raised above. It is becoming increasingly clear that there are certain skills that make it easier to obtain employment, to remain in it, and to easily adapt to the changing demands of the labour market.[5] This is more

> **Types of competencies:**
>
> **Basic competency:** Elemental behaviour which workers have to demonstrate and which is associated with knowledge of a training kind.
>
> **Generic competency:** Behaviour associated with performance that is common to diverse occupations and branches of productive activity.
>
> **Specific competency:** Behaviour associated with knowledge of a technical kind linked to a certain language or productive function.
>
> CONOCER, 2002

difficult in a situation where there are low levels of schooling, which is the reality for workers in Latin America. That is why, in this region, the concept of key competency has acquired an aura of being closely connected to the basic competencies that are usually derived from education, and which in a number of countries are considered necessary for the exercise of citizenship.

In Brazil, for example, this idea has been fostered to the extent that the training of workers exceeds mere technical content and also includes a dimension of citizens' rights which goes beyond the ambit of the enterprise: reading, interpreting reality, expressing oneself verbally and in writing, dealing with abstract scientific and mathematical concepts, and working in a group to solve problems. In fact, everything that is usually defined as the profile of a worker in the leading sectors of the economy is tending to become a requirement for life in modern society.[6]

From another perspective, key competencies were defined by Dieter Mertens[7] in 1974 as the knowledge, capacities and skills of a kind that contribute to an open group of labour activities. Their contribution can be found in (a) the aptitude for a large number of positions and functions, performed alternately or simultaneously, and (b) the aptitude to deal with changes in the course of labour life.

---

3 This is a regional programme for strengthening vocational and technical training for low income women. The project was financed by the Inter-American Development Bank and coordinated by Cinterfor/ILO in Argentina, Bolivia and Costa Rica. (www.cinterfor.org.uy/mujer)
4 In the literature in English these are also called "core skills" or "core competencies".
5 Riordan, Trevor; Rosas, Gianni, Core work skills: ILO perspective and recent developments, Geneva, 2003.
6 Leite, Elenice, M., *El rescate de la calificación*, Montevideo, Cinterfor/ILO, 1996.
7 In Heinz, Walter, *Vocational socialisation and competence development: the historical dimension*, Luxembourg, Cedefop, 2000.

Key competencies make it easier for a worker to adapt to changes in the technologies used and in the organization of work, or to take on new responsibilities which require the acquisition of specific skills. They are closely linked to characteristics of a personal and social kind, and they have to do, for example, with skills in communication, the capacity to work in a team, and understanding systems and methodologies of work that involve computer technology.

The name that Mertens[8] gave to this group of basic competencies was "competencies for employability", since they are necessary for obtaining employment, remaining in it, and for finding new employment. These are not necessarily a collection of technical abilities, rather they reflect attitudes, behaviour and capacities of a general nature, often derived from the application of capacities acquired as a result of education such as understanding written texts and operating with numbers.

In the ambit of these social competencies, the concept of "soft competencies" has developed to designate elements like self-confidence, orientation to team work, creativity, being able to tolerate frustration, and self-motivation. In the box below some key competencies are cited as examples.[9]

Some key competencies:

- Working in a team
- Critical thought
- The creative solution of problems
- Communication skills
- Skills in reporting
- Skills in managing information and technology
- Self-esteem, self-confidence

By way of an example it is interesting to look at the classification proposed by Bunk,[10] who establishes four kinds of competencies.

---

8   Mertens, Leonard, *Labour competence: emergence, analytical frameworks and institutional models*, Montevideo, Cinterfor/ILO, 1999.
9   O´Dalaigh, Carl, "Work, Qualification and Competences", Presentation at the *IVTO Conference: Education and Work*, Sao Paulo, Brazil, 1998.
10 Cited by Tejada Fernández, José, "Acerca de las competencias profesionales", *Revista Herramientas*, Madrid, 1999.

Technical competency: Expert mastery of the tasks and content of the work ambit, and the knowledge and skills necessary for it.

Methodological competency: Knowing how to react by applying the appropriate procedure to assigned tasks and to any irregularities that may occur, finding solutions independently, and appropriately transferring the experience acquired to other problems in work.

Social competency: Knowing how to work with people in a communicative and constructive way, and showing behaviour oriented to the group and interpersonal understanding.

Participative competency: Knowing how to participate in the organisation of the job post and also of the labour environment, the capacity to organise and decide, and the disposition to accept responsibilities.

The National Commercial Training Service (SENAC) in Brazil identified the following competencies in the framework of research entitled "XXI century: the new occupations":

• Creativity	• Capacity to negotiate
• Adaptability	• Oral and written communication
• Initiative	• Interpersonal relations
• Leadership	• Knowledge of computers
• Autonomy	• Knowledge of English
• Versatility	• Openness to possibilities to work in other places

Another classification that comes close to the concept of key competencies can be found in the work of Gallart and Jacinto:[11]

Intellectual competencies: solving problems, handling information, understanding processes and systems, autonomy and responsibility.

Basic competencies: the capacity to read and write, the use and interpretation of symbols and mathematical formulae.

Technical competencies: knowledge of instruments and the functioning of machines, tools and work procedures.

Behavioural competencies: the capacity for verbal self-expression and interaction with work colleagues.

---

11   Cited in: Novick, Marta *et al.*, *Nuevos puestos de trabajo y competencias laborales*, Montevideo, Cinterfor/ILO, 1998.

**The new information and communication technologies
and key competencies**

The fact of working in a context in which new information and communication technologies are increasingly utilised has also generated new demands for competencies. One result of this is that it is easier to work in a team; information and communication technologies make access to information easier and more democratic for larger work teams so it is possible to deal with larger frameworks of data and it is easier to have a vision of the job as a whole. This has generated an interesting paradox: the more that production becomes specialised due to the fragmentation of the industrial fabric, the more the collection of competencies which workers require become generalised.

The role of the individual specialist is gradually losing out to the role of the team worker. In this new context, the contribution of each individual is amplified with the capacities of collective learning and reflection, and group communication and evaluation.

The use of information and communication technologies is generating a demand for competencies of a social kind. These include the following:

• Working and collaborating as part of a team, not only with work colleagues but also with clients and suppliers.

• Listening to and understanding the demands of clients.

• Presenting and explaining one's own ideas.

• Negotiating in a context that is characterised by competency, plurality and divergence.

To sum up, the conceptual approach to key competencies leads to an interesting mix of skills, capacities, behaviour and applications of knowledge which allow the worker to adapt to changing situations in employment and keep up to date his capacities to deal with the changes that are coming.

This kind of combination has its deepest roots in the capacities transmitted by education, and this accounts for the importance given to schooling as an indicator of the development of competencies. But it also involves skills and behaviour that the worker can apply in different work contexts, which explains the supreme importance which is given to work experience as a generator of competencies.

Key competencies and employability

Concern with the development of key competencies is also connected to the capacity to find and retain employment. The average unemployment rate in Latin America is 9%[12] and this is mainly made up of the youngest sector of the population. In addition, the informal sector predominates when it comes to generating employment opportunities,[13] which makes it especially important to develop the basic competencies that are transmitted by education as a means by which many young people, as well as unemployed men and women, can re-insert into employment.

A recent study by CEPAL[14] described the positive relation between the number of years in education and access to employment. This relation is maintained when education is measured against income. It is clear that a higher level of education is linked to a higher level of employment and income. However, young people who join the work market early, and also adults who finished studying and did the same, need options to accede to educational mechanisms which will enable them to update their capacities and skills. The idea is not exactly to add to their years of schooling, rather it is to recognise the competencies they have built up during labour life and make efforts to get these recognised and translated into educational achievements which, in turn, will contribute to developing new competencies.

The lifelong learning programmes in the region are aimed at opening the door to adults who began their labour life early and whose competencies are now deficient. The challenge is to develop their basic competencies, giving them contents that are traditionally educational and which will allow them to develop capacities that are valued in employment.

---

12 The ILO Regional Office for Latin America and the Caribbean estimates that 19 million people are unemployed. The average urban unemployment rate in the region in the early months of 2002 was 9.2%. The impact of these levels of unemployment affects all workers, but women and the young are affected most. (Labour Panorama 2002, ILO).
13 In 2001, some 49.7% of female employment and 43.8% of male employment was in the informal sector.
14 Carlson, Beverly, *Educación y mercado de trabajo en América Latina. ¿Qué nos dicen las cifras?,* Santiago de Chile, CEPAL, 2003.

2. NATIONAL EFFORTS IN THE DEVELOPMENT OF KEY COMPETENCIES

National efforts include experiences which originate in national public authorities, either ministries of labour, ministries of education or national training institutions. Normally these experiences are implemented with national coverage and affect the formulation of training policies. In national training institutions, the focus on key competencies is usually reflected in the production of occupational profiles and the design of training programmes.

2.1. The FORMUJER programme: key competencies for employability (Argentina, Bolivia, Costa Rica)

The serious situation of labour in Latin America as described at the start of this study is precisely one of the reasons why the FORMUJER programme tackled the development of competencies for employability. In the programme it is recognised that "work in the current situation requires subjects who actively construct their labour career, and who have the capacity to identify and value their resources and capacities with an attitude of seeking help and the will to overcome their limitations, and this makes them managers of their own employment opportunities. Similarly, new styles of life and of consumption which are reflected in family relationships have a crucial impact on the formation of new identities, and call for a re-configuration of the relation of men and women with the public and private spheres, and therefore of the relationships of gender themselves."[15]

> The Regional Programme to Strengthen the Vocational and Technical Training of Low Income Women (FORMUJER) has been in operation since 1998. Cinterfor/ILO provides regional coordination and methodological technical supervision. It has been co-financed by the IADB, and executed with pilot projects by the Ministry of Labour, Employment and Social Security in Argentina, by the INFOCAL Foundation in Bolivia, and by the National Training Institute (INA) in Costa Rica.

One of the basic conceptual principles at the heart of FORMUJER is to strengthen employability with a gender perspective, and throughout its execution the programme showed how it is feasible to strengthen the possibilities for obtaining and retaining employment by strengthening people's basic abilities.

---

15 Silveira, Sara, *Género y economía informal en América Latina. Nuevos retos y respuestas posibles desde las políticas de formación para el trabajo*, Cinterfor/ILO, 2003.

Based on this framework of reference, in FORMUJER the concept of employ-ability is understood as "the aptitude to find, create, retain and enrich a job and move from one to another, obtaining in exchange personal, economic, social and professional satisfaction."

Among the innovative aspects of the programme what stands out is the em-phasis on training for employability and the consequent development of what the gender focus and competency-based training have in common. One of the outstanding methodologies of the FORMUJER programme is the "occupational project", an activity in which the beneficiaries bring their key competencies into play in the structured planning of alternatives for personal development and labour insertion.

The work of FORMUJER to promote employability is oriented to the following:

- To strengthen people's capacities so they can improve their possibilities of labour insertion through developing key competencies which reduce the risk of obsolescence and which will permit men and women to re-main active and productive throughout their lives, not necessarily in the same position or activity.

- To train for learning that is lifelong and complex, which means learning to learn, learning to do, and learning to be.

- To help people to identify the internal and external obstacles which in-terfere with their attaining their objectives, to value their skills and knowl-edge, and also to value the demands and competencies required in the world of work. These include obtaining information and orientation about the educational market and the labour market, in which there are many alternatives, demands and possibilities, and eliminating stereo-types which pigeonhole jobs as female or male, and orchestrating the search for or generation of work.

- To stimulate and strengthen the capacity of each individual to manage his or her own vocational itinerary, which is particularly necessary in the uncertain environment in which professional life takes place and will take place.

A categorisation made by FORMUJER of the different competencies for em-ployability is as follows:

- **Basic competencies** to learn how to learn, and to assimilate this as a lifelong process. The outstanding ones are verbal and written expres-sion, applied mathematics, a second language, and also the capacities to place and understand data from the real world in a critical way so as to construct choice-making criteria for taking decisions.

- **Mainstream competencies:** the capacity to learn to do, in the sense of mobilising and adapting knowledge and capacities to new circumstances. These are particularly significant for women because they widen the spectrum of alternatives and give women horizontal mobility. The outstanding ones are the capacity to anticipate threats and opportunities, to integrate and develop a systematic vision of reality, to organise, to plan and manage tasks, resources and above all time and information, and to acquire a technological culture (working and applying technologies to tasks and in daily life). Among these competencies, special mention should be paid to the capacity to undertake, which is at the basis for formulating the occupational project. This includes developing initiative, strengthening decision-making, the capacity to take risks and to participate through developing leadership and the active implementation of ideas and projects, but also , if democratic leadership is promoted, it contributes to citizenship.

- **Attitudinal competencies:** these involve learning to be, and they strengthen identity and work against self limitation. For women, these competencies are essential for overcoming mental and social barriers which restrict their positioning and empowerment. The priority competencies in this area are personal abilities such as the reinforcement of identity and personal and gender security, responsibility for oneself, playing a role in the process of employment/training itself, and autonomy. There are also interpersonal or social competencies such as working in a group, responsibility and self-regulation, personal relationships, the capacity to negotiate, knowing how to listen and communicate, and emotional discrimination in labour situations.

- **Technical sectoral competencies:** these contextualise and complement the learning to do. For women, these are diversification, valuing old competencies developed in other ambits, and creating new competencies for employment niches that are emerging in the market.

To support the development and strengthening of key competencies, FORMUJER has produced *Training Modules for Employability and Citizenship*,[16] which are oriented to developing competencies like self-confidence, strengthening the feeling of belonging to a group, and improving the capacity to identify and resolve problems (*Employability Module*), strengthening personal autonomy, recognizing and exercising rights and responsibilities, and selected aspects of participation and leadership (*Citizenship Module*).

---

16 Irigoin, M.E.; Guzmán, V., *Módulos de Formación para la Empleabilidad y la Ciudadanía*, Montevideo, FORMUJER, Cinterfor/ILO, 2000. (4 volumes).

These modules have been applied in an integral way in Bolivia. They have served as the basis for preparing different didactic materials, like in Costa Rica where the *Manual with Activities to Stimulate Employability from the Classroom*[17] was produced. In Argentina, co-executive bodies use them as inputs for constructing the Occupational Project.

FORMUJER included labour guidance as an element in the vocational training process. In the programme there was a methodology called *The individual and/or collective occupation project* (OP). The OP is a collection of courses of action which individuals define, plan, revise and re-plan with a view

As of the first quarter of 2003, through the application of FORMUJER's methodological package of pilot and demonstrative training work, more than 3,000 poor and socially vulnerable women had been trained on the FORMUJER programme in more than fifty occupational profiles, both traditional and innovative, which had been revised and/or updated in cooperation with the productive sector. Evaluations show that there was an increase in employability competencies and in the preparation of occupational projects which empowered the participants, both men and women, to implement productive initiatives as individuals or in groups. These initiatives have taken place through a very varied range of connections including municipal and community bodies and other IADB programmes.

to achieving productive insertion or to improving their employment situation. Through supporting and strengthening each person's capacities to define, produce and manage a viable employment and training OP, the aptitude of women and men to obtain, develop, change or generate their work position will be improved.

The experiences carried out in the FORMUJER framework have shown that people strengthen their employability and exercise of citizenship when:

- they are able to match their capacities, needs and knowledge with the competencies required by the labour context;

- they come to see themselves as creators of their own future, identifying skills, desires, possibilities and difficulties in such a way as to construct their own path in life.[18]

---

17 Coto, J.; Quiros, R. et al., *Manual con Actividades para Estimular la Empleabilidad desde el Aula*, FORMUJER, INA/IDB, Costa Rica, 2003.

18 Extract from the *Cartilla sobre Proyecto Ocupacional* prepared by the Punha Cooperative and included in the paper in preparation *Proyecto Ocupacional, material de apoyo para formadoras y formadores* which will be published shortly by the FORMUJER Programme/Argentina.

The FORMUJER programme has shown that training for the neediest sectors of the population is not effective when it is oriented exclusively to training in occupations. On the contrary, it needs to be developed in an exercise of analysing the potential of the beneficiaries and applying their capabilities to facilitate their own development and success in the search for employment. In this, the key competencies approach has proved to be extremely useful.

2.2. "Chile Califica" and the development of key competencies

This programme was designed as a lifelong learning programme based on an open structure which is aimed at different stages in training.

The project only began in 2002 so there has not yet been any advanced execution, but its formulation clearly allows an understanding of the importance of basic education as a generator of competencies for employability. In the strategy of execution, priority has been given to pilot applications which include the organization of "technical education networks" which have sectoral orientation. The objective is to create a coordinated modular educational offer that will generate options that are coordinated around an educational curriculum able to facilitate progress in formal education and training for work in a determinate region.

This focus on pilot applications that have strong sectoral and regional roots is clearly seen in projects in which the "Chile Califica" services are coordinated, such as in the mining cluster in the Antofagasta region or the horticultural chain which facilitates the joint work of most of the institutions of education, training and production linked to the horticultural, fruit producing, forestry and wood producing sub-sectors in the Maule region.

The "Chile Califica" programme makes available to enterprises in these regions services which contain its four lines of action: the levelling of studies, the improvement of technical training, labour training, and the certification of labour competencies. Entrepreneurs who participate in the programme are always conscious of

The reference for key competencies in computing:

The "Computer Driving Licence" for competencies in the area of information technology, has been adopted as a standard in at least 22 European countries. It is aimed at raising the level of knowledge about information technologies and the level of competency in computer applications. In some countries there is an attempt to generate an offer of basic training geared to this standard, which would allow all citizens to participate in the information society.

how important it is to develop the key competencies of their workers to improve sectoral and national competitiveness.

Mention should also be made of another step forward in the key competencies approach, which is the explicit intention of the programme to produce a package of "digital" key competencies. This consists of helping to develop a training and certification offer in a group of competencies that are of fundamental importance for work with information technologies. The Ministry of Education has expressed interest in raising the level of workers' digital literacy, and it is very likely that through the programme the offer of training and competency recognition in this area will be promoted.

The social programme of information technology training in Chile.

One of the areas that is usually emphasised when it comes to analysing changes in occupation profiles is computing. In fact, working with information technologies has become a key competency in many occupations and it is being incorporated into more and more labour activities. Competencies in the computer field are a kind of "way in" which defines inclusion or exclusion with respect to a large part of labour life.

Because of this, the Chilean government has advanced various strategies to improve computer literacy on its "2006-2010 Digital Agenda", a collection of measures designed to make Chile a digitally developed country.[19] This project is closely linked to policies for trade development and integration, and it is complemented in other areas like education, in which the teaching of the English language is being promoted.[20]

When it comes to information technologies, training and certification in key competencies are being promoted for a "wide spectrum" of labour performance. This experience has been included in the SENCE social training programmes which are aimed at micro-enterprises and independent and unemployed workers in the framework of the "Chile Califica" programme.

---

19 In Chile, 71% of the population do not know how to use internet, 63.2% cannot use word processors, and 67.8% do not know how to use balance sheets (CIDE). One in ten Chilean homes is connected to internet and 39% of Chileans have a mobile phone, but Chile is in 25th place in the world ranking for using information and communication technologies (www.icdl.cl)

20 The Ministry of Education is promoting the "English opens doors" plan as one of a group of measures to improve the quality of education and to develop the skills to meet the challenges of globalisation. This initiative involves setting standards and carrying out periodic tests. In addition, a long term professional development plan for teachers has been defined, and standards have been set for quality teaching. (www.mineduc.cl)

In this programme the International Computer Driving License[21] (ICDL) is being used as a base. This is made up of seven modules which contain the computer competencies which are considered necessary for operating basic information technologies. The modules include basic concepts of information technology, managing files, word processing, balance sheets, data bases, presentations, internet and communications. The idea is to disseminate this digital licence widely among groups of secondary school students, micro entrepreneurs, young workers and adults in general.

2.3. The development of key competencies in the Competency Training and Certification Programme in Argentina

The labour competencies certification programme in Argentina[22] is working on the design of training curricula and the process of competency certification in four sectoral areas: the graphics industry, metalworking, the automobile mechanic area, and traditional pastry-making. The project is oriented to establishing the institutional and methodological foundations for developing a national system of labour competency certification, using pilot training and verification experiences based on the labour competencies approach.

One of the most interesting areas of work in this programme is the development of materials to help remedy deficiencies in basic competencies, especially for adult workers. Because the adult population is weak in basic competencies, it has been decided that the competencies certification programme should design and develop the following:

- Instruments for diagnosis which will make it possible to evaluate the degree of consolidation of basic competencies in the target population.

- Modules which will guide teachers and help them to take compensatory action to develop and/or strengthen these basic competencies.

The coordination unit of the project has organized the work so that the modules would have the following characteristics:

- they would be to "compensate", not to teach illiterate people;

---

21 International Computer Driving Licence (ICDL). International licence from the European Computer Driving License Foundation (ECDL).

22 This project is co-financed by the IDB and the participating organizations, namely the Union of Automobile Mechanics and Associated Workers, the Argentine Federation of Pastry, Confectionary, Ice Cream, Pizza, Biscuit and Fast Service Workers, the Association of Metallurgical Industries in the Province of Rosario, and the Gutenberg Foundation in the graphics industry. This three-year programme started in 2001.

- they would be based on strengthening the communicative capacities of reading and writing, and the capacity for logical mathematical thought;

- they would be based on developing these capacities in problem situations contextualised in the occupational dynamic;

- they would set out to strengthen basic competencies in at least three levels of difficulty (level 1 – up to 6 years of general schooling completed, level 2 - up to 8 years of general schooling completed, level 3 – up to 10 years of general schooling completed);

- they would develop the compensatory modules with material basically aimed at the vocational training teacher. This teacher is conceived as the facilitator of this strengthening process.

In the area of developing logical mathematical thought, the focus was put on the following basic competencies:

- the ability to handle fractions;

- skill in using and calculating with decimal numbers;

- skill in utilising different measurement unit systems;

- skill in the reading and interpretation of graphs and tables;

- the capacity to apply proportions in different contexts;

- skill in using and calculating percentages;

- skill in managing and interpreting formulae;

In the area of developing skills for communication and expression, the focus was on the following basic competencies:

- to manage in situations in which language is used;

- to recognise different kinds of obstacles to verbal and non-verbal communication;

- to recognise the changes that occur in language when it is used in different circumstances;

- to widen vocabulary through the use of synonyms and different ways of saying the same thing;

- to identify the actions which are involved in speaking;

- communication, taking into account the circumstances of the place, time and persons involved;

- using non-verbal communication as a complement to the verbal language when giving information to a superior;

- distinguishing verbal language from written language;

- recognising the changes that occur when narrating the same fact in a verbal or in a written way;

- recognising the changes that occur when recounting what another person has said;

- recognising variations in the way things are said in accordance with who is speaking and the circumstances, place and time in question;

- recognising differences in the use of verbal and written language;

- recognising the meaning of phrases in accordance with the situations in which they are used;

- reading and commenting on texts;

- interpreting a written text and writing short texts appropriate to the situation;

- recognising the use of different ways of speaking in accordance with different situations and circumstances;

- recognising changes in the transmission of information;

- recognising the action that is carried out in speaking.

2.4. "CONOCER" in Mexico and mainstream competencies

One of the first tasks of the Occupational Competency Standardization and Certification Council (CONOCER) in Mexico[23] was to carry out an analysis of key competencies, these being understood as types of labour behaviour that are portable and can be applied in different work situations.

CONOCER proposed setting up a national system for the standardization and certification of labour competencies because it had to have a "competencies" map, a standardized national reference for competencies in the world of work, for its matrix of qualifications with the twelve occupational areas and five competency levels. Obviously generic competencies can be transferred from one occupational area to another. This posed the interesting challenge of whether it was possible to identify the generic competencies. If it was, then a great deal of work

---

23 The Council was set up in 1995 in the framework of the Technical Education and Training Modernisation Project (PMETyC), which had financing from the World Bank. For further information see www.conocer.org.mx

> **Types of competencies in CONOCER:**
>
> **Basic:** Those that have to do with knowledge of a training kind, like reading, writing, mathematical arithmetic and verbal communication.
>
> **Generic:** Those that have to do with performance that is common to different organizations and branches of productive activity, including the skills to analyse, interpret, organise, negotiate and do research.
>
> **Specific:** Of a technical nature, connected to a specific productive function.

and duplicated effort could be saved when the time came to describe the competencies in each of the occupations in different areas. The generic competencies already identified could be used, and in each occupation they could simply be added to the basic and specific competencies.

This is how CONOCER came to develop its *Study of the Identification and Initial Diagnosis of the Basic and Generic Labour Behaviour Required in the Mexican Workforce*. The aim was to use this to obtain information about behaviour that was common in the labour market and in basic and generic competencies. This yielded information to support the work of the standardization committees, the bodies in charge of producing technical and labour competency standards. An important point in the use of this study was that the same study had been done in Canada and the United States; this would eventually make it easier to compare results, which was highly desirable given the expectation that there would be regional integration within the NAFTA.

The main results of this study were:

- A data base of common behaviour
- Models of relations between different kinds of behaviour
- Levels of performance, with their associated knowledge, skills and dexterities
- High performance behaviour
- Diagnosis of the qualification levels of the workforce
- Recommendations for the offer of technical education and training

In the first phase the study was oriented to identifying a significant range of generic labour behaviour. The areas identified were as follows:

1. Administration and information
2. Coordination and administration of activities
3. Reading material in order to use the information
4. Client service
5. Communication

    6.   Use of technology

    7.   Interaction with work colleagues

    8.   Quantitative operations

    9.   The management, storage, preservation and manufacture of materials and products

The second phase consisted of setting scales for the depth and scope of types of behaviour:

    1.   Reading

    2.   Writing

    3.   Applied technology

    4.   Verbal communication

    5.   Finding information

    6.   Mathematics

    7.   Organisational environment

    8.   Interpersonal relations

    9.   Decision making

In this way a performance scale was defined for each kind of behaviour, giving information about the depth and scope of that item. For example, for "client service" the scale runs from the minimum level which only involves "verbal communication" up through more complex behaviour such as "finding information" and "decision making".

Once the different competencies have been established, a data base will be available with information about the basic and generic competencies. This will be extremely useful in the work of constructing technical competency standards, and above all in avoiding the duplication of efforts involved in having to analyse the same generic competency in different occupations.

3. OTHER EXPERIENCES WITH KEY COMPETENCIES

This section includes some experiences of a more sectoral and specific nature, normally centred on one occupation or family of occupations. A project aimed at strengthening basic competencies that is led by a workers' union in Brazil has also been included because of its originality.

3.1. Basic and management competencies in SENAI in Brazil

The National Industrial Training Service (SENAI) is the national training institution for the industrial sector in Brazil. SENAI is running a national strategic project about vocational certification based on competencies. In the framework of this project three kinds of competencies have been defined: basic, specific and management.

Basic competencies are essential for occupational performance and encompass the technical and scientific bases, both general and multivalent, on which the specific management competencies relative to professional qualification are based.

Specific competencies encompass technical skills which allow the individual to work efficiently with objects and variables which are directly involved in creating the product. This means mastery of the pertinent content, knowledge and skills.

Management competencies are made up of organisational, methodological and social capacities. Organisational capacities allow the individual to coordinate different activities in work, participate in organising the work environment, administrate the technical, social and economic aspects in a rational and cooperative way, and to use the material and human resources appropriately and safely. Social capacities involve responding to established relations and procedures in the organisation of work and being able to integrate efficaciously, horizontally or vertically, cooperating with other people in a communicative and constructive way. These capacities are portable to different work situations and contexts.

The table below shows some basic competencies and management competencies taken from the "Construction foreman" occupational profile produced by SENAI in the regional department of Sao Paulo.[24]

It is very possible for the management capacities shown in the table to be transferred to other occupations. Besides that, they also allow the competent worker to perform better. Vocational training for key competencies seems to focus on

> Occupational competency is the mobilisation of the knowledge, skills and professional attitudes necessary for performing typical activities or functions in accordance with the standards of productivity and quality required by the nature of the job. Occupational competencies include basic competencies, specific competencies and management competencies.
>
> SENAI, 2002.

---

24   This profile is in the process of being drawn up, and it is included just as an example.

identifying them during the process of drawing up occupational profiles, and developing pedagogic strategies that allow them to be generated throughout the training process. A central theme here is the role which work practice could play in generating these competencies.

OCCUPATIONAL PROFILE: Construction foreman   LEVEL: Qualification of technical level
GENERAL COMPETENCY: To participate in the planning and the work, and to supervise the production planned, coordinating the work, facilitating and creating safe conditions for the activities carried out on the job, and controlling environmental protection measures.
COMPETENCY UNIT: Supervision of the stages of the job

BASIC COMPETENCIES	MANAGEMENT COMPETENCIES
• To know the methods and means of work (equipment, tools, materials, instruments) • To know the specifications of the different materials, equipment, tools and instruments • To communicate on the level of the interlocutors in question • To read and interpret technical texts and legal language • To make reports • Basic knowledge of geometry applied to civil construction • Utilising software applied in civil construction	• To relate the carrying out the work to the total production in its different phases • To control the execution of the work with management tools and instruments and those to do with costs, deadlines, quality and productivity • To manage conflicts • To be the leader • To have initiative • To be pro-active • To have the capacity to persuade and negotiate • To have empathy • To be creative • To know how to delegate • To have self control • To know how to evaluate and self-evaluate • To orient and effect compliance with safety norms on the job

Source: SENAI, Regional Department of Sao Paulo

3.2. Key competencies in the application of ProMES in the sugar industry in Mexico

There is an interesting application of the key competencies approach at the enterprise level in a Mexican sugar mill. This is the application of the Productivity Measurement and Enhancement System (ProMES), and it involves the development of human resources based on labour competencies. The experience started in 1996 and three objectives were set: the first was to help change the work culture, the second was to give effective training, and the third was to bring about an inclusive effect which would encompass each and every worker in the mill.[25]

The training objective included the learning concept known as "*Action Reflecting Learning*". In this, group work sessions are used to externalise experiences, and this brings about the verbal expression of implicit knowledge. Later, as a product of this externalisation and reflection, the people are able to draw conclusions and conceptualise based on their reflections about the activity and the group's problems. In this way a process of formal learning takes place, but it is not structured and it brings into play many competencies that have to do with reflection, analysis and the way people construct their own concepts.

THE MANAGEMENT OF TRAINING IN THE ProMES MODEL

INSTRUMENTS	DEVELOPMENT OF COMPETENCIES
ProMES committees ⟶	Solving problems and managing the process
Guides to self-study and evaluation ⟶	Comprehension and mastery of key competencies
Courses in technical skills ⟶	Specific competencies. Specialisation
Tutoring in the operation ⟶	Operational skills

Source: Mertens and Wilde, op.cit.

---

25 Mertens, Leonard; Wilde, Roberto, "Aprendizaje Organizacional y Competencia Laboral. La experiencia de un grupo de ingenios azucareros en México", in: *Reformas económicas y formación*, Montevideo, Cinterfor/ILO, 2003.

The key competencies for organisation are worked on using guides for self-study and evaluation which centre on competency units such as:

- Communication in work teams and between workers and supervisors
- Cleaning and safety on the job
- Labour relations
- Awareness and commitment on the part of workers to use personal protection equipment
- Worker awareness about product cleanliness
- Worker participation in achieving the objectives in their areas

It is clear that the collection of competencies here correspond to many of the characteristics most frequently required in a job, but besides identifying these key competencies the learning process gives rise to new forms of relating within the group, between the group and supervisors, and among supervisors and managers. These forms of relating are more objective ways of communicating, and they involve dealing clearly with problems that are detected, working jointly in search of solutions, and suggesting alternative solutions during the process. Here again the ProMES system provides a stimulus for developing an important group of key competencies, this time at the level of the enterprise, but which are fully portable to other productive activities in transformation industries.

3.3. Key competencies in civil construction in Argentina

Following an initiative from GTZ[26] in agreement with the INET and the Construction Workers' Union (UOCRA), work was done on designing profiles and technical vocational training curricula in the area of civil construction.[27]

This work developed the concept of the "portability" of a competency, this being understood as the potential that the competency has to be carried over and applied in various contexts. The portability of competencies comes up particularly in the framework of an "occupational family", a concept adopted to show the affinity there may be between different groups of occupations by virtue of belonging to the same sector, having certain technological and technical principles in common, and sharing a certain "training affinity" or knowledge base which would facilitate learning.

---

26 The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) (German Agency for Technical Cooperation) is a German state agency which gives counselling to persons and institutions in 142 countries. In 1997 it began a project to support the National Institute of Technological Education (INET).
27 Catalano, Ana, "Familias Profesionales y Calificaciones Clave en la Construcción Civil", INET/GTZ project, Buenos Aires, 2000.

According to the study, the capacity to transfer competencies from one occupational field to another is based on three pillars:

- the **basic and fundamental competencies** which come from general schooling;
- the **mainstream competencies,** when they generate constructive methodological capacities;
- the **specific technical competencies** in a field which, because of its pertinence, generates the possibility of constructing capacities at a higher level of abstraction and understanding in a way that favours the strengthening of generic capacities in an occupational field.

In the study, training is assigned the role of an activity to mobilise knowledge so as to facilitate the portability of a competency. "The portability of a competency is related to its capacity for contextualisation of the knowledge which may be developed in the subjects."

Hence training should develop a series of capacities which would in turn foster the ability of the worker to transfer his or her competencies from one context to another.

The capacities which favour the portability of competencies are capacities for the following:

- Communication
- Rational thought: analytic-synthetic, causal-final, algorithmic-heuristic, abstract-metaphoric
- Creative thought
- Management
- Responsibility
- Sociability
- Trustworthiness

The study also defines the concept of **mainstream competencies** as capacities developed by individuals as citizens and workers, that is to say they are cognitive and problem-solving capacities which, by their very nature, can be applied in diverse fields of social and labour life. Some of these are as follows:

- To be pro-active and to have initiative, autonomy and creativity in organisation, planning and approach
- A global and systematic approach: dialogue between disciplines
- Critical awareness
- Diagnosis

- Adaptability to different productive or occupational contexts
- Managing uncertainty and the unforeseen
- Construction based on decisions
- Disposition to self-control
- Cooperation
- Disposition to teaching
- Disposition to learning
- Taking responsibility for tasks, processes, missions

The generic competencies which the study establishes for the construction sector are given in the table below.

GENERIC COMPETENCIES IN THE CONSTRUCTION SECTOR

GENERIC COMPETENCIES	DEVELOPMENT INSTRUMENTS
Interpret written or verbal technical information which is presented	Identify codes and symbols Read plans Identify construction techniques requested Establish materials requested Establish the limits and range of the demands of the position
Transfer technical information from documents to the building site	Execute technical information Plan sub-process activities Communicate sub-process activities to the work team
Select technological resources, tools, materials, safety elements and work techniques in line with criteria of cost, quality and safety	Identify resources considering criteria of cost, quality, productivity, safety and time
Evaluate the application of safety and quality norms, and establish guidelines for continual improvement	Identify safety and quality criteria pertinent to the sub-process Develop methodology for its application Develop evaluation standards for the introduction of continual improvements

GENERIC COMPETENCIES	DEVELOPMENT INSTRUMENTS
Establish technical cooperation and functional relations with the agents in the other sub-processes	Listen to problems, ideas and proposals from other sectors Exchange information Give and request help Explain problem situations Work in coordination with others
Manage the material and human resources necessary to progress in the job in line with the conditions of quality, safety and time established	Identify magnitudes of the elements Relate the information obtained to the job Apply systems of control for the site store Evaluate the performance of the work group Establish training action
Administer the work in accordance with the budget established	Determine the characteristics and quantity of inputs, tools and equipment Select the purchasing system Evaluate progress in the job with the values budgeted and paid Pay salaries and wages in line with legal standards Establish work schedule
Manage the commercial relations which make it possible to obtain work to do	Negotiate the characteristics of the job, budget and payment conditions with third parties Negotiate costs, terms of payment, and the delivery of inputs and equipment with suppliers Receive payment of the appropriate amount for each service and control compliance

Source: Ocupational families and key qualifications in construction, INET/GTZ.

3.4. Key competencies in the software and internet services industry in Argentina

A recent study in Argentina[28] about the dynamics of the supply and demand for competencies in one of the so-called "knowledge industries" in the "new economy" can serve as a good reference for analysing the mix of key competencies which are in demand in this sector.[29]

Technical competencies are necessary in this area but not sufficient to be able to operate effectively. The sector has a high propensity to change on the technological level and as regards the content of work and organisational structure. The workers in this sector have always been well qualified, but they have to operate in an ambit in which they are exposed to continual changes in structures and in network procedures with colleagues, and there is pressure from clients for immediate replies. In short, in view of what is required, technical training alone is not enough for competent performance.

The key competencies for this sector include the capacity to communicate with clients and consumers, to manage expectations, to influence and negotiate, to be a manager so as to be able to handle work teams, projects, clients, suppliers and resources, and also the capacity to analyse and solve problems.

One of the most sought-after competencies in this sector is the capacity to work in a team. Enterprises consider this an essential tool to be able to cater to clients and to the market. Competency in problem solving is also important.

One of the important characteristics of this study is that it contains a list of competencies that are connected to entrepreneurship. In this, the people who were polled stated where they acquired their competencies. It should be made clear that there are many small and middle-sized enterprises in this sector; in fact more than 80% of the enterprises have less than 30 workers.

The list of key competencies for entrepreneurs in the computer sector include the following:[30]

- problem solving
- motivation for business
- capacity for social relations

---

28 Novick, Marta, "La dinámica de la oferta y demanda de competencias en un sector basado en el conocimiento en Argentina", in: *Reformas económicas y formación*, Cinterfor/ILO, Montevideo, 2003.
29 According to this study, in the year 2000 the software industry employed some 15,000 people and generated around USD 2 thousand million in sales.
30 This study was based on a survey in the IADB/DBJ/UNGS project "Entrepreneurship. Comparative Study in Latin America and Asia".

- capacity to take risks
- negotiating skills
- capacity for team work
- creativity
- aptitude for hard work
- competencies for planning
- communication skills
- the ability to motivate people

In most cases, it turns out that these competencies were acquired through work experience. The people surveyed also said that education was the main generator of "technical knowledge". Thus the key competencies match up with the experiences of the entrepreneurs themselves, who believe that they acquired and developed their competencies through work experience.

3.5. Key competencies and new training programmes for young people

In Latin America the vocational training of young people is especially important, and one of the reasons for this is the pressure that this age group is putting on the demand for employment and labour training and updating. The unemployment rate for young people is not only the highest for any group (over 15% on average), but also it is usually two or three times higher than the national average in almost every country in the region. In total young people account for more than half of all unemployment in Latin America.[31]

Youth unemployment almost always goes hand in hand with a wide range of weaknesses which cause the key competencies of these young people to deteriorate. These shortcomings are deficient cognitive and educational competencies, a lack of social skills, no integration into contact networks, a lack of the capacity to deal with, face and propose efficacious solutions to problems, and lastly, a deterioration in the competencies that have to do with self-esteem and the search for self-development.

This deficiency in key competencies often originates from adverse circumstances such as extreme poverty, social marginalisation and early school drop-out.[32] In the region, the systems of education and work training are increasingly

---

31 ILO, *Labour Overview 2003*, Lima, ILO Regional Office for Latin America and the Caribbean, 2003.
32 Young people who are considered "poor" rarely have more than 8 years of education, Gallart, María Antonia. (coordinator), *Formación, pobreza y exclusión: Los programas para jóvenes,* Montevideo, Cinterfor/ILO, 2000.

having to face the challenge of handling this group and facilitating the development of knowledge and key competencies which would help them with labour insertion and to retain employment.[33]

In the 1980s the programmes that focused specifically on the problem of youth unemployment concentrated on "technical" or "specific" competencies, and sought to develop operative capacities that were usually specific to the ambit of one occupation. Today, on the other hand, there is more awareness among those who formulate active employment policies, and also among training institutions, that it is important on youth training programmes to develop skills for employability.

Many training programmes have begun to tackle the question of how to develop a group of competencies about which there can be a consensus as to their importance for improving employment possibilities and creating the capacity to adapt to continual changes in the labour market.

A superficial analysis of some experiences in the Latin American region shows that training has been geared to various groups of key competencies, which are sometimes called basic competencies, and these are borne in mind when the time comes to execute training.

There is a wide-ranging and varied debate about where to set the conceptual limits between key competencies and technical competencies, and also the limits between competencies and skills. Here we present a proposed classification of key competencies. It is intended to serve as a reference for describing the experiences which we will describe below, and it is useful because each of the experiences tends to emphasise one or more of the five groups in this classification.

---

33 There is a thorough analysis of this situation in Aro, Pekka, *Empleo y Formación de Jóvenes*, Bulletin 151, Cinterfor/ILO, Montevideo, 2002.

Classification of key competencies

COMPETENCY AREA	CONTENT
Cognitive	Language, communication, logical mathematical thought.
Problem solving	Observation, analysis, identifying the parts of a problem, suggesting creative solutions, critical thought, the planning and management of projects. Adaptation to the context.
Self learning and self knowledge	Being informed, motivation to learn, learning to learn, concern with one's own development, knowledge of one's capacities, transferring knowledge from one context to another.
Social	Working in a team, the capacity to negotiate, construct arguments and interaction. Getting others to understand one's point of view. Self-confidence, seeking and maintaining networks of social contacts.
Motivation for work	Initiative, responsibility at work, commitment and interest at work.

Source: Adapted from *Defining and Selecting Key Competencies.* Rychen. Salganik. *Competencias Transversales*, Masariegos, Sopena and others.

Basic competencies for social insertion:[34] A recent UNESCO study analysed the interface between basic competencies and technical competencies on various regional youth training programmes.[35] That study presented three experience which are reviewed below.

The first was an experience promoted by the Centre for Research and Development in Education (CIDE) in Chile.[36] This experience was based on the idea

---

34 The term "key competencies" is not used here because the term used in the information source is respected. As was explained previously, the literature about this subject employs different names and conceptual approximations.

35 Milos, Pedro, *Cómo articular competencias básicas y técnicas en la capacitación de jóvenes*, Paris, UNESCO, IIPE, 2003. (www.unesco.org/iipe)

36 This is a private independent body with vast experience in training young people from marginal sectors of the population.

that there is a deficiency in basic competencies in Chile, a state of affairs that was brought to light when the International Adult Literacy Survey was carried out in that country.[37] It was based on the conviction that rather than technical competencies, what labour performance demands is a series of basic skills that have to do with written and verbal communication and logical mathematical thought. According to the CIDE model, these competencies can be developed through a focus on solving problems, and they involve six main skills.

The six skills in the model are shown in the table below.

CIDE: Basic skills:
Comprehension of verbal and written language and mathematical thought

SKILLS	DESCRIPTION OF CAPACITIES	
	COMPREHENSION OF VERBAL AND WRITTEN LANGUAGE	LOGICAL MATHEMATICAL THOUGHT
IDENTIFY	Identify key words in a determinate situation Identify relevant information to be able to respond to specific questions Recognise the context in which a situation is framed	Identify data Identify the question or questions Recognize the problematic situation in context
ANALYSE	Break down the situation or text into its parts Discriminate and differentiate relevant and irrelevant aspects Determine the variables which impinge on the situation Determine what is necessary to be able to understand the situation	Separate the data that is pertinent for understanding the problem from that which is not Identify the variables involved in the problem Establish the needs for information when this is not complete
RELATE	Combine all the variables simultaneously and successively and/or determine the nexus and connections between the parts of the situation Relate the data to previous knowledge about the situation	Establish the relation between the data and the question Combine all the variables in the problem simultaneously and successively Determine the nexus and situations among the objects involved in the problem

37   International Adult Literacy Survey (IALS), OCDE (1998). This survey found that more than half of Chilean adults do not understand written texts and are only able to make basic inferences about what they read. (www.ocde.org)

SKILL	DESCRIPTION OF CAPACITIES	
	COMPREHENSION OF VERBAL AND WRITTEN LANGUAGE	**LOGICAL MATHEMATICAL THOUGHT**
PLAN	• Select and plan an alternative which will subsequently provide a solution for a problem, determined in line with the requirements of the stated situation	• Set out the possible strategies for a solution • Decide on the most suitable strategy to solve the problem
EXECUTE	• Make the situation known, either verbally or in writing, depending on the situation and the demands	• Carry out the plan • Communicate the solution in a way coherent with the problem
EVALUATE	• Verify whether the planned objective was achieved • Revise, check, and return to the variables which influenced the process (if the objective was not achieved)	• Check whether the objective has been achieved • Verify the causes of the deficiencies which could impede reaching the objective • Select one response among various viable ones

Source: Adapted from Milos, Pedro, op. cit., UNESCO (2003).

The second experience described in the UNESCO study was carried out by the Uruguayan organization "Foro Juvenil" (Youth Forum).[38] In this, the development of basic competencies was linked to social elements which have a positive impact on capacities for relating and interacting. The experience was based on the idea that the lack of social competencies among young people, which has its roots in factors like poverty, the immediate environment and the consequent absence of social networks which could stimulate contact and interaction, is a barrier to labour insertion.

The "Foro Juvenil" model involves the successive development of social competencies in four stages which run parallel to the training process. These stages are shown in the table below. The pedagogic model reinforces the competencies of reading, writing and mathematical calculations in the training context.

---

38 "Foro Juvenil" is a private, independent, non profit organization oriented to social development. It has been in operation in Uruguay since 1981.

"Foro Juvenil":
Social skills in function of the stages of the training process

TRAINING PROCESS	SKILLS
Initial level	• Acceptance of Rules • Adaptation • Respect for others
Process level	• Valuing rules and norms • Flexibility • Respect for diversity
Affective base level	• Contact with reality • Personal modality • Self respect
Result level	• Personal and social development • Responsibility • Initiative • Cooperation and group work • Self knowledge, self esteem, maturity

Source: Adapted from Milos, Pedro, op. cit., UNESCO (2003).

The third experience comes from the Vocational Training Network of the Archbishopric of San Isidro in Argentina.[39] This concentrates on a group of basic competencies which are usually provided by education, but the added value here is that there is an attempt to develop them through the formulation of "technological projects."

The design and formulation of the project fosters the development of a group of skills that underlie the organisation of an activity for young people which, like the project, requires the projection of objectives, targets, resources and time. The competencies include working in a team, organising, reflecting about reality, problem solving, seeking information, adopting safety and hygiene measures at work, etc.

---

39 The Vocational Training Network of the Archbishopric of San Isidro was set up in 1985 through an agreement with the General Board of Culture and Education of the Province of Buenos Aires.

Archbishopric of San Isidro
Competencies developed during the preparation of a technological project

PHASES OF THE PROJECT	SKILLS INVOLVED
Problematic situation	• Identifying the problem situation which will be solved through the project • Characterising the real starting point of the situation
Strategic situation	• Formulation of a strategic situation which will allow the problem to be solved (the path to solve the problem)
Design	• Draw up a specific plan of form and content, including the activities which will lead to achieving the expected results and the competencies involved
Organisation and management	• Programme the running of the project • Define tasks and functions
Application	• Execution of the project • Carrying out the tasks in line with the programme
Evaluation	• Analysing what was learned and correcting errors

Source: Adapted from Milos, Pedro, op. cit., UNESCO (2003).

Social competencies and entrepreneurship: The Don Bosco Industrial Polygon (PIDB)[40] is a private educational institution in El Salvador whose educational activities include running an interesting combination of formal education and a programme to train young people for productive life. The process of setting up the PIDB began in 1986 with an effort to salvage a marginal area adjacent to the Don Bosco secondary school in the city of San Salvador. In that area, a group of cooperative enterprises were set up. There were different kinds of businesses such as automobile repairs, shoemaking, tool making, printing, aluminium, plastics, clothes making, baking and carpentry. Eventually the need to offer training to the members of these enterprises led to the setting up of an institution to support enterprise development: the Technical Institute of Entrepreneurial Workers (ITOE), which is part of the PIDB effort.

---

40   See Casanova, Fernando, *Local Development, Productive Networks and Training.* Cinterfor/ILO, 2004.

The PIDB runs a work programme for juvenile delinquents who in most cases had been in urban gangs and had been sentenced by the legal system. The PIDB offers them an option of training, rehabilitation and social insertion during the period that they are serving their sentence. The PIDB training model uses the ITOE to develop competencies in business undertakings, creativity and initiative, with the emphasis on solidarity and working in a team. This was chosen in preference to simple training in basic competencies, and it has helped enormously in re-socialising the beneficiaries. In this regard, the ILO Recommendation can be quoted in the sence of helping and supporting people to develop and put into practice their entrepreneurial capacities so as to create decent jobs for themselves and for others, through education, training, lifelong learning and other policies and programmes.[41]

Competencies that have to do with self development are also dealt with through the use of an inductive methodology based on the young people's own personal history. The aim is to help them to recognize their own potential, and raise their self esteem and self confidence. This component gives the young people the capacity to set their own targets, and to be able to take advantage of their educational and entrepreneurial experience in the PIDB.

Other key competencies that have to do with living in a community and creating social networks are being stimulated by the way the PIDB works. It is in effect an institution connected to community development in the immediate area, and its work philosophy gives it a fluid relationship with the young people and with the community they come from. The development of these kinds of competencies is essential in cases where poverty and marginalisation are so severe that they affect the young people's social conduct and make an intervention necessary. This is not necessarily academic intervention, but rather it is geared more to a specific collection of social competencies.

Competencies for employability: the "Preparado" programme in Chile. The "Preparado" programme[42] has the perspective of competencies for employability. It has identified a group of competencies and is seeking to have them introduced into the regular curriculum in educational establishments, in secondary technical vocational education and in technical training for adults. The focus is employability, understood as the capacity to obtain employment, retain it and progress in the organization contributing with it.[43]

---

41 ILO Recommendation concerning the development of human resources, 2004.
42 This organisation comes under the Ministry of Economy, Promotion and Reconstruction in Chile, and it is promoted by the Chile Foundation and financed by the Corporation for the Promotion of Production (CORFO).
43 Chile Foundation, "Preparado": Programa de competencias para el trabajo, Guía de Trabajo, Santiago, 2004.

Different strategies can be used, and this depends on the kind of educational establishment in question and the target population. The programme is expected to contribute to improving possibilities to find work, either as an employee or in self employment.

The competency areas defined by the "Preparado" programme are communication, entrepreneurship and the ability to start an undertaking, project planning and management, working in a team, problem solving, learning to learn, developing a career, and the use of technologies.[44] Each of these areas is made up of various competencies, and examples of three of them are given in the table below.

Three areas of competency in the "Preparado" programme

AREA	COMPETENCY
Communication	• Express oneself clearly, both verbally and in writing • Communicate in non-verbal language • Be assertive
Entrepreneurship and undertaking	• Adapt to a new situation • Translate ideas into action • Be creative
Project planning and management	• Set objectives • Gather, organise and analyse information • Develop and manage projects

Source: "Preparado" programme. Work Guide. 2004.

3.6. Basic competencies and citizenship: The CUT "Integrar" programme in Brazil

The trade union organization CUT in Brazil designed the INTEGRAR programme for coordinating work on vocational re-training and competency certification with recuperative schooling and certifying basic teaching.[45]

The programme helped both employed and unemployed workers. For unemployed workers the emphasis was on school levelling and acquiring the fun-

---

44 For further information see: www.preparado.cl
45 The average schooling of a worker in the metallurgical sector is three and a half years. This programme is financed with resources from the Workers' Protection Fund (FAT), and follow-up is done by the Ministry of Labour and Employment in Brazil.

damental competencies for life as a citizen, the latter being a competency that is often absent from the daily lives of men and women workers because of their low educational levels. This is a perspective of social inclusion in which the competencies to participate as a citizen, and competencies for life, widen and enrich the traditional conception of employability.

INTEGRAR's regular courses ranged from the typical subjects of basic education to familiarisation with the rudiments of computer skills in classrooms that are equipped with computers, and even to so-called "pedagogic laboratories". These laboratories were a source of information about industries, public bodies, civil organizations and areas of the city, and they suggest alternatives for generating employment and income, and cultural events. This facilitates learning, and training for citizenship, and the full exercise of the individual's rights.

In addition, the programme was geared to competencies for employability, and it held "Pedagogic Workshops for Sustainable Development" whose function was to train unemployed people and organise them to construct projects to generate work and income. Workers, members of the community and the local union all took part in the workshops and worked to identify and analyse alternatives to escape from unemployment.

The courses were open and they consisted of modules, so they could be interrupted and then re-entered later on. The total content was 14 modules, which could take 700 hours spread over ten or twelve months.

Technical areas included in the INTEGRAR programme:

- productive re-structuring
- applied mathematics
- measurement control
- reading and interpreting diagrams
- computers

Basic areas included in the INTEGRAR programme:

- Portuguese
- English
- Geography
- History
- Physics
- Chemistry
- Biology
- Basic mathematics

Although the programme does not use the term "competencies", it is clear that many of the areas included on the list amount to key competencies, above all the "technical areas" in the first group.

The programme awards a certificate of completion of basic education (which normally lasts 8 years in Brazil), and it has been suggested that certification be awarded for competencies acquired through work experience, in addition to the certification of basic education already awarded.

SOME CONCLUSIONS

The application of the key competencies approach is growing and is being taken into account more and more in Latin America and the Caribbean. There are different conceptual approaches, each with its own slant on the question and each centred on a slightly different area.

The first of these is the link between core skills and employability. This conception emphasises the capacity of certain kinds of competencies to be applied in various labour contexts regardless of the particular job in question. This conception has sparked off a lively debate and it is strongly opposed by those who maintain that employability cannot be a final aim that is attributed only to the worker. This is the main position taken by the unions when they wish to defend the idea that ministries of labour and education should facilitate conditions to improve access to training and promote the lifelong learning of workers.

The second approach associates key competencies with solid basic training. This perspective emphasises the problem of low levels of schooling among most adult workers in the region. The focus here is on trying to raise basic competency levels, and it has been made the central core of the lifelong learning programmes that are under way in Chile, and in the training of adults throughout the region.

There is a third approach which stresses the key competencies required to perform successfully in a particular occupational sector. This is the case of competencies that are essential for specific sectors like industry or construction, and also competencies that are key for enterprises.

III. RECOGNITION OF PRIOR LEARNING AND CERTIFICATION OF LABOUR COMPETENCIES

Measures should be adopted, in consultation with the social partners and using a national qualifications framework, to promote the development, implementation and financing of a transparent mechanism for the assessment, certification and recognition of skills, including prior learning and previous experience, irrespective of the countries where they were acquired and whether acquired formally or informally.

ILO Recommendation 195 concerning human resources development, 2004

Introduction

In this section we will analyse some experiences in Latin America that involve the recognition of prior learning. We begin with a concept which, in the region, is usually called "the certification of labour competencies", and then we present a summary of various experiences that have to do with the recognition of competencies. The aim is not to make an exhaustive list of experiences but rather to try to point out the most significant characteristics, and also to show that there is no one best model. Lastly, we will show how the certification of competencies should be included in national policies for developing human capital in a country.

1. CERTIFICATION: CONCEPT, IMPORTANCE[1]

In Latin America, interest in competency-based training and certification[2] has been growing for a number of years. In fact, even before the advent of the labour competencies model, Cinterfor/ILO ran a regional project on occupational certification that was oriented to the formal recognition of occupational qualifications irrespective of how they were acquired.

---

1   Mainly taken from: "Cuatro afirmaciones sobre Certificación. Todas falsas", *Boletín de Formación Profesional* No. 153, Cinterfor/ILO, 2002.
2   In the European literature on this subject the term 'recognition of prior learning' is more commonly used.

In a work project carried out by Cinterfor/ILO in 1979,[3] certification was defined as "formal recognition of workers' occupational qualifications regardless of how they were acquired."

> The importance of mechanisms for "recognising prior learning" was emphasised during the International Labour Conference (June 2004). The member states approved a new recommendation concerning human recourses development, and in the discussion special attention was paid to the certification of skills acquired in work as a means for promoting lifelong learning and employability.

In the text of the new recommendation about human resources, in the section on the recognition and certification of vocational aptitudes, it says: *Measures should be adopted, in consultation with the social partners and using a national qualifications framework, to promote the development, implementation and financing of a transparent mechanism for the assessment, certification and recognition of skills, including prior learning and previous experience, irrespective of the countries where they were acquired and whether acquired formally or informally.*

Such an assessment methodology should be objective, non-discriminatory and linked to standards.

The national framework should include a credible system of certification which will ensure that skills are portable and recognized across sectors, industries, enterprises and educational institutions.

Special provisions should be designed to ensure recognition and certification of skills and qualifications for migrant workers.

Today we can identify a number of experiences in the discussion, design and implementation of labour competency certification systems which have originated basically in training institutions, ministries of labour and ministries of education, or from human resources management in enterprises.

In this section we will analyse these groups of experiences and how they represent not only the institutional level involved but also the intentions and objectives sought through certification.

| 3   The project DOCREF/SEM 128/1, Cinterfor/ILO, 1979.

> The concept of competency certification in training has to do with the formal recognition, which is valid for a specific time period, of the capacities demonstrated by people in labour performance in a determinate occupation, irrespective of where these capacities were acquired.

The vocational training intuitions in Latin America and the Caribbean have sought to modernise their programmes by implementing the competencies approach. This has allowed them to accede to new ways of analysing work processes and procedures for identifying the knowledge, skills, dexterities and know-how mobilized by workers.

The new capacities developed in this way constitute a unique opportunity to update knowledge about training in order to modernise the didactic strategies needed to stimulate the competencies considered to be "key", like working in a team, initiative, working in safe conditions, etc.

Normally the certificate is awarded at the end of the teaching or learning process, when the candidate has successfully passed all the evaluation tests and examinations. This conception is very similar to the idea of training which held sway when the mass production model prevailed and, unlike today, when work experience was not considered as a source of learning.

The first attempts to set up a system for recognising prior learning came about in processes called "validation" which concentrated on evaluating labour capacities. In this way the concept of diagnostic evaluation developed. This is done with the aim not of recognising demonstrated capacities but of identifying the needs for developing new capacities. Many national vocational training institutions carried out validation experiences in the 1970s and 1980s, and most still run systems of this kind.

In addition, various ministries of labour and education in different countries in the region

> **Some outstanding events**
> **in the recognition of prior learning:**
>
> In Costa Rica, INA has a work unit specialised in providing a certification service through which that institution recognises competencies demonstrated by an individual, regardless of the way they have been acquired.
>
> In Colombia, since the 1970s, SENA has been carrying out experiences of "occupational validation" using test banks to identify the candidates' capacities measured against a standard, which was the organisation's training programme. The institution awarded a certificate of occupational aptitude to those who passed the tests, and provided complementation courses for the skills that were lacking.

121

have promoted the public recognition for labour capacities which would facilitate the connection of supply to labour demand and which would give greater transparency to work relations. The government sector wants to play a key role in regulating training and certification, and very often this has been reflected in its active participation in promoting debate and national projects in the area of training and certification.

The motivation behind this attitude on the part of the public sector is the need to increase the quality and pertinence of training so as to make the industrial base of the country more competitive. There is also a need for greater transparency because there are so many training offers and so many different kinds of training certification that it is difficult be sure what the competencies that trained workers have really consist of. Another line of action is to improve access to training and the recognition of labour capacities acquired in working life.

A nationally accepted certificate of labour competency would be useful because it would be reliable and would represents real capacities that are very significant for work performance. It would show that the worker has demonstrated these competencies, regardless of how he had acquired them, and this would allow possible employers to clearly understand the competencies in question.

We will give two examples of experiences promoted by ministries of labour or of education: the experience in Mexico with the Technical Education and Training Modernisation Project (PMETyC) and CONOCER, and the fledgling experience in Chile, the "Chile Califica" project.

Lastly, there are number of **enterprises or groups of enterprises** carrying forward processes of training and the certification of labour competencies to improve their own productivity or to meet the international standards usually associated with people's safety.

On the first point, enterprises in certain economic sectors have developed labour competency models for managing their human resources. To this end they have defined profiles whereby their workers can obtain certification and thus improve their possibilities of labour mobility, and here the certification of competency is associated with executing training programmes and with the occupational mobility of workers. On the second point, there are sectors in which work certification normally takes place, for example precision welding or gas installations in domestic housing or in industrial premises. The great challenge in these situations is how to include them in a system of standards that has nation-wide scope, and, even more difficult, how to integrate them into the concept of a national framework or reference for qualifications.

The diagram below shows the different expectations which are converging towards certification.

Different expectations for certification

GOVERNMENT
Equity
Employment
Transparency

TRAINING
INSTITUTIONS
Curricula
Pertinence
Catering to demand

CERTIFICATE

UNIONS
Training
Bargaining
Remuneration

ENTREPRENEURS
Productivity
Competitiveness
Mobility
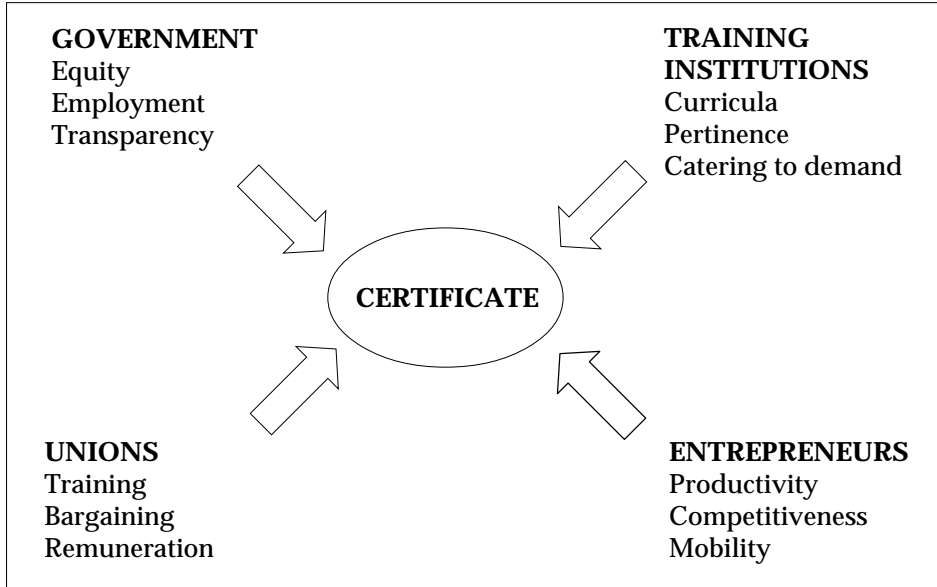
In addition to the interest that employers have traditionally shown in having competencies certified as a good indicator of the labour competencies of candidates for a certain job, the unions in the region are more and more coming to favour the development of mechanisms for recognising acquired competencies. The VTIs, which have a long tradition in the region, have managed to position their respective competency certificates in line with the legitimacy and prestige which these usually confer on the holder.

This varied range of different interests requires a good institutional structure to allow the development of different roles that are coordinated in such a way as to cover the criteria of quality, coverage and pertinence. In general, the discussion about training and certification systems in the region begins with an analysis of the need for institutional organisation which will give legitimacy and validity to the certification of competencies.

2. CERTIFICATION IN LATIN AMERICA. SUMMARY OF SOME EXPERIENCES

To facilitate the analysis of the labour competency certification experiences in the region we have classified them into two broad categories. The first is the group for which the initiative to organise certification processes comes from the public sector, usually from the ministry of education, the ministry of labour or the country's national vocational training institution. These kinds of experiences normally have national coverage, and they are set up with a scope of action which tends to cover a number of occupational sectors in the labour market. The public interest tends to dominate in these experiences, factors such as equity and access in an inclusive perspective carry a lot of weight. We will describe the most developed experience in the region, which is CONOCER in Mexico, and also experiences in Brazil, Chile, Colombia and Costa Rica.

The other broad group is made up of experiences for which the initiative in the certification process comes from the private sector, almost always limited to a specific occupational sector. Normally, in these cases, evaluation and certification are linked to selection and development in human resources management. Although the models tend to be voluntary, for a worker not to have certification can become a barrier to obtaining a particular job.

2.1. Certification experiences oriented by ministries of education and national training institutions

In this section we outline the experience of the Brazilian Ministry of Education with the Law of Basic Guidelines for Education and its implications for certification, the progress of the SENAI in Brazil, the "Chile Califica" programme which involves the Ministries of Education and Labour, the SENA in Colombia, the INA in Costa Rica and the CONOCER in Mexico, which is oriented by the Secretary of Public Education.

2.1.1. Certification in the ambit of education for work: the case of Brazil

In Brazil, the Law of Basic Guidelines (LDB in Portuguese) for National Education (Law 9.394) was promulgated in 1996. This set up a new framework for vocational education in the country. The LDB stipulates that vocational education must promote the transition between school and the world of work, and train young people and adults with knowledge and general and specific skills for the exercise of citizenship and for productive activities.

124

The LDB establishes three levels for vocational education, which are basic, technical and technological. The basic level deals with the training and re-training of workers regardless of their level of schooling. The technical level is aimed at students who have completed secondary education (after some 11 years of education), and the technological level involves higher level courses geared to students who have completed the secondary technical level. The LDB, and a subsequent ruling (Decree No. 2.208 of 1997) establish the possibility of recognising competencies acquired in work so as to allow the continuation of studies. Without doubt this ruling is a great step forward in that it accords value to work experience. It accepts that vocational competencies can be acquired outside the formal education system, and so represents progress in valuing work as a generator of capacities and knowledge.

At the moment, the regulation of the different phases and institutions is in the process of being set up. There is a high level of participation on the part of different public and private actors in the debate about the structure and functions of the bodies in charge of carrying out the recognition of competencies. There is a clear differentiation between the LDB certification to be able to continue studying, and the certification of competencies which are valued only to be able to perform in a labour ambit.

For the former, certification for continuing studies, it is the federal and state systems which will set examinations and establish the recognition of competencies which allow disciplines or modules in the training courses to be revalidated. In the latter, that oriented to labour performance, progress is being made in the discussion and dialogue between public and private actors. In this, the National Education Council is in charge of organising a "national system of competency-based certification and also of the different bodies which will contribute to this process. Employers and workers are taking part in this process.

2.1.2. The SENAI Training and Competency Certification national strategic project in Brazil

The National Industrial Training Service (SENAI), which is the national service for training in the industrial sector in Brazil, has formulated a strategic project oriented to designing and setting in motion the SENAI Certification System. This project is based on consideration of the fact that, in practice, workers acquire competencies that are amenable to being recognized. The best opportunities for employment always go to those who can show that they have studied.

So as to facilitate the recognition of these competencies, the SENAI is working on a project geared to developing mechanisms to allow workers to obtain a labour competency certificate which is recognised and valid.

This "vocational certification" project is supported by a number of pilot schemes that are under way in different states and training schools. In these, the process of identifying competencies and preparing training programmes is being built up. On this foundation, a procedure has been set in motion which allows people who voluntarily come forward as candidates to obtain a certificate of labour competency.

The diagram below shows the process of certification in the system. The SENAI proposal is that the evaluation that takes place during the educational process should be different to that which is applied in the recognition of competencies.

THE CERTIFICATION PROCESS
Candidates with previous occupational experience
or training connected to the occupation
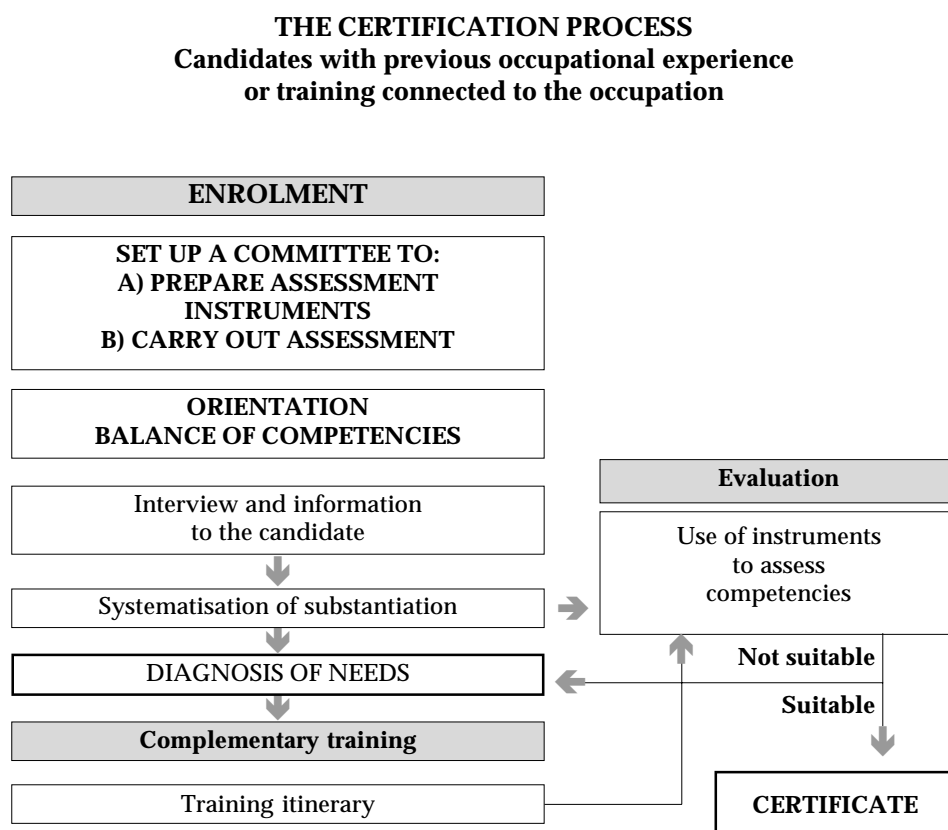
Source: Methodological Document. Evaluation and Certification, SENAI.

The SENAI experience has been enriched by the pedagogic and educational experience of the institution. A team of technicians from at least nine regional departments have developed a methodology manual which covers the process of constructing profiles through setting up sectoral technical committees, curricular design and evaluation, and competency certification.

The SENAI certification system is being designed so as to actively involve enterprises, and to promote human resources policies which favour the recognition of competencies for developing a career. The system is conceived as open and inclusive, and it will take as a reference the occupational profiles prepared jointly with representatives of enterprises and workers in the sectoral technical committees.

The SENAI experience shows the great educational value which the evaluation of competencies has when it comes to certification. Consequently, a complete guide for preparing evaluation instruments has been written. Among other things, this guide proposes that a committee be set up to prepare evaluation instruments, and that it should be made up of a specialist in evaluation and a specialist in the content of the job to be evaluated. There is also a committee which applies the evaluation instruments, and which is made up of SENAI teachers who have not taken part in the training of the candidates (if there has been any) and an outside specialist.

Competency evaluation and certification that is carried out by training institutions like the SENAI have the great advantage of appreciating the training capacity of evaluation since they consider it as a means towards qualification and not as an end in itself. This facilitates the presentation of training plans for the candidates which leads them to develop their competencies beyond what is required for merely measuring those competencies.

2.1.3. An experience in full expansion: "the SENA in Colombia"

The SENA is responsible for designing and constructing a system which coordinates the whole public and private technical education supply. This is in line with what is laid down in Decree 1.120 of 1996, which makes the National Training System the leader of this undertaking in the country. One of the bases of this work is to organise dialogue with a view to preparing the competency standards. These spaces are called "sectoral committees", and they are made up entrepreneurs and representatives from workers' organizations, the public sector, research centres and educational institutions.

127

The first committees were set up in 1997 for sectors that were considered to be strategically important for the country and for sectors with which the national government had agreements about exporting competitiveness.

Colombia now has 31 sectoral committees with representatives from unions, employers, educational bodies, government bodies, workers' organizations and research centres, and along with the SENA training centres they have contributed to drawing up characterisations, functional maps and labour competency standards and titles. In line with Resolution 8.728 of March 2001, national and international bodies are empowered to apply for accreditation to the Superintendent of Industry and Commerce to become personnel certification bodies.

Decree 933 of April 2003 gives the SENA the power to regulate, design, standardise and certify labour competencies. This meant that SENA was chosen rather than any of the other organizations that had been pressing for the role of setting up new certification bodies.

The National System of Training for Work[4]

In order to coordinate social actors in the country, this system connects up a group of organizations which offer technical, technological and vocational training. The aim is to structure the training response through identifying and defining national labour competency standards. It acts systematically to make the training supply of the bodies in the system congruent, to systematically and efficaciously match the training supply with the needs of the world of work, and to coordinate with the formal educational system by setting up transparent mechanisms of equivalences and homologation.

The System of Training for Work is made up of a number of sub-systems.

• **The Standardization of Labour Competencies sub-system**

The aim of this sub-system is to organise, structure and run processes which will, in cooperation with the productive and educational sectors and the government, establish national labour competency standards to facilitate the operation of evaluation, certification, training, and human resources management. In the National Development Plan, the government established that SENA would be the national labour competencies standardization body for Colombia.

---

4   Taken from www.sena.edu.co

- **The Labour Competency Evaluation and Certification sub-system**

The objective here is to set up and operate a system to evaluate and certify people's labour competencies in line with national standards. This evaluation and certification makes it possible for people's labour competencies to be recognised in society regardless of how they were acquired, and it thus facilitates people's possibilities for promotion and work.

• **The Modernisation of the Training Supply sub-system**

This sub-system is geared to coordinating the supply of technical and technological education and vocational training bodies in the country so as to modernise and improve their curricula in line with the needs and demands of the productive sector, thus guaranteeing greater coverage and quality services which will contribute to national competitiveness. It will also design tools and mechanisms for homologation, equivalences and revalidation among the different levels of competency-based training and the levels of study in the formal educational system. This will facilitate the transfer and mobility of people between the two systems so that there will be continual improvement.

The "SENA vision towards 2006" is a medium term strategic plan to work on the "Standardization and Certification of Labour Performance" along the following lines:

- To propose state policies for the standardization and certification of labour performance.
- To establish the Standardization and Certification of Labour Competencies System in association with other actors who are involved. The SENA will be the national body in charge of standardising and certifying workers' labour competencies.
- To guarantee the operation of the Accreditation and Standardization of Labour Competencies System through consultation, follow up and control of the organizations which make it up.
- To consolidate the sectoral committees.
- To lead, and to position the Colombian standardization model in the Andean Community of Nations (CAN).
- To lead the coordination between the different levels and modalities of education and training for work in the training chain (secondary technical level, technological and university).
- To evaluate the quality of the national offer of technical education and of integral vocational training based on national labour competency standards.

- To train evaluators and auditors for the certification of workers' performance.

The SENA has produced a *Manual for Preparing Competency Standards* and a *Manual for Curricular Design for Competency-based Training.* In the 31 sectoral committees (see table below) 1,234 competency standards have already been drawn up in the framework of 174 curricular structures, which are shown in another table.

SENA Colombia
Curricular Structures by sectoral committees

SERVICES	N° est.	PRIMARY	N° est.	INDUSTRIAL	N° est.	PRODUCTIVE CHAINS	N° est.	PORTABLE	N° est.
POTABLE WATER	8	POULTRY	3	CONSTRUCTION	17	LEATHER FOOTWEAR ACCESSORIES	6	LOGISTICS	9
GAS	10	OIL PALM OILSEED	3	METAL-WORKING	5	FIBRES – TEXTILES GARMENTS	13	MAINTENANCE	1
ELECTRICITY	7	COFFEE	2	HANDICRAFT	2	PETROCHEMICALS PLASTICS RUBBER	4	COMMERCE	8
EDUCATION	1	FRUIT AND VEGETABLES	9	WELDING	2	PULP – PAPER GRAPHICS INDUSTRY	9	HUMAN RESOURCES	2
HEALTH	2	BANANA AGRO-INDUSTRY	2	SUGAR INDUSTRY		FISH PRODUCTION	2	TELE-INFORMATION	5
TELECOMM-UNICATIONS	3	MINING	3			FOREST – WOOD FURNITURE AND WOOD PRODUCTS	2	FINANCIAL SERVICES	7
TRANSPORT	2	ECOLOGICAL AGRO-PRODUCTION	1						
RURAL DEVELOPMENT	1	FLOWERS	1						
TOURISM	14	IRRIGATION	1						
TOTALS	48		25		33		36		32

The tendency in the Nation Training System is now towards organising a national network of institutions of training for work. The idea is to facilitate access to the labour competency standards for public and private institutions outside SENA. These standards will be made available by SENA free of charge to institutions of secondary technical education, non-formal education, ongoing train-

ing programmes in universities, and training centres in enterprises or associations.

The network will have 1,234 labour competency standards in 31 occupational sectors developed by SENA. This will allow the institutions to design competency-based training programmes which meet the standards set by the entrepreneurs in the 31 sectoral committees, a space where social dialogue applied to improving the quality of training is becoming a reality.

SENA Colombia
Distribution of the sectoral committees

SERVICES	PRIMARY	INDUSTRIAL	PRODUCTIVE CHAINS	PORTABLE
POTABLE WATER	POULTRY	CONSTRUCTION	LEATHER FOOTWEAR ACCESSORIES	LOGISTICS
GAS	OIL PALM OILSEED	METAL WORKING	FIBRES TEXTILES GARMENT MAKING	MAINTENANCE
ELECTRICITY	COFFEE	HANDICRAFTS	PETROCHEMICAL PLASTICS RUBBER	COMMERCE
EDUCATION	FRUIT AND VEGETABLES	WELDING	PULP PAPER GRAPHICS INDUSTRY	HUMAN RESOURCES
SHEALTH	BANANA AGRO-INDUSTRY	SUGAR INDUSTRY	LIVESTOCK PRODUCTION	TELE-INFORMATION
TELECOMM-UNICATIONS	MINING		FORESTRY WOOD FURNITURE AND WOOD PRODS.	FINANCE
TRANSPORT				
TOURISM				
8	6	5	6	6

The SENA also plans to offer pedagogic training and labour competency certification to the teachers from these institutions.

2.1.4. The "Chile Califica" experience constructing the concept of lifelong learning

The "Chile Califica" programme aims to contribute to the development of production in Chile, and to improving people's opportunities for progress by setting up a system of lifelong learning.

In Chile the system of training for work is centred on a strategy whereby the Ministry of Labour, through the SENCE, runs a tax exemption scheme. This is fiscal incentive that allows enterprises to recover the investment they make in worker training by deducting that amount from the annual tax payable on profits, so long as the amounts deducted do not exceed the equivalent of 1% of the monthly payroll. The enterprises can choose their own training providers from technical training organizations that are accredited by the SENCE, and thus benefit from the tax exemption for the training costs incurred.

> **The National Training and Employment Service (SENCE)**
>
> is a decentralised technical state body connected to the government through the Ministry of Labour.
>
> Its mission is to contribute to raising national productivity and promoting occupational training both in enterprises and for lower income people in the country.
>
> SENCE does this through a tax incentive which the state offers to enterprises for training their staff, and with a subsidy through a programme of grants for training, financed with public resources.
>
> www.sence.cl

SENCE also controls the funds used for contracting training services with a wide range of technical training bodies. Usually the national funds used for training are distributed on "social programmes" focalised on population sectors that are vulnerable to unemployment, or redundant workers or ones who have only had one job, who generally have low educational levels.

There is an extraordinary range of differences in offers of training, so SENCE gives priority to measures which help to improve quality. Besides making progress in the design and utilisation of a quality standard for the technical training organizations, SENCE also considers that a national competencies framework would be very pertinent.

"Chile Califica" aims to create a system of lifelong learning which will contribute to developing the country and improving opportunities for people to

progress. This is a joint initiative on the part of the Ministry of Education and the Ministry of Labour and Social Security through the National Training and Employment Service (SENCE). It is also supported by the Ministries of Economy and of Agriculture, and by the Chile Foundation.

The objectives of this project include setting up a "National System of Labour Competencies" which will provide a certification service for competencies regardless of the ways or places in which those competencies were acquired. This went into operation in 2002, and is financed by the World Bank and the Chilean government.[5]

The project will orient considerable increases in investment in human resources which will raise literacy levels, particularly in the active population, in an attempt to remedy the deficiencies of the educational and training systems in meeting the development needs of the country. It is focused on improving technical training to make it more effective for the country's development needs, by tackling the problems of coverage, quality and curricular coordination among the different training levels. It also covers the ambit of the recognition of competencies, developing assessment and certification mechanisms in a national system to facilitate training so that this will in turn be able to generate mechanisms to meet identified needs. Assessment and certification can reinforce the improvement in the quality of the training offer.

The project's target is that sector of the active population which needs to improve its competencies, its literacy and schooling, but it also includes young people and workers at the level of technical education and higher level technicians.

The components in the design of the project include developing new possibilities in lifelong learning which cover the adult population with open and flexible educational modalities, and which use financing mechanisms which will foster the levelling of studies and the utilisation of public financing schemes such as the tax exemption scheme in Chile.

Another component is oriented to improving the quality and coordination of technical training by widening and improving the quality of the offer at this level. In this way, decentralised technical training projects in the regions of the country will be promoted, and to this end there are funds to be awarded for increasing the offer and promoting networks or associations which connect up technical training institutions with the productive sector and regional governments.

---

5 The total amount is USD 150.75 million, and the Bank's contribution is USD 75.75 million.

The plan is to develop a national system of competency standards and technical training itineraries which will include setting up a national framework of labour competencies and of competency assessment and certification components, ensuring the quality of the training offered, and improving and adjusting the training supply and technical training programmes that are connected, open and sequential.

Four areas in which "Chile Califica" operates

1. Levelling studies
2. Vocational training
3. Improving technical training
4. Certifying labour competencies

www.sence.cl
www.chilecalifica.cl

The project also caters to the need to train teachers, and to set up an information system about education and training.

The management of the programme has a national level made up of the Ministers of Education, Labour and the Economy, and the National Coordination of the Programme. On the regional level, through the regional director of the programme, needs will be detected and local training agents will participate in the execution of the training in a decentralized way.

In order to have their labour competencies certified, workers have to undergo a rigorous assessment process that is implemented by specialised bodies. They can do this on their own account or through their enterprises.

The assessment process involves an exhaustive review of the candidate's previous labour experience, and there are also knowledge tests, interviews, and direct observation in the work place.

Instruments that have been specially designed for the process and validated by the sectors in question are used.

There is indirect as well as direct assessment, and in this way the maximum amount of concrete evidence about the labour capacities of the person is gathered.

www.competencialaboral.cl

In the early stages, advantage will be taken of the experience that has been acquired since 1999 from a labour competency, standardization and certification project that was funded by the IDB, and worked in the construction, mining, tourism and computer sectors.

By the end of 2002 around 7,000 people from the mining, gas, electricity and hotels and catering sectors, most of them trained workers, had participated in the process of competency assessment.

The coverage of the competency assessment and certification component could be extended to other occupational areas, thanks to the resources and activities involved in the "Chile Califica" project.

Certification and lifelong learning

In this project, certification is considered as a means and not as an end. It is a means to identify the training and development needs that could be provided through the network of vocational training institutions. In fact, certification is not limited to competencies that are strictly technical in nature, it will also be used in the levelling of studies for adults whose education lapsed. A mix of activities to recognize competencies derived from experience will be used, and this will generate certificates that have value in the formal educational itinerary.

Strategies to be implemented in the project

Identify the productive sectors and occupational areas which will participate in the programme.

Set up sectoral human resources councils which include entrepreneurs, trainers and workers.

Agree with these actors on a national competencies framework which would order types and levels of skills, knowledge and aptitude.

Define labour competency and employability standards in the sectors that are most important for the economic and human resources development of the country.

Establish methodological bases for assessment and certification mechanisms, and also organise the training offer into modules.

www.chilecalifica.cl

Another project is to encourage local initiatives in which educational and/or training institutions would develop projects to coordinate education with training for work. In this way the beneficiaries would find that they would progress in formal education at the same time as developing labour competencies.

Starting from pilot applications

One of the promising characteristics of this project is that it has been initiated in a strategy of "bottom up", with pilot applications of certification in different sectors which have a commitment from entrepreneurs and workers to move forward in identifying competencies and in certification.

This has allowed a good proportion of what has been learned to be incorporated into the activities. Although the institutional structure to be adopted for certification has not yet been defined, pilot applications show what has taken place in different stages of the process.

Enterprises participated in identifying competencies, but there are no signs of participation from unions as such.

Design work is being done on the best structure for bodies to carry out independent quality assessment. In this sphere a number of universities have shown themselves to be suitable as assessment centres. Similarly, work is going ahead to design the best institutional set-up for certification. Very probably, given the structure of the Chilean training model, this role will be played by third-party organizations. It is precisely these crucial activities that the project is financing. The diagram next shows the certification process as it was designed during the pilot application phase.

COMPETENCIES CERTIFICATION PROCESS

```
                    ┌─────────────────────┐
                    │ Competencies defined │
                    │    and validated by  │
                    │ entrepreneurial      │
                    │       sectors        │
                    └─────────────────────┘
                              ⬇
┌──────────────┐    ┌──────────────┐         ┌────────────────┐
│  Candidates  │    │              │   ◇Yes◇  │  Certification │
│ for          │───▶│  Assessment  │────────▶ │ of the         │
│ certification│    │              │          │ competency     │
└──────────────┘    └──────────────┘          │ demonstrated   │
                           │                   └────────────────┘
┌──────────────┐          ▼
│ Recognition of│      ◇ No ◇
│ prior learning│
└──────────────┘          │
                          ▼
                   ┌──────────────┐
                   │  Not yet     │
                   │  competent   │
                   └──────────────┘
```
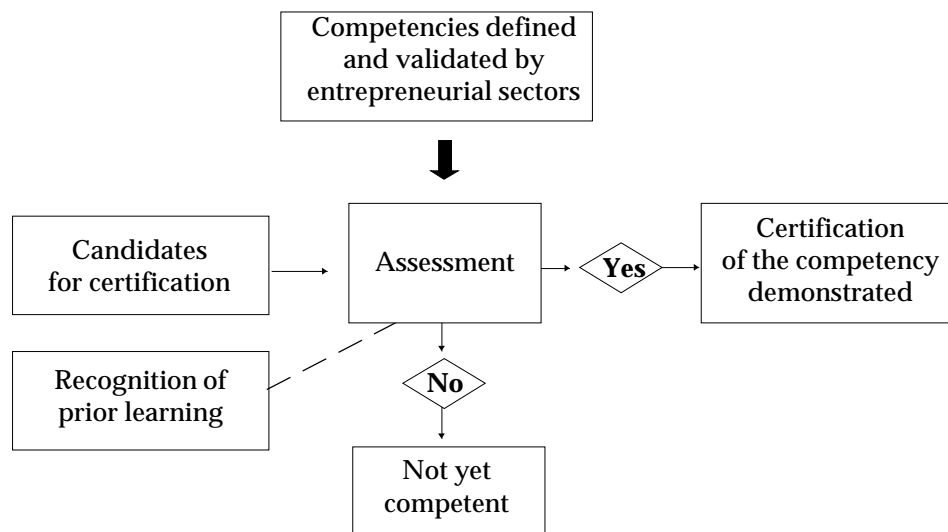
Source: Labour Competencies Project, Chile.

The progress of the "Chile Califica" project will show whether the execution strategy turns out to be more effective than that of other experiences in which work was done with more commitment from the public sector. The sustainability of the fledgling structure of certification bodies and assessment centres will be put to the test in the execution of the programme. The configuration which is ultimately adopted for assessment and certification processes will have a lot to do with whether the programme turns out to be sustainable, and with the roles which the training actors in Chile play.

2.1.5. The CONOCER experience in Mexico

As was explained in the section on the development of national qualifications frameworks in Latin America, the CONOCER in Mexico is promoting the generation of labour competency qualifications, and the certification of these qualifications, based on the real needs of enterprises.

CONOCER grew from the framework of the Technical Education and Training Modernisation Project (PMETyC), which was financed by the World Bank.

The supply of vocational training in Mexico comes from a wide range of institutions and they are all linked to the public sector, either the Secretariat of Labour or that of Public Education.

CONOCER is executing a wide-ranging programme of restructuring the supply of human resources training. Its sources of finance are the World Bank, and to a greater extent the IADB. In 1996 CONOCER set up its first eight standardization committees, and by October 2003 it had 75 standardization committees operating in that same number of occupational sectors. The work of the committees has led to the production of 601 technical labour competency standards, and 32 certifying bodies and 1,273 assessment centres have been set up.

Recently CONOCER has focused on diffusing and utilising its standards through certification. There are authorized certifying bodies for 308 technical labour competency standards (51% of the total), and these bodies have been accredited as assessment centres for 256 technical labour competency standards. A total of 170 qualifications are covered by certification. The number of labour competency units that have been certified is 177,396, and 80% of these are concentrated in 22 qualifications

---

WHAT IS A QUALIFICATION?

A labour qualification is a collection of competency units and their elements. It specifies the criteria and the ways to evaluate, through efficient performance, the knowledge, skills and dexterities required for that competency.

What is a certifying body?

It is an entity accredited by CONOCER to be in charge of certifying the labour competency of candidates and conducting the outside inspection of assessment centres.

138

The most frequently certified competency units

SECTOR	Competency units certified
Computers	57,407
Clothing	20,718
Tourism	13,737
Commerce	12,976
Occupational health	8,461
Energy	6,913
Forestry	7,154
Human resources	4,064
Consultancy	5,368
Electrical maintenance	4,979
Urban passenger transport	3,746
Office work	2,947
Sugar industry	2,375
Agro equipment	3,158
Graphic arts	3,002

Some figures about the PMETyC in Mexico (1996-2003)

- Total value of the project: USD 412 million. For competencies: USD 221 million. For the modernisation of training: USD 159 million
- Technical labour competency standards produced: 601
- Standardization committees: 75
- Certifying bodies: 32
- Assessment centres: 1,273
- Percentage of competency standards with accredited assessment centres: 42%
- Units of competency certified: 177,396
- Most of the certificates have been on competency levels 1 and 2.

CONOCER is itself a certifiying body. It has set up an open process in which the worker can apply to a certifying organisation to be evaluated and to have his labour competencies recognized in some of the standards that are available. The certification process is known as "third party", and was inspired in the model which is mainly used in England, Australia, New Zealand, Ireland and Scotland. It is based on a national body, and the roles of assessment and certification are separate.

In this process the two components, the assessment body and the certifying body, are separate. The former carries out the assessment of competencies based on criteria in the standard in question, and the latter awards the certificate based on the results of the assessment. Both the assessing and certifying bodies must be accredited by the national standardization and certification authority.

The stages that CONOCER has designed for certifying a candidate are as follows:

a) Previous diagnosis in which the candidate's possibilities of being awarded certification for the competency in question are analysed.

b) The assessment process itself, carried out by a certified center. This is based on specific criteria in the labour competency standard.

c) A report on the result of the assessment of the candidate. The result may be "competent", in which case the certificate is awarded; or "not yet competent", in which case the causes for this are analysed, and the candidate is offered options for training and development which could lead him or her to reach the competency level required.

WHAT IS CERTIFICATION?

A process by which a third party body recognizes and certifies that an individual has shown competency in a determinate labour function, regardless of the way in which this was acquired, and based on a standard that is recognised at the national level.

The diagram below is a graphic representation of the process of recognising prior learning and certification.

Labour competency certification cycle
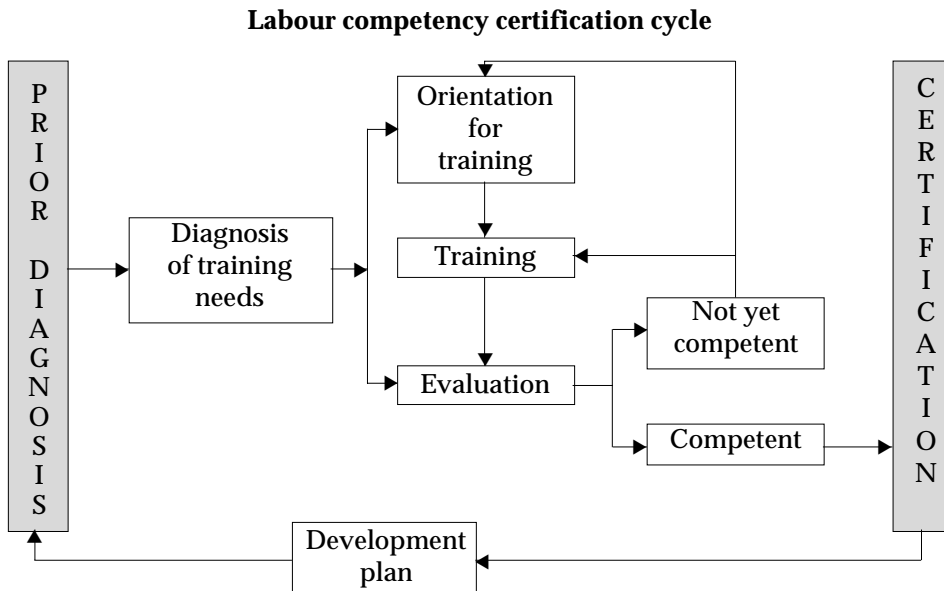
Source: CONOCER

Some of the lessons that have been learned from the CONOCER certification model are as follows:

- In the early years the effort was concentrated on promoting the setting up of standardization committees and preparing competency standards. The Council was a public body functioning in the framework of a legal ruling in private law known as a "trusteeship", and this gave it great autonomy, versatility and operative flexibility. At the moment there is intense debate about the possible adscription of CONOCER to the Secretariat of Labour. The period of execution for the project has ended, and the credit from the World Bank has also come to an end.[6]

- A good number of standards have been established, and now the emphasis is on "putting them into practice" through certification. What is needed is to activate a certification market which would use and value certification in the technical standards of labour competencies that have

6   The authorities from the Secretary of Public Education are successfully negotiating the continuation of some action with IDB funds.

already been produced. Recently CONOCER has concentrated more on this aspect than on continuing to advance in preparing new competency standards.

- The certification market must be attractive enough to allow the certifying and assessment bodies that make it up to enjoy financial sustainability. In the beginning the project invested funds to stimulate assessment and certification, and contributed to fee payments to help unemployed workers, but now what is needed is an explicit policy to facilitate access to certification for unemployed people.

- In the beginning the "pure" third party model did not allow educational institutions to assess competencies. This is a perfectly valid stance from the point of view of training or from that of the assessment of training. But as time passed and the experience progressed, assessment became more flexible. It is a costly process and one which requires a "real atmosphere" and a "pedagogic structure", so now educational institutions like CONALEP are accepted as assessment centres, but they are required to maintain their two functions completely separate.

- The experience in Mexico also shows that having a labour competency certificate is not attractive in all labour sectors. In fact, 36% of the certificates that have been awarded are concentrated in the computer sector. Other sectors which have obtained a sizeable proportion of the total number of certificates are linked to pilot applications that are usually concentrated in big enterprises. In these cases, implementation has to do with a desire to incorporate the focus into human resources management.

- Most of the certificates are concentrated at competency levels 1 and 2. This echoes the trend in the English system in which, up to 2001, a total of 3,488,787 certificates were awarded, and of these 18% were in level 1, 59% were in level 2, and 20% in level 3. Another point is that three occupational areas (engineering, goods and services, and financial services) issued 75% of the certificates.[7]

- Capturing the interest of the labour market is a continuing challenge for the system. Much has been gained from the point of view of enterprises through simplifying the methodologies of competency standardization and certification, and also due to the fact that many business sectors find the competency standards useful for their specific needs.

---

7 QCA. *Annual NVQ Statistics*, www.qca.org.uk

2.1.6. Certification in the INA in Costa Rica

In Costa Rica the National Training Institute (INA) has developed a well-structured certification experience, and it has one organisational unit specialised in providing the certification service.

In the INA definition of the certification process, it is described as the "official recognition of vocational qualifications that a person possesses (knowledge, skills and attitudes) regardless of the way that these were acquired, whether through participation in systematic vocational training or as the result of working in a trade without previous training."[8]

The INA has been running its pilot scheme in the tourist sector since 1997, and the certification there is based on labour competency standards. A "vocational profile" is also taken as a reference.

The certification process emphasises consistency and dependability based on public recognition of the certificates issued by the INA. It also embodies the principles of equity and impartiality, and it is an open process for those who meet the set requirements, which are communicated without any restriction to people who request them.

> **The National Training Institute (INA)** in Costa Rica was one of the first institutes to initiate the process of quality assurance. It acceded to ISO 9000 certification for its accreditation unit in June 1998, and auditing of follow up was carried out in December of that year and in June 1999. This unit's main task is to verify the suitability of the training offer of institutions outside the INA, measured against the quality of the institute's own offer. An INA policy statement reads, "Design and execute programmes and projects which will allow the assurance of quality in the internal and external management of services offered to officials and users."

The INA certification process involves theoretical and practical tests. For the theoretical test the institution has developed a procedure which covers the general design of the test, the design of the item, the production of support materials, the structuring of the test, and the validation of the test.

For the practical test, the process begins with a definition of the situation in which the test will take place, determining the psycho-motor indicators of socio-affective and cognitive behaviour, determining the execution criteria of the test,
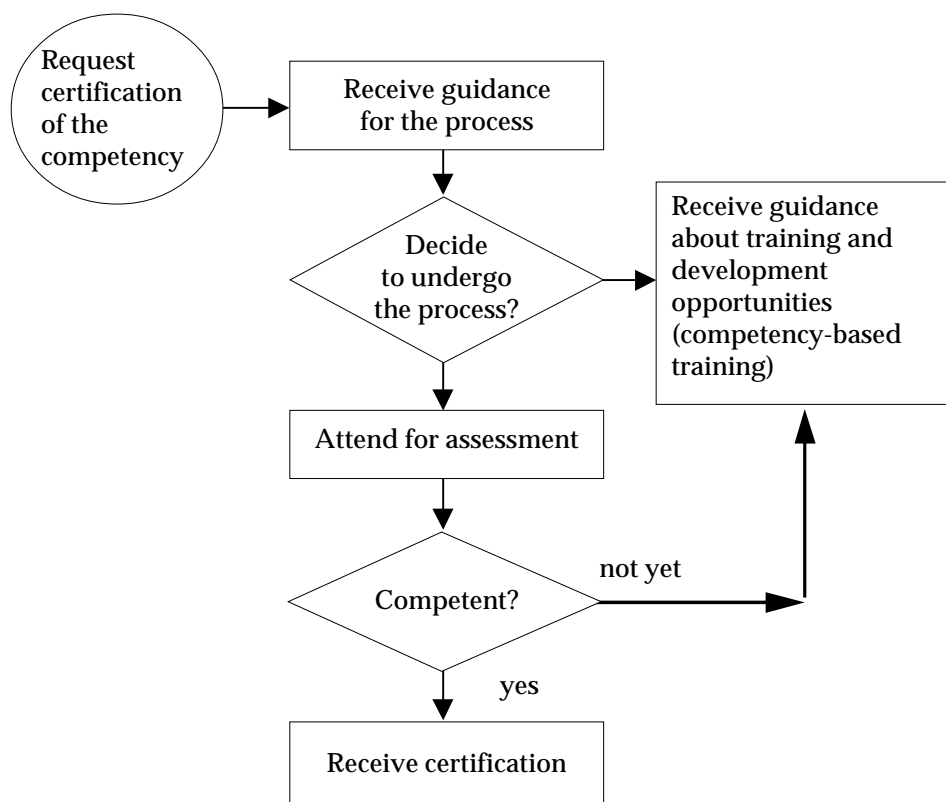
---

8   INA experience in the framework of the Standardization, Training and Certification of Labour Competencies, INA, 2001.

preparing the instruments that will be used by the evaluator on the candidate and for validation of the test.

2.2. The certification of competencies in specific occupational sectors

This section deals with experiences of competency recognition which, unlike the analyses in the previous section, concentrate on a specific occupational sector and are mostly promoted by enterprises or by interest groups affiliated to that sector. The general characteristics of the competency certification process in these experience are shown in the diagram below.

General process of competency certification in the sectoral ambit

```
 ┌─────────────┐          ┌──────────────────┐
 │  Request    │          │  Receive guidance│
 │  certification│ ──────▶ │  for the process │
 │  of the     │          └──────────────────┘
 │  competency │                   │
 └─────────────┘                   ▼
                          ╱─────────────────╲          ┌──────────────────────┐
                         ╱      Decide        ╲         │  Receive guidance     │
                        ◀   to undergo        ────────▶ │  about training and   │
                         ╲    the process?    ╱         │  development          │
                          ╲─────────────────╱          │  opportunities         │
                                   │                    │  (competency-based     │
                                   ▼                    │  training)             │
                          ┌──────────────────┐          └──────────────────────┘
                          │ Attend for assessment │                ▲
                          └──────────────────┘                     │
                                   │                               │
                                   ▼                  not yet       │
                          ╱─────────────────╲                      │
                         ╱    Competent?      ╲ ────────────────────┘
                          ╲─────────────────╱
                                   │  yes
                                   ▼
                          ┌──────────────────┐
                          │ Receive certification │
                          └──────────────────┘
```

144

The diagram above gives a general representation of the different stages in the certification process from the candidate's point of view. Normally these processes include the group of training opportunities associated with the assessment, that is to say, certification is not designed only to measure a certain level of competency but rather to diagnose and generate opportunities for training and development.

2.2.1. *Certification in specific occupational sectors in Brazil*

In Brazil there have been a number of certification experiences of a sectoral nature, and we will describe that of the Brazilian Maintenance Association (ABRAMAN) and that of the Brazilian Petrol Enterprise (PETROBRAS).

The ABRAMAN certification programme

In 1990 ABRAMAN[9] was asked to organise a national qualification and certification project for the personnel who work in the maintenance field. The growing trend for enterprises to outsource maintenance services revealed that there was a need to improve the quality of maintenance workers' performance.[10]
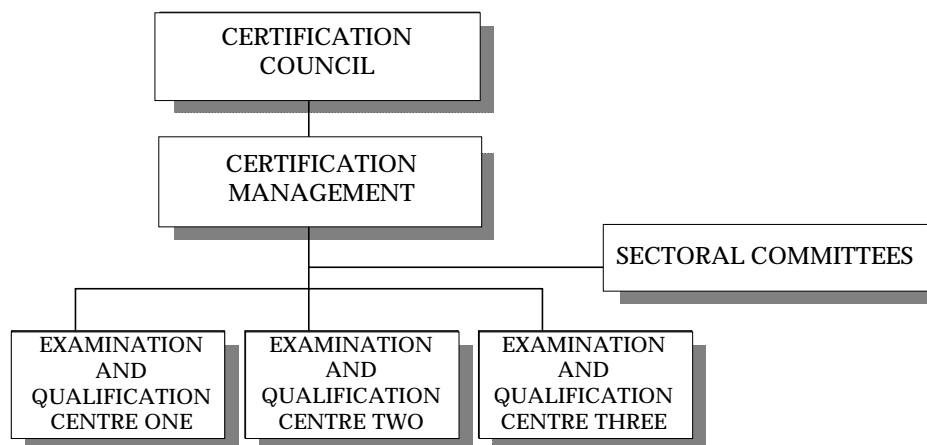
In 1991 it was decided to launch a project to develop a National Plan of Personnel Qualification and Certification (PNCC), and this gave rise to a series of activities to make enterprises conscious of the need to have their maintenance workers certified. ABRAMAN then organised a certification process[11] and went into action. The diagram below shows the structure of the PNCC.

---

9   This is a body established in private law that was set up in 1994 with the aim of gathering together professionals, enterprises and institutions from the maintenance field with the objective of becoming the natural forum for questions of interest to this group.

10 In 1999 an ABRAMAN report showed that there were flaws in the training of maintenance personnel in 73% of the enterprises surveyed.

11 With the support of Cinterfor/ILO.

STRUCTURE OF THE PNCC

```
┌─────────────────────┐
│    CERTIFICATION    │
│      COUNCIL        │
└─────────────────────┘
          │
┌─────────────────────┐
│    CERTIFICATION    │
│     MANAGEMENT      │              ┌──────────────────────┐
└─────────────────────┘              │ SECTORAL COMMITTEES  │
          │                          └──────────────────────┘
   ┌──────┼────────────────┐
┌──────────┐ ┌──────────┐ ┌──────────┐
│EXAMINATION│ │EXAMINATION│ │EXAMINATION│
│   AND    │ │   AND    │ │   AND    │
│QUALIFICATION│ │QUALIFICATION│ │QUALIFICATION│
│CENTRE ONE │ │CENTRE TWO │ │CENTRE THREE│
└──────────┘ └──────────┘ └──────────┘
```

Source: ABRAMAN.

The programme is run by a National Qualification and Certification Council, which has representatives from 35 enterprises and is counselled by the Qualification and Certification Committee, which acts as an executive organ of the system. The Council is responsible for defining the occupations covered by the certification process and the requirements necessary. The Council's other important functions are follows:

- Formulate the administrative guidelines of the programme.

- Approve the qualification criteria for the different occupations.

- Decide about the coverage and validity of the certificates.

- Decide about the recognition of certificates issued by other domestic or foreign organizations or by enterprises.

The management of the PNCC is an executive body and its functions include the following:

- Submit the profiles of the occupations (including specific knowledge) prepared by the sectoral technical committees to the Council for approval.

- Submit proposals for setting up new technical committees for specialised functions to the Council for approval.

- Set out the criteria for recognising and accrediting examination and qualification centres.

146

- Supervise the examinations given by the centres.

- Promote and set up programmes to audit the centres.

- Coordinate the work of the sectoral technical committees.

The sectoral technical committees represent the different occupational sectors catered to in the programme, and their role includes:

- Formulating the standards required for certification, which include the knowledge, skills and experience for qualification (certification requirement standards).

- Interacting with the examination and qualification centres in holding the certification examinations.

- Representing the management of PNCC in supervising the certification examinations.

The examination and qualification centres are bodies accredited by the SNCC. They are responsible for examining, qualifying and certifying workers. They can function by taking advantage of training institutions, and this is why some of them are installed in SENAI training schools. In this way they use not only the infrastructure but also SENAI´s capacity and knowledge in the area of vocational training. This means that candidates who do not reach the performance levels required by the certification standard can accede to specific training programmes. There is also an advantage for SENAI because it can gauge the certification candidates' needs for training because this gives a good idea of how to update their training programmes to cater to these needs. At the present time, there is certification for the mechanical, boilermaking, electricity and electronics areas.

> For ABRAMAN, occupational certification is the formal recognition of vocational qualifications regardless of the way these were acquired, and considering the employed, unemployed and sub-employed population who have specific abilities that can be updated through the certification mechanism, and who can therefore enter the job market through recognition of their skills.
>
> ABRAMAN, PNCC, 1996.

The general process for certification in the ABRAMAN PNCC if as follows:

- Manifestation of interest on the part of the worker.

- Pre-qualification. Demonstration through documentation that the worker has the schooling and occupational experience requirements laid down in the standard of the occupation chosen.

- Written and practical examination. Pedagogic interview and analysis of results.

- If the worker passes, certification that is valid for five years is obtained. If the worker fails, he or she may opt for a new examination to be taken no sooner than thirty days after the first.

- Needs for specific training may be identified as a result of the pedagogic interview.
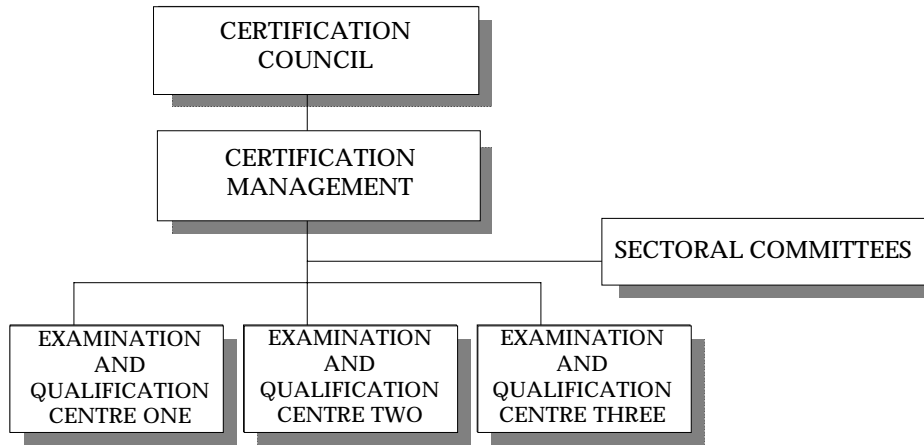
The PETROBRAS certification programme

In 1978 this enterprise organised the Qualification and Certification Sector (SECUI) in the framework of its quality management policy. The aim is to qualify and certify personnel who work in functions that have to do with quality control in the enterprise. These functions include non-destructive testing, underwater inspection, inspection of welding, technological checking of concrete, industrial painting, instrumentation and electricity.

PETROBRAS decided to set up the system in the belief that competent personnel are essential in order to have safe installations and to ensure operational continuity. This is especially necessary in activities involving quality control.

The enterprise adopted the structure of the National Qualification and Certification System, which was mentioned above in the ABRAMAN experience.

Importance is given to having a certification council which includes bodies representing diverse sectors such as suppliers of goods and services, big purchasers, employers' associations and vocational training bodies.

STRUCTURE OF THE NATIONAL QUALIFICATION
AND CERTIFICATION SYSTEM AND ITS APPLICATION IN PETROBRAS

```
                    ┌─────────────────────┐
                    │    CERTIFICATION    │
                    │      COUNCIL        │
                    └─────────────────────┘
                               │
                    ┌─────────────────────┐
                    │    CERTIFICATION    │
                    │     MANAGEMENT      │──────────────┐
                    └─────────────────────┘    ┌──────────────────────┐
                               │               │ SECTORAL COMMITTEES  │
                               │               └──────────────────────┘
        ┌──────────────┬───────────────┬──────────────┐
  ┌────────────┐ ┌────────────┐ ┌────────────┐
  │ EXAMINATION│ │ EXAMINATION│ │ EXAMINATION│
  │    AND     │ │    AND     │ │    AND     │
  │QUALIFICATION││QUALIFICATION││QUALIFICATION│
  │ CENTRE ONE │ │ CENTRE TWO │ │CENTRE THREE│
  └────────────┘ └────────────┘ └────────────┘
```

Source: PETROBRAS

The Examination and Qualification Centres have specialists in the areas in which certification tests have been prepared. PETROBRAS had its SECUI accredited as an examination centre with the Brazilian Association of Non-Destructive Testing (ABENDE). Thus the qualifications awarded by the SECUI have nationwide coverage and validity since they are recognized by ABENDE as complying with national standards.

An interesting feature of the PETROBRAS experience with personnel certification is that it involves international standards. Some of these are as follows:

- EN 45013, September 1989 (ISO 17024 of 2003), *General criteria for certification bodies operating certification of personnel.*

- EN 473, November 1992, *Qualification and certification of personnel. General principles.*

- ISO 9712, May 1999, *Non-destructive testing. Qualification and certification of personnel.*

These standards have their equivalents in the Brazilian standardization system which comes under the Standardization and Metrology Institute (INMETRO). The SECUI in PETROBRAS is accredited by INMETRO as a personnel certification body.

This experience has been incorporated into the enterprise's human resources policy. The qualification of personnel has come to be based on knowledge and skills whereas previously it was only based on experience. A number of career plans have been defined internally in areas such as industrial operation and maintenance, industrial safety, etc.

2.2.2. *The certification of competencies in some occupational sectors in Argentina*

As we saw in the section on key competencies, the labour competencies certification programme in Argentina is developing the design of a process of competency certification in four sectoral areas: the graphics industry, metal working, automobile mechanics and traditional cake making.

The execution of the programme has allowed progress to be made in identifying the competencies of a good proportion of the occupations involved in the different sectors in question. With these competency profiles as a base, a certification system will be designed which will allow skills acquired as the result of labour experience to be recognised.

To this end, the project is developing the phases of competency standardization, training materials development and the execution of training, assessment and certification. Up to now, the progress in preparing competency standards has allowed deeper analysis of the certification process so as to begin defining the different procedures and actors involved. In fact, a good number of profiles are already available, as can be seen in the table below, and some of these will be selected to begin the certification process in line with the needs of each sector.

On the project, work is being done in five dimensions of the labour competency certification system. These are as follows:

- To select the profiles and/or units of competency to be assessed and certified in each occupational sector analysed. This dimension is at the stage of identification and development in each of the sectors.

- To develop assessment instruments for the competency units corresponding to each profile.

- To develop the competencies which an evaluator must have to be accredited as such.

- To develop the procedures for making an assessment based on competency standards, which shall be transparent and legitimate.

- To design the institutional set-up for each sector to develop a system of labour competency assessment and certification.

TRAINING AND COMPETENCY CERTIFICATION PROGRAMME
COMPETENCY STANDARDS DEVELOPED

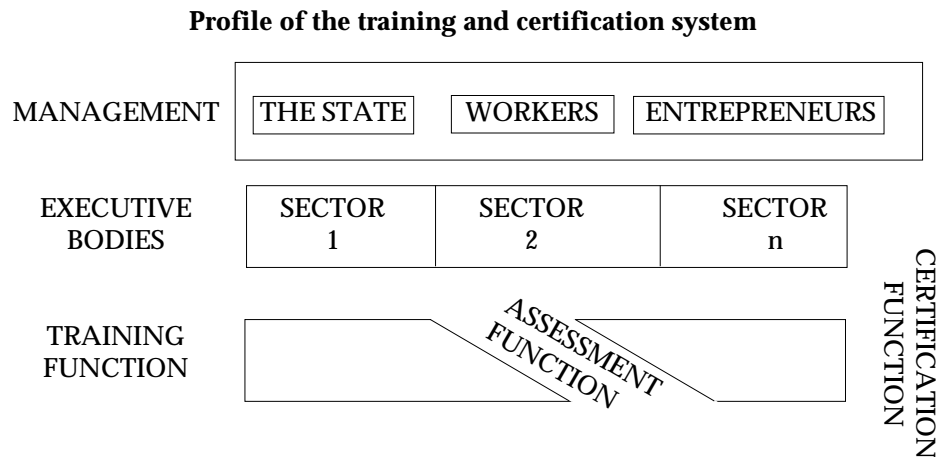| GRAPHICS INDUSTRY	AUTOMOTIVE	TRADITIONAL CAKE-MAKING	METAL WORKING
• Flexography printer machinist • Combined offset press • Gravure • Digital graphics set up • Stereotype set up and photopolymer preparation • Guillotine cutter • Cost analyst • Quality control • Technical salesperson • Binders	• Maintenance and repair of electronic systems Mechanics in: • Air conditioning systems • Automatic transmission • Installation of alarms and audio systems • Conventional feed and sparking systems • Conventional diesel injection systems • Conventional brake systems • Front wheels - steering • Transmission • Engines	• Master cake maker • Cake maker • Assistant cake maker • Pastry maker • Catering cook • Minute cook • Waiter/waitress • Cake salesperson	• Thermal cutters (processes of manual and automatic plasma, manual and automatic oxy-gas) • Differentiated welders (MIG process in tubes, on plates, SMAW in tubes and on plates, GTAW in tubes and on plates) • Braizing welder of electric conductors • Lathe operator • Mill operator • Mould and tool-making operator.

Source: Training and Competency Certification of Programme, Argentina, 2003.

151

3. SOME FINDINGS: WHAT ARE THE MINIMUM CHARACTERISTICS COMMON TO CERTIFICATION PROCESSES IN LATIN AMERICA AND THE CARIBBEAN?

Certification models have followed the evolution of educational practices, and these in turn grew out of cultural values and a heritage that has accumulated throughout history. Each system expresses national beliefs about what a training model should achieve. If this expression is transplanted from one country to another without suitable adaptation the result could be unsuccessful.

3.1. A structural vision of a certification system

There are four main stages in the development of a certification system: the identification of competencies, standardization, opportunities for competency-based training, and the process of certifying competencies. There are usually three levels in the structure of a certification system, and these are shown in the diagram below.

Profile of the training and certification system

MANAGEMENT	THE STATE	WORKERS	ENTREPRENEURS
EXECUTIVE BODIES	SECTOR 1	SECTOR 2	SECTOR n
TRAINING FUNCTION	ASSESSMENT FUNCTION		CERTIFICATION FUNCTION

The management level is usually a participative set-up in which workers, employers and the government establish "the rules of the game" of the system, which are normally underpinned with legal norms. The management establishes how the system will be set up and the bodies to be in charge of training, evaluation and certification. It is highly desirable for the state to participate, above all because it is an excellent sphere for regulating such aspects as access, equity, quality and transparency.

At the executive level, the organization is almost always sectoral. In most cases this level is made up of workers and employers in a specific labour sector like forestry, the automotive sector, or leather and footwear, etc. Methodologies are used for identifying competencies and setting performance standards. The basic functions at this level are to verify quality and pertinence for the operative level (which executes the training, assessment and certification), to ensure that the training corresponds to identified needs, and to ensure that the certificates have the quality required, that is to say that they do in fact certify what they say they certify.

The operative level is where the functions of training, assessment and certification are carried out. From our point of view these functions may be carried out with the suitable level of quality by a training institution.

> The certification of skills constitutes an important tool in this process in that it solves an information problem by making the quality and quantity of the skills that workers have observable for employers. However, certification requires committed institutional participation on the part of enterprises, workers and unions in designing the content and mechanisms for accreditation.

Source: Márquez, Gustavo, *Capacitación de la fuerza laboral en América Latina: ¿Qué debe hacerse?,* Inter-American Development Bank, 2001.

In fact there is no one best formula for organising an institutional training system. What is common to all models is that they usually seek the best quality, coverage and pertinence, but obviously there are different modalities for reaching these goals. When we examine the various kinds of institutions set up in different countries (which are very often taken as inspirational models) we should bear in mind that each is the result of practices that have been assimilated culturally into the educational and training ambit.[12]

A number of common elements have been identified in all the certification models:

• **A solid institutional structure**. Social actors participate in identifying and standardizing competencies, and defining processes and procedures and their references to equivalents in education, to make competency certification possible in what in many countries is called a "national qualifications framework". This solidity also extends to the capacity of the certifying institutions

---

12 "Cuatro afirmaciones sobre Certificación. Todas falsas", Cinterfor Bulletin No.153, 2002.

to offer training and development opportunities to those who are evaluated. The experiences in the region are making an effort to ensure that certification should not only be a filter but also a mechanism for promoting opportunities for learning.

- **A standardized reference.** This is commonly called a competency standard, and it functions in a framework of reference and consultation which usually has nation-wide scope. The competency standards are known to all, and access to them tends to be free. In 2001, an external assessment commission in the English standardization and certification system recommended that the competency standards should be managed as a "public good".[13] This national qualifications framework must facilitate the inclusion of core skills, and it is increasingly being recognised that these should be understood as a group of skills which influence the capacity to perform successfully in a wide range of occupations (for example, solving problems, working in a team, critical thought, etc.).

  In Latin America and the Caribbean, a number of countries have developed labour competency standards. The most advanced is the CONOCER in Mexico, but also countries like Argentina, Chile, Colombia and Brazil have developed standardized descriptions of labour competencies. These standards become the basis for the process of preparing training and competency assessment programmes.

- **A process of assessment or diagnostic.** The main aim of this is to establish which competencies the person has and has demonstrated, but it is also geared to the needs for training which would enable the worker to attain higher levels of competency and to fix an itinerary for training and career development. Theories and methodologies of assessment have advanced in this area, and assessment based on criteria and substantiation is widely accepted. Assessment seeks to establish whether or not the criteria of quality for competent performance have been met. These criteria have been defined beforehand in the competency standards. In addition, assessment makes it possible to identify shortcomings in certain abilities, so these abilities can be fostered with guided labour practice or through training.

- **Training opportunities.** There are opportunities for training linked to the results of assessment. These must be very close to the results of the assessment for there to be an effective connection between the assessment process and the development of competencies. There is not much data about the percentage of assessment candidates who successfully obtain a competency

---

13 Report of the independent review of the UK National Occupational Standards Programme, 2001.

certificate, but there is evidence that no more than 15% of workers with educational or training needs obtain some sort of certification at the first attempt.

• **Validity and legitimacy.** These are derived from the recognition that the certificate enjoys in the labour market. This point shows that there should be demand for certification, that is to say that entrepreneurs should value the competency certified because it is connected to their needs in the productive process, and also that workers should find that certification is going to be useful to them in their search for employment and in developing their competencies as a worker and as a citizen.

Perhaps it is the value that is given to certification as a generator of possibilities for labour insertion that explains why so many of the certificates awarded are in the lowest competency levels (levels 1 and 2 in Mexico, levels 2 and 3 in Great Britain). However, the perception of the "value" of certification has been a barrier to the development of the certification system. In a vocational education college in Mexico, qualifications are offered in computers and demand from candidates is high. However, although there is good demand in the market for computer certification, when a new type of certification from a well known software manufacturing enterprise appeared recently, there was a change in the candidates' preferences and they began to demand the new certificate. The college, therefore, was disposed to make an alliance with this firm to begin certification in accordance with the firm's standards.

When it comes to the value that employers and workers put on certification, we can make a comparison with money. The value of money is not attributed to the paper, the design, the ink or colours used to make it. The certificate, like money, does not have intrinsic value or value that is attributed to the legal bearer, it needs solid backing, it needs to represent a value for the employer, for the worker and for other interested parties. This capacity to reflect a value which will be demanded by interested parties derives from the fact that these parties are certain about the validity and legitimacy of the certificate. A competency certificate is taken as valid if it really represents the competencies that are possessed and demonstrated by the bearer, and if it is issued by an institution that is recognised and socially valued.

3.2. Elements of the debate in Latin America
Who should recognise competencies? [14]

The certification of labour competencies is more than a process of verification based on assessment. The recognition of competencies is of little value if it does not become a base upon which the worker can recognise his or her limitations and can be offered training options to remedy them.

The recognition of competencies has other characteristics, and these are as follows:

• *A coherent framework* (an occupational structure) which allows anyone to recognise the content of an occupation which is certified (this is how national qualifications have been defined in England and in the qualifications framework in Mexico, and other countries are now in the process of updating their occupational classifications).

• *A guarantee that the certificate is legitimate and valid.* This means that it is valued by the entrepreneur, the worker and the state. The value of the certificate can be compared to the value of money: a banknote is not valuable because of its design, colour or size, but because of the value that is put on it by the society and the economy that uses it.

• *It is derived from a simple mechanism.* There is not much bureaucracy, and it is less costly for the user than other alternatives. To pursue the money metaphor,[15] people use it because they find that it is a better reference than directly exchanging apples for cheese, for example, or salt for rice.

• *It has legitimacy and credibility.* That is to say, it comes from an institutional mechanism that is credible and socially recognised. If there were many kinds and sources of certificates, the bad certificates would soon displace the good ones. Many people would have no alternative but to resort to lower quality certificates which would be more accessible and less strict.

• *It facilitates transparency.* This means that workers know what the certificate says about them and what is expected of them as regards performance, and a prospective employer can be sure of the type and scope of the competencies that a worker has.

• *Certification must allow the configuration of a concept of lifelong learning.* This is because it extends to the recognition of all know-how, and values the knowledge and aptitudes acquired in all ambits of life. It also connects up with the

---

14 This discussion does not apply to the institutional framework of the English-speaking Caribbean, which uses the model of third party certification.
15 This was developed by Jens Bjørnåvold in various papers for CEDEFOP.

offer of training opportunities which allow competencies that a worker does not yet have to be acquired. The process of competency recognition should offer all the educational and training possibilities so as to motivate the candidate to develop professionally. Creating a culture of learning means widening opportunities for training.

On this point, the experiences in Latin America show that how the process is developed is more important than who does the certifying. In other words, the process of assessment with quality can be perfectly well carried out by the same institution that does the teaching. There is a guarantee of elements like trustworthiness, impartiality and validity, and there are also suitable pedagogic spaces available, connections with enterprises and knowledge about assessment, and in all these areas training institutions and centres have big advantages.

> A certification body may provide training, and if so it shall clearly demostrate how separation of training and examination is managed to ensure confidentiality, objectivity and impartiality.[16]

This argument has a bearing on the debate about whether it is better to adopt a system or to adapt one because, very often, the logic of the certification of processes and goods tends to be automatically translated to the ambit of the certification and recognition of people's capacities. Training institutions are very well equipped to run training, and the assessment which leads to certification is, above all else, a form of training.

The role of the state in determining levels of quality and the ways in which national training frameworks can be set up suggests a need to have a rector body to regulate the modalities, levels, forms of access, determination of standards, equivalences and other aspects necessary to set up lifelong learning schemes. This role is complemented by training institutions that are efficient in providing programmes and assessment.

---

16 Standard ISO 17024, 'General requirements for bodies which operate systems for certifying persons." (4.2.2)

3.3. Weak points and challenges in competency certification experiences

The experiences described in this study allow us to focus on a number of important points. These are the coordination between different experiences at the national level, the degree of participation of the actors as reflected in the results of those experiences, and the subject of access to certification.

3.3.1. It is desirable to work towards integrating and coordinating different experiences?

In the examples we have given of experiences at the level of sectors or enterprises, the certification of competencies had undeniable advantages for the immediate ambit but there are limitations on the mobility that the certificates and recognition can facilitate at the national level, or even at the sub-regional or international levels. Hence there is a tension between achieving immediate results, which relate to certification at the level of the enterprise, and the boarder aim of generating a national certification model which would cover a number of sectors and therefore facilitate the recognition of portable competencies. In developing a certification model at the national level it usually takes longer to organise and to promote the participation of interested parties.

Competency certificates that are awarded at the level of an enterprise generally reflect immediate interests that have to do with human resources management and the productivity of the economic unit in question, but because they are limited to the enterprise they do not do much to promote the mobility of workers who have improved their competencies and received certification. Obviously, interest in improving the mobility and employability of workers often falls in the public sphere, so the system is flawed if there is no mechanism to coordinate enterprises, sectors and the national level.

If there is no clear vision from the government level about the way to generate a framework in which knowledge and competencies are valued regardless of how they were acquired, there is little chance of finding a remedy for this defect. Coordination is necessary, but what is also needed is a national framework which establishes a common language between the different levels and occupational areas in which competencies can be certified. There is a clear need to have a framework for classifying the different levels of competency and for defining the route to labour progress and the way that new competencies can be acquired and validated.

It is for this reason that some experiences at the national level, like "Chile Califica", have brought in different actors from education and from the world of

work, so as to create bridges to allow an upward trajectory in the occupational biography of the worker, with inputs of knowledge and skills from different sources. In certification systems the objective is not to create an offer of competency standards and assessment bodies, rather it is to facilitate opportunities for assessment and the recognition of knowledge to favour the levelling and acquisition of what is required for good labour and social performance.

To sum up, given that the recognition of prior learning has reached different levels in different experiences, it is clear that experiences in enterprises or specific sectors are usually geared to the needs of the sector in question. To improve the worth of competency certification as a mechanism for detecting training needs and orienting labour life, the public sector will have to intervene on matters such as defining a national framework, setting up a mechanism for validation and recognition between sectors, and above all to ensure that there is a progression in the training of the worker in the framework of the philosophy of lifelong learning.[17]

3.3.2. Do entrepreneurs and workers participate more in national initiatives or in sectoral experiences?

When the public sector promotes certification systems, usually through the ministry of labour or the ministry of education, its first efforts are to attract private actors and convince them to take part. Entrepreneurs will be interested in getting involved if they perceive that the certification of competencies is useful in their management of human resources. Workers will be interested if they are given clear signals that a competency certificate will be valuable in their relationship with the enterprise and in training processes.

The first national standardization and certification programmes began with an "top down" strategy, combined with pilot experiences. An example of this is the CONOCER in Mexico, whose coverage grew slowly as the methodologies designed centrally by the Council's technical apparatus were applied in more and more new sectors.

However, the excessive uniformity and, paradoxically, the high degree of standardization that this approach involves, came in for criticism from some entrepreneurial sectors because these sectors did not all see their training needs reflected in the competency standards that had been drawn up using a procedure that was standardized and uniform at the national level. As a result, flexible

---

17 On this point, the 2004 ILO Recommendation concerning of human resources development says, 'The national framework should include a credible system of certification which will ensure that skills are portable and recognized across sectors, industries, enterprises and educational institutions.'

strategies were applied as regards response times, kinds of intervention, methodologies and even technical language, in order to make the system easier for the enterprises to understand.

On the other hand, some programmes of a sectoral kind have not had to face the great challenge of having to develop a "national system" and have been limited to more restricted spaces such as "the foodstuffs sector", "the graphics industry" or "tourism". In these cases, the programmes are usually closer to the enterprises, and this makes it easier for the enterprises to take part. However, it cannot be said that whether the initiative to set up a certification system is national or sectoral in nature makes that initiative more attractive or less attractive for the actors.

The degree of participation depends more on the design of the programme in question and on the capacity of the people who run it to promote it. The CONOCER succeeded in reaching a large number of occupational sectors, and organised many standardization committees with the participation of entrepreneurs and workers, but the wide range of certifiable competency standards offered is not reflected in the same proportion in the flow of certificates awarded. A factor here could be the degree to which workers perceived certification as useful, that is to say, how far they believed that certification would help them to find employment or to increase their income. It is in these elements that we find the roots of their "disposition to pay' in terms of the time devoted to assessment, and in terms of the actual monetary payment for assessment and certification.

Certification programmes geared to an enterprise or sector, like those in Brazil that we have outlined, are from the very beginning better coordinated with the practices of human resources management in the enterprises involved, and therefore are perceived to belong to those enterprises and are strongly promoted. Even mechanisms whereby assessment has to be paid for do not discourage candidates since the certificates on offer are recognized and valued by enterprises in that occupational area. It is clear that in these cases training institutions like the SENAI play an active role, and this facilitates a direct connection between assessment and training opportunities. This is typical of the Latin American training model, in which assessment is conceived and executed as part of the training process.

The actual volume of competency certificates awarded has not yet reached significant proportions, but this does not necessarily mean that the programmes are failing to attain their objectives. More and more experiences are being implemented, and the recognition of prior knowledge is gaining ground in the region. This does not only apply in the sphere of public employment and training policies but also in the private ambit in which the competency-based human resources management and the pressure for greater competitiveness are forcing enterprises

to seek competent personnel. This increasing priority for competency certification also figures in the perspective of some large global corporations. They have launched their certification systems onto the market, and these have the added attraction that they carry a brand name.

One important lesson that has been learned is that the need for certification is not inherent, nor is it required, for all levels of competency. As can been seen in the experience in England, there is usually greater demand for certificates at the operative and technical levels where there is a closer connection between certification and options for employment. However, to the extent that employers and workers both perceive the advantages of incorporating mechanisms for recognizing knowledge into enterprise management, without doubt there will be activity in this area, and ministries of labour and education as well as training institutions will be under more pressure to design and to implement such mechanisms.

3.3.3. Different certifications and different objectives. Numerous approaches coming together in the Latin American experience

At the present time the concept of certification in the Latin American region involves a variety of theoretical and practical aspects. To speak of certification in the region it is first necessary to define the concept and the institutional model in question. The biggest three groups are certification experiences promoted from the public sphere, those promoted on a sectoral level by representative entrepreneurial groups, and those which are linked to corporations that operate worldwide.

As far as the public ambit is concerned, the experiences analysed have a number of common features such as the fact that they are voluntary, that the intention is to promote accessibility and equality of opportunities, that there is a need to implement mechanisms to safeguard public safety through "authorising" certificates, and the idea of fostering certification as a mechanism to promote lifelong learning. In this area there are experiences promoted by ministries of labour and of education. The outstanding characteristic of these is that certification makes it possible to recognise a worker's learning regardless of how this was acquired. This gives a national perspective that is very close to the theories of human capital and the impulse towards lifelong learning.

The initiative from the public sector carries with it the possibility of creating or defining institutional structures that are responsible for this undertaking (for example, the CONOCER in Mexico, "Chile Califica", and the SENA National Service of Training for Work in Colombia). Cases of certified authorisation also

come in this group. These are activities which have to do with the regulation of the exercise of certain occupations that fall in the category of public welfare and/ or safety, such as regulations for the exercise of occupations in the health sector or in some industrial fields like handling combustible liquids or gases. The authorisation certificate is indispensable to be able to work in these occupations.

The sectoral approach is almost always connected to a specific area, and it almost always enjoys the active participation of entrepreneurs and workers. Its basic objective is to improve the competencies of the workers and consequently raise productivity and competitiveness in that sector. These experiences are carried out in sectors where there is a high level of competitive maturity, and usually where the enterprises are involved in global trade or are faced with international competition. Very often these practices are linked to concepts in business culture and the development of worker competencies. In these cases certification is usually connected to practices in human resources management, specifically in the stages of selection, training and development. These experiences may function in alliance with national training institutions such as the SENAI in Brazil.

The corporate initiative focus is usually promoted by an enterprise which has global reach. In this category we see the development of a model of "certification" with technical parameters of quality that apply in that framework or global sector. Sometimes this sector can have multinational scope, as is the case of certification in the field of precision welding or automobile repairs. This trend also tends to facilitate improved quality in after sales service, which is of great interest to any manufacturer.

Corporate certification usually involves allies in the educational sector who subscribe to the quality standards of the brand and are therefore accredited to offer the certification in question. Given the fact that these brands usually have a wide projection in the market, this kind of certification is very attractive to educational providers (who make agreements with the owners of the brand in question, and have access to world class technology in the educational services involved), to employers (who find the certificate gives a "seal of quality" to workers who have it), and to the workers themselves (who rapidly see the advantages of a certificate that is recognised world wide).

This kind of certification has great geographical and technological portability, but it does not correlate well with internal references or sectoral training frameworks. There is no doubt that it is an irrefutable recommendation in the generation of employment opportunities, but its connection with public training policies is still very weak, above all because there is a barrier that prevents public programmes from associating themselves with one provider in particular, without going through a call for offers. This kind of certification is very common among software manufacturers in the computer sector, but it also exists, and has

for a longer time, in markets as varied as the hotels sector and automobile repairs.

A question that has to be asked is why this kind of certification model has recently come into the region. There is no one single answer to this, but we can pinpoint some of the factors involved. First, the trend towards a global economy has put an emphasis on the concept of global brands and uniform quality. This has made it legitimate for manufacturers to wish to preserve their level of service by directly checking the quality of programmes and permitting accredited agents to use their logotype and trademark. Second, consumers usually follow signs that are more visible in the market, and this very probably accounts for the growing demand for training and assessment on the part of the providers of these brands.

One consequence of this situation is that there is widespread debate about what the contents and characteristics of a certification programme should be. Should the objective be general competencies, key competencies for employability, or content that has already been defined and tested in the market though a connection with specific technology or prestige? What role should the state play in the regulation of matters connected to raising workers' levels of skills and competency? Is it better to have a national framework for recognising know-how which promotes lifelong learning, or a series of specific offers which are geared to sectoral competencies? These are new questions, and they can be added to the traditional ones that have been asked time and time again in discussion forums in many countries in the region: Who should pay for certification? How is it possible to avoid the recognition of knowledge becoming a cause of, or at least a factor in, exclusion? Who should do the certifying, and for what? On this last point, there is frequent analysis of first-, second- and third-party certification mechanisms.[18]

Regional experiences are still marking out the ground of what is already a demand from workers and employers. Some ideas about the role and objectives of certification need to be clarified before it can serve as a solid foundation for defining institutional models. This is because very often a lack of knowledge means that judgements are formed *a priori* or programmes are designed which favour methodological positions without regard to technical considerations. The next table presents some of the dimensions of certification initiatives.

---

18 For a more detailed description of these mechanisms, see Vargas. F, *40 Questions on Labour Competencies,* Cinterfor/ILO, available at www.cinterfor.org.uy

**Some dimensions of competency certification experiences
in Latin America and the Caribbean**

DIMENSION	NATIONAL INITIATIVES	SECTORAL INITIATIVES	CORPORATE INITIATIVES
PROMOTED BY	National training institutions Ministries of labour Ministries of education	Entrepreneurs' associations Sectoral branches International sectoral associations	Multinational business corporations
IMMEDIATE OBJECTIVE	Recognition of knowledge Lifelong learning	Competitive performance Productivity Human resources management	Brand complementarity, service, quality Image and commerce
COVERAGE	National Developed with sectoral pilot applications	Sectoral Can be local or national	Global Development at the rhythm of local markets
FINANCIAL RESOURCES	Funds from international loans Funds from the national budget Funds from vocational training institutions	Private funds Sometimes co-financed from public funds	Private funds
UTILITY	Levelling and progress in studies Occupational recognition Possibility to work	Linkage and career development Connected to performance evaluations and permanence decisions	Brand image Business image Brand-quality link
ACCESSIBILITY	Open Not obligatory Favours the inclusion of workers Occasionally requires payment	Not obligatory Closer to workers in the sector Almost always has to be paid for Does not include the unemployed	Not obligatory Proximity to partners and corporative collaborators Is always paid Attraction of image

DIMENSION	NATIONAL INITIATIVES	SECTORAL INITIATIVES	CORPORATE INITIATIVES
WHO PAYS?	Free in the pilot phase Subsidised for disadvantaged groups Interested party can pay a part	The interested party Employees of the interested party In some cases subsidised with public funds in its pilot phase	Interested party Employees of the interested party
WHO ASSESS?	National training institutions participate First-, second- and third-party models co-exist	National Training institutions participate Second- and third-party models	Interested corporations, sometimes in alliance with educational institutions Third-party models
STRONG POINTS	Public backing Promotion of education Lifelong learning Portability	Sustainability Use in personnel management Explicit participation	Global representation Brand backing
WEAK POINTS	Sustainability Education-work coordination Token participation	Little portability Inter-sectoral occupational mobility	Accessibility Concentration Little portability

Source: Author

3.3.4. The importance of financing and of institutional structures for the sustainability of certification mechanisms

Finance is always a key factor for initiating and sustaining innovation in human resources training. In the regional panorama, experiences that were initially promoted by training institutions are usually financed with the funds of those institutions themselves. However, many new experiences are financed by multilateral bodies, and take place in the framework of projects with a limited life cycle and a fixed amount of financing. Although the progress of certification experiences in the region, particularly those with sectoral coverage, do not yet allow definitive conclusions to be drawn, the absence of enduring institutional arrangements puts a question mark against their ultimate sustainability.

The certification of competencies is emerging as a new instrument for diagnosing training needs and for recognising achievements obtained in ambits other than training centres. According to the new ILO Recommendation concerning human resources development, countries need to be encouraged to formulate national human resources development policies in such a way as to favour employability, this being understood as the possibility of finding decent work, being promoted in the enterprise, or changing jobs when necessary, and all this in the framework of the continual changes that are caused by technology and the new forms of organization in work.

It is here that the responsibility of governments to maintain a system of education and training for work lies. They should create a training framework that facilitates lifelong learning and motivates enterprises to maintain and improve their investments in training. The design of competency recognition mechanisms must facilitate access to training and re-training for workers. Thus the Latin American experiences show that countries should be encouraged to give great weight to developing these mechanisms in the framework of national training institutions.

ANNEX
Institutions of technical education and vocational training referred to in this book

Argentina:
Training Area Administration. Secretariat of Employment
Ministry of Labour, Employment and Social Security
www.trabajo.gov.ar

Labour Competency Training and Certification Programme
www.trabajo.gov.ar

National Institute of Technological Education (INET)
www.inet.edu.ar

Barbados:
The Technical and Vocational Education and Training Council (TVET Council)
www.tvetcouncil.com.bb

Bolivia:
National Institute of Labour Training (INFOCAL)
www.infocalcbba.entelnet.bo

Brazil:
National Commercial Training Service (SENAC)
www.senac.br

National Industrial Training Service (SENAI)
www.senai.br

National Rural Training Service (SENAR)
www.senar.org.br

National Transport Training Service (SENAT)
www.cnt.org.br

Secretary of Secondary and Technological Education (SEMTEC)
www.mec.gov.br/semtec/default.shtm

Chile:
National Training and Employment Service (SENCE)
www.sence.cl

Lifelong Education and Training Programme. "Chile Califica"
www.chilecalifica.cl

Ministry of Education
www.mineduc.cl

Colombia:
National Training Service (SENA)
www.sena.edu.co

Costa Rica:
National Training Institute (INA)
www.ina.ac.cr

Cuba:
Workforce Administration. Training Department
Ministry of Labour and Social Security

El Salvador:
Salvadorian Vocational Training Institute (INSAFORP)
www.insaforp.org.sv

Ecuador:
Ecuadorian Occupational Training Service (SECAP)
www.secap.gov.ec

Guatemala:
Technical Institute for Training and Productivity (INTECAP)
www.intecap.org.gt

Honduras:
National Vocational Training Institute (INFOP)
www.infop.org

Jamaica:
National Training Agency. The Heart Trust/NTA (HEART/NTA)
www.heart-nta.org

Mexico:
National College of Technical-Professional Education (CONALEP)
Secretariat of Public Education

General Administration of Work Training Centres (DGCFT)
www.sep.gob.mx

Occupational Competency Standardisation and Certification Council (CONOCER)
www.conocer.org.mx

Nicaragua:
National Technological Institute (INATEC)
www.inatec.edu.ni

Panama:
National Vocational Training Institute (INAFORP)
www.inaforp.edu.pa

Paraguay:
National Service of Promotion of Vocational Training (SNPP)
www.snpp.edu.py

Programme of Efficiency and Quality in Construction (PECC) of the Paraguayan
Chamber of Construction (CAPACO)
www.pecc-capaco.org

Peru:
National Service of Occupational Training in Industry (SENATI)
www.senati.edu.pe

Tourism Training Centre. CENFOTUR
www.cenfotur.edu.pe

Dominican Republic:
National Institute of Technical-Vocational Training (INFOTEP)
www.infotep.gov.do

Saint Lucia:
Technical and Vocational Education Department.
Ministry of Education, Human Resource Development, Youth and Sports.

Spain:
National Qualifications Institute (INCUAL)
www.mec.es

National Employment Institute (INEM)
www.inem.es

Tripartite Foundation for Training in Employment
www.fundaciontripartita.org

Centre for Research and Documentation about the Economy, Employment and Vocational Qualifications (CIDEC)
e-mail: info@cidec.net

Trinidad and Tobago:
National Training Agency (NTA)
www.ntatt.org

Uruguay:
Council of Technical and Vocational Training (CETP/UTU)
www.utu.edu.uy

Venezuela:
National Institute for Educational Cooperation (INCE)
www.ince.gov.ve

BIBLIOGRAPHY

AGUDELO, Santiago. *Alianzas entre formación y competencias.* Montevideo: Cinterfor/ILO, 2003

—. *Certificación ocupacional: manual didáctico.* Montevideo: Cinterfor/ILO, 1993.

ALEXIM, Joao Carlos; LOPES, Carmen Lucia Evangelio. A certificação profissional revisitada. Río de Janeiro, SENAC. *Boletín Técnico do SENAC.* v.29, No. 3, Sept - Dec. 2003.

ARBIZU, Francisca. La perspectiva del Sistema nacional de cualificaciones y formación profesional en España. Transparencia, reconocimiento y calidad de competencias. *Boletín Técnico Interamericano de Formación Profesional. Competencia laboral y valoración del aprendizaje.* Montevideo, Cinterfor/ILO. No.152, 2002.

ARGÜELLES, Antonio. (Comp.) *Competencia laboral y educación basada en normas de competencia*. Mexico: Conalep; Limusa, 1996.

ARO, Pekka. Empleo y formación de jóvenes. *Boletín Técnico Interamericano de Formación Profesional.* Montevideo, Cinterfor/ILO. No. 151, 2001.

BOUDER, Coutrot et al. *Certification and legibility of competences*. Thessaloniki: CEDEFOP, 2001.

BRAZIL. Ministry of Education. *Ley de Directrices básicas sobre educación.* Law 9394 of 1996.

CAPACO. *Programa de eficiencia y productividad en la construcción.* Various reports. Asunción, 2002.

CARLSON, Beverly. *Educación y mercado de trabajo en América Latina. ¿Qué nos dicen las cifras?* Santiago de Chile: CEPAL, 2003.

CASANOVA, Fernando. *Local development, productive networks and training.* Montevideo: Cinterfor/ILO. 2004.

CATALANO, Ana María. *Familias profesionales y calificaciones clave en la Construcción civil.* Buenos Aires: INET/GTZ, 2000.

CEDEFOP. *Evoluciones en el ámbito de los sistemas de formación profesional de los Estados Miembros entre setiembre 2001 y febrero 2002.* www.cedefop.eu.int

—. *Identification, evaluation and recognition of non formal learning*. Agora V. Thessaloniki, 1999.

CENFOTUR. *Estándares de competencia laboral en hotelería y turismo.* Lima, 2002.

CINTERFOR/ILO. *La formación basada en competencias en América Latina*, www.cinterfor.org.uy

CONOCER.Various presentations at different events. www.conocer.org.mx

COTO, J.; Quiros, R. et al. *Manual con actividades para estimular la empleabilidad desde el aula*. San José de Costa Rica: FORMUJER; INA/IDB, 2003.

Chile Califica. *Diseño de itinerarios de formación técnica.* Working paper. Santiago de Chile, 2004.

Chile. Ministry of Education. *Decreto Supremo 220 de 1998. Objetivos fundamentales* y contenidos mínimos obligatorios para la enseñanza media.

Eurydice. *Key competencies. A developing concept in general compulsory education*. Brussels, 2002.

Fundación Chile. *Preparado: Programa de competencias para el trabajo. Guía de trabajo.* Santiago de Chile, 2004.

GALLART, María Antonia. (Coord.) *Formación, pobreza y exclusión: los programas para jóvenes*. Montevideo: Cinterfor/ILO, 2000.

GAMERDINGER, George. *Calificaciones profesionales: experiencias del Caribe.* Port of Spain: ILO, 2000.

—. Tendencias en el reconocimiento y certificación de calificaciones: papel de la formación basada en competencias. Perspectiva del Caribe. *Boletín Técnico* Interamericano de Formación Profesional. Competencia laboral y valoración del *aprendizaje.* Montevideo, Cinterfor/ILO. No.152, 2002.

HEINZ, Walter. *Vocational socialisation and competence development: the historical dimension.* Luxemburg: CEDEFOP, 2000.

HERNÁNDEZ, Daniel. Políticas de certificación en América Latina. *Boletín Técnico Interamericano de Formación Profesional.* Montevideo, Cinterfor/ILO. No. 152, 2002.

IBARRA ALMADA, Agustín. Formación de los recursos humanos y competencia laboral. *Boletín Técnico Interamericano de Formación Profesional. Competencias laborales en la formación profesional.* Montevideo, Cinterfor/ILO. No.149, 2001.

—. *Reforma estructural de la formación profesional y la capacitación.* Mexico, 2000. Electronic presentation.

—. El Sistema normalizado de competencia laboral. In: ARGüELLES, Antonio (Comp.) *Competencia laboral y educación basada en normas de competencia.* Mexico: Conalep; Limusa, 1996.

ILO. *Labour overview 2002*. Lima, 2002.

—. *Labour overvie 2003*. Lima, 2003.

—. *Recommendation concerning human resources development.* Geneva. 2004.

ILO; Ministry of Labour and Employment. *Certificación de competencias profesionales. Relatos de algunas experiencias brasileñas.* Brasilia, 2002.

INA. *Experiencia del INA en el marco de la normalización, formación y certificación de competencias laborales.* San José de Costa Rica: INA, 2001.

INCUAL. *Sistemas Nacionales de Cualificaciones y Formación Profesional.* 2003.

INFOCAL. *Clasificador Nacional de Ocupaciones*. La Paz, 2002.

INSAFORP. *Sistema Nacional de Formación.* El Salvador. www.insaforp.org.sv

INTECAP. *Modelo Norte de formación por competencias.* www.intecap.org.gt

IRIGOIN, María E.; GUZMÁN, Virginia. *Módulos de formación para la empleabilidad y la ciudadanía.* Montevideo: Cinterfor/ILO, 2000. 4v. FORMUJER Programme.

IRIGOIN, María E; VARGAS, Fernando. *Competencia laboral. Manual de conceptos, métodos y aplicaciones en el sector salud.* Montevideo: Cinterfor/ILO; OPS, 2002.

JENS BJØRNÅVOLD. *Identification, assessment and recognition of non formal learning.* CEDEFOP, 1999. European Tendencies.

MÁRQUEZ, Gustavo. *Capacitación de la fuerza laboral en América Latina: ¿Qué debe hacerse? IDB*, 2001.

MASARIEGOS, A., Sopena, Quim. And others. *Competencias transversales*. SURT. Barcelona: FORCEM, 1998.

McDONALD, Rod; BOUD, David; FRANCIS, John; GONZCI, Andrew. Nuevas perspectivas sobre la evaluación. *Boletín Técnico Interamericano de Formación Profesional.* Montevideo: Cinterfor/ILO. No.149, May - August 2000.

MERTENS, Leonard. *Labour competence: emergence, analytical frameworks and institutional models.* Montevideo: Cinterfor/ILO, 1996.

MERTENS, Leonard; BAEZA, Mónica. *ISO 9000 y la competencia laboral.* Mexico: CONOCER, 1998.

MERTENS, Leonard; WILDE, Roberto. Aprendizaje organizacional y competencia laboral. La experiencia de un grupo de ingenios azucareros en México. In: Labarca, Guillermo (Coord.) *Reformas económicas y formación.* Montevideo: Cinterfor/ILO, 2003.

MILOS, Pedro. *Cómo articular competencias básicas y técnicas en la capacitación de jóvenes*. Paris: UNESCO. IIPE, 2003.

MIRANDA, Martín. Transformación de la educación media técnico-profesional. In: *Políticas educacionales en el cambio de siglo. La reforma del sistema escolar de Chile*. Santiago de Chile: Universitaria, 2003.

MONTEIRO LEITE, Elenice. *El rescate de la calificación.* Montevideo: Cinterfor/ILO, 1996.

National Qualification Authority of Ireland. *Frameworks of qualifications: A review of developments outside the State. Working paper.* July 2002.

NOVICK, Marta. La dinámica de la oferta y demanda de competencias en un sector basado en el conocimiento en Argentina. En: Labarca, Guillermo (Coord.) *Reformas económicas y formación.* Montevideo: Cinterfor/ILO, 2003.

NOVICK, Marta; BARTOLOMÉ, Mara; BUCETA, Mariana; MIRAVALLES, Martina; SENÉN GONZÁLEZ, Cecilia. *Nuevos puestos de trabajo y competencias laborales: un análisis cualitativo en el sector metalmecánica argentino.* Montevideo: Cinterfor/ILO, 1998. Papeles de la Oficina Técnica, 6.

OCDE. *Literacy in the information age: Final report of the IALS.* Paris. 2000.

O´DALAIGH, Carl. *Work, qualification and competencies.* Presentation at the IVTO Conference: Education and Work, Sao Paulo, Brazil, 1998. Programa de formación y certificación de competencias laborales. *Presentación gráfica.* Buenos Aires, 2003.

—. *Informe de avance.* Buenos Aires, 2003.

QCA. Qualifications and Curriculum Authority. *Annual NVQ Statistics.* London. www.qca.org.uk

RIORDAN, Trevor; ROSAS, Gianni. *Core work skills: ILO perspective and recent developments.* Geneva, 2003.

RYCHEN, Dominque; SALGANIC, Laura. (Eds). *Defining and selecting key competencies.* Gottingen, Germany: Hogrefe and Huber, 2001.

SENA. *Clasificación Nacional de Ocupaciones.* Bogotá, 1997.

SENA. *Plan estratégico 2002-2006.* Bogotá, 2003.

SENA. *Sistema Nacional de Formación para el Trabajo.* www.sena.edu.co

SENAI. *Certificación profesional basada en competencias. Metodologías.* Brasilia, 2002.

SENAI. Proyecto estratégico nacional sobre certificación de competencias. *Documentos metodológicos.* Brasilia, 2002.

SILVEIRA, Sara. Género y empleabilidad: desafíos y oportunidades para una política de formación profesional y técnica en el siglo XXI en América Latina.

Boletín Técnico Interamericano de Formación Profesional. Formación Profesional, productividad y trabajo decente. Montevideo, Cinterfor/ILO. No.153, 2002.

SILVEIRA, Sara; MATOSAS, Anaclara. Género y economía informal en América Latina. Nuevos retos y respuestas posibles desde las políticas de formación para el trabajo. *Boletín Técnico Interamericano de Formación Profesional.* Montevideo, Cinterfor/ILO. No. 155, 2003.

Standard ISO 17024. Requerimientos generales para organismos que operan sistemas de certificación de personas.

TEJADA FERNÁNDEZ, José. Acerca de las competencias profesionales. *Revista Herramientas*, Madrid. No.56, March- April 1999. UK National Occupational Standards Programme. *Report of the independent review.* 2001.

VARGAS, Fernando. Cuatro afirmaciones en torno a la certificación: todas falsas. *Boletín Técnico Interamericano de Formación Profesional.* Montevideo, Cinterfor/ILO. No.153, 2002.

—. *40 Questions on Labour Competency.* Montevideo: Cinterfor/ILO, 2004.

World Bank. Chile lifelong learning and training project. *Project appraisal document.* 2002. www.worldbank.org

World Bank. Mexico Technical Education and Training Modernization Project. *Staff Appraisal Report.* Mexico, 1994. www.worldbank.org

ZARIFIAN, Philippe. *El modelo de competencia y los sistemas productivos.* Montevideo: Cinterfor/ILO, 1999. Papeles de la Oficina Técnica, 8.