
Introduction

Expressions of change

As of its creation, in 1963, Cinterfor/ILO has committed the best of its resources and human and institutional potential to follow and contribute to the production and acquirement of knowledge on training, education and labour. To do so it has made relevant Latin American and international research, reflection and dissemination regarding policies, strategies, practices and experiences in these areas one of the fundamental pivots of its programmes.

In a world typified by the vertigo of change and organised around the spiral of knowledge, the amount and complexity of innovations, searches and efforts developed by the multiple players who act today in the universe of training require constant systemisation -always threatened by obsolescence- if one wishes to take maximum advantage of them and recover them for collective learning and advancement. This document is a new manifestation of this commitment to the generation of synergies among countries, institutions, and key players in the area of vocational training and technical education and its purpose is to describe and analyse what is happening at present in Latin America and the Caribbean in these fields.

5

With this objective in mind it would seem that the simplest resort would be to compare with the past. However, upon first beginning along these lines, it becomes evident that the central question can no longer be, what has changed in the occupational training of the region?, but rather, what has not changed? And the fact is that only few aspects -in form, content or concept- have not changed during the last 25 years. Furthermore, in no century in history have there been so many and such intense social transformations as in the 20th.

Society, the pivots which structure its development, its morphology and the coordinates of space and time are quantitatively and qualitatively different. There is no longer any doubt as to the role played by knowledge in development. Economies are no longer based solely on the accumulation of physical capital and human resources: there is a need for a solid base of information, learning and adaptation. Scientific research results in technological innovation, new products appear, inputs are replaced, innovative production techniques are discovered which allow resources to be economised and costs to be reduced, etc. **Knowledge becomes the basis of human labour and has the power to create a new society: the cognitive society or the society of knowledge.**

Globalisation of exchanges, new communication technologies, the vertiginous development of computerisation and the decline in the cost of the services it makes possible are doing away with frontiers and shortening distances and time. The farthest village has alternatives to access a worldwide accumulation of knowledge so vast as to be unimaginable only fifty years ago, and it can also do so faster and more cheaply than anyone would have imagined two decades ago.

6 As a result, education becomes the centre of cognitive society and its functioning and basic values must be, increasingly, a motive of interest and involvement of all society's players. Everything points to the acquirement of knowledge in the society of knowledge becoming like the possession of property and wealth in the capitalist society. Likewise, the technological impulse has also allowed the development of non-conventional pedagogical methods (various forms of long distance education, including: television, interactive education, multimedia resources, etc.), that open up learning opportunities to millions of people who, otherwise, would have no access to satisfactory education.

But, at the same time, these possibilities are far from being available to all on an equal basis, besides which they require radical modifications of the type, combinations and quality of knowledge needed. The intensity of the spread of information cannot hide that there are vast areas of our continent that still lack electric light and potable water or schools where chalk and books are scarce. For poor people, the fruits of the information era -*knowledge for all*- continue to be out of reach. The inequalities in the capacity to generate knowledge are still greater than those in income, and what definitively distinguishes the poor from the rich -be they people or countries- is no longer

limited to their having less capital, but also less knowledge and of a poorer quality, which is to say that the difference in income among nations and individuals depends on the degree of success which they have been able to bring to bear to the acquirement and use of knowledge. The latter, in today's world, defines economic transactions, determines commercial trading, orients markets, determines technologies and productive systems, but it also makes viable the quality of life and of social linkages. The poor countries have less institutions and tools to gather and disseminate information on transactions, technologies and market prospects, to certify the quality of their products, but also to ensure the relevance and updatedness of their educational and health services, and even to generate and transmit the knowledge and information which allow free expression of the citizen's will and transparent functioning of political control mechanisms.

There does not, therefore, seem to be room for doubt that, on the eve of a new millenium, promotion of economic development, improvement in the life style of citizens and countries, enjoyment of better health, provision to young generations of an education of better quality and greater relevance, preservation of the environment, require finding the resources and ways in order that **everyone**, men and women, young people and adults, countries and regions alike, may: *access, learn and communicate relevant knowledge*. To do so it is necessary to search for and adapt the knowledge available in other places in the world and encourage local generation; to ensure basic universal education and the creation of life-long educational opportunities, as well as to promote tertiary education and take advantage of all the possibilities of information and communications technology.

7

Lastly, **knowledge, in its technological specificity and in its multidisciplinary aspect, radically modifies the morphology of society, encouraging the irruption of a "network society," and alters the space and time coordinates, incorporating a virtual space and atemporal time culture.** Networks, as sets of bodies, centres, institutions, apparatus, physically separated but connected with each other, on the basis of common codes of communication and complementary or articulable objectives, become the organisational methods and/or the appropriate instruments for an economy based on innovation, globalisation and decentralisation or for enterprises which are based on flexibility and adaptability.

Two thousand seven hundred years after the discovery of the alphabet, which made rational discourse possible and broadened the world, freeing it from objects and relationships among speakers, television allowed text, image

and sound to be integrated into a single system and, in the second half of the nineties, multimedia provides the merging of mass communications media with the power of interaction and extends the scope of electronic communications to everyday life, work, school, leisure, etc. The result: a radical and definitive transformation of culture and the blurring of frontiers between materiality and virtuality, between yesterday, today and tomorrow.

The division and the nature of labour have changed. The expected impact of automation, computer science, robotics and the development of telecommunications have unleashed the “third industrial revolution”, which co-exists with high world unemployment. It is estimated that, in the U.S. alone, ninety million jobs are on the way to being replaced by machines in the immediate future. The technological impact, however, is not only circumscribed to industry, since biotechnology radically transforms agriculture and telecommunications and information science the services sector. We are witnesses to a meshing of information technology with the Life Sciences, and a good example is the appearance of a new field -called “*pharming*”- arising from cloning and which, by introducing genes in the genetic code of animals, transforms them into chemical factories.

8 This merging of computer science and biotechnology questions the mass labour which was distinctive of the industrial revolution and has such a large productive capacity that it is increasingly difficult to find an effective demand for it, especially when the purchasing power and number of workers also decline constantly. We must add to that the tendency towards a reduction in vertical integration, through externalisation of the support services of production -formerly carried out internally by the firm and by its regular staff- and even of parts of the productive process. Therefore, the boundaries between the traditional sectors of the economy and, therefore, the very division of labour change and everything indicates that they will continue to do so in an unforeseeable manner.

In the second half of the 18th century, in Europe, economists and engineers, with Adam Smith as their figurehead, defined work as the performance of a set of elementary productive operations which could be made objective and defined precisely, regardless of the person performing them. This definition of labour violently disrupted the way in which professional activity was lived and practised by the artisans who produced the product with the knowledge acquired and implemented by the individual. This definition of labour as a sequence of operations generated a radical break between an object called work and another called worker, defined as a work

force with a certain energy and ability, capable of taking on the performance of those operations. In this scenario, what qualified workers was only their capacity to adjust to the operations they needed to perform as employees, subordinate to an employer. This double definition of work and worker led to the notion of a build-up of labour productivity: physical productivity - velocity of performance and speed in the linking of operations- and economic productivity, which translates as a decline in the unit value of each product thus produced.

Frederick W. Taylor, an engineer economist, gave practical interpretation to this conceptual structure, and the entire so-called “Taylorist system”, based on the division between conception and execution of labour, is nothing but an instrumental application of the ideas of Adam Smith. By Taylorist organisation is meant the rational organisation of mass-production industry which seeks to define and divide, with a maximum of precision, jobs and tasks in order to control the labour involved. It is a system that seeks to do without labour as a subject.

While the increasing evolution of demand, which characterised the past, allowed standardisation both productive -economies of scale- and commercial -distribution networks- today, the increasing differentiation required and the impossibility of keeping considerable “stocks” of heterogeneous products, demands customised production. The latter requires an adjusted interlocking between technological progress -that offers answers and solutions to these new demands- and modernisation of operational and commercial management. Among the many changes required by this process, the replacement of Fordist-Taylorist type rationalisation can be affirmed, as well as its substitution by a new industrial production model based on flexibility and new methods of organisation of work adapted to ever-changing and heterogeneous markets or soft technologies. This “new industrial organisation paradigm” demands a double reading of technological change. From a diacronic standpoint we need to keep in mind that the change is neither sudden nor generalised, the new machinery soon becomes obsolete, but, moreover, that the new systems are not implemented instantaneously and completely but rather co-exist with the old production systems, generating imbalances and unevennesses in the industrial modernisation process. In turn, a synchronous reading reveals that the consequences of those changes in the organisation and qualification of labour are different depending on worker categories, sex, level of qualifications, although also on whether we are dealing with highly industrialised or developing countries.

9

All of this leads to a radical change in occupational profiles, to a demand

for new competencies and abilities -until now unknown or undermined- that close the gap between training of workers and training of the citizen, and to a lack of technological determinism. The design and content of occupations have become more complex, jobs require greater knowledge and less physical abilities, the content of the jobs has been enriched and the range of operations performed by all workers has broadened. The work force management system of Fordist industries was characterised by the extreme parcelling out of tasks and the extensive use of unskilled labour. On the other hand, the new paradigm is characterised by the performance of several short series within a variety of different products (flexible automation) and their management has been accompanied by new organizational methods such as *just-in-time*, *kanban*, team or work group production, sub-contracting of tasks or services and even some forms of occupational flexibility (part-time workers, a shorter day for all workers or for specific groups, contracting for tasks, etc.). When dealing with control methods, statistical quality control, continuous upgrading, total quality, zero defect programmes, are incorporated. This involves substantial changes in work environments and conditions which should be designed to generate profound changes in attitude and to change worker practices and the competency requirement into cognitive and tool competencies, access to which is achieved through a higher level of general education. Also, however, the new forms of labour organisation require behavioural competencies and socio-motivational approaches which encourage absorption into teams.

In regard to these transformations at the world level, the inevitable question is how they have been processed in Latin America and the Caribbean and what is happening regarding the adjustment between these new demands and the labour force training realities. Economic transformation and technological modernisation in the continent have been characterised by intense imbalances and heterogeneities. Moreover, at the micro level, contrasting behaviour occurs and it is still possible to detect sectors of activity or firms that -while keeping to a quasi-crafts productive organization- manage circumstantially to find successful market niches which ensure a survival, the continuity of which it is difficult to foresee. In turn, although during the crisis of the eighties the educational capital of the population continued to increase, Latin America and the Caribbean have not yet managed to ensure that an important proportion of their population reaches the levels required by those occupations which allow better income and high productivity levels. And what is even more significant, the quantitative expansion of registration affected the quality of education and increased the difference among the people being educated according to their financial level and culture of origin.



In this context the management of human capital and, especially, of its skills, should constitute a meeting point, the interlocking space, between desire and reality. When we focus on this aspect, we find the following:

The conception of training has changed. Although it was always considered an educational issue, the truth is that for a long time it maintained a more fluid dialogue with the world of production and labour than with the world of school and academics. At present this educational aspect of training is stressed as it becomes the common ground, together with other educational methods and branches, of the challenge of fulfilling the need of people to have access to training and education throughout their lives.

Training, being closely linked to productive work, was always an item within the labour relations systems of our countries. But this presence was for a long time discrete and undervalued by the productive and occupational players themselves. Today it appears as a central component within the strategies for increasing productivity and improving the competitiveness of firms. It is, in turn, associated with wages and with opportunities to participate in the management of production. It is the subject of negotiation and appears with ever greater frequency in collective agreements and labour laws. Employers and workers, as well as their representative organisations, press for decision-making power in the matter of training and, at the same time, find unsuspected opportunities for co-operation and dialogue. The unemployment problem, installed as item number one on the agenda of priorities to be addressed, begins to be attacked through **a new generation of active employment policies, within which training appears as a central, strategic and indispensable component.**

11

To talk about training has also been, and always has been, to refer to providing knowledge, abilities and skills linked to a job and, logically, to the handling of a certain technology. It was, no doubt, a transfer of technology towards the individuals who were involved in the learning process. While maintaining this basic element, the truth is that today **the link between training and technology has become much more extensive, profound and complex than in the past.** The pace of innovations accelerates and it is now not only apprentices who must become familiar with a (for them) new technology. Employers, middle and technical executives, managers, professionals, the firms themselves as organisations, must be constantly up to date, require guidance and information, seek spaces for trials and tests in order to make the decision to incorporate or not a certain innovation. Training thus starts to diversify its audiences and it is no longer only the individual worker but also



other kinds of staff and the firms that request training and updating services regarding technology. As the technology applied to production is rapidly renewed, training also begins to change: the relative importance of pedagogical efforts addressed to handling specific technology -such as a certain type of lathe or certain welding technique- declines and the importance of training to handle and relate to a constantly changing technology increases. This new situation has caused, in Latin America and the Caribbean, that in the most up- to-date and efficient cases of attention paid to firms and workers, the talk and work are no longer in terms solely of training as such, but rather that they are integrated into a set of services, fundamentally technological, that seek to provide an overall answer to the global needs of firms.

The sectoral composition of the supply of training has changed direction. The economy of countries, both in terms of product generation and of employment distribution, has changed radically. Three decades ago, the sectors linked to industrial production relatively weighed the most, and everything led to expect that their participation in the economy of countries would increase sustainedly. In keeping with this, the major part of the institutional supply of vocational training basically addressed jobs in the secondary sector of the economy. During the last two decades, in Latin America and the Caribbean, as well as other regions of the world, the industrial sector lost importance relatively in terms of participation in the product, but particularly in regard to employment generation. At the same time, the importance of the services sector has increased, contributing an increasingly greater proportion of the product and taking first place regarding employment generation, absorbing to a large extent much of the labour force which gradually became redundant in the secondary sector. This explains why many of the training bodies of the region have re-directed their supply seeking to give greater weight to tertiary sector jobs, at the same time as a new supply, both public and private, arises and develops, devoted specifically to the requirements of this expanding sector.