CINTERFOR/ILO

VOCATIONAL TRAINING ON THE THRESHOLD OF THE 1990s

Volume II

A study in two volumes of changes and innovations in specialized institutions of Latin America

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Vocational training on the threshold of the 1990s was elaborated by María Angélica Ducci, CINTERFOR/ILO expert. Pedro Daniel Weinberg, Ligia Chang Alfaro, Eduardo Martínez Espinosa, Jaime Ramírez Guerrero and Fernando Rojas, collaborated as consultants. Thanks to the special contribution of SENAI from Brazil, Marisa de Assis and Arlette de Paula Guibert also collaborated as consultants.

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PREFACE

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CINTERFOR will publish the study in Spanish. This English language version is being disseminated to provide quick access to the data and conclusions for those that do not read Spanish, even though the translation is less than fully polished. The findings, interpretations, and conclusions are solely those of the authors, and should not be attributed to the World Bank, its Board of Directors, its management, or any of its member countries, or to any of the other organizations who co-sponsored the study.

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VTI DIRECTION: POLICIES AND PLANS

1. VTIs IN THE POLITICAL CONTEXT

a. The interplay of forces

VTIs have become bodies of exceptional political sensitivity. Their very location, at the meeting point between the diverse interests of the various sectors having a direct say in their management, has taught them to develop a balance that enables them to respond to demands on many levels. VTIs undoubtedly face much greater political pressure today than they did when first created. Initially, VTIs were entrusted with a specific task, which was given the importance required by the particular time. Nobody foresaw, however, the political importance they would come to have as they became increasingly powerful and their resources grew. The autonomy and consequent freedom of action they were originally given was to a large extent a form of State protection for a new endeavour that was given marginal room to manoeuvre within the realm of national activities, and which was also to be financed with funds from the business sector. The feeling was that it was already quite an achievement to extract funds from the private sector to resolve a State need, and that it was better not to insist on excessive governmental control in the matter. Moreover, the formula for joint participation of the government, employers and workers in the management of most VTIs was seen as sufficient insurance against any improper use of the autonomy VTIs had been given.

Nevertheless, government control grew little by little, and VTIs increasingly began to be considered "official" agencies, where primary responsibility for management came to rest with the State. The employer and worker sectors retained only a limited and at times merely formal, participation. It should be noted that as VTIs grew, employer sectors began moving away and losing their say and power in VTI management. The financial contribution of enterprises, which had been the material basis for the private sector's right to participate, came to be understood as just one more tax, and employers accepted the fact that the growth of State power in national life, which was so marked in the countries of Latin America during the 1960s and '70s, should also include VTIs.

Workers, on their part, assimilated the action of VTIs as a social service provided by the government. Despite the fact that worker representation on VTI directing councils had been a union victory, their participation was generally rather passive.

Only recently in the 1980s do we begin to see a reawakening of the private sector, particularly among enterprises, in VTI management. This is naturally explained by the trend toward economic liberalisation in Latin American countries and the consequent reassessment of the predominant role of the State in various spheres of national interest. It is also a result of the renewed interest of employers in managing the training of the human resources they currently need to participate in economic reactivation and to cope with the technological renewals that implies. Finally, it is to a certain extent a reaction by these sectors to the threats deriving from the government policies prevailing in the region, tending to reallocate VTI financial resources and to make them available to the general State budget.

At present there is a power struggle, at times below the surface, between governments and enterprises for control of VTI administration and resources. On the one hand, government authorities are seeking to use VTI resources to address social policies, and press for a distributionist role for the services VTIs provide. On the other hand, the private sector is demanding that enterprises be compensated for the resources they contribute in the way of taxes for VTI financing.

In some cases this is an open battle and has led to transfers of control from one sector to another. Such is the case of INACAP in Chile, which is the clearest instance of an institution that has gone from government to private sector management. On the other hand we have the Brazilian institutions SENAI and SENAC, the only ones in the region that have stayed in the private spheres since their creation, which with great difficulty managed to at least temporarily avoid the State control proposed by the new Brazilian Constitution in 1988. In most other countries, the struggle is less open, but no less marked. It is difficult to define a trend or to predict what will happen in the future. For now, VTIs seem to prefer avoiding definitive changes and to stay at the level of negotiations between the government and private sectors, which has led to an increasingly forceful rebirth of the participation and involvement of different levels of political management.

Of course, governments, employers and workers all have their own - often conflicting - expectations, concerning the role that VTIs should fulfil. Moreover, within each of these three sectors, positions are far from being monolythic.

On the one hand, governments struggle to bring VTIs more and more in line with their views on social policies and on the fight against poverty; but at the same time they urge them to play a dynamic role in economic reactivation and in technological modernisation. On the other hand, employers interests are diversified among subsectors, geographical regions, types and levels of productive units, and the various groups exert pressure to obtain a response to their specific demands; workers on their part show a more passive attitude, although not more unitary; they are alert to any change in the VTIs that may encroach on their conquests but rarely take any initiative. They act more in reaction, and with an aim to stop eventual undesired effects of measures that nearly always come from the enterprise or governmental sector. In the latter case, workers' interests are often better defended by the government, or by sectors that are more sensitive to the workers' cause, than by their own organisations.

Considering that VTIs are usually presided by boards of directors with representation from the above-mentioned sectors, they have established a tradition of conciliation of interests and mutual concessions in seeking a path that will respond, in a well-balanced way, to major national interests. Until recently, it was considered that the expression of these so-called "national interests" was guaranteed in VTIs through the voice and the vote of government, employers and workers' representatives.

Today, the situation is far more complex, as this tripartite participation is not enough to provide the VTIs with sufficient clues as to their political management. The pressures that were traditionally channelled through these boards or councils, now also circulate on the outside, from higher government levels, business organisations, regional and sectoral powers, etc., all establishing new rules of power, in the face of which VTIs must also take up a new political position.

Historically, VTIs have not carried out a decisive role in political terms. This is obvious from the fact that they were rarely called upon to take part in major national decisions, although these decisions may have exerted an influence or made demands on VT. But the situation is different now . VTIs have gained power, presence and prestige, and usually manage considerable budgets that more than warrant them being a focus of power.

While the scope of VTIs has gradually become more diversified and wide, covering an increasing range of economic activities and sectors as well as social groups and segments, the management of policies has become increasingly difficult. Varied and sometimes contradictory demands have to be balanced without jeopardising the legitimacy that has been achieved. Nowadays,

interlocutors are most varied. It would be inadequate or inaccurate to limit the framework of political decisions to a reconciliation between the defined expectations of the government, the enterprises and the workers regarding the qualifications the labour market demands from manpower, as in the past.

As VTIs have grown, they have become stronger and taken on greater weight in the life of the countries, and, with this, their visibility has obviously increased. It is thus that the bidding and bargaining that goes on outside these institutions - perhaps at the highest level of the management of economic, social and labour activities in the countries - reaches them directly. Fiscal policies and employment policies, as well as social policies in general (and sectoral policies in particular, such as education, health, housing) show the results of the struggle of interests and spaces of power, reflecting on the institutions.

b. External pressures

The real political battle is waged outside the VTIs, in the external world at high government levels, in the sphere of economic policies, political parties, enterprise organisations, unions and the new social groupings that have arisen as a result of the reorganisation of the productive apparatus. What is at stake are definitions of overall orientations of national policies, highly concentrated by the tug-of-war between the various sectors, above all regarding the implementation of policies for adjustments and reduction of the fiscal deficit. Summing up, we are dealing here with a fight for scarce resources, and on this front, VTIs could not go unnoticed, particularly as they concentrate a considerable budget and a remarkable autonomy in the use of their funds. It is not by chance that many of the most outstanding proposals for institutional change that have been considered over the last fifteen years in the sphere of VT, have not involved the participation of VTIs themselves, and have not even come out any of their own initiatives.

To illustrate this point, we can recall the approval of the Training and Employment Act in 1976 in Chile, which radically changed the prevailing VT scheme and included a tax incentive system for training under the enterprises' responsibility; the establishment of fiscal stimuli of a similar nature in Brazil in 1976, and Law 55 in Colombia, which implies significant changes in SENA's autonomy and field of operation, as from 1985.

These three legal movements, together with many others that did not have such significant repercussions, are related with definitions going much further than the allocation and internal distribution of resources within VTIs. They refer to external definitions regarding authorised leeway of operation, and concerning the availability and liberty of action in the management of resources by traditional VTIs.

This has compelled the VTIs to come out of the relatively passive political attitude they had during their first years and to develop multiple and simultaneous mechanisms for understanding, processing and negotiation, in order to manage increasing external pressure. This is a constant fight to save or to redefine their position, and to reaffirm their legitimacy with each of the interlocutors, whose support is essential to the VTIs. Public opinion has not been detached from this interplay, nor of course have the sectors closest to the institutions' activities. When VTIs have been affected by external legal reforms, a heated debate has taken place that has projected VTIs well beyond their traditional limits. Over a million and a half signatures were collected in Brazil to support SENAI and SENAC when their institutional life was threatened in the draft for the new political Constitution, and similar discussions can be observed in the press and in political channels in practically all the countries where strong VTIs were threatened by legislative measures, or, as in the case of INA, when an attempt was made in 1983 to stop the new law that doubled VTI resources.

As a general rule, VTIs have tried to gain more attention from governmental economic and social decision-makers, simultaneously with agreements with employers for the establishment of policies on a sectoral ground. This dialogue attempts, not always successfully, to create a balance in the gray zone between increasing alignment with national policies and the preservation of the VTIs' autonomy and legitimacy vis-a-vis enterprises, an asset which is much appreciated and a tradition that the institutions zealously defend.

In other words, insofar as VTIs started acting closer to the execution of social policies, the presence of the governments increasingly became more marked in the management of most of these institutes. Their chief directors became more tied to the whims of administrations and governments in power. To a certain extent, this also led to a relative deterioration in the effective participation of the employer and worker sectors in VTIs boards. Appointment of highest level officials in VTI boards increasingly depends on the Executive Power. Although the laws establishing VTIs and later instruments governing appointment of VTI authorities generally provide for proposals, agreements or ratification of the appointment of VTI general directors or executive chairpersons, the novel part is that increasingly these posts are considered to be positions of trust with high-ranking importance in the distribution of power at government level.

With the exception of private sector-managed bodies such as the Brazilian SENAI and SENAC, INACAP in Chile, and Mexican institutions such as ICIC and CATEX, in most VTIs appointments are a prerogative of the Executive

Power. In some cases, these appointments are made directly, and in most cases through the ministers of labour. In the case of CONET, it is the President of the Republic who appoints the Director. In Bolivia the recently established INFOCAL, which replaces FOMO, has an Executive Director appointed by the Minister of Labour from among three candidates proposed by the employers. At INA the Governing Council appoints the Executive President. At SENA, the appointment is made directly by the President of the Republic. In the case of INFOTEP and INAFORP it is the President of the Republic who makes the selection from among three candidates proposed by the respective councils of the institutions. For INTECAP, the appointment is a prerogative of the Minister of Labour, as was the case until recently for SECAP, which as from 1986 has its Executive Director appointed by the Board of Directors from among three candidates proposed by the Minister of Labour. The Director General of SNPP is appointed by the Executive Power through the Minister of Labour. It is only at INFOP, SENCICO, SENATI and INCE that the governing council appoints the director of the institution, and even in those cases it is often the government that exerts the greatest pressure in such appointments.

In general terms, a conciliation between the parties is proposed, but in practice the governments have a decisive weight in high level appointments when the institutes are clearly seen to be official bodies. In various cases, the Executive Power has the right to appoint or approve non-governmental members of the governing councils, following proposals by the various sectors.

Marking a clear difference from the situation at the start of VTIs, these now unmistakably appear among the spheres of power in their respective countries. VTIs attract attention in national activities and are increasingly present in political activities. An illustration worth noting is that in many countries higher positions in VTIs constitute a springboard for officials and politicians "on their way up". Two former Director Generals of SENA, on accomplishing their appointments there, were promoted to Minister of Mines and Energy and Minister of Economic Development, respectively. A former President of CONET interrupted his job to become Minister of Education and Culture, a former President of INA (who had previously been Minister of Labour and Social Security), became Cabinet Minister in Costa Rica. A former president of INCE, after having been elected to Parliament, became Chairman of the Budget Committee of the House. And these cases are increasing. In this general climate, VTIs have taken on a renewed political behaviour. We shall examine some of its most significant manifestations.

2. THE FORMULA FOR AGREEMENT

a. Tripartite councils

VTI activities were marked from the start by an intention to guarantee participation and concertation among the interested sectors. This was ensured in VTI leading bodies formally established and ruled by law.

There is no doubt that the ILO had a decisive role in this matter. It is a fact that the ILO was a propelling force behind the establishment of most of the VTIs in Latin America. In 1939, during the twenty-fifth session of the International Labour Conference, at which Recommendations 57 and 60 were approved concerning vocational training and apprenticeship, respectively, the first Latin American delegation to take up the idea of establishing a national system to train the labour force, was Brazil. The Federal Government set up a commission to study the establishment of a specialised institution for industrial apprenticeship within the Ministry of Education and Health, funded by resources from industrial enterprises. Anticipating the effectiveness of the recommendations of that commission, and supported by experience in Sao Paulo, the employers proposed establishing what was later to become SENAI.

Although it is true that the Brazilian institutional formula did not provide for worker participation, the ILO used the basic setup of SENAI (later to be repeated in Brazil by the commercial sector with the creation of SENAC) to prepare a new model incorporating tripartite participation as a basic element. This was proclaimed insistently through ILO missions contributing to the establishment and implementation of institutions such as SENA in 1957, INCE in 1959, INA in 1965, INACAP in 1966, and later in most of the institutions set up during the seventies and even during the eighties.

Although the influence of the ILO's technical cooperation in shaping these institutions has covered many aspects, it is without any doubt tripartism that has been one of the outstanding features the ILO has incorporated in VT in the region. Since then, the ILO has remained vigilant, reactivating tripartism whenever it has seemed weak, and actively promoting it in situations where it had not been fully achieved. On encouraging discussion of the subject by governments, employers and workers at the same time, the ILO managed to promote the idea that the task is effectively these three sectors' shared incumbence.

If the bodies from within the ministries of labour in charge of VT (DGFP in Peru, SENCE in Chile, SMO in Brazil, DGPA in Mexico) are excluded, typical VTIs in the countries of the region all transpose multisectoral integration in

their governing councils or boards. The governments are represented in all of them and only in the case of UTU in Uruguay are the employers absent. Only three of the twenty VTIs with governing councils have not formally included workers' representatives.

On most of the governing councils the governmental representatives have a majority. On several of them it may be seen that governmental representation is on the increase, with the addition of other government sectors besides Ministries of Labour and Education that traditionally shared official representation. This responds to a progressive identification of new governmental sectors claiming their say in the major decisions of VT. The clearest case is that of national planning departments, ministries, councils or offices that have acquired a seat on the governing councils of institutions such as SENAR, SENA, SECAP, INTECAP, INFOP, INAFORP, SNPP, and COCAP. Ministries of Economy and Finance are also gaining progressive insertion, such as in the case of INTECAP, INFP and INFOP. This goes to show that little by little VT is entering a relevant sphere regarding the allocation of resources and impact on the execution of the State's global policy.

On the government side, there is no doubt that it is mostly the ministries of labour that have the decisive weight at the governing bodies. Of twenty institutions that have multisectoral councils, only three do not have direct participation from the Ministry of Labour. These are INACAP, INFP, and UTU. It should be pointed out that these three institutions are those more closely linked to the educational sector than to the labour sector. The ministries of education, that are represented on practically all the councils, only have supremacy in the case of CONET and UTU, as these institutions are inserted in the framework of the regular educational system.

In general, the councils are presided by the ministers of labor of their representatives, except in those cases in which it is the executive presidents of the institutions that preside, or when the institutions are sectoral bodies that report to the respective ministries, as in the case of the Peruvian institutions: SENATI, linked to the Ministry of Industry and Tourism, and SENCICO, linked to the Ministry of Housing. Of course, institutions linked to employers chambers are directed by them, such as in the case of SENAC, SENAI and the Mexican institutions ICIC, CATEX and others. The way governing councils are integrated is a fairly dynamic matter, in spite of requiring legal norms to support the changes being introduced. A progressive diversification may be noted, both from the governmental side as from the employers and workers ones, together with a movement in the relative weights of these various sectors. Some cases illustrate the various trends, showing evolution in the composition of the governing bodies.

In the case of SENA tripartism continues to be in force, but a considerable evolution has taken place in its internal balance of power along its institutional history. A progressive loss in the numerical importance of the representation of the employers' sector has taken place while State representation has increased. This is a reflection of the "officialisation" process within SENA. That is to say, of its increasingly clear definition as a governmental policy agency and of its definite incorporation in the state administrative apparatus.

Perhaps the most extreme case is that of UTU, which when established (1942) had a governing council with tripartite representation, but in 1973, with changes in the Educational Law, this was reduced to a professional technical council with three members representing only the government.

Within INA tripartism has gone through several stages. When it was established the Board of Directors was tripartite, including five members of the government and one representative of workers and employers, respectively. This scheme varied after 1970 when the law known as "4/3 law" took effect, whereby it was established that all the boards of directors of autonomous state bodies, including INA, should have seven members, four representing the government party and three representing the main opposition party. Thus, all traces of tripartite participation were eliminated from the institution's higher council. In 1974 the figure of Executive President was created as main authority of INA, but a non-tripartite Board of Directors was maintained, from then on comprising an Executive President and "six people having a wide knowledge or recognised experience in the field of activities of the institution or having a professional degree recognised by the State, appointed by the Governing Council". The total absence of participation and representation by worker and employer sectors was continued until INA's new organic law was approved in 1983, re-establishing participation from the three sectors - this time on a parity basis - which will become fully implemented at the end of the progressive application of the law for the appointment of the Board, in 1990.

INACAP has recently become fully dependent on the largest employers' organisation in the country, the National Confederation of Production and Trade, whereby the primacy of governmental representation held by the Corporation for the Promotion of Production (CORFO) has been cut back. Thus, worker representation disappears and governmental representation loses relevance, marking a definite step for INACAP towards the private sector.

The number of representatives of employers and workers , and very particularly the former, are very much related to the effective compartmentalisation of the various associations and unions in the organisations that represent them. Thus the appointment of the members of the

boards of directors is a result of a delicate balance between forces and pressures exerted by these organisations to achieve representation. In various countries some workers organisations have complained because they feel that they are not represented by union organisations that are given a seat on these councils.

In fact, the labour sector appears to be far less unified through its representative bodies than the employers sector. Furthermore, the labour sector is represented in a more diffuse way on some of the councils, considering that these also incorporate cooperative and solidarity movements (INA) or independent artisans (INAFORP) or peasants (SENA) and various others.

The appearance of these new sectors within the governing councils is a particularly relevant fact. On the one hand, it expresses an openness and awareness on the part of VTIs about movements that have taken place among the forces that are emerging as new clients for their services. This reaches such an extent that, for example at INA, the three representatives of the labour sector come from the union movement, the cooperative movement and the solidarity movement. A relative novelty in governing councils is the representation of small farmers in the case of institutions covering the primary sector. SENA, INCE and SENAR, as well as INAFORP, have such representatives.

Inclusion of leaders as representatives of groups or movements halfway between the employer and the unionised worker contribute to giving a new profile to traditional tripartite representation. In fact, gradual increase in the number and variety of the members of such higher bodies is one of the paths that VTIs have followed to progress in concerted leadership with the various sectors that effectively represent the interests of the social parts involved in the work of VTIs. In this way, tripartite representation, which had been established at the beginnings of nearly all the institutions, has progressively changed because of the incorporation of new actors and protagonists in the sphere of their management. This is merely a formal recognition and a legitimation of the heterogeneity of interest in what is today the commitment of those who are responsible for training.

In spite of tripartite participation having been extolled, degrees of participation are not equitable among the various sectors, save in very few exceptions. The only institution that has representation on a strictly paritary basis of the three sectors is INFOTEP, where agreements must necessarily be made by consensus in the Board of Directors.

Occasionally the number of representatives from each sector responds to the diversification of forces within each of them. In the case of INTECAP, the employers sector has six representatives against three government

representatives and three worker representatives. Nevertheless, the institution is clearly steered by the government. This is not the case however in SENATI, where six employer representatives are added to three from the government and two workers' representatives, here represented by the VTI's own teachers. The greater the number of economic sectors covered by VTIs, the greater the probability of varied seats from the employer sector corresponding to different branches of economic activity.

On the other hand, when the workers' sector is represented through its trade-union organisations, which are formed around class-oriented political and ideological positions, it transcends sectoral representation. So, in many cases the number of seats is frequently in accordance with the number of trade unions or confederations having greater power in the country. However, all in all, the workers have not actively stated their desire to participate on the governing boards of VTIs, which reveals that this field is not one of particular priority for the trade union movement. Trade union interests around training are centered on preparing new generations of leaders in traditional subjects of trade union action, such as: salaries, collective bargaining, full employment, labour legislation. However, the vocational and technical training of their workers is seldom among their demands. An exceptional case is ICIA in Mexico which has a direct organic link with the Workers Union of the Sugar Industry, sharing responsibilities with employers and the government.

On the contrary, employers do seem to be clearly committed to VTIs. Of course it was the employer confederations that promoted the establishment of VTIs such as the Brazilian ones, and most of the sectoral ones, namely the Peruvian and Mexican VTIs. At present, this is the case for the intermediary technical bodies (OTIR) in Chile that group small and medium-sized enterprises from specific sectors under the sponsorship of the corresponding chambers, to administer training for their associates, charged to tax incentives. Employers have fought or are fighting in various countries to acquire greater weight in the management of VTIs. This is particularly explicit in Ecuador regarding SECAP, and recently in Bolivia, with the creation of INFOCAL to replace the old FOMO.*

In practically all the countries, the employers are grouped in one, two or, at the most, three large national unions or confederations, which undoubtedly makes the appointment and representation of its spokesmen easier. Nevertheless, in the view of the VTIs, when employers are represented at this level they are not always sufficiently motivated, and are often far from the

* The National Vocational Training Institute (INFOCAL) was created by Supreme Decree 22105 of 29 December 1988.

grassroots and give opinions of a far too general nature, so that their contribution is not really concrete or effective.

Diversification of union organisations represented, both on behalf of employers and of workers, is a latent force exerting pressure on the VTIs governing bodies. The echo of sectoral chambers and associations claiming that they do not feel adequately represented are perceived very hazily, as are those of competitive labour union groups wishing to have a say in major VT decisions. These stirrings are felt by the VTIs that endeavour to open up a dialogue at summit levels, seeking to get closer to the specific needs of an increasingly wide spectrum of interlocutors. Their survival spirit makes them attempt, in this way, to anticipate eventual alienations or oppositions. As far as this is not always possible through transformations in the councils membership, VTIs have deployed a series of parallel and complementary mechanisms that operate beyond formal governing councils.

b. Intermediary bodies

Large institutions such as SENAI, SENAC, SENA that have a fairly decentralised structure, covering the whole national territory, have set up, at state or departmental level, regional councils that replicate the large national councils at a more restricted geographical area. This helps to achieve a more diverse and direct participation of employers in the governing bodies of the institutions. The same is true at SENA for the rest of the representatives with a seat on the National Board of Directors, who in turn appoint representatives to the SENA Regional Councils, at departmental level.

In those countries that have established training systems allocating to the employers the responsibility of training their workers, such as in Chile and Mexico, participation is basically established at the level of the enterprises themselves, where the real needs for training, leading to requests or to contracts with specialised agencies, are defined. The Mexican National System for Training provides for the establishment of paritary membership bodies at various levels: Joint training commissions by enterprises, by branches, state advisory councils, and the national advisory council, acting as advisory bodies at the highest level to the Secretariat for Labour and Social Security (STPS) that acts as a regulator for the system. This broader participation system in fact has not been fully established. According to STPS information, in October 1989 there were 108 thousand joint commissions at a like number of enterprises, which is the equivalent of 20 % of the universe of enterprises registered with the Mexican Social Security Institute (IMSS).* For the most part they tend to be

* Mexico: Programa Nacional de Capacitación y Productividad, 1990-1994. Poder Ejecutivo Federal, Mexico, D:F:

large and medium-sized enterprises that have complied with this obligation. Apparently the system has no control over them. In fact, establishment of these joint commissions is open to the forces of the workers within the enterprises themselves.

In Chile, the Bylaws for Enterprises launched by a 1985 Decree provide that any enterprise with over 100 workers should set up an enterprise committee, with the aim to look after adequate management of training programmes given at the employers' initiative. In fact, this does not occur either, as there are very few enterprise committees that have been established and SENCE has no control over them.

If the practice of participation has had its difficulties in enterprises, VTIs, on the other hand, need participation as a mechanism for communication and on-going interlocution with users and interested parties. The very concept of participation and concertation today transcends the old consideration of formal tripartism. At least it is not exhausted at the level of governing bodies shaped by VTIs to ensure it. In practice, it can be seen that the higher formal governing bodies are losing effectiveness. Save for few exceptions, they tend to become merely formal mechanisms whereby the sectors represented limit themselves to giving their agreement to the administrative and financial aspects of management. There is very little leeway being taken advantage of to show new concerted orientations for the action of VTIs. Varied mechanisms are emerging - some well-known, others almost imperceptible to the outsider - that show in a clear way that VTIs are creating multiple processes whereby they are able to breathe more freely. They are thus able to gain legitimacy of their action and tune in to the demands of society in a practical, specific and dynamic way.

Concertation has moved onto a concrete and short-term plane, as a clear manifestation of the flexibility with which they are willing - and to a certain extent, obliged - to accept new demands.

There is no doubt that most of the mechanisms established by VTIs for this purpose are, for the reasons stated earlier on, of direct use for operational planning and programming of activities. However, their wide variety, recurrence and projection constitute a sum that in the end becomes a new factor in the definition of institutional policies and in the way in which the VTIs politically manage the pressures and expectations from the various sectors. VTIs have thus put out "feelers" to guide and legitimise their actions and to juggle diverse and conflicting interests, while keeping their valued global autonomy.

One of the mechanisms that has taken on great relevance lately in practically all the VTIs is the establishment of liaison committees, advisory commissions and other intermediary councils that have become, in practically all of them, the most agile "feelers" to help them understand the specific demands made on them by the various groups represented. The variety of these committees is enormous and their operation ranges from a high degree of formality and standards, with medium-term projections, to the establishment of ad hoc committees to programme very concrete activities in the immediate future.

What is surprising is that many of these consultative bodies were already foreseen in the laws establishing the VTIs. But it has only been over the past few years that they have started to gain strength and vitality as an essential resource in decision-making by VTIs.

Doubtlessly, the most marked initiative in this aspect is that of INA in Costa Rica, which by virtue of its new Organic Law of 1983, sets up liaison advisory committees of three types: oversight committees, economic activity committees, and regional committees. The three oversight committees respectively include employers, workers, and the cooperative movement. Each one is formally constituted by representatives of the most important bodies in each of the sectors. The economic activities committees have been progressively set up according to the contacts developed with each of the sectors. So far, eight committees have been established, involving the clothing industry, the commercial and service sector, small industries and handiwork, hotel and tourism services, the plastics industry, the metalmechanic industry, the food industry, and the agriculture and livestock sector. The committee for liaison with the cooperative movement incorporates the most relevant organisations and is in turn subdivided into committees for specific projects. The committee for liaison with the labour sector was officially established in 1985, and includes the trade union and solidarity movements.

The degree of formality of the liaison committees established within INA has made them concertation bodies at the highest level, only superseded in hierarchy by the Board of Directors. These committees have made it possible, in a political perspective, to balance the diverse interests within each sector, as their membership is much wider than that of INA's board of directors. Despite their advisory nature, the committees increasingly have a greater weight in institutional management. The institution considers that there it finds the best backing and guarantee of support over a much wider range than the one that can be covered by the Board of Directors.

In other countries committees and commissions are established with increasing frequency, although they do not have the same hierarchy as those of

Costa Rica, and are becoming important instruments for backing-up, participation and corresponsibility for the various social actors in the task of VTIs. The agreements reached within these committees, even those at very specific levels, have opened up doors, have facilitated an effective quantitative and qualitative adjustment at least for the most flagrant and heartfelt demands of the groups involved, have on many occasions provided physical, financial, human and material resources, and have acted as a channel for feedback, checking and renewal of the operational strategies and teaching techniques for their training activities. In addition to these benefits in the context of institutional planning, they have implied a significant political commitment. As a counterpart, VTIs generally maintain the power of convocation and tend to place their interlocutors into compartments, so as to be able to balance partial commitments without upsetting the overall institutional stability.

The creation of these types of intermediary bodies for participation has to a large extent come to compensate for the growing distance and ineffectiveness of top level bodies in decision making, given the complex political context in which VTIs must operate. They have proven to be more effective in getting around the obstacles to a conciliation of often conflicting interests among the various representatives with a right to vote on high level boards and councils, which are also frequently not in line with the true grassroots interests they are supposed to represent. At the same time, the participants in such intermediary bodies show greater motivation in posing their demands and a greater willingness to collaborate with the VTIs in the joint search for appropriate solutions. Naturally, the fact that they act at a specific, restricted level, be it the sector, the area of economic activity, the region, the town, the school or the programme in question, gives greater visibility to the subjects under discussion and to the solutions adopted or proposed. Since the decisions they make are supposed to lead to actions that are concrete, quantifiable and measurable over the course of time, the participants feel they can control the results and, moreover, assume direct responsibility for attaining them.

The experiences reported by the VTIs indicate that the effectiveness of these intermediary bodies is varied, but ever-growing. One can deduce that what is necessary is an apprenticeship in participation and a strong dose of constant motivation, which normally comes out of the VTI itself. It is the employers who show the greatest interest and motivation for participating, particularly in sectors that are undergoing or need an expansion of production or a technological reorganisation of their enterprises. Yet less dynamic sectors are also beginning to be attracted by VTIs. At VTIs that are heavely encouraging these intermediary bodies there is a growing confidence in their effectiveness and a conviction that they are highly agile mechanisms, much more appropriate for the current times than the traditional councils. They are considered to be

complementary bodies for the definition of VTI political behaviour, and they are frequently used by the executive and technical authorities to counterbalance the prerogatives of the councils and as support for more specific political decisions.

3. POLITICAL BEHAVIOUR OF VTIs

a. Ideological balance

The political position taken on by VTIs, either explicitly or implicitly, is a result of the interplay and shape of power among their diverse constituents, combined and blended in varying degrees under the influence of expectations and pressures exerted from external circles of power. Thus a varied spectrum of ideological positions prevails among the various VTIs, and this is reflected in the image each one of them projects towards its own environment, while shaping internal mobilisation and operation. This not only varies from institution to institution, but also throughout history, depending on the varied actions of forces at any given time.

In this respect, VTIs that are most linked with the governments are more exposed to fluctuations in ideologies as they change with the government in power at a given time. On the other hand, VTIs that have remained more attached to enterprise circles have managed to achieve greater ideological stability over the years. However, even within each of these extremes, there are VTIs that at various times have changed their degree of attachment and subjection to governments or to enterprise circles.

The most extreme case is perhaps INACAP (Chile), which from its very start was an instrument of government policy, initially as a function of the economic stimulation required for industrialisation, and later increasingly becoming a social policy body. At present INACAP is practically independent of the government, and has become a service enterprise, competing on the market as a private agent, with enterprise organisations having strong participation in its management. To a lesser extent, SENATI has also gone through periods of great dependence on the government, and at present is far more attached to the enterprise sectors of industry. Institutions such as SENA, INA, INCE, and most of the others, have consolidated their positions as government agencies that should reflect and give direct course to the policies of the government in power. At the other extreme are SENAI and SENAC, that have always been strongly attached to their respective confederations of employers, and have therefore had a more stable history.

Therefore, the political autonomy of a VTI is basically conditioned by the decisive weight on its course of action exerted by the two major sectors that greatly influence its management: the government and the employers. If their positions coincide, or if the range of mutual tolerance is greater at any political time, tensions will logically be fewer and the VTIs will finally achieve greater autonomy. But if interests are globally contradictory, the struggle will be defined by the strength of one of the sectors, beyond that of the VTI itself, and the latter will endeavour to adapt to the sector with greater weight.

The greater pluralism of the governing bodies of VTIs, the greater the possibilities of balance in political decisions on the basis of mutual concessions; but at the same time, the greater the restrictions on internal -operational and financial- autonomy of the institutional apparatus, starting at the levels immediately below such governing bodies, downwards. Furthermore, a progressive loss of autonomy by the governing councils themselves is noticeable, as the policies are established by higher powers, either as specific guidelines of the government or the enterprise chambers for the VTI, or because the global positions of each one affect VTIs simultaneously with other agencies depending on one or the other as the case may be.

From the standpoint of the governments, influences and pressures surrounding VTIs range from tax policies to social policies, operating through a display of force that takes on singular and oscillating connotations in each country. Coming from the orbit of chambers of enterprise, they convey to VTIs their inclinations in favour of the different areas of investment that seem more promising, with particular emphasis on export activities, which they consider to offer opportunities for advantageous competitiveness on the international market. It is not a matter of coincidence that SENAI's technological centres should have flourished in line with activities having greater repercussions on the recent economic growth of Brazil, a picture which is repeated in institutions strongly linked to employers, such as SENATI, INACAP, ICIC and SENAC, also in Brazil.

The resistance or permeability of a given VTI to external change is furthermore strongly conditioned by its internal ideological tradition. Most of the VTIs of the region have acquired, over the years, a solid institutional weight that makes it possible for them to filter and settle external pressures, avoiding internal cracks that would give rise to a constant reconsideration of the priorities of the moment. This is based on a technical solvency that gives them the authority to put forward objective judgements and considerations on detected demand, which they use when resisting what they consider unjustified pressures. This is all related to the style and behaviour of VTI managers at the highest level who, ultimately, are those who carry out negotiations at the level

of the institution's management (Governing Boards or Councils), or who lobby for the overall orientation of the institution.

The increasingly frequent rotation of the heads of VTIs also has an impact on their institutional ideology. Except in cases where the heads depend on employer organisms, their stability in the post, which was a distinctive characteristic of VTIs for many yeras in nearly all the countries, has come to an end. At present such posts are considered to be at a high political level and consequently are subject to the short duration of appointments of this type, consequently entailing ideological unstability at the top. The rotation of heads of VTIs over the past ten years has been greater in those institutions that are more attached to the public sector (CONET: 5 changes; SENAR: 6 changes; SENA: 5 changes; INA: 5 changes; SECAP: 6 changes; UTU: 4 changes); in the others, a greater stability is noted (SENAC: 3 changes; SENAI: 2 changes; SENATI: 2 changes; and INFOTEP: 3 changes).

However, VTIs are increasingly aware that their future depends on the degree to which they are able to accompany technological processes taking place in the productive apparatus. Even those that are more closely related to social policies or to the field of formal education, have made a particular effort over the past few years to catch up with the technological innovation prevailing on the market. The penetration of a new ideology may be seen, deriving from the hope of increasing their prestige among the productive sectors on the basis of an ability to provide specific response to demands for training, even at the level of frontier technologies.

The proof of this is the incipient but strong trend towards the establishment of new functions in relation to the development of enterprise technology and productivity. As we have seen in detail in chapter III of this study, many institutions have established technological centres that, besides training, provide non-conventional technical assistance and technological dissemination services, demanding research and development tasks. This is placing VTIs on a better basis for discussions with the science and technology sectors, and with the more technified sectors of production. This new position has marked VTIs in their internal work discipline. A certain internal division may even be seen in some VTIs, reflecting some segments geared towards innovative technologies and modern production processes while others are dedicated to a more social approach, geared to the needs of less privileged economic levels and sectors of the population.

Behind all this is a doctrinal conception of the action VTIs should carry out, vis-a-vis society as a whole and vis-a-vis specific sectors within it: the polemical debate between what primacy VTIs should give to economic or social objectives

and the authorised doses of work - and allocation of resources - in one direction or another. The first phase of the life of VTIs in Latin America, linked to industrialisation processes, was governed in terms of an econmic rationale that was acceptable and therefore undisputed until the end of the sixties. From then on, the economic and social crisis led to deep changes in the scenario of working relations, and this started eroding the approach used by VTIs until then. VTIs started taking up the challenge of the idea of actions geared towards social objectives, with a more redistributive and humanistic sense, in favour of the less privileged sectors of the population.

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The difference between the two approaches is not at all irrelevant for the purpose of political management and planning of VTI responses. Most certainly, these are not absolutely antagonistic doctrinal approaches, because generally the greatest economic impact is sought in VT programmes, although it is recognised that training is not enough to salvage people from poverty, if there are no effective labour opportunities. However, for many years, this apparent duality marked the inclination of VTIs towards one extreme or another. Only recently has a form of dilution been found for this dichotomy between the economic and the social, through a trade-off between both criteria, expressed through a redefinition of the objectives of equity sought by VTIs.

b. Equity in a dynamic light

Within the constraints imposed by their institutional mandate, along with political fluctuations and pressures in favour of social matters, equity has become a value implicitly accepted by all VTIs and explicitly adopted by some. The most forceful manifestation of adherence to the principle of equity is based on the progressive - and in some institutions, decisive - opening up towards socially less privileged sectors.

It might be implied that the objectives of democratisation that VTIs ascribe as for the value of equity have gone through various stages. At the beginning, this democratising role was implicit in the very fact that the clients of VTIs were precisely those who had not had sufficient access to job preparation through the channel of formal or other education. However, selection slowly took over, because ultimately those receiving training became an elite among the great mass of workers who did not fit into the modern sectors of economy, towards which VTI services were focused.

The change started to take place when some VTIs, strongly linked to the governments, initiated, at the latter's special request, programmes for less privileged groups or sectors of the population. The path was opened up by INCE during the mid-sixties, followed by SENA and INA, and then practically all the other institutions of the region followed suit, reaching a point where it became an explicit policy in many of them. The tone was initially one of social assistance, offering training services to the poor because of their social situation of poverty but not focused precisely on the economic function to be fulfilled by them. Equity operated by opening up opportunities for those who had been left out of the main stream of services being offered. But, the critical social situation itself - showing increasing poverty - contributed towards this added function becoming, little by little, the core of many VTIs.

It is important to remember that, initially, the governments of several countries allocated - or promised to allocate, but never did so - extra-budgetary amounts of resources to VTIs to enable them to work with less privileged sectors, as noted in greater detail in chapter IV of this report. The present trend seems to be the reverse. The governments count on VTI resources and even go so far as committing them in a compulsory way, to carry out social programmes in accordance with their own priorities. This is an already marked, admitted, and recognised trend, above all in those VTIs that are most attached to governments, and particularly when the latter assign them the task of acting as instruments for social policy, as is the case of SENA and INA.

The next step was to technically consolidate this new line. On this level it would not be going too far to say that VTIs established the basis for technical and operational leadership to carry out actions for groups of the population that had been neglected in the field of training by other institutions, including those that had a greater vocation in this respect, such as promotion and social development agencies. Institutions such as SENA became the axis of ensign programmes for the last governments, such as the programme for integrated rural development (DRI), the micro enterprise development programme, the rehabilitation programme in violence areas, etc. With this, VTIs surpassed their specific field of traditional action, and even the limits of strictly VT, by

carrying out activities such as organisational training, productive management, marketing and even issues dealing with credits. INA and various others have even managed, although in reduced numbers, programmes for loans to small enterprises and graduates from their programmes to enable them to work independently.

While they continue to gain advantages in this new field, a door is being opened up, giving way to VTI links with promotion, assistance and social development agencies, and with organisations specialising in promoting and supporting small and micro enterprises, handicrafts, peasants, small-scale fishermen and miners, and many others. Two phenomena have arisen from this practice: transfer of technical capacity and therefore a delegation of direct execution to other institutions, with the support and backing of VTIs in training aspects, and the incorporation of VTIs in integrated multisectoral programmes for regional, local, sectoral, and community development, where they are in charge of the training component.

At this point a new stage in the approaches to equity may be observed. The exclusively social justification of programmes aimed at socially less privileged groups or sectors is no longer a firm basis, and it is being replaced by a refurbished reasoning of the economic sort, through which the level of social equitability is positively focused.

The offer of programmes for people or groups of people, in individual poverty situations, demanding much more than mere training to obtain effective results, has turned towards a strategic approach of working with production units of a small scale and by economically feasible occupations and jobs, where the poorest sectors of the population are concentrated. Suitability and efficiency of VT is achieved in two ways: on the one hand, by giving priority to the target groups having a potential for development through training; on the other, by providing other services additional to training through converging, complementary and concerted action with other institutions.

Once again, attention is focused on the economic function of the job and its conditions on terms of technology and productivity; and it is with this approach that Man and his social situation is reached. Man continues to be the objective, and the demands of equity insist on providing particular opportunities to those who have been relegated. However, the approach is specifically through productive performance, and it is in function of this economic role that VTI services are defined, implemented, given priority and taught.

It could be said that various VTIs are changing from working with less privileged groups, under an essentially social justification, to working with less

privileged production levels, using an economic rationale having a direct social impact. It is already openly admitted that most of the job opportunities are to be found in small enterprises and in production micro-units, as in self-employment in the informal sector, which thus becomes a basic component of the productive apparatus. If the VTIs define the productive system as a whole as their field of action, they cannot avoid working with a majority part of it, which, precisely for being the most deprived, is the sector that most needs the services of VTIs.

Selectivity operates on the basis of the development potential of productive units and the real benefits that VT or aggregate services that VTIs can offer, can contribute. In this way, a redefinition of equity has started to appear within VTIs. Although it is still latent and at different degrees of maturity within the various VTIs, the idea of contributing to social equity by means of an economic approach could act as support and even save them from the increasingly strong employer resistance to devoting resources to what they consider "social action".

The economic rationale of the so-called social programmes is favoured by the process of restructuring the productive apparatus that little by little all the countries of the region are undergoing, and which is already expressed recurrently in certain economic activities where deconcentration of major enterprises is shifting the needs for training to the sphere of the medium and small producers. The phenomenon is to be seen in Chile, even for strategic and traditionally quasi-monopolistic activities (copper mining, agro-industries, forest and fishing industries) and in Colombia, particularly in strong manufacturing areas (textiles, clothing, shoes) and non-traditional exports (floriculture), to mention but two examples that are repeated for a wide range of goods and service production in the other countries.

c. A new style of political interlocution

At the level of overall economic and social policies promoted by the governments, conflicts and instability marking an unpredictability in the governing of countries have forced VTIs to make an enormous effort to translate and understand the hazy and precarious signs coming from economic and labour decisions made by sectors that are evidently foreign to the scope of the VTIs.

Perhaps the criterion of value that most massively and globally moves VTIs is that of currentness, in the sense of keeping abreast and tuning in to the major national development issues: to keep up to date in what is important, in what transcends to the future. A first sign is the avidity with which VTIs try to tie

their activities with development policies; even when these national, regional or sectoral plans and policies do not make explicit, or even implicit, reference to the task of VTIs, they endeavour to transpose these signs to their own sphere of action, in order to tune in and come into line with them. But on the other hand, their efforts to become part of national and educational plans are weak, and they allege that the horizon as to labour policies is unclear. They are fairly alert as to science and technology policies, particularly those VTIs that have already set out on the path of research and development, taking on a more active role on the technological sphere. They are also more aggressive in connecting their activities to sectoral plans, in direct proportion to their degree of sectoral specialisation, and even in investment and development projects in their fields of interest.

VTIs are sensitive and receptive to signs of economic reactivation, strategic activities concerning national wealth, key export items, and advanced technology. However, save for those cases in which the VTIs are specially requested to participate in and even manage governmental programmes, the absence or scant duration of policies of the prevailing government make them invalid as a determinating framework for long-term projection of VTIs. Therefore they have chosen an increasingly wide formulation of institutional policies, under the form of general guidelines, in which practically the whole spectrum of possibilities for action have their place.

While the signs of national policies are not quite clear and do not have sufficient scope as to justify a deep institutional re-adaptation to provide a response, VTIs limit themselves to a restricted reactive position of offering services that are not too distant from those they are able to provide immediately. But, where the guidelines are certain, solid, and have at least a medium-term projection, the effort some VTIs have put into creating new lines of action - be they training or non-conventional services - collaborating in each development goal, has been significant.

For example, SENAI has signed an agreement with SEI (Special Secretariat for Informatics), to address the training needs implied by the enormous leap forward taken by the informatics industry in Brazil, supported by SEI's policy of market reservations. It is no longer a novelty for VTIs to provide the training needed for major investment projects; in the construction of dams such as Yacireta, Itaipú, El Cajón, the respective VTIs (CONET, SNPP, SENAI and INFOP) were expressly called upon and made responsible in the contracts signed with the (generally external) financing sources for the corresponding projects. The same thing has happened with major mining projects (Carajás, Camacari/SIDOR; Cerrejón) that involve SENAI, INCE and SENA, respectively, just to quote a few illustrations.

Strategic decisions are worked at by incorporating a strong dosis of political lobbying, particularly when dealing with discretional decision-making spaces and resources not consumed in the normal operations of VTIs. Such is the case of decisions concerning investment or opening up of new lines of action committing VTIs to long-term activities, which increasingly are tied to the availability of special resources to fulfil them. This has become a new factor fostering the ability of VTIs to enter into agreements and put together resources and efforts with interlocutors who are willing to enter into joint ventures with them. It is on this level that formulae for agreements arise with enterprises, sectoral bodies, trade unions, and community organisations, as well as with international cooperation agencies, to which VTIs turn for working on projects with clearly specified goals and generally sharing resources.

It is within this context that the many inter-institutional coordination agreements are placed, which VTIs have multiplied over the past years as a way of ensuring a massive and effective impact of the partial and limited share that is theirs to provide in more ambitious development objectives that they are unable to reach on their own. The frequent and varied agreements of this type that are presently organising much of the VTIs' activities will be examined in greater detail later in this report. For the meanwhile, it should be borne in mind that this modus operandi in concertation, provides a defining tone to the effective possibility of turning the political orientations expoused by VTIs into actions. Furthermore, it is a way in which VTIs can ensure the support they need and the guarantee of commitment they require to enter into fields of intersection and convergence with other agencies. They do so, supported by the prestige that they enjoy in these spheres, as a consequence of their recognised technical suitability, and thanks to persevering interlocution and negotiation that they have learned to manage.

The new style of management for VTIs is unfailingly marked by an ability for political interlocution, as an essential strategy for survival in a highly diversified and changing context.

At the same time, VTIs have developed the skill of maintaining room in which to manoeuver, which they use as a bastion to resist counterposing attacks. Thus, advisory committees are organised separately by social groups, by areas of activity, and by geographical regions, with the VTIs themselves concentrating on an overall balance between their respective demands. The forms and degrees of response and receptivity to the various pressures are processed within the VTIs, which take on considerable shares of risks and audacity, but always supported by the political concertations achieved in their external contexts.

In short, VTIs have put in motion a series of mechanisms which predispose them towards an increasing permeability, receptivity and sense of opportunity to grasp new spaces in which to act, and to increase their capacity to respond to multiple demands. They have shown a malleability and skillfulness in playing politics and in marketing their work that is hard to find in other public services. This is not simply a matter of chance or of the unthinking will of VTIs to expose themselves to the increasing commitments and new demands that these negotiations inevitably entail. Without any doubt, this is a strategic form of response to the characteristic present-day uncertainty in the countries of the region; it is also a reflection of the true heterogeneity and multiplicity of demand, and a demonstration of a constant search for institutional currentness and legitimacy; finally, this is a test of their versatility and adaptability to changing conditions.

In this way, the inertia characteristic of large bureaucracies such as VTIs is shaken by an injection of dynamism and flexibility that demands insistent internal mobilisation as a function of negotiations with the surroundings. This has only been possible thanks to the solvency, technical soundness, and accumulated experience of the VTIs, which make it possible for them to give rapid, valid and suitable response to new demands. The strategy implies the risk of dispersing and breaking up institutional energy. When "putting eggs into many baskets", there is a danger of losing one's bearings and thus, one's way. But, in view of the present unstable circumstances, the way itself is hazy, and it seems to be a wise attitude on the part of VTIs to weather the storm with multiple responses, above all if VTIs stay alert, as they have been, to the signs that define their goals.

Finally, the very discipline of VTIs is a defense against erratic management. In fact, when a new line of action is opened up, with sufficient long-term prospects, and explicit political - and sometimes financial - support from external sources, it usually takes on such a wide scope and degree of technical consolidation that it becomes very difficult to stop. To end with, an anecdote:

A SENA official recently explained that if VTIs were to be accused of being white elephants, what could be acknowledged is that, just like elephants, once they set in motion they are difficult to stop. As an example she quoted the case of the distance training programme at SENA, launched during the presidency of Belisario Betancur, which continued to grow although it had stopped being the government's vanguard programme. The same is true for all the massive programmes that have found acceptance and success, thereby justifying their presence in VTIs beyond the external impulses that set them going.

4. CURRENT PLANNING APPROACHES

a. Setting priorities

Within the political context we have just described, the process of VT planning takes on great importance in establishing the effective orientation of VTIs. The function of planning itself has risen in hierarchy within organic structures. Within VTIs it is expected that the planning divisions - usually placed immediately below the principal director level - will process the different pressures, demands, information and signs, in such a way as to draw up a coherent and guiding framework within which institutional activity can be centered.

However, planning divisions have not explicitly been entrusted with this task, and therefore there is a link missing between research and the elaboration of the plans (which are the explicit responsibility of such divisions), and the management level political "feelers". Frequently, the gap arises in relation to the shaping of a relatively clear picture of guidelines which will perform as a "steering plan". Its aim would be to orient an integrative and unified operation that will project an institutional identity inwards, in spite of all the variations and dispersions from a changing and sometimes turbulent scenario.

On the other hand, it is frequently observed that practically all the VTIs of the region are making a special effort to define institutional policies reflecting issues of strategic priority of their attention. These policies are not always explicit as such, but to a certain extent are present as general orientations for action, trying to translate each VTI's supreme values at a given historial time. They are forged by the interplay of action and reaction between the situational stimuli of the environment and external ideological forces channelled through the institutions' high authorities, and blended and filtered by internal tradition itself.

However, the formulation of policies is not transparent. From the survey carried out on VTIs in the framework of this paper, it may be deduced that the priorities they establish are not always very clear to the respondents, nor are they able to find their place in an official document. Furthermore, over the years very few changes have taken place in these priorities, as they include practically all the subjects covered by VT, but lack sufficient classification by order of importance. From the standpoint of how often the various priorities are referred to, it seems that the objectives falling within the following three basic subjects have taken on particular relevance and are reiterated:

i. Relations with the environment and particularly with new economic and social clients should be refined, as a way of adjusting responses to real needs and demands.

ii. The quality of services offered should be improved, placing special emphasis on technological updating and functions relating to the development of technology and productivity.

iii. Institutional management should be made more effective, with particular emphasis on decentralisation and implementation of better administration and operational control systems.

This list seems to contain the aspects of main concern for the future of VTIs, but they do not reflect the real energy consumed by investments in the various fields of activity they cover.

The way planning is handled has a lot to do with the allocation and distribution of resources, and in this respect VTIs fall into two main categories:

On a first level, and as would be expected, the planning process appears to be more complex in the VTIs that receive direct allocations for the general fiscal budget (CONET, UTU) or direct subsidies from the government through specific taxes (SENAI, SENAC, SENA, INA, SECAP, SENATI, SENCICO, INFOTEP, INCE, among others). In these cases, and generally in Latin America, the subsidy is given to a large "producer" of VT services, who has to decide on how to distribute the annual lump sum among the various programmes. It should be borne in mind that budget management discretionality in VTIs is limited by the pre-allocated resources they receive, by restrictions on the expenditures they can effectively make, or by provisions covering the use of cash surplus. These constraints vary in each of the VTIs and we shall have an opportunity to refer to them in greater detail when dealing with management and finance issues that are addressed elsewhere in this document.

On having an official mandate to respond to national needs for training in their field of competence, these subsidised institutions must examine the real and potential overall demand for their services, and establish priorities to give their attention to, in accordance with prospects for the economic and social development of their country or of their sector.

On the contrary, and on a secondary level, scope and importance of planning have a much lower profile when it is the enterprises themselves, or the sectoral specialised bodies they manage that are responsible for training their workers. That is, when it is the users themselves that define the supply of services. This is the case in Chile, where the training system operates under a regime of tax incentives to enterprises, so it is up to them to carry out directly the training programmes they have identified as necessary or to hire the services of specialised agencies to implement them.

In this framework the problem of planning for VTIs is reduced to assembling and organising responses to requests for services in accordance with their possibilities. This is clear in Chile, where VTIs operate "on request", promoting their services and competing among themselves to attract specific demands from many enterprises. INACAP comes in here on an equal basis with nearly 700 technical execution agencies (OTE), as training agencies recognised by SENCE, the Ministry of Labour agency, which authorises tax discounts on training by enterprises. The same occurs when training grant services, financed directly by SENCE, are opened up to bidding or other programmes and projects, and charged against hired training services.

In systems that are almost free markets for VT, such as this one, the task of identifying needs is highly split up, and in fact falls upon consumers themselves (the contracting enterprise or agency), since strong competition and the degree of specialisation of most VT agencies make it impossible - and even unnecessary - for them to get an overall and long-term view of the needs of the entire productive apparatus. Thus, the problem of planning the supply of services is mainly posed at the level of specific projects as a result of explicit demands made by the user.

A similar situation is apparent in Brazil, due to the great volume of training initiatives operating under the system of tax incentives for VT for the enterprises, coexisting with the traditional system of major official VTIs: SENAI, SENAC, SENAR. In both, Chile and Brazil, the system of tax incentives was conceived for the very purpose of decentralising decisions on the allocation of VT resources, in such a way as to correspond to needs, as felt by the users themselves. Furthermore, competition between VTIs as a way to encourage efficiency in the production of services was promoted. Thus the preparation of a national plan based on the identification of VT needs within the VTIs themselves lost force.

Proportional to the scope of VTIs action, the planning function becomes more complex, and its approach is forced to conciliate the macro perspective with micro-level prospection. This is evident in agencies with a near hegemony in a multisectoral range (INA, SENA, INCE) and even for sectoral agencies having a wider scope (SENAI, SENAC, SENATI).

The characteristic of institutions of this kind is a concern to integrate VT with other levels of wider planning that may exist in the countries: the national development plans, educational plans, employment plans, and sectoral, regional and local plans. This trend is certainly more accentuated in cases in which the VTI is closer to the government than to enterprises. Thus, in Argentina VT is inserted in technical education plans (CONET Plan of Action).

In Colombia, SENA has been assigned definite tasks for labour training and participation, in the framework of sectoral education plans, also in plans determining economic-social development, such as those for micro-enterprises, integrated rural development, or rehabilitaton in violence zones, etc. In turn, they receive fairly precise mandates from the National Council for Economic and Social Planning (CONPES).

In Costa Rica, the National Development Plan contains general guidelines as to education and is the primary source for the definition of INA policies; likewise, the National Employment and Social Development Plan includes a subprogramme that provides for INA participation. But, ultimately, still more important is the strict link that INA maintains with the Ministry of National Planning, with which it closely coordinates its policies, and on which it depends to a great degree for approvals on its investment projects and development.

The VTIs that are closely linked with the enterprise sector have a remarkably wider degree of autonomy in their planning process, insofar as they consider national, regional and sectoral development plans as indicative inputs but not as limits on the definition of their operational goals. Emphasis is placed rather on visible trends of economic activity than on formulated plans, although these are frequently linked for concrete purposes, once they are in full operation.

b. Getting beyond "classical" models

Even with these preliminary distinctions as to institutional behaviour towards the subject of planning, certain constants in the accomplishment of this function may be noted in VTIs. They are all aware that classical VT planning models are not as useful as they were thought to be.

This questioning alone reflects the great importance given by VTIs, from the outset, to the creation and consolidation of methods enabling them to know the real demands of the productive structure. The enormous contribution made by the VTIs' traditional dedication to the task of finding out training needs should be stressed. These functions have always had to be covered by VTIs, as neither the ministries of Labour, nor the Planning ministries, nor other institutional agencies have provided an objective basis for planning VT activities on a national level. VTIs have developed interesting and fitting methodologies to gain knowledge about real demands and have based themselves, for this purpose, on macroeconomic and social projects, combined with studies for the detection of needs through direct consultation with the enterprises, this being the method whereby they have gained greatest capacity and experience.

Although these methods continue to be useful, above all for those jobs related with demographic trends, they are progressively being replaced by various short-term analysis techniques that extract signs from the labour market. The planning approach used by VTIs has changed over the past fifteen years, mainly as a consequence of the following:

i. The understanding that the labour markets in the countries of the region show a particular heterogeneity and an acute dependence on the behaviour of macro-economic and political factors, which can undergo very sharp and relatively unpredictable variations.

ii. The incorporation of new social groups and levels of economic activity as VTI target populations, in particular the informal sector and the rural economy, which has made it essential to overcome exclusive focalisation on the formal sectors of economy. This has made it necessary to deploy planning processes that cover the whole spectrum of the productive apparatus, including all the range of production units.

iii. A progressive loss - both political and financial - in the autonomy of VTIs, whereby the governments, enterprise chambers, and various sectors and agencies inside and outside each one of them impose new target groups, new areas to be covered, and the preestablished allocation of resources for specific programmes.

iv. Internal evolution of VTIs towards more open, integral, flexible and participatory conceptions, linked to the universal currents of development of education and to the reorganisation trends of the productive apparatus.

As a result of all this, projections of the labour force and traditional processes to establish needs through direct consultation with the enterprises, according to the VTIs themselves, are not either enough or realistic, as a single basis for planning.

Surveys of establishments showed themselves to be very effective over a long period, as it was possible to get to know the situation of human resources in the enterprises of the formal sector, at a time when they were almost the exclusive ambit of institutional action. The results of these surveys have been complemented with information from national censuses and national development plans, information on the structure of the gross domestic product and demographic-labour statistics.

But changes in the labour market have made this process too mechanical, partial and incomplete. The process assumed that the productive apparatus

was predominantly made up of enterprises sufficiently organised to be able to estimate these projections with a reasonable degree of certitude and that the addition of individual expectations would be enough to be able to infer global trends. Conscious of these limitations, VTIs have tried to develop much more sophisticated methodologies for a reasonable consideration of demographic and educational variables, as well as for variables of production demand affecting the labour market or possibilities for VT action.

SENA is the VTI that has managed to install the most complete planning system in these terms. The so-called Planning System for Human Resources developed at the beginning of the eighties on the basis of an international technical cooperation agreement with the government of the Netherlands is a decisive innovation within SENA. It is based on an input-output model that takes into consideration the variables of manpower supply, including those of a demographic or educational nature, to quantify and characterise the social pressure that SENA will be subjected to by the population that is presently linked or about to be linked to the labour market. Furthermore, it also incorporates demand variables such as industrial, agricultural and livestock production, levels of technology, capital investment trends, etc., in order to foresee the behaviour of the various economic sectors and their implications on the labour market.

Another advantage of this model is that it involves, in its design, various sources of information from the national economic system, and this enables it to produce regionally separate predictions by branch of activity and by groups of trades. On confrontation with data on manpower historically trained by SENA, it shows balances indicating deficits or surplus in the supply of VT, thus guiding this service's planning. The same system incorporates an evaluation and follow-up component, designed to respond to equity and effectiveness criteria in the provision of services.

A general consensus is felt at SENA about the use and the quality of the system for planning human resources, and about its improvement over other previous approaches. However some doubts do remain on what some consider to be its excessive sophistication in conception and management requirements. Evidently, the system requires an important and sustained effort to obtain information, carried out with scientific criteria, to keep it up to date. At the same time, it needs an overall understanding of its theoretical basis and structure to be properly used. If these conditions are not fulfilled, two equally undesirable tendencies appear. It can only be managed or used by a reduced number of specialists, or it deteriorates into partial and mechanical applications. Avoiding these deformations is the permanent challenge SENA faces on this subject. It is significant that one of the effects of the human resources planning

system has been that of highlighting institutional limitations which make it difficult to provide adequate and timely responses to the changes foreseen in the work market, and to identify the points that require adjustment.

SENAC is another VTI that is outstanding for the sustained impulse it has given to the definition of an integrated and systematic planning process. Its present planning system was implemented in 1982, and covers nine phases: diagnostic, forecast, institutional political decisions, regional administration plan of action (PAAR), sectoral plans of action, implementation, evaluation, reevaluation, and report. Of these phases, the process gives great importance to the diagnostic phase which contains data and information on the internal and external environment, fed by annual research on demand for manpower, exploratory studies, and other specific surveys in areas and levels that are of particular interest to the VTI. The interesting point in SENAC's approach is that it is centered at a regional level and that budgetary programming is assigned to this level. The institution reveals, both at a national level and regional department level, that it has a constant concern about adjusting and improving planning processes, and particularly of simplifying and training the institutions' human resources working in this area.

Another feature that should be highlighted in SENAC's planning approach is the insistence placed on the process being one of wide participation, sounding out all the people involved within the institution itself, and opening up the decision-making level.

INA has developed a continuous and permanent system to assess needs for VT, involving a set of methodologies that complement each other with an aim to perceive what is taking place in the different sectors and economic strata, as well as the needs and characteristics of their various clients. Information is obtained from various sources including surveys of establishments made by the central planning agencies, or by regional offices, as well as those that are occasionally hired from external agencies.

In the case of INA, this methodology formally integrates in the planning process, the detection of needs through liaison committees with enterprise organisations, labour and cooperative movements. INA's Office of Planning and Evaluation guarantees that the information gathered there is immediately used to feed the institution's plans.

c. Information and research supports

Those agencies in which the planning process is a relevant subject, especially valued as technical support for institutional activities, have

developed the most elaborate information systems among the VTIs of the region.

SENA has constantly made great efforts in the field of statistical information, but in spite of this, until recently it had not achieved satisfactory results. Various more or less efficient applications have been found for administrative, financial and operational fields, but the whole was not coherently linked with the technical-pedagogical function. In 1987, the present system of statistical information was designed in its final form and launched, completely computerised on a national level through a telematic network. This system makes it possible for SENA administrators to have practically daily statistical information (with monthly cuts) comparing programming and execution of their operation (instructor/hours, students being trained, courses, groups, all this by regional, sectoral, modality, job grouping, etc.), as well as related administrative and financial variables.

INA has also deployed efforts for some time now to establish an elaborate system of information and statistics as a basis for its planning process, also connected to the operational, administrative and financial management, although it still does not have a basis of computerised support as in the previous case.

SENAC has given enormous impulse to the shaping of the information system, in order to provide the sectors of the National Department, regional departments, and local delegations with quantitative and qualitative information needed by the planning, programming and evaluating process of activities developed by the institution. The statistics division which coordinates the programme, has decided to consider the production subsystem as the main vector of operationalisation. With the latest restructuring of SENAC's National Department, the Statistics Division became a Computerised Information Centre, covering the statistics, technical communications, and data processing sections. The master plan for information has drawn up lines for the production and management of data, with an aim to standardising the production of information, and serve as an instrument which is able to adapt supply to demand for information, and provide useful indicators to the planning of activities and evaluation of results.

In general, all the VTIs have made a singular effort, particularly over the past few years, to set up adequate information and documentation systems, resulting in fluid and accessible data management for the planning and general operation of the institution. The progress made by VTIs such as SENAI, INACAP, SENATI, CONET, INTECAP, and INFOP should be highlighted. All the VTIs are actively participating in the "Regional Information and

Documentation System on Vocational Training" (SINFOR) project, launched by CINTERFOR, through which a network for circulation of information is being set up on a Latin American and Caribbean level. This implies strengthening the information and documentation services of the respective VTIs, adopting homogeneous standards and processes facilitating information transfer, which has contributed to an accelerated development of these institutions over the past few years.

However, the subject of statistics is still the bottleneck. The variety of activities and services of the VTIs and their increasing diversification has made traditional standards for gathering and treatment of statistics into instruments of little value in understanding the real significance of quantitative data. Although this information will be useful for internal matters, the lack of homogeneity of statistical categories and in their processing implies serious limitations on comparative treatment at a regional level. It therefore becomes necessary to gain a very exact knowledge of the nature and characteristics of the concrete facts that figures try to show, to be able to interpret them correctly.

Along with diversification of planning methods, it may be noted that VTIs give growing importance to the research function as the very basis of planning. There is also a trend towards calling the divisions in charge of planning, research and evaluation simply study divisions, which indicates a desire to show themselves as more open and receptive to signs from the environment rather than to designing definite plans to be projected outwards. In fact, VTIs have not sufficiently developed their capacity for research except in the effort we have already pointed out relating to studies of training needs. Institutional culture sets more value on doing than on reflecting and recording what has been done; on creating as from an exploratory and experimented practice rather than on the theoretical conception a priori as a source for establishing practical activities.

When VTIs have felt the impact of external change and, above all, the pressure of a demand for effective activities, they have been incited to strengthen their professional teams and their methodological capacity for research. The study plan, and the way VTIs propose tackling it, varies. Those institutions whose main aim is to keep up with technological change, such as the clear case of SENAI, concentrate their research capacity on carrying out very elaborate studies on technological changes in the productive apparatus, while others, like SENA or INA, which give particular importance to the exploration of non-traditional clienteles in disadvantaged sectors, concentrate intensively on researching the nature of such sectors and their labour-production characteristics.

Some of the surveyed VTIs stated that at present they do not regularly carry out follow-up studies of graduates (CONET, UTU, SENATI, SENCICO) or that they are carried out only with partial coverage (SENAI, SENAC, and SENA); however, INA (Costa Rica) seems to have made a more systematic effort in this field. In the case of Chile, VTIs do carry out these studies when the users, enterprises or the government authorities managing VT social programmes, so request.

It is true that research technicians often feel frustrated because the results of their work are not always taken into account when taking the relevant decisions. However the most frequent complaint comes from the operators to the effect that the results of research do not flow towards them, or do not show them clear ways of modifying their activities.

The institutions are increasingly aware of the need to understand the economic, social and labour-productive environment to organise their response in agile harmony with these factors. For this reason, the training of VTI human resources has warranted special attention, as interlocutors that are aware of the language and signs being transmitted from external data production. CINTERFOR has also covered this area, and as from 1989 launched a regional project that will help VTIs to train their staff for this purpose.

The concern of SENAI regarding research into possible scenarios of the VT demand that the context will generate, as well as the wide scope study launched by SENAC on the challenges facing VTIs for the year 2000, are clear proof of the new awareness shown by VTIs. It is not unusual to find instances of VTIs having established contracts with research centres and universities to carry out these ambitious investigations. In fact, this demands that VTIs be prepared for a dialogue and orientation of their studies, at a high academic level.

SENAI has given such importance to research that, within the multi-institutional international cooperation project in which SENAI, SENAC and SENAR participate, financed by the Brazilian Government's loan from the IBRD, a heavy component involving preparation and development of human resources in research and planning as from 1989, has been incorporated, basically aimed at SENAI.

However, a word of warning. VTIs are incited towards change basically because of demand. They have developed "feelers" to understand the needs and expectations for which they would have the capacity to satisfy. Their very institutional culture establishes their aptitude towards change, innovation and generation of responses to the most diverse issues, in accordance with this detected demand. However, on designing their response they do not seem to

deploy sufficient efforts to explore alternative supplies available in the countries to respond to these same needs. It has not been possible to find any signs of these institutions investigating parallel initiatives from other national institutions.

The General Office for Vocational Training of the Peruvian Ministry of Labour has recently made the only effort to undertake an inventory of institutions providing training outside the official systems of VT covered by the present document. It should be noted that this Office does not adapt to the classic conception of a VTI, for although it does fulfil an executive function in training actions, it is very limited and residual from the standpoint of the product of the global system of VT in that country. Its role is centered on coordination and orientation of the action of executing agencies, and consequently has the function of providing these institutions with information on the overall supply available in their field.

This case is repeated, at least at the level of intentions, in all those agencies on the level of "axis" of national VT systems, with emphasis on the functions of defining policies and guidelines, standards and, in some cases, control and supervision, and even allocation of resources. In 1988 the Manpower Secretariat of the Brazilian Ministry of Labour has defined a study programme that includes detection of the existing supply of capacity on a national level; a few years ago the Argentine Republic's Ministry of Labour started a detailed study of the same type, but it has not been continued; the Chilean National Training and Employment Service (SENCE) regrets not having been able to carry out a study of this kind due to lack of resources and personnel, but considered that it should do so.

5. INSTITUTIONAL DEVELOPMENT AND OPERATIONAL PLANNING

a. Margins of flexibility

Two levels must be distinguished in planning: planning of institutional development and planning of operation. The first has to do with the expansion, improvement and diversification of VTIs' operational capacity, in relation to their specialisations, educational technologies and modalities, clients, related services, and management systems. The second refers to the programming of their usual production.

Political and financial pressures that VTIs have started facing affect very particularly planning of institutional development. The shrinking of current budgets, freezing of expenditure and surplus, and even threats to the financial

stability of some VTIs have prevented institutional development planning from being undertaken, in many of them, as an integrated growth strategy, based on studies forecasting needs.

These restrictions are particularly felt by SENA and INA, due to measures freezing institutional resources by the highest government authorities that manage their budgets. Of course restrictions are also felt, although for different reasons, by those institutions that have small budgets, either because their source of financing, by definition provides them with very limited funds, or because they do not receive all the funds that the law has awarded them, above all when a wide range of enterprises do not comply with their contribution to the VTI although they are obliged to do so by the law.

Institutional development is increasingly operating as a result of specific projects that respond to pressures, demands and dispersed and sometimes unforeseen political opportunities, that arise from various sources and that are increasingly subject to the availability of extra-budgetary resources. On this level international technical cooperation - in the form of credit or donation - is very important, as it can be inclined towards coherent institutional development, projected over the long term, or it can worsen the situation, committing the VTI to developing non-priority areas.

As a result of this interplay of partial impulses, growth of VTIs currently tends to be a consequence of a relatively inorganic aggregate of elements. To lessen this risk of anarchic growth, VTIs endeavour to define their own areas of expansion and development, in harmony with their forecasts for demand. But whether these demands will be those of the long term is also subject to the vulnerability and loss of autonomy that can increasingly be observed in many VTIs, together with the scant reliability of the forecasts they are based on.

Some VTIs try to compensate external pressure by taking initiatives or gaining influence in circles that impose certain restrictions on them, from the outside. A remarkable example is that of SENA, which, following Law 55/85 underwent successive restrictions as to its power to spend, and had to make obligatory transfers from its budget to other institutions. Currently the situation is being reversed to a certain extent; the government has charged it with new areas of activity and for this purpose exceptions have been made to the restrictions affecting their power of expenditure.

The systems that finance VTIs have a direct impact on their form of planning and operating. Thus, VTIs that have a foreseeable flow of finance and that do not need to fight to obtain these resources, have more room for medium and long term planning. On the other hand, those VTIs that are

compelled to survive by selling their services to the market have very restricted possibilities of medium and long term planning, unless they manage to obtain considerable surplus from their operation, or receive fresh resources from external (national or international) sources for investment and institutional development. Of the VTIs covered by this study, so far INACAP is the only one in this position, and it concentrates mainly in short term operational planning, in strict compliance with immediate demands for which users are prepared to pay.

Operational planning is a product of the combination of VTIs' capacity to supply, with the analysis of the need to train new manpower and to upgrade in-service personnel. This study usually distinguishes two main dimensions: a) determination of the profile of qualifications required (qualitative aspect of the problem), and b) an estimate of the number of the people who need training (quantitative aspect of the problem).

The first aspect is of interest in the curricula design of the courses, whereas the quantitative aspect is important to clarify the size of VTI operations in each job or sector of activity.

Although operational planning can be managed with greater ease from within VTIs, it is also affected by external pressures, both of a political and financial nature. In practice, VTIs are obliged to share out their operations considering that unavoidable pressures will arise, which they will have to face by adding to normal planning. Thus they try to leave a discretionary margin, enabling them to respond to emerging needs. However, the strategy has varied considerably over the past few years, negotiations are held with the interested sectors, in a search for cofinancing of these added activities. This practice is increasingly frequent and has shown positive results, although it has its limits, as described in the chapter on financing.

Operational planning in VTIs takes on two expressions that are not clearly differentiated. On the one hand, there is the "open" supply of services, relatively stable, conventional and based on available installed capacity, and on the other, supply "by clients" that responds to emerging needs in specific sectors, regions or localities, and even in given enterprises or communities. It is in this programming that VTIs operate with the greatest degree of flexibility. Once again, financial aspects determine actions: those VTIs that have budgetary surplus from their running operations (open supply and longer term agreements) will not depend so strongly on external resources; VTIs with tighter budgets will have to negotiate these extra resources in order to respond to needs that are not covered by their current programming.

Programming "by clients" assumes formalisation through working in projects, and this is gaining increasing importance in nearly all the VTIs. It is carried out through operational agreements between the VTIs and enterprises and other institutions that represent specific segments of the productive sector, as well as with organisations for national, regional or local development. The VTIs themselves see in these agreements a multipurpose mechanism, combining the following objectives:

i. Supplementing resources for institutional action.

ii. Sharing tasks and responsibilities.

iii. Obtaining more direct and precise information on qualitative and quantitative needs.

iv. Widening the base for support of VTIs in public opinion and legitimacy vis-a-vis specific interlocutors.

v. Ensuring a mechanism for feedback and automatic evaluation of results.

Work carried out under agreement has taken on an important role in VTIs such as SENA, INA, SENAI, CONET, which sign agreemeents ranging from overall programmes at the medium and long term, to punctual programmes for specific projects with a definite time span. Some VTIs have specifically implemented the modality of "programming by projects", which implies an even more precise planning approach (INA, INACAP, SENA) defining goals and impacts to be reached within a set time limit with separate financing. Programming by projects increases possibilities if, besides integrating the action of various operational VTI services and units, it is linked with initiatives by other institutions at the service of development and with enterprises themselves.

This modality of programming by projects resolves one of the problems of VTIs: promotion of suitable conditions to guarantee effectiveness and pertinence of training efforts, in the productive environment where the users of training carry out their activities. In other words, it is a question of optimising the impact of training.

This is a demanding challenge, as it is necessary to acknolwedge the fact that training on its own will not necessarily produce significant effects on productivity or on the profitability of production, and that the best results are obtained when accompanied by actions in the area of business management, technological adaptation, opening up of markets, etc. Programming by projects has the particularity of integrating, under a single operation initiative, a

multiplicity of strategies, programmes and services offered by various executive units of the VTI itself, to link and coordinate the action of the whole set on a single productive sector, a geographical region, a community, etc.

Of course there are serious problems in programming by projects. The same VTIs that use it indicate a trend towards considering the projects as a mere formal exercise, often hiding behind the excuse of the difficulty in establishing cooperative agreements with external institutions and agents, that operate properly. The bureaucratic trend towards isolation of the various operational units, due to conflicts in power and status, tend to compromise good project operation.

b. Alliances under inter-institutional agreements

Inter-institutional coordination has become essential for VTIs, especially when they are working in integrated development projects be they of a sectoral, regional, local or community type.

It would be too long to list the infinite number of agreements between VTIs and other agencies, essentially of a governmental nature, for inter-institutional action. We shall mention a few of the most relevant cases because of their duration or scope, or because they point to the protagonist role of the respective VTI involved.

In fact, it is those institutions that have a direct government mandate to work in integrated development projects, that turn most to the inter-institutional work formula. Thus, following the 1985 Law 55, SENA was legally obliged to establish agreements with various institutions, namely: National Employment Service (SENALDE), the Ministry of National Education, the Colombian Foundation for Scientific Research and Special Projects (COLCIENCIAS), the Colombian Institute for Agrarian Reform (INCORA), Colombian Artisans, the Colombian Institute for Agriculture and Livestock (ICA), the Presidency of the Republic, and the Autonomous Regional Corporation of the Cauca Valley.

Under such agreements, SENA is obliged to transfer resources from its own budget to special programmes for joint action with the agencies involved. Although this was the spirit of the law, in practice it has gradually changed, and so, in most cases, SENA takes on the leadership in the action foreseen to be undertaken jointly, involving the other party to the agreement in a more divergent way. At all events, there has been a need to reach very specific agreements on ways of linking work with the respective institutions, which

demands a multidisciplinary work pattern, combining conceptual approaches and strategies and even logistic and operational agreements.

In addition to these compulsory agreements signed by SENA as a result of Law 55/85, it has deployed several agreements that simultaneously commit various governmental agencies in major development projects. Such is the case of the project for integrated rural development (DRI), in which SENA, besides working with the various institutions involved in rural development, has acted as an axis for multiagency coordination, and as a major institution in charge of training processes considered to generate the other results foreseen on the basis of the participation of the agencies under consideration. Similar to this is the participation of SENA in the Micro-enterprise Development Plan, stimlated by the government from the National Council for Economic and Social Policy (CONPES). In addition to acting in harmony with the other agencies for credit, technical assistance, marketing, technology and others making their respective contributions towards the promotion and development of the small and micro-enterprise, SENA acts as the technical secretariat for the global project. This places the training institution as the hub of inter-institutional coordination.

A similar role is taken on by INTECAP in the Guatemalan governmental programme known as Micro-enterprise Multiplying System (SIMME), promoted as from March 1987, involving institutions from the public sector and non-governmental organisations, in order to set up a credit system combined with training for microenterprises. INTECAP has explicitly taken on, under orders of the National Commission coordinating the project, the function of training NGO managers and supervisors and of micro-enterprise advisers both from INTECAP itself and from the other agencies participating in the integrated project. The ambitious goals of the programme, which proposes reaching 30,800 micro enterprise operators in a lapse of three years until 1990, has placed INTECAP in a protagonistic role in the context of government action to promote employment, and has obliged the VTI to deploy a vast network of inter-institutional coordination.

For its part, INA, following its own initiatives, has carried out important activities in the signing of inter-institutional agreements to which it increasingly has resort as a way of inserting its services in projects of a wider scope. Between 1983 and 1986 INA signed a total of 83 agreements of which several were aimed at stipulating the contribution to training by the VTI, in the framework of integrated development projects. Because of their wide coverage and length, coordination actions with the Ministry of Education, warrant special attention. Under these actions, INA provides instructors, methodologies and teaching materials for the programmes it carries out jointly

with the Ministry in less-developed communities. INA has also worked in coordination with municipal authorities for the establishment of public workshops for training production, generally located in marginal urban quarters. At the research level, INA has an agreement with the Costa Rican Technological Institute, the National Science and Technology Council and with the University of Costa Rica, whereby INA is associated in activities for the design and preparation of models and prototypes using applied technologies.

SECAP has also become involved in various inter-institutional agreements whereby it provides its technical personnel, its methodological experience and teaching materials to programmes related to community development in which the counterpart agencies provide infrastructure, and cover the cost of materials, per diems or mobilisation of the instructors. There are various institutions that commit themselves to make contributions such as these, in the framework of agreements, in relation to the technical teaching experience.

In Peru, the General Office for Vocational Training (DGFP), an agency which has a serious lack of operational resources, has been particularly active in signing inter-institutional agreements that enable it to promote its training function in the framework of projects financed by other agencies. The most outstanding one is the joint programme with the Ministry of Education, which takes on special relevance, given the fact that it harbours an important network of Occupational Education Centres (CEOs), that, through the agreement with the DGFP, have become very dynamic, a characteristic of VT which they were lacking. This Ministerial body also promotes various agreements with VTIs, such as SENATI, SENCICO, CENFOTUR and others, to provide training in the informal sector and to rural communities.

Coordination with government bodies at a local level is a new channel that VTIs are using actively. In this coordination a protagonistic role is played by agreements with municipalities, especially in countries such as Colombia, Chile and to a lesser degree, Argentina and Brazil, where an intense political and administrative decentralisation is being promoted towards regional and local units. The clearest example is the participation of SENA in the Plan for the Eradication of Absolute Poverty, launched by the government in 1988. This implies an enormous institutional effort, as SENA has been obliged to extend its coverage from 25 municipalities located in the most important towns of the country, to 100 municipalities corresponding to the highest rates of urban poverty, and including the previous 25, SENA is working on this major project in coordination with the municipalities and has established the goal of launching community organisations that will reach over 5,000 during the first year of the plan's execution. There is no information on the goals effectively reached.

The Argentinian CONET has recently promoted a series of joint activities with the municipal education secretariats. The widest ranging is the agreement signed with the Municipality of Buenos Aires, aiming at joining physical and technical resources to widen coverage and facilitate transfer of technology and methodologies between the educational units of CONET and technical training managed by the Provincial Government.

Inter-institutional coordination is a longstanding practice in most of the VTIs, but it still involves great difficulties. Experience shows that it is often the VTIs that must continue with programming in spite of nonfulfilment by the counterpart agencies, which obliges the VTIs to take on the whole weight of programmed activities. This has been a strong limitation on the effectiveness of training programmes that are a component of projects that can only reach their targets if all the components are provided in appropriate quantity, quality and timeliness. However, this modality is still being promoted insistently by VTIs, particularly for activities with the informal sector and rural economy, to make it possible for VTIs to concentrate their efforts in their own field of action. In fact, they have often had to take on foreign components as a form of guaranteeing effective results. There have been cases whereby special resources have been allocated to VTIs, in the framework of external development programmes with their own financing, to carry out functions that go much further than strict vocational training.

c. Participation and decentralisation

The diversity of planning criteria, methods of detecting needs, use of non-conventional methods, and forms of organising plans, has produced combinations and linkages taking on various forms. This process has given rise to difficulties in the management of the planning process and is a cause and effect of a rupture of internal consensus within a same VTI. Divergent lines appear in the interpretation of the mission and each one struggles to gain influence in institutional planning processes. In practice, information and agreements obtained outside the schematic planning processes are frequently more weighty, and this takes on greater relevance when there is a sufficient degree of autonomy at the bases.

Most of the institutions have endeavoured to respond by inclining towards a participatory planning within the VTI. Particular insistence is placed on this by SENAC, SENA, INA, SENAI and INFOTEP. These last two institutions have even set up what INFOTEP calls a "planning board", which gathers people from various of the institution's sectors. SENAI (Sao Paulo) insists on explaining that the mechanism they give preference to is that of a "planning committee", which involves various officials, including technicians from the

study and operational sections. Both institutions consider that this mechanism has shown positive results. However, many others point out that in practice it is difficult to operate a wider participation system, due to the time and movement involved.

All these VTIs have adopted uprated planning procedures, that endeavour to integrate planning on three levels: central, regional and local. On the local level (centres and operational units), daily actions are planned (events, courses and other activities). On the regional level, the frameworks for action in a geographical region are defined, in terms of quantitative goals by modalities, methods and specialisations, and annual resources available are established: furthermore, programming of operations going beyond the context of a single centre of local programme is also coordinated. At the central level, the priorities by productive and labour sectors are determined, regional plans are made compatible and resources are distributed among the regions, global balances between resources and needs are made, the programming of multi-regional actions is coordinated, major investment research and development projects areapproved, and, when necessary, it is here that linkages with national development plans, manpower and education take place. In general the borders of central and regional planning are fairly lax, so that in practice at the local level there is a wide degree of freedom to decide what, when and how to produce in terms of VT services.

In the case of Brazil, due to the enormous size of its territory and the federative structure of the republic, the regional direction agencies of SENAI and SENAC have faculties as to planning similar to those of national VTI agencies in other countries.

The trend towards deconcentration of VT planning is explained by a set of factors, such as the following:

i. The progress made by the regionalisation process of public administration in some countries. In Peru, the General Regionalisation Law will, as a matter of fact or of law, oblige SENATI and SENCICO to decentralise their power structures. In Chile, the establishment of the Regional Development Fund has given great budgetary autonomy to regional authorities to carry out social programmes, including contracts for VT programmes for unemployed youth and adults in situations of extreme poverty. In Argentina, decentralisation of the educational system is being accentuated, involving in this process VT inserted in CONET. In Colombia there is a trend towards strengthening municipalities, and this is doubtlessly turning them into one of SENA's main interlocutors.

ii. Advisability of having a more direct knowledge of local labour problems and imminent needs felt at the bases, together with a more expeditious access to community centres of information and decision.

iii. The need to facilitate coordination with other local institutions to participate in more integrated development actions.

iv. The importance of encouraging a greater sense of commitment on the part of the VTIs' basic operational units with the plans agreed on.

In this way, VTIs are trying to establish an increasingly close relationship with the government authorities and beneficiaries of VT at all the planning levels (central, regional, local). As stated earlier on, through this relationship, they are endeavouring to gain a closer knowledge of the true needs, priorities and possibilities for action in VT, to commit the other actors of the system in the task, and to have a basis of social support to protect the institution from political and economic risks and even internal conflicts that might threaten it.

In most cases, the planning process is carried out as a circular cycle that aims at coordinating three planning levels: central, regional and local, through a flow of information with varying degrees of disaggregation. This cycle may be repeated through successive approaches until it reaches a total adaptation in the three planning levels, but in most cases, a single cycle is enough. A variation of this process is when the cycle starts from the bottom upwards, starting with detailed programming proposals made by the basic units (centres and programmes) to the higher decision levels, in which these proposals are reviewed and consolidated in accordance with available resources and the institution's general policies.

d. Factors implying rigidity

The predominating planning horizon within VTIs is over an annual period. Long-term plans are more connected to opening up new lines of action, initiatives for institutional strengthening in technical and administrative support areas, and investment and research projects, than to direct operations.

Medium-term planning is generally done over a period of three, four or five years (in VTIs most connected to the government, the periods correspond to presidential periods), and in general show a combination of institutional policies and governmental policies. The formulation of plans at this level is almost exclusively managed by the higher authorities of VTIs, in general by their directors or presidents and the corresponding governing councils or boards.

Planning at the short term is generally done on a yearly basis, and in nearly all the VTIs, it reaches a detailed level of programming. It is a far more technical and routine process than the former ones, particularly in the case of operational programming, which is done by covering two basic parametres: installed capacity and analysis on the behaviour of the labour market.

Installed capacity, and above all the physical and human capacity, undoubtedly introduces a highly rigid factor. Most of the VTIs already have a heavy physical infrastructure and staff, which must be used in spite of the limits on desired flexibility. This rigidity produces an inclination towards the most important and urgent changes arising from new needs being made by adding on new programmes, with the corresponding technical support apparatus and even with relatively autonomous planning systems (not formally accepted but nontheless real), particularly when they are linked to external processes of great weight in political-governmental or enterprise contexts.

Annual operational programming and that of running expenses, tends to be a routine, repetitive function, as we have just pointed out. It is in the programming of physical investment resources (building of centres, acquisition and/or replacement of material and durable equipment), where attention is usually concentrated along short-term planning processes, as it is here that decisions concerning regional or sectoral allotment of budgetary surplus are taken, after having ensured that running operations are covered. As this surplus can be significant, the various regions and representatives of the sectors exert pressure to have access to it.

Although it is true that VTIs planning systems have adapted to the complex doctrinal changes taking place within VT, and have improved their capacity to perceive social or economic imbalances in the labour market that can be totally or partially solved through VT, some weaknesses still remain within the VTIs themselves that detract from the effectiveness of their plans.

Among these weaknesses, the following should be emphasised, as they are a common denominator in the region: a. predominance of a fixed capacity for supply (installations, staff, programmes and teaching material) over evaluation of needs, as a planning criterion; b. the weak links between physical and budgetary planning, due to a lack of adequate cost information systems; c. the scant power of decision enjoyed by the basic operational units, particularly established instructors, to decide on VT actions, contributing to making VTIs supply of services cumbersome, and d. weak systematisation of mechanisms to control execution of programmes and evaluation of results (graduate follow-up), as feedback instruments to adjust the plan.

6. NON-CONVENTIONAL METHODS TO DETECT NEEDS

With reference to methods for the detection of needs used by VTIs, a trend may be perceived towards less use of conventional, systematic and structured methods that prevailed when VTIs were predominantly serving the countries' modern productive apparatus, particularly the manufacturing industry. The widening of the spectrum of needs covered by VTIs, in terms of direct beneficiaries (workers) and indirect ones (productive units), due to advances in criteria for social and economic promotion in programming decisions, has eroded the effectiveness of the various orthodox methods. That is to say, those methods based on a formal analysis of the dynamics of the structured labour market, such as: projected needs for manpower, ex-post evaluation of VT profitability, international comparisons of occupational structures and education/training profiles by branches of economic activity, techniques based on work organisation standards, surveys of employers, and econometric models integrating economic forecasts with those of manpower and vocational education/training. Furthermore, the cost of applying these methods, because of the large amount of data collecting and processing they demand, together with their persistent conceptual weaknesses, detracting validity from their conclusions, have contributed to degrade their cost-effectiveness as VT planning instruments. Thus, over the past few years, there has been a general trend towards using attraction and analysis of the labour market's qualitative signs as a complement to formal models to estimate needs, which in no way implies a reduction in the need for information.

In fact, an attempt is made to develop non-conventional information sources and to obtain non-parametric data to assess imbalances in employment that will make it possible to infer training needs for manpower. Among these methods, the following, which have become widespread because they are practical, effective and cheap, should be highlighted: a. analysis of job vacancies appearing in the press and in employment agencies; b. the use of key informers at a local level, particularly important in the rural and informal urban sectors; c. the organisation of working groups (small/micro enterprise managers, or inhabitants of rural communities) for self-diagnosis of their training needs on the basis of productive projects; d. agreements with specific users (enterprises, workers, social organisations and government agencies); and e. the establishment of VTI-enterprise advisory committees, with functions going beyond mere detection of job opportunities and quantitative needs for VT.

a. The leading role of users

All the VTIs surveyed have revealed an increasing use of multiple interlocutors, sources and types of information, together with traditional

methods for the detection of needs to support short-term planning decisions. Some examples of specific interest are set out herebelow:

- The analysis of job vacancies appearing in the press has given SENCE (Chile) satisfactory results in the programming of grants. Obviously, this source of information is used as a complement to planning elaborated from local levels in which municipal agencies take on considerable importance, particularly through their employment agencies. The identification of needs prepared at municipal level in all the provinces of Chile is centrally processed by SENCE to distribute and allocate, to the various programmes requested, the resources for the National Grant Programme. In several other countries, the employment agencies of the Ministries of Labour employment services have a commitment to send the VTIs the lists of job supply and demand, but only operate efficiently in a few cases. INA (Costa Rica) takes this demand into account to include candidates in the programmes offered by the institution and the offers to employ its graduates, but there is no evidence that this has any impact on activity programming. This simple procedure, has operated in agencies having lesser scope or at initial stages. CECAP (Uruguay) although not a conventional VTI, bases its programmes mainly on the analysis of job vacancies in the press, combining it with an analysis of job statistics.

- The use of key informers on a local level is particularly important in the rural and informal urban sector. It is part of a training process in all the experiencies preceding, following or inspired on the project for small rural enterprise (SRE), promoted by Cinterfor in the VTIs of the region working in the rural sector. In SENA's programme of training for rural dweller participation (CAPACA) and the other similar one for training in the urban informal sector (CIPACU), the diagnosis of needs is prepared at the level of the community involved, using as a hub the community leaders and other persons qualified as informers with knowledge of the local situation. The same goes for the SRE experience that INFOP applies on a fairly wide basis, and in general in all the programmes that involve the participation of the community as a basic component.

- The organisation of the users themselves is an element which is also incorporated in the training methodology, essentially in that used for small enterprise managers, in which the initial training stage is provided by self-diagnosis of needs. A clear example of this mechanism is the apprenticeship programme by action (APA) through METAPLAN technique first used by INA (Costa Rica) based on an ILO project, and later extended to practically all the VTIs in the Central American region.

- The establishment of agreements with specific users, such as enterprises, workers, social organisations, local government agencies, etc., is a characteristic solution to which VTIs presently resort to obtain a direct idea of the users concrete needs. This is achieved through agreements that are omnipresent in the way in which VTIs are currently working. In this case, we shall refer specifically to agreements with users, setting aside inter-institutional action agreements referred to earlier on, that come under a different heading. This aspect is fairly novel, as by definition VTIs cover enterprise needs, without needing specific agreements. The range of agreements of this sort is enormous, but we shall refer here to those that are established directly between a VTI and generally a medium or large enterprise, to develop a whole training programme, in which the expected goals, management control and evaluation are clearly set out. Responsibilities are assigned to each of the parties, and in some cases the costs and the way they will be covered by each of the parties are also stipulated.

SENA has signed an enormous number of agreements with both State and private enterprises. In the first case, these are mainly ministries or State enterprises, where linkage with SENA is aimed at committing personnel training goals. In general, SENA resorts to the agreement formula with large scale enterprises acting in strategic sectors of the economy, both in terms of the production of consumer goods and in the generation of employment, experts and reactivation of the economy in general, in accordance with the government policies in this respect. The privileged areas where work has been carried out under this formula are the shoe industry, ready-made clothing, textiles, graphic arts, with which SENA has established agreements with the productive units of each branch. It also maintains fully active a high number of agreements with individual enterprises in a wide range of production branches.

CONET currently keeps up some thirty agreements with enterprises and workers and employers organisations, with an aim to multiplying training actions in their own centres or to complement them with external resources. Some of these agreements aim at placing CONET's physical resources at the disposal of enterprises, unions and chambers. This implies opening up its centers to specific programmes such as those signed with the Chamber and the Gastronomic Union, the Chambers of Building, Automobile Concessionaries and Mechanics. Others offer the organism's technical-pedagogic capacity, namely instructor training, programme design, preparation of teaching aids, etc., such as those foreseen in the agreements with the Chamber of Building, the Jujuy Chamber of Tobacco, the Chamber of Food Industries, the Association of Textile Industrialists, the Civil Servants of the Nation, Transportation Workers, etc.

SENAC operates through the so-called terms of technical cooperation, whereby it establishes agreements with given enterprises or groups of enterprises, to provide training services with clearly specified goals. This type of agreement is increasingly being used by SENAI as a variation of the traditional agreements for exemption and partial retention of its contribution to the VTI, incorporated since the outset as a mechanism that really operates as a transfer of implementation of training programmes to the enterprises. The difference between these agreements and the so-called "terms of collaboration", is that in the latter case it is SENAI itself that trains. INA also resorts to the agreements with enterprises formula, which frequently arise from the liaison committees. There is also evidence of the establishment of agreements at other institutions, such as SECAP, where the most important one is the agreement with the Ecuadorian State Petroleum Corporation, CEPE, and INTECAP with the Chamber of Tourism. From here on this type of initiative is repeated in most of the institutions.

To a certain extent, these agreements are partially equivalent to contracts such as those signed between INACAP with the enterprises to which it sells its services. In the other institutions, agreements serve the purpose of attracting resources in the form of a commitment by the direct users. In addition to these financial and logistic aspects, in terms of planning this implies a very precise definition of operational goals for each of the projects arising from the agreements, while incorporating tangible elements that are immediately applicable for evaluation and feedback.

b. Advisory committees

The establishment of advisory committees or commissions is perhaps the most pertinent mechanism used by the institutions as a non-conventional source for the planning process. Certainly, the task of these bodies does not end with information on needs, but is a permanent and active channel for direct linking with the users of VTI services.

The scope of this type of communication and liaison with the corresponding sectors has become significantly dynamic over the past, concomitantly with the restrictions shown by orthodox planning models used as a primary source of planning until fairly recently. Therefore, the concrete figure, the form of operation, and the results that this type of advisory body expresses in each VTI should be examined.

The advisory committees of CONET's vocational training centres are the response of cooperatives set up as support and collaboration agencies with the technical schools. These committees are formed by representatives of

community institutions and from the economic activity in the zone covered by the respective training centres. Their objectives are varied and their members collaborate on an ad honorem basis. When the management of the training unit is sufficiently dynamic and interested in mobilising the community, these committees have managed to involve considerable contributions in terms of specification of needs, supply of material and even equipment and tools, as well as the backing of the centres to obtain contributions from the community and even special authorisations from the institution's authorities.

As from 1985, SENA has reactivated and promoted the operation of the so-called external advisory committees that had only existed in theory for many years. Their members include SENA technical staff and enterprise personnel. Their basic aim is to reorient existing programmes, in number and content, in SENA's specialised centres where demand generally comes from the large enterprises. Such is the case of activities in the field of petroleum, coal, and electricity enterprises.

As stated earlier on, INA is the agency that has made liaison committees the flagship of modern times. In fact, membership of these committees has taken on great dynamism and it is already possible to observe tangible and positive results from their operation. Before this mechanism was formalised by the 1983 law, it already existed on an informal basis, as a means of exchanging information and coordination with the respective sectors. They are organically connected to the VTI which established the liaison committees section in 1985, specifically in charge of managing relations with advisory committees. It would be very lengthy to go into the results obtained, but it is worthwhile stressing that an output has been to effectively leave in the hands of these committees some of the functions that this VTI had to carry out itself, such as the preparation of training plans and examination of needs in very specific areas (precision mechanics, maintenance and metal structures, tourism, retail trade, food industry, concrete building, etc.). Although it is true that the establishment of these committees is still in process and that scarce interest on the part of some sectors of employers is reported, some results are remarkable and far exceed the immediate planning and feedback commitment they were originally assigned. As an illustration, the management committee of the enterprise sector even prepared a "draft agreement" to support INA's operation before the governmental budgetary authority, concerning the creation of new posts, particularly for technical and instruction jobs. In this way, the committee has taken on the role of supporting the VTI with the higher government spheres and has taken on their "defence" when facing threats from the outside.

In terms of operation planning and management, these committees have introduced a factor of flexibility, which makes it possible to adjust plans that,

by the nature of the formal procedure establishing them, are fixed far in advance.

INTECAP has developed a mechanism of advisory commissions, whose constitution and operation is strictly ruled, with the possibility of setting up for each of the different branches, an economic activity in accordance with institutional needs. In SECAP, the advisory committees are established by province, with the essential aim of informing SECAP on training needs in the industrial, small industry, artisan, commercial and service sectors. INAFORP has technical advisory commissions by branch of economic activity, with parity membership of employers and workers. As in the preceding case, these committees are set up according to the VTI's own needs.

The advisory committees operate on a much more informal basis at INFOTEP and SENATI. INFOTEP has set them up in large and medium sized cities, organised by productive sectors. They are not obligatory and include the membership of people and representatives of enterprises, workers, communities, official authorities, etc., and even salesmen from commercial concerns selling equipment, tools and inputs, related to the activity being covered. Following a decision by the VTI's authorities, budding experience will be broadened and systematised, given the receptiveness shown towards it.

At SENATI, the advisory committees are a privileged form of direct communication with enterprises and here, too, they are organised by branch of activity. Their operation is varied and they are convened at the discretion of SENATI. This institution reports that various committees have been established (a total of ten to fifteen committees on a regional and national level), with the direct support of the National Industry Society. Some have operated very well, for instance the ready-made clothing and textile committees, others have been a failure, such as the carpenty and wood committees. An interesting piece of information reported by SENATI is that these committees have not only served to define demands and introduce technological updating into the VTI, but also to obtain free equipment and raw material, from the enterprises themselves, and with their endorsement, from suppliers, who have donated their products to the VTI with a view to their promotion and demonstration. SENCICO (Peru) and COCAP (Uruguay) are also empowered by law to set up advisory technical commissions, but these have not been of any relevance. COCAP emphasised the successful case of the commission set up with plastics industries.

Nearly all these committees have common features as to their constitution and operation, as well as regarding their problems and constraints. Among the latter, a lack of definition of responsibilities between the parties is alleged, and

above all, the excessive demands made on the VTI, without sufficient analysis of the real possibility of complying with these demands. At all events, they are a source of enormous projections in making training offered by VTIs more flexible, and essentially for mobilising the capacity for their continuous adjustment and updating on the basis of real demands made by productive activities. They are also a source of encouragement for decentralisation as they are usually set up on a very specific level, be it an activity, be it a locality, or be it a social sector covered. The very fact that they have fast risen in importance and presence in VTIs is a proof of their timeliness: moving from long-term forecasts towards short-term and immediate adjustments and readjustments, more in line with the fast changing, heterogeneous situation, which has to adapt not only to major movements of society as a whole, but also to the multiple, small movements in each of the segments and branches integrating it.

VI

MANAGEMENT AND DECISION-MAKING: HOW VTIs WORK

To tackle the subject of institutional management is like trying to climb a slippery slope. This is a particularly sensitive area of VTIs, as it is indeed of any other kind of institution, and it is difficult to obtain data reflecting accurately the way in which they really operate. In fact, each institution and its many internal departments constitute worlds in themselves. It is hard to identify from outside the behavioural codes and the real flow of decision-making and implementation of initiatives within them.

Our analysis will try to visualise the real and everyday operation of VTIs starting off from two different inputs. On the one hand, the concrete and very powerful results of that management from which we can infer the options resulting from decision-making. On the other hand, to this analysis also contributes the direct knowledge which is necessarily partial and sometimes concrete, that we have by observing and by sporadic living together with VTIs or with parts of them, which has enabled researchers to get in touch with the actual way in which they mobilise themselves in their everyday activity. It is of course particularly difficult to make generalisations in this respect. There is a great diversity of VT bodies. Although they all share to a certain extent a common institutional culture, stemming from the ultimate goal that they are aiming at in society, and from a shared and exchanged tradition which has enabled them to forge a relatively homogeneous profile, the characteristics and singularities of which are difficult to grasp. This is a serious limiting factor for a detailed analysis of the specific nature of each one in the handling of decisions and operations.

1. MANAGEMENT STYLES

a. The stamp of professional disciplines

The style of management that distinguishes these institutions is built on the basis of an encounter of disciplines which has come to constitute a peculiar combination. Most VTIs were born tinged by an engineering approach, since the founders and the first professional and technical teams that blazed a trail for

them were precisely engineers, based on their knowledge of the industrial and manufacturing world. It was on their views that most VTIs were initially constructed. However, the nature of the educational service that they had to render soon absorbed the pedagogic teaching discipline of educators. This merger of engineers and educators contributed to lead to a management namely guided by technical criteria that counterbalanced the practicality and pragmatism of strict control measures promoted with engineers, with the teaching discipline rooted in social sciences, characteristic of educators.

The initial stages in the life of these institutions when they had to comply with clear-cut tasks for the training of workers with well-defined skills in terms of the requirements of work posts is tipped in this balance between the approach of the exact sciences contributed by engineers and technicians and that of the social sciences, inherent in the discipline of teachers. However, as VT bodies were compelled to respond to wider demands from a labour market that sent less distinct signals and where the requirements went over and above a strict profile of technical qualifications stemming from a specific work post, they opened up to multiple disciplines in the technical and operational staff as well as in the administrative and financial personnel. Together with the growth, expansion and diversification of these institutions, their staff absorbed the most diverse disciplines: anthropologists, historians, sociologists, mathematicians, economists, lawyers, psychologists and administrators were added to the traditional engineers, technicians and educators. The projection of VTIs towards an overall context and frequently their links with policy decision-making circles in the outside world were a condition for the gradual widening and combination of approaches enabling them to deploy a style of management capable of reaching understandings with multiple interlocutors and of giving response to very diverse demands.

Of course a style of management clearly reflects the way in which a given VTI is inserted in the society surrounding it and the degree of autonomy or links of dependency it has with respect to various external sectors. Institutions included within formal education systems naturally tend to opt for educators, whereas those more closely connected to entrepreneurial sectors, particularly the industrial sector, assign predominant roles to engineers and technicians. For their part VTIs more strictly connected with social policies of their respective governments absorb a greater number of elements coming from social sciences including political leaders, whose participation starts to be decisive at top levels of institutional leadership, in entities such as SENA, INA and INCE, fundamentally. It is also possible to see changes in this type of hierarchical make-up as time goes by. With increasing frequency we have seen a turn-over and change in the higher authorities of VTIs. In general their technical staffs are relatively stable but there

is also greater renewal and mobility of personnel, also at top professional and technical levels.

As opposed to other agencies and departments of public administrations VTIs are relatively resistant to political appointments at intermediate levels. Very often the new Executive Directors bring along with them a small professional team for key posts and jobs. Nevertheless, more frequently mobility occurs through internal changes in the already employed personnel. Naturally, participation and control by employers of the management of VTIs is a containing barrier to excessive personnel turn over or to the addition of new contingents for political reasons.

The greater stability of the personnel cadres of VTIs, the greater their general conservatism. Thus, institutions which are more firmly inserted in educational structures such as CONET and UTU, attribute great value to a professional degree and have officials with a long history within the entity. Frequently intermediate and higher cadres are filled in by personnel that has reached those positions through internal promotion after long years of service. Something similar happens, although for different reasons, in institutions such as SENAC, and above all SENAI, where there is greater personnel stability and where people are promoted internally on the basis of their merits which, in that organisation, result from an intimate knowledge of the VTI and long experience which is considered of great weight in the culture of the institution.

The specific nature of VT and the fact that it is a specialisation that is acquired through experience and not learnt as a discipline or knowledge in any school, has made seniority an important criteria for promotion. The gradual incorporation of personnel from other disciplines and activities not directly related with VT, has generated within VTIs different and sometimes opposing views as to the mission to be accomplished and the way of implementing it. In this way, in all VTIs in the last few years and in direct proportion to their degree of patency to new personnel currents, an effort can be detected for the induction of new arrivals under the form of programmes to promote awareness and training of this new personnel. These programmes are also promoted periodically to older personnel in order to bring into line all functional cadres under a common denominator and a shared discipline. This being convergent towards the goals that the institution has set itself at a given historic moment and steeped in the strategic, functional and operational organisation that it has adopted as a code of behaviour. This is a way of homogenising a large personnel contingent and giving it a uniform stamp in order to keep alive the institution's identity and its culture.

b. External controls

Most of the VTIs that we are referring to are in the public or State sphere. Although both these institutions and those of a private nature, such as SENAI and SENAC and at present INACAP, were created through acts of government, they enjoy a considerable degree of financial and managerial autonomy, as they are outside the norms of ordinary public administration. Nevertheless, the actual degree of institutional autonomy does not strictly depend on formal regulations that their charters granted to these bodies. In effect, there is a growing encroachment by governments in a direct or indirect way about several key aspects of the current management of VTIs. First of all and in particular, for those which are organically more closely connected with governments, there is a pressure to make them toe the line of governmental policies. In practice this means restrictions to their autonomy in the handling of budgets, their personnel, investments and expenditures and in the remuneration they pay their employees.

The traditional intervention of the State in these VTIs used to be channeled through the guidelines of their boards of directors. But in recent years it has been exerted through official norms, such as laws, decrees or administrative ordinances, which regulate, in a much more strict and authoritarian way, the handling of their funds or budgetary surpluses (cases of INA and SENA), or through the impositions of the so-called National Vocational Training Systems, that were created with an official character. Even in bodies of a private nature, such as SENAI and SENAC, a greater intervention of the State can be seen through the years. This is done through efforts to restrict or even actual restrictions on the flow of resources that by law belong to these institutions, but which, being collected and handed over to them through external tax agencies, have implied periods of government limitations on the availability of financial resources for SENAI and SENAC.

Over and above the rigidities introduced into VTIs from governmental circles, which are mainly reflected in restrictions to their financial and management autonomy and their expenditures and which we shall see in greater detail in the chapter on finance of this report, most of their submission to general norms of public administration operates through personnel management. All VTIs with a logical exception of those of a private nature exclusively, have been assimilated to the rules and regulations governing public administration as their personnel is concerned. Procedures for the recruitment, selection, salaries, services and promotion are therefore governed by laws and decrees shared by the whole operators of public administration. The measures promoted by governments to curb public expenditure have introduced limits that erect a barrier for the incorporation and renewal of

personnel in VTIs, and that put a ceiling to the salaries that they can offer to their employees. In fact, this is one of the problems that VTIs frequently quote as a justification for their difficulties to expand according to their needs as well as for keeping their personnel, as the salaries that they pay are not competitive with those of the private sector. Consequently there is a constant drain of human resources trained by the institutions which have invested a great deal of money and effort for a long time in preparing this personnel.

With regard to personnel appointments, institutions have managed to keep up rather strict and technically correct criteria which have counteracted political pressures in this respect. Influences operate at the top level, and in some cases, immediately below the top hierarchy, but normally they do not pervade intermediate and lower cadres.

Although VTIs are increasingly hamstrung by the State provisions that condition and restrict their autonomy bringing them into line to the general measures for reduction of expenditures in public administration, they have learned to live with these constraints and to take advantage of them insofar as possible. In order to do that, they fall back not only on the ability, influence and political connections of the directors as we said before, but they also resort to alliances and controls with the external sector, mainly with employers and workers, as a way of preventing excessive intervention by the State. The key to institutional management from the point of view of external demands, lies in the need to strike a balance among the different pressures exerted upon VTIs, by State organisations, by users and by private sectors. They all influence not only through formal mechanisms of participation in the boards of directors but very specifically through different formulas, such as agreements and interinstitutional coordination that we have already examined. In fact, VTIs must account for their management not only to governments but also to employers, workers and the other sectors that make up their boards of directors and councils. Apart from that, as purveyors of services to the public, they must submit to the acceptance, legitimacy and approval of their action by the market. They are permanently exposed to the penalty of having to face up to their direct and indirect users, workers and enterprises, and they are also in the limelight of public opinion.

The origin of the resources of VTIs mainly through levies on the payroll but increasingly through new mechanisms such as co-financing agreements, sale of services and participation in broader development projects financed from external sources, gives the financing entities the right to "demand" results from these institutions in line with their respective expectations. Hence, institutional management is conditioned by external factors that are often at loggerheads with each other and that can be seen through incentives and

penalties imposed on VTIs. This is subject of the accountability of these institutions to outside interested parties, which grows in direct proportion to the instability of the financial resources. The strategies adopted by VTIs to deal with this matter are manifold. Some of them with a long history and particularly when they are strongly rooted in the entrepreneurial sector, as is the case of SENAI and SENAC, are taken for granted by employer sectors. Often they do not know exactly what the institutions have to offer, but they do not question it as they are placed at the top of their boards of directors and therefore, they assume that the products they get are in consonance with their own needs. In the case of SENATI, for example, the strategy chosen by this entity was to get closer to the entrepreneurial sector. It offered its services aggressively to the different enterprises. Thus, SENATI ensured the backing of each individual firm, which in the long run, means underwriting by the whole productive sector.

Insofar as most VTIs increasingly offer customised services to certain enterprises or groups of enterprises, this individualised marketing strategy becomes more frequent. It normally operates for a whole range of assistance and consultant services to firms and companies (INA, SENA, INCE, INFOP, INTECAP and many others). Other institutions underwrite contracts with enterprises for rendering these and other services as well, as is the case of INACAP and SENAI. Agreements with enterprises, which cover the same line, condition and control the production of VTIs according to their clauses. From the point of view of overall institutional management, this often leads to a behaviour that might be compared to firefighting so to speak, and entails a risk of erratic and individual responses on the part of the institutions. This is a growing sign and several VTIs have expressed through interviews and services their fear that an excessive atomisation of services may ensue in order to respond to these individual agreements.

What concerns VTIs nowadays is to maintain equidistance between a casuistic and a flexible approach. They know that they have to find ad hoc adequate solutions to the specific requirements of each sector, each group, each enterprise, even each worker. This makes for flexibility and diversity but it also causes a scattering of institutional energies, and the dilution of the scale economies that are one of the cornerstones of the organisation of VT in large organisations of a cuasi monopolic nature in order to ensure the highest possible returns from their services. This current symptom is also reflected in the traditional evaluation which was the regulating and correcting factor of institutional management, and is now giving way to multiple feedback mechanisms. VTIs fall back on these mechanisms to check up on their acceptance in the marketplace and to verify the efficiency of their services.

2. COMPLEXITY OF STRUCTURES

Decision-making processes relating to the operation of VTIs, are highly dependent on the basic organic structure of those institutes and the distribution of functions among the different components. In effect, they are large organisations with a complex distribution of functions within them. The size of VTIs may be glimpsed to a certain extent through the number of employees and officials making them up. In fact, this is not a faithful indicator but it is quite significant that VTIs like SENAI or SENAC should have around twelve thousand employees, SENA over eight thousand and most of the other VTIs between one and two thousand, although the smaller ones like INFOTEP and SENCICO remain below the five hundred mark. Naturally, institutions inserted within regular education systems of their respective countries, like CONET and UTU, also carry out massive technical teaching tasks and they have an overall number of employees which is proportionally higher. In the case of CONET it is over seventy thousand and in that of UTU, seven thousand.

The typical structure of VTIs is divided into four clear-cut areas: planning, management and finances, an operational area and a technical-teaching one. In some VTIs, the two latter are merged into a single unit, but as an institution grows and expands they tend to become separated into different units at the top level of the organisational structure. This gives rise to complex processes of distribution of power, structural readjustments and rivalries between units, along with new interrelations and operational and hierarchical linkages, which have repercussions that add to the complexity of institutional management.

a . Conflicts underlying organisational structures

The distribution of personnel among the different areas does not shed any very clear light on the real weight of their functions within VTIs. What is clear is that the greater the scope and variety of the services the institution offers, the greater the complexity of its functional organisation, and consequently, it will have a more diversified organisational structure. The technical characteristics of the different functional areas hinder communication and coordinated work among them. The fields of responsibility are not always well demarcated and the necessary interconnections are hampered by latent frictions or more or less open conflicts, which may in some cases, erode the efficiency of institutional management. This turns the problem of the organisational structure of VTIs into a recurrent and delicate theme, subject to frequent modifications. However, only seldom have satisfactory decisions been achieved for all the parties concerned. This is due not only to technical and organisational reasons but also and sometimes to a very great extent, to political, institutional, and even extra-institutional pressures and interests. The greater the size of a VTI,

the greater the competitive struggle within it in the fight for resources assigned to the different functional areas and programmes, above all when budgetary surpluses of regular operation are to be allocated or when any attempt is made to introduce relatively important changes to the weight of each one of them. They fight for attention and political impact within and without the institutions, and the struggle for an internal space for the handling of financial, technical and personnel resources. It is not infrequent for some internal divisions to seek outside support to gain greater space and weight inside the institution. Very often departments, divisions, services or programmes that have gained increased power, importance and autonomy at a given moment, pressure to retain it, although their function is no longer a priority. Such is the case of programmes launched in connection with large projects of limited duration, either stemming from governments, from international cooperation, from requests from some sectors and so forth.

Authorities are then compelled to devote part of their time to strike a balance among these warring factions in order to counteract certain centres of power which if they grow in excess, may undermine the institutional stability and harmony. Even so there are internal alliances that blur normal channels for decision-making. As a result the distribution and compartmentalisation of functions does not always respond to a strict criterium of efficiency and effective management, nor is it clearly reflected in organisational charts.

According to the VTIs themselves the greatest conflicts occur between the administrative and technical areas. They seem to speak different languages and the institutional culture, characteristic of VTIs, tends to conceive administrative functions as mere internal services rather than mechanisms for information and control of management. With the exception of production statistics, which are of relatively good quality, internal control systems could be considerably improved, especially in the areas of costs, inventories and budgets. In fact, in the course of this research survey, we verified that information on these aspects is symptomatically the least abandoned. In connection with financial management, emphasis is placed usually on the formal control of cash flows, rather than on the relation of operations and expenditures. To a great extent this is due to a deficiency of information on costs. There are no obvious technical or economic reasons that may explain these shortcomings in information and control. It would rather seem to be an attitudinal syndrome of VTIs, which faces management efficiency as something of secondary importance. This might seem contradictory in view of the number of personnel usually employed in the administrative areas of these institutions, but can be accounted for by the relatively bureaucratic procedures in which they work, in that area. Worthy of note is the scarcity of some key efficiency indicators, such as: a) costs by course/hour; b) a relationship between course/hours and the

permanently employed teaching staff to measure the hourly work load of instructors. Although the statistical exercises tried out in the present research survey for these purposes are not quite perfect and lack liability due to the heterogeneous nature of the data handled, they at least point to the fact that there is a great divergence among different institutions with regards to the hourly work load of instructors and to the cost of course/hours.

Over and above the restrictions that VTIs had in profering information of this kind for the present survey, this is a problem that all institutions suffer from. They do not have appropriate systems of information for management purposes.

Budgeting and control systems are not well-adapted to the specific technical operational nature of the services rendered by these institutions. It is increasingly necessary to promote closer contact and discussions among the administrative and technical-operational sectors in order to reach common definitions enabling to lay down appropriate control, management and costs systems. The difficulty is magnified by constant changes and innovations in the operation of VTIs, which make rapidly obsolete administrative support and management systems that were designed for other activities.

In effect, there are no valid productivity indicators, even in the case of instructors. To be sure, this category of personnel includes a wide range of officials tackling varied functions and there are no homogeneous standards or explicit norms in each institution as to the teaching work load of instructors. In this respect, it is surprising how little time they seem to devote on an average to direct teaching in most institutions. However, there is no specification of the additional tasks they perform, such as the preparation of teaching material, attention of trainees, vocational information and guidance, consultant services to enterprises, administrative work, etc. VTIs do not usually control the work load of their instructors, so that it is not easy to find information concerning the use of the 1,800 to 2,000 man/hours a year that are more or less the accepted standard of hourly work load for each instructor. There are no data either about the periods of forced inactivity which are inevitable in the performance of their work. Let us recall that just travelling consumes a great deal of time and becomes important for those institutions that work intensively through mobile actions.

In relation to the degree of concentration of functions and the hierarchical lines and degrees of authority and control among each other, there is a constant factor with regard to hierarchical line functions, that is to say, the generation of services, which are invariably organised on a territorial basis. However, there are differences as to the levels of departmentalisation. In some cases, the

top structure of their line is regional in kind and has jurisdiction over multiple basic units which are the local training centres or specific VT programmes (SENAR, SENAI, INA, SECAP, SENCICO). A variant of this model are forms combining regional distribution with the existence of other independent bodies, also along hierarchical lines which operate special programmes at national level (SENAC, with its TV production centres and centres for the dissemination of informatics; SENA with its Subdirectorate of Social Policies; SENATI with its management for the Support of Small and Medium-sized Industrial Enterprises; INFOTEP with its in-plant training programme). They may also look after the separate management of VT on the one hand, and technical education on the other (CONET and UTU). In other cases, the primary or basic territorial bodies are the operational units themselves, such as schools, training centres or the headquarters of programmes under the technical-teaching supervision of special departments (UTU and INACAP).

As far as structures are concerned outside this main operational line, similarities are even greater since usually VTIs have the same central services for technical and administrative support, such as planning, design of programmes and teaching material, financial management, personnel management and development and general services. Documentation services are usually under the jurisdiction of the central technical unit. Evaluation activities tend to be attached to planning units or act as a consultant body to the top management of VTIs.

Finally, there is also an evident coincidence in the structure of consultant services that are usually clustered round legal departments and public relations divisions, project engineering, and international technical cooperation. The latter is always jealously guarded within the sphere of decision-making of top management. An effort is usually made for this international cooperation, although sometimes aimed at certain areas of activities or specific regions, to have a direct impact on the whole of the VTI. For that purpose, national departments try to ensure the transfer of the impact of this cooperation towards the rest of its units through mechanisms of coordination with regional departments.

b. Centralised power vs. operational autonomy

Currently, the most controversial organisational matters within VTIs are related to the struggle for power between the operational line and the specialised central bodies, particularly in connection with the following aspects: a) planning of operations; b) the authority of central, technical departments over decentralised operational units regarding innovations, the lay down of standards and application of controls through the so-called technical-teaching

supervision with regard to the content of programmes, teaching methods and materials; and c) the degree of administrative and financial decentralisation of operational units.

In this debate there is an interplay of matters of principle, such as the integrity of institutional objectives and the necessary freedom from certain controls within an organisation, vis-a-vis practical considerations such as the need to make operations more flexible, the comparative scarcity of resources in central technical bodies, to carry out an effective, normative and supervising task and the pressure of bureaucratic units far removed from direct operation which sometimes give priority to quantity over quality in training action.

In effect, aiming to render accounts on the management and results of the institutional production, forces VTIs to show eloquent figures that may have an impact outside. Here there is a clash with the institutional culture which preaches quality and efficiency of services over and above quantitative achievements. However, when the time comes to control the returns of operational units in a tacit or explicit way, rewards argument the attainment of certain production targets although there are not sufficient tools to measure the quality of the training action dispensed. All those involved in this operation feel however, a greater pressure to improve the standards of quality even to the detriment of figures and numbers. It is a well-known fact that occasionnally operational units disguise their production figures in their reports, so as to keep central authorities contented and at the same time in order not to let down the quantitative expectations of their direct beneficiaries. In the last analysis all this boils down to the degree of the personnel mystic to comply with the quantity requirement imposed from above keeping in line with quality demands, which depend on the will of those who have to deal with the direct generation of training services.

In the administrative area there is also a certain rivalry between central specialised bodies and the operational lines of VTIs. They fight over authority with regard to the management and budgets, especially resources derived from regional or local sources and personnel administration in general.

In this respect there are two concerns that are more or less open and recurrent within VTIs. On the one hand, there is a feeling that administrative management should be more flexible and that controls tend to become a hinderance overloading processes and slow them down. On the other hand, there is a conviction that institutions of the size and scope of VTIs with a large volume of resources, there is always the possibility of abuses and mismanagement in administrative areas which born out by certain cases which,

although sporadic, have been widely commented, reinforces a trend to greater and stricter controls.

Over and above management and control areas, technical centralisation remains strong in matters such as policies, technological research and development, signing of agreements, international relations, design of technical teaching standards, and production of teaching materials and aids, whereas in the administrative area the highest degree of centralisation lies in remuneration policies, the contracting of personnel and all decisions involving the capital and properties of the institution.

Of course the degree of deconcentration and consequent internal autonomy of the different units within VTIs is in direct proportion to their size and to their territorial coverage. Nevertheless, it also stems from their style of management and other factors. The more open kind of institution, where non-conventional sources of funding are accepted, frequently secured at the level of the operational units themselves, logically have a greater degree of autonomy down below. In that case, control is handed over to the users or financers themselves, which makes for wide flexibility in services offered. This is a way to overcome the constant preoccupation of VTIs to strike a rational balance between operational flexibility on the one hand, and the risk of creating anarchy within the institution and sacrificing its scale economies on the other.

This is indeed a very delicate balance and at the present moment the scales are being tipped towards greater independence in the operational area in accordance with the gradual need to adapt to the very particular problems of each location and the advance of administrative regionalisation in all spheres of government.

Several VTIs have central units especially devoted to establishing links with operational units and controlling their management. At a certain moment these units gained a great deal of power and acted as judges or inspectors and became feared because they monopolised the flow of information between top management and peripheral posts. At present, however, there is a trend to a more well-balanced control from a technical point of view, which has the character of consultant service and guidance rather than inspectorship.

c. Regionalisation and decentralisation

The initial concentration of technical administrative aspects and operational management in the central units or general departments of VTIs has gradually given way in all of them, in proportion to their institutional development and to the regionalisation processes that took place along the way.

At present, nearly all VTIs operate in a regionalised way, setting up headquarters and branches by states, provinces, departments or regions, from where they spread their action towards peripheral zones and locations. Even institutions that are not formally regionalised, take advantage of existing training centres in certain areas, as focal points from where they exert their operational management.

Regionalisation goes hand in hand with intensive decentralisation processes in countries whose territorial extension so justifies. As each regional department has a vast area to cover, returns may be satisfactory and even scale economies are possible, by introducing regional autonomy for many of the processes under way. On the other hand in smaller countries, excessive autonomy, for example in matters such as technical-pedagogic support, makes VT too expensive.

Although deconcentration and decentralisation of functions are not necessarily related to the degree of regionalisation of a given VTI, they are frequently associated with it. Regionalisation was initially the result of an expansion of VT tasks throughout the whole national territory and the setting up of a network of units, capable of offering access to training services to localities far removed from central VTI headquarters. In that way, the regionalisation process started with the erection of VT centres away from the central headquarters. The growing tendency towards moving away from the school-room in VT matters and to use training approaches that dispense with centres as a physical infrastructure to support their programmes, a subject that we shall deal in greater detail in the next chapter of this report, contributed to breaking the tie between the existence of training centres and the actual process of regionalisation of institutional management. Currently regional departments are over and above the mere existence of training centres in localities away from any focal point. In fact, they in general, manage a great number of operational units.

In most cases, VTIs have become regionalised in a gradual manner as demands so justified and resources allow for it. At present, CONET has 8 regional departments, SENAI 24, SENAC 25, SENA 19, INTECAP 8, INA 6, SENATI 6, SECAP 4, and INFOTEP only 3. SENAR and INCE for their part, have structured their regional departments in accordance with the political, adminstrative divisions established by the governments in the territory of their respective countries.

Of course the scope and coverage of regional departments vary significantly from one institution to another. In the case of the Brazilian entities, regional departments are the veritable equivalent to the central administrations of

smaller countries. At the other extreme, the regional departments of the Costa Rican INA and the Dominican Republic INFOTEP and of other small Central American countries handle a flow of activities which is below that of the individual operational units of the Brazilian training bodies mentioned above.

What should be underlined here is that regionalisation processes are increasingly seen as instruments for actual deconcentration and decentralisation of institutional management. In some countries like Costa Rica, Colombia, Chile, Peru and Venezuela, regionalisation is a decentralising strategy within the general framework of the management of development services. This has encouraged VTIs to come into line with such processes through an accelerated regionalisation and decentralisation of their own management procedures. This is more evident for institutions which are directly dependent on governments, such as SENA, INA and INCE, as well as the Brazilian SENAR. On the other hand, in Peru the process of mandatory regionalisation of all state structures will shortly impinch upon the necessary regionalisation of VTIs like SENATI and SENCICO. In the case of the latter, SENCICO, which is at an incipient stage of internal regionalisation, regional centres will very probably be absorbed by local governmental authorities. It has even been thought that they might be operated and run directly by provincial governments.

Institutions of greater weight and power fit in a different manner into the regionalisation and decentralisation processes of the State apparatus. Thus for the Colombian SENA the rapid municipalisation of the country will probably mean growing coordination of activities at the level of municipalities and local authorities as indicated before. For its part, the Chilean INACAP that operates with a system of individual contracts with enterprises, agencies and local development projects will also likely increase its activities at the level of municipalities and localities. The Peruvian SENATI getting ahead to the administrative regionalisation process taking place in the country has already established links with provincial and local authorities, which will no doubt lead it to delegate power to its regional units which so far lack independence.

The regionalisation of VTIs has brought about remarkable advantages for their direct action in a more flexible manner. However, the decentralising of management involved has not taken place without difficulties. The first authorisations granted to regional departments and even to local operational units relate to the technical pedagogical management of the training programmes they run and consequently the operation of services, including promotion and dissemination of programmes and courses, contacts with local authorities and people, search for facilities, equipment, and any other local

infrastructure for the holding of courses and carrying out of training action, the recruitment and selection of candidates for the courses, administrative control of the teaching learning process, operational inter-institutional coordination and so forth. With regard to administrative management, regional units are empowered to purchase inputs mainly cheaper and perishable, and they can also store materials, take over the management of assistant personnel and adopt some minor decisions which do not commit the institution in a decisive way. With the exception of the Brazilian SENAI and SENAC, where regional departments enjoy great autonomy, the regional bodies of VTIs are usually considerably independent as far as day to day operational decisions are concerned like things dealing with the readjustment of their annual programming and the maintenance of their physical infrastructure. Nevertheless they are limited from a technical and administrative point of view for scale economy reasons mainly.

Years of regionalised operation have shown that it looks in a better way after the development needs of each zone, with training strategies and approaches more in tune with local needs and specificities. It is also assumed that the officials and services regionally distributed are better acquainted with what goes on in a certain area with the trends of local economy and production, programmes and projects foreseen, or under way that affect the local inhabitants. Therefore, training needs and other services required can be estimated in a more accurate fashion.

Seven institutions included in the survey provided detailed information as to the degree of independence enjoyed by the regional departments in matters directly connected with institutional management. They were INA, INACAP, INFOTEP, SENA, SENAI, SENATI and the Peruvian DGFP. A brief analysis of the situation detected can be summarised as follows:

In the matter of planning and research, regional departments carry out diagnostic studies at micro level within their area of influence. They take part in the macro or large research projects originating in the national headquarters or they may implement overall investigations in their own area with the guidance, consultant services and collaboration of headquarters. Based on the knowledge acquired about training needs and on the contacts with productive and population sectors, these regional departments propose areas for growth and specific projects and take active part in the formulation of short-term programmes, taking into account of course, the budgetary limitations. In highly developed institutions, like for example, the Brazilian SENAI, regional departments have large teams for research and planning of training action and may generate their own independent way. They are only limited by the general guidelines of the institutional policy stemming from central headquarters.

With regard to picking up new lines of action, regional departments may propose them and even implement them within the framework of the budgetary levels allocated to them. For that purpose, they normally request the support of specialised agencies of central headquarters. Once a programme, project or action has been approved, it is usually run under the responsibility of regional authorities, although they may get consultant services and follow-up from the National Direction. In some institutions, decisions about new lines of action is the exclusive province of National Headquarters. But regional departments may adapt the application of such a line in accordance with the needs and characteristics of their own clientele.

Concerning the implementation of training activities, there is quite a lot of flexibility to introduce adjustments in carrying out programmes in the short term by regional departments (things like duration of the training activities, specialisations, number of students, places of operation). However, regional departments often have to ensure the back up of central headquarters for the maintenance of new units set up by them. The central authorities then provide advise, control and check up on everything. In some VTIs regional departments have less freedom of action and they are confined to small changes having to consult with headquarters or get headquarters approval whenever adjustments imply substantive changes in programming.

Changes in the implementation along the way are considered a normal thing in accordance with the requirements of enterprises, the characteristics of the localities, and local population, specific purposes of the training activity and resources available in regional departments. To sum up, central headquarters allow for a certain degree leeway and initiative to regional departments provided they do not exceed budgetary appropriations.

The greatest restrictions for independent decision-making by regional departments are observed in the technical-pedagogic area. Once again the reasons for this are the scarcity of resources. With the exception of SENAI, the central headquarters or national direction of a VTI issues all standards, directives and technical-pedagogic patterns, as well as often study plans, curricular, and teaching material. The instructors of regional departments dealing with technical-pedagogic matters do internships in the central technical department for periods of time or carry out their work locally under the guidance of supervision of the specialised agencies of central headquarters. In practice, instructors in agreement with regional authorities may introduce changes and adjustments to the training contents and work methodologies, seeking for greater effectiveness in their programmes or trying to take advantage of the knowledge and experiences that participants may already have in the learning teaching process. In the larger

institutions, regional departments have their own technical-pedagogic staff that provide a great deal of materials that they need for the support of training.

With regard to physical infrastructure and acquisitions it is quite normal for central headquarters to lay down policies and directives on buildings and equipment, an area over which it exerts strict control. Frequently, the national direction or headquarters carry out most of the acquisitions and provides most of the machinery tools and materials, a portioning to each regional department whatever they need for their training activities. The larger VTIs regional departments may have quite complete supplied services. However, in the smaller ones there are very few possibilities in this respect. Regional departments are usually confined to small emergency purchases or the acquisition of perishable goods.

Agreements with external agencies are signed by national directions when their coverage involves the whole national territory. In smaller institutions central headquarters also subscribe directly all other kinds of agreements, even though they may stem from regional departments. The larger regional departments may have authority for certain kinds of agreements of local or regional interest. Here again the Brazilian SENAI is the exception. Its regional departments enjoy complete freedom in this matter.

Finally, as already mentioned, personnel management is an area where regional departments have few prerogatives. They are confined to contracting temporary personnel or by the hour, provided that institutional policies so permit; as for the rest, they are restricted to granting annual leave, short-leave permits, attendance control, etc.

Although it is not yet possible fully to appreciate the effects of the growing regionalisatin and decentralisation that is quickly taking place among VTIs of the region, all of them say that therein lies one of the keys to the greater operational flexibility. Despite that fact, many of them maintain that at present the regionalising process, although formally under way is in practice limited by pressures exerted from outside, in order to make them more dependent on superstructural bodies. This is obviously more acute for entities which are directly linked to governments and that, as we have said repeatedly, are being submitted to administrative and budgetary controls stemming from the governmental finance policies. But even institutions that depend mainly for the financing on entrepreneurial agencies are not free from this threat. They also suffer from external pressures originating in interests which at that level are being handled over and above institutional management circles.

VTIs argue that although regionalisation and the consequent decentralisation it entails will in the long run bring about a reduction of operational costs, introduction of the whole process requires a flexible handling of management and investments, in order to set up management mechanisms that make the whole process possible and expeditious. In that way, any cut-back on resources implies a restriction to the internal autonomies conquered by regional and local units.

3. PERSONNEL MANAGEMENT

a. Composition and expansion of personnel

The management of human resources is an area calling for special attention in VTIs, as the services they render rest fundamentally upon a human basis and as the personnel associated costs account for a considerable proportion of the current expenditure. In the case of the twelve institutions that supply data in this connection, personnel costs as a percentage of current expenditures for 1987 fluctuated between 44% and 91%. It was in institutions like CONET and UTU, connected to the former educational sector, where the highest percentages were noted, 99 and 84%, respectively. In the more typical VTIs the proportion oscilates within a relatively narrow range from 44% for INA, 47% for INCE, 46% for SENATI, 49% for SENAC, 51% for INFOTEP, 64% for SENAI, 53% for SECAP. In some other institutions the ratio goes up to 68% at INACAP, 69% in SENCICO, 71% SENAR, 77% INFOP. The scattered nature of these data is due to a number of factors. It is not always possible to infer how far the diversity of services offered by each one of these VTIs is a condition for the percentages of expenses allocated to the personnel rubrique.

In effect, in institutions of a more academic kind, the teaching staff is the main input in the teaching process, which is clearly reflected in their costs structure (CONET, INACAP, UTU). In others, the large geographical coverage of their operations makes them expensive through transportation and per diem expenditures for instructors, something which is particularly evident in the case of SENAR. Finally, in other VTIs remuneration policies are influenced by burdensome union agreements (INFOP).

Data relating to the expansion of personnel over a period of fifteen years, shows, for those same VTIs, an average growth of 4.5% a year. During the period 1973-1980, human resources of VTIs increased by 30%, at a rate of 3.8% a year. In the eighties the growth of personnel contingent was greater than in the preceding period, reaching an average annual rate of 5.2%.

It is worth noting that the historical series for the present decade (1980 to 1987) shows a stepping up of personnel expansion as from 1983 and in particular, in the last year. A probable explanation lies in the fact that precisely during that period VTIs underwent an acute diversification of activities, and they required new professional abilities. No doubt they secured them through the contracting of specialists. This was also a time when research and technical support services proliferated to support the consolidation of this institutional turn-about that could be seen in practically all VTIs at the beginning of the eighties.

Of course variations in personnel figures are quite wide for the different VTIs. The two institutions with the highest growth rates are SENAR and INFOTEP, which is not strange as they are two entities that were recently created at the beginning of the decade and that are now undergoing the setting up of their staff structures. As may be seen in the following table, these are the only two institutions whose growth rate exceeds two digits for a seven-year period, taking 1980 as a base year. They are followed by another two: INA and CONET, where the increase for both exceeded 60%, the growth process was accelerated towards the middle of the period. A second group is that of VTIs who have a moderate increase: SECAP, SENAC, and UTU, their personnel grew by about 30% in the period under review, whereas INACAP only reached 17%. Another common feature to all of them is a steeper acceleration in 1984 and onwards. SENAI, SENCICO, SENA and SENATI kept their personnel level during this period with slight variants over the initial total. In the former ones, during the last, there were additions that swelled the personnel ranks over and above the base year. On the other hand at SENA and SENATI numbers are slightly lower than at the beginning.

An outside observer may be struck by the significant personnel expansion in VTIs precisely in a period when they were overwhelmed by budgetary restrictions. On the other hand, this expansion coincided with times of relative stagnation in the production levels, at least in the conventional terms in which this production is measured, that is to say, through enrolments and graduations. In effect, until 1980 VTIs as a rule, had a large increase of enrolments as a result of the expansion of older institutions (SENAI, SENAC, UTU, CONET, SENA, SENATI), and the creation of several new training bodies as from 1965 and the consequent consolidation and expansion in subsequent years (INA, INACAP, SECAP, SENAR, SENCICO).

The eighties were characterised by a very slow expansion rate when few institutions saw their enrolment grow or if it grew it did so at a much moderate rate than in the past. In some of them, enrolment even diminished. Let us now recall what we pointed out in the initial chapters of this study, in the sense that

Table VI.1

EXPANSION OF VTI PERSONNEL 1980-1987
(Total personnel and variation indexes)

INSTITUTIONS	1980	1981	1982	1983	1984	1985	1986	1987
CONET	44.215	45.094	45.996	46.913	53.047	54.662	56.224	71.686
	100	102	104	106	120	124	127	162
SENAI	11.703	11.817	11.468	11.654	11.221	11.221	11.743	12.691
	100	101	98	99	96	96	100	108
SENAC	10.268	10.299	10.630	10.507	10.739	11.679	12.195	13.216
	100	100	104	102	105	114	119	129
SENAR	368	342	770	1.391	1.625	1.939	1.909*	1.888
	100	93	209	378	441	526	518	513
SENA	8.640	8.279	7.891	7.891	7.891	8.204	8.204	8.317
	100	96	91	91	91	95	95	96
INA	1.026	964	1.081	1.041	1.008	1.495	1.484	1.670
	100	94	105	101	98	146	145	163
INACAP	1.581	1.764	1.699	1.662	1.709	1.723	1.963	1.849
	100	112	107	105	108	109	124	117
INFOTEP	...	42	107	121	137*	350	365	572
	...	100	254	288	326	883	869	1.362
SECAP	528	528	528	820	576	574	679	689
	...	100	100	155	109	109	129	130
SENATI	961	920	850*	877	932	797	771	931
	100	96	88	91	97	83	80	97
SENCICO	...	392	390	389	417	386	376	519
	...	100	99	99	106	98	96	132
UTU	6.035	5.988	7.159	7.317*	7.681	7.615	7.783	7.989
	100	99	119	121	127	126	129	132

* Estimated data

Sources: 1980-1986: Anuario estadístico de la FP en América Latina, Cinterfor.
1987: Regional study.

the number of enrolments is no longer a valid indicator and has little significance to appreciate the production of VTIs. As we already indicated this is due to a number of factors. Apart from the statistical falacies disguised by a mere quantitative analysis of the number of enrolments, observable figures would indicate that rather than a growth through expansion of numbers in the training activities, what has taken place is a deep change in the nature, make up and internal distribution of the services offered by these institutions as also pointed out before.

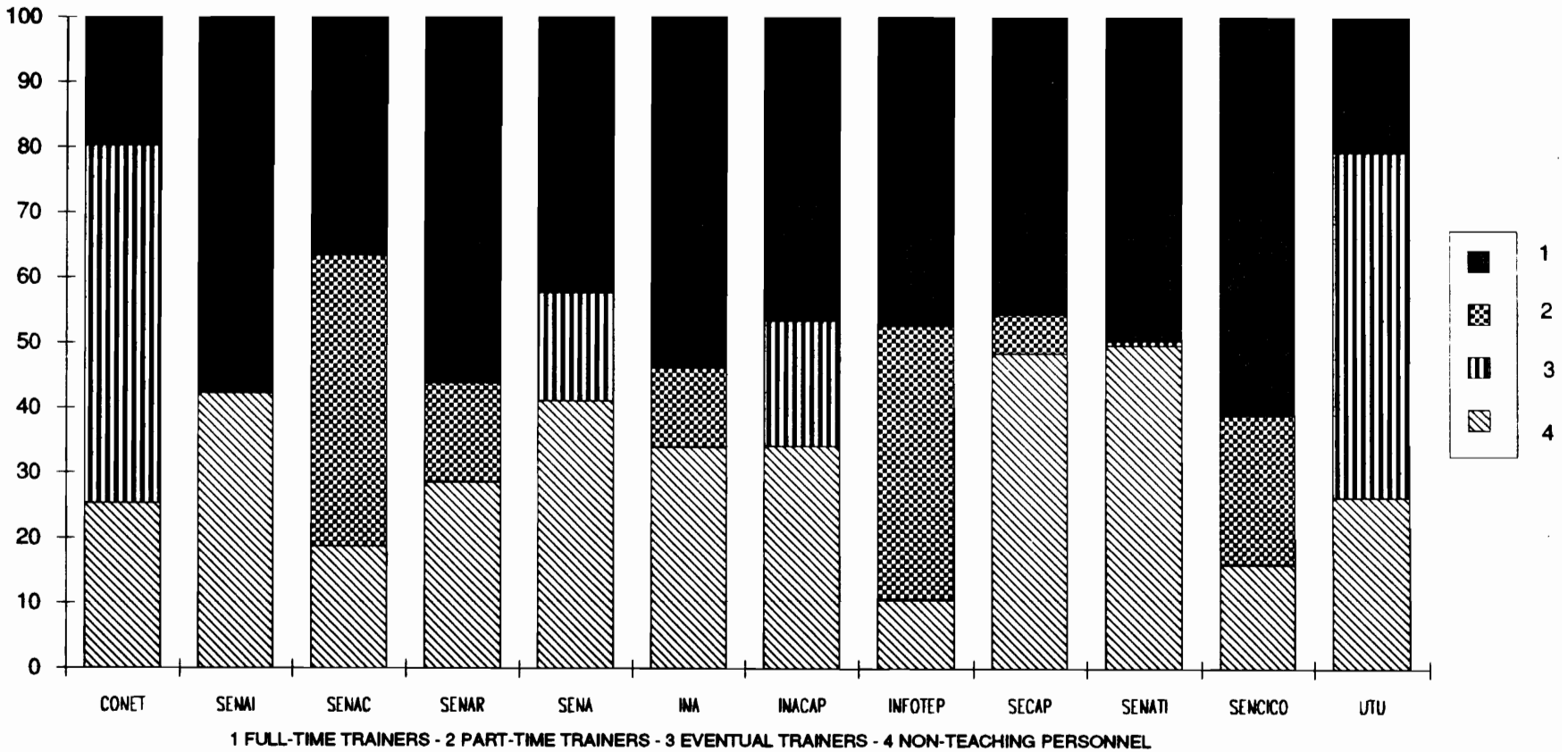
What we should like to underscore here is the difficulty of relating personnel expansion to the transformations mentioned above. The available information does not only explain how far personnel activities imply superfluous or redundant fact on overall structures, or really respond to new and justified requirements for more expertise in staff cadres. We do know indeed, as a reaction to inflexible rules and regulations regarding personnel contingents, VTIs started to take on extra personnel on an ad hoc basis, by the hour or in a temporary way which may be misleading as far as total numbers are concerned.

There is an interesting tendency the meaning of which however, is not quite certain. In analysing the personnel make up of the VTIs at least of the twelve ones that submitted data for this survey we may see that the relative importance of non-teaching categories, directors, professionals and technicians, administrative and assistant personnel, reaches 47% on an average (see Graph VI.1). But here a warning. The distinctions made by different institutions are not always the same, therefore figures should be taken with caution. The borderline between high and middle echelons and the category of technicians and professionals is quite blurred as is that between professionals and teaching personnel. But even more misleading may be a close analysis of administrative and services personnel, a bracket that usually includes large numbers of technicians and professionals as well as teaching personnel. Therefore, it is impossible to infer the relative weight of the different categories. In fact, the proportion of personnel not directly connected with teaching is quite variable from one VTI to another. But something that might be worth exploring in greater depth is that for a certain range of size of VTIs, non teaching personnel tends to grow to a lesser proportion as total numbers increase. This suggests the existence of scale economies in the technical and administrative areas of these institutions, as they have reached a critical mass of two thousand employees.

The division of functions within VTIs is directly related to their size. The trend towards specialisation of technical personnel in the areas of occupational analysis, programming, methodological experimentation and others, has taken place above all in the larger institutions, although instructors are generally

Graph VI.1

DISTRIBUTION OF PERSONNEL BY PROFESSIONAL CATEGORIES FOR TWELVE VTIs (1987)
(percentages)



1 FULL-TIME TRAINERS - 2 PART-TIME TRAINERS - 3 EVENTUAL TRAINERS - 4 NON-TEACHING PERSONNEL

Source: Survey to VTIs. Regional study.

connected with many of these tasks. As a rule it is considered that instructors should participate directly in technical-pedagogic work, devoting a proportion of their available time whenever is necessary under the guidance and orientation in any case of specialised technical personnel.

The larger an institution, the more likely it is to have a greater number of specialists. Small institutions like the Central American and Caribbean ones, have a minimum number of experts and their instructors have to bear the brunt of practically all the technical and support work. It is only in consultant and assistant programmes for enterprises, which have expanded as non-conventional services that nearly all VTIs of the region nowadays render, where technical teaching and executing functions have remained distinct. However, they may be organised in a such a way that some enterprise consultants may specialise in some programming and support areas, whereas others concentrate on the direct supply of training consultant assistant services.

b. Practices for personnel development and advancement

There are certain aspects of personnel management of special importance for VTIs, such as personnel recruitment and development, remunerations policies, stability in strategic posts, and personnel attitudes vis-a-vis innovations. The main source of personnel recruitment for these institutions, particularly for technical-teaching and operational levels, are skilled workers in enterprises. In general, VTIs do not assign a great importance to academic degrees of candidates, but rather to their practical experience which they consider essential. There are some exceptions in institutions that carry out formal, technical education activities as well as VT (CONET, INACAP, UTU), where official degrees are required. Nevertheless, several VTIs have increased recruitment among young graduates from their own courses, mainly for teaching jobs in their own specialities. This is principally due to the remuneration and salary levels that they are in a position to pay and which fall below those of the labour market, in most cases. In fact, low salaries prevent VTIs from attracting and keeping good quality personnel. They find it increasingly difficult to attract qualified human resources from firms and enterprises, in particular from the private sector, to fill in the vacancies they have in teaching jobs. VTIs, in general, try to make up for salary differentials with other incentives, such as expectations for safer and more agreeable work, as well as greater opportunities of professional development and promotion in their employment. However, it is not infrequent that these very same practices of personnel development, which often consist of further training, fellowships in technologically more advanced countries, may later contribute to an exodus of instructors and technicians towards the productive sector. Therefore, further

policies for teaching personnel apart from the technical justification may have a twofold negative effect: they facilitate recruitment but they encourage personnel turnover.

The diversification and specialisation of functions has brought about a need to place increasing emphasis on personnel training and development. Perhaps through their own vocation as trainers, but undoubtedly due to pressing needs, VTIs have deployed intensive training activities for the human resources, mainly oriented to the promotion and upgrading of their employees and technicians. Training and development activities extend to top echelons of the organisations, both at central level and in operational units. It also covers technical and administrative support branches. In the teaching area, further training courses and programmes are frequent in occupational analysis, pedagogic design, preparation of projects, technical teaching evaluation, etc. Despite all this, as we shall now see, the emphasis on internal training focuses on the methodological needs of instructors. Abilities in relation to technical-teaching operations are frequently acquired by sending staff abroad. The acquisition of specialised journals, bulletins and technical documentation on the different subjects, and in plant training, usually imparted by more experienced colleagues.

We cannot overlook in this connection the decisive influence that horizontal technical cooperation has had, specifically the exchange of ideas and experiences through seminars, and internships facilitating contacts among technicians belonging to different institutions. All this has contributed to the training, development and upgrading of personnel, both concerning technical-teaching processes and the handling of institutional management itself.

The high frequency, intensiveness and importance of circulation of VTI officials in external milieus as part of their learning process and further training is a remarkable fact. Internship periods in firms and enterprises, in other institutions and abroad, although we are not able to gauge them exactly are a habitual and recurrent practice of VTIs, which does not happen in other areas of public administration.

VTIs also make a considerable internal effort for the development of their human resources, particular technical and teaching staff. In this connection, most of them have set up special centres or programmes for that purpose, based on a rationale of methodological and technical training seen as an ongoing, updating process, as opposed to the concept of initial methodological induction imparted only once, which was then the norm in earlier times. Thus, SENATI has its Institute for the Training and Further Training of Instructors called "Blaise Pascal", SENAI three centres for Personnel Development (CEDEP)

which operate as a chore for technical-pedagogic courses offered by the entity at national level. SENAC has its own national programme for the development of instructors in VT, called PRODIFOR, and the Chilean INACAP has a plan of long distance teachers training, and INCE a national centre for the training of human resources at La Morita. Other VTIs have less well structured systems for the development and upgrading of their technical teaching personnel, based on more decentralised activities and using differente means, such as, ad hoc internal courses, internship periods in firms and enterprises, fellowships in other VTIs or multilateral and bilateral technical assistance projects and special programmes offered by international organisations, such as those that Cinterfor has been implementing in the last 25 years and, more recently the INTAFOP/ILO project, for Central America and the Dominican Republic.

The quantitative scope of the internal training effort of VTIs has reached highly significant levels. In SENAI in 1986, 9,782 employees took part in training activities, which means nearly 85% of the whole personnel contingent. Something similar happened at SENA, where during the same year 2,126 officials attended training and further training programmes, to a proportion higher than 25%. At SENATI the percentage was over 50% with 672 employees attending training programmes. In all these cases, most of trained officials belong to the category of teachers or instructors.

As we pointed out earlier, remunerations policies are an obstacle for the recruitment and retention of personnel, particularly at technical and teaching levels. The problem has become aggravated in the last few years, since most VTIs have salary scales which in fact or by law are the same as those of public administrations. These are generally below those of the private sector as restrictions to public expenditure have been introduced that put comparatively low ceilings for remunerations of state old institutions. VTIs also have to face up to the rigidities stemming from laws that ban the dismissal of civil servants from their posts in public administrations. These regulations are also applicable to them and they are also hampered by trade unions that establish inflexible conditions in their bargaining agreements.

One of the most frequent formulas to overcome the difficulties of securing the services of qualified personnel with low salary levels, and to pump new blood into virtually frozen staff contingents is the contracting of temporary personnel or on an hourly basis, particularly in the case of instructors. This is a relatively recent phenomenon as fifteen years ago it was practically non-existent. At present, institutions such as CONET, SENAC, SENAR, INACAP, SENA, INA, SENCICO, and INFOTEP, frequently fall back on the contracting of temporary or part-time personnel. This kind of human resources no doubt contributes to the operational and budgetary flexibilities of VTIs and favours the upgrading

of their services without a disproportionate increase of costs, so that the presence of this transient personnel will probably grow in the future. So far it has been judged as a positive thing by VTIs applying it as they obtain wide flexibility and fewer final commitments in employment links projected towards future times that are supposed to be difficult. However, indiscriminate use of external teaching staff carries with it the danger of deterioration in the quality of the teaching imparted as this personnel is usually outside the regular methodological teaching training programmes that VTIs have for their full time staff. Institutions like INACAP and INA have already foreseen the setting up of training systems for this kind of personnel, as well as for supervisors at firms and enterprises.

A second strategy utilised by several VTIs to make up for the negative effects of strict remunerations policies, lies in the professionalisation of jobs, which is based on the constant practice of promotions towards ever higher levels. Employees are usually promoted through contests where value is subscribed to their experience and ascertained capacity in the job rather than to scores allocated according to educational levels.

Some VTIs have launched mechanisms of different kinds to provide incentives for their personnel. In some cases, creativeness is encouraged through technological contests where employees are given the opportunity to show special abilities or professional skills. Examples of this nature are the CONCRID of SENAI, which is a creativity competition for SENAI teachers, and has been held for several years in succession, and the system of incentives (SSEMIS) established by SENA awarding bonuses and promotion opportunities for officials showing particular enthousiasm and creativeness in the performance of their jobs.

What in several VTIs constitutes a guarantee for retaining employed personnel is the comparatively high status attached to belonging to these institutions, at least as compared to other agencies of the public sector. The efficiency of most VTIs is widely recognised and the work they carry out has earned the respect of public opinion and of the sectors of users more closely connected with them.

Another positive factor is the granting of fringe benefits and prerogatives such as additional services to the salary earned by employees. These include good quality health services, leave of absence for study purposes, and kindergarden and other services which also comprise the employees family. Actual salaries are frequently augmented through subsistence allowances and bonuses that employees are entitled to in the performance of duties in the field or doing overtime. This is a frequent practice insofar as training activities are

not confined to conventional working hours in public administrations, nor to the vacational periods of formal education establishments.

In summary, VTIs seem aware of the fact that their personnel constitutes a valuable asset which would be very difficult to replace, therefore they stint no effort in their search for incentives to compensate for the strict salary policies that they are submitted to, thus minimising a turnover factor that might threaten the efficiency and continuity of the services they offer.

4. OPERATIONS MANAGEMENT

a. Ensuring diversity and flexibility

The degree of efficiency in the management of a VTI is reflected in the final analysis in its results, that is to say, in the services that the institution offers. But even if the whole institutional machinery has been well tuned, the actual implementation of services presents quite a number of management problems. The very flexibility of the programmes institutions have and the diversity of the services they offer that we have referred to in this report, require a very versatile management of operations. This management also takes different forms according to the type of action under way. As each one of the programmes is guided by the results expected from it, the combination of elements at play in the training process is different in each case.

Perhaps the most appropriate criterion to identify the different ways in which these components come together and the specific requirements that that organisation calls for from the point of view of management, may lie in the delivering modes utilised by VTIs.

Even the most traditional management of a training centre requires the perfect supply of all the inputs that once combined, will make it possible for the courses to be imparted. The process of promotion and dissemination of programmes, selected and enrolment of trainees, vocational guidance and information prior to registration, administrative and pedagogic control of students, teachers' management, the management of spaces, workshops, equipment, tools and materials should all be ordered in such a sequence and convergence that the lack or deficiency of any of them may not affect the free development of the course. Even so, there are problems stemming from example from the distribution of enrolments, in such a way as to avoid underutilisation of available facilities, without overloading a tendence to courses, the graduates from which would probably have no placement in the labour market. Effective management of teaching periods and the availability of equipment, tools and

materials becomes even more complex when individualised tuition methods are adopted for the teaching-learning process. In that case, strict control has to be kept of each separate student promoting them to the next stage as the time comes ripe, which implies in turn making room for them at that following stage. Support functions, such as the repair and maintenance of equipment and workshops, the supply of materials, the mobilisation of students and teachers, when this is also the responsibility of the institution, etc., only become noticeable when through some shortcoming, they hinder the normal development of the course. But left out of control, they may seriously harm the operation of a training centre.

Nevertheless, the management of training at centres is comparatively simple with regard to that of mobile actions, which by definition have a higher degree of flexibility. Those utilising mobile units whether they be portable workshops, vans, trailers, or any other type of movable infrastructure, require a whole array of previous measures and the setting up of equipment in the places where training is to be dispensed. When local facilities are used already existing in the community or the training action simply takes place out in the open air, it implies the displacement of the instructor and eventually of his technical support team to the place of action. Arrangements prior to all this imply timely programming and provision of facilities for these mobile actions. In all these cases strict administrative control is required for in leaving the physical framework of the institution itself, there are greater risks that the training programme may not comply with the standards and norms governing it.

Due to the very nature of mobile actions, they do not always have a set plan for the implementation of different activities. Therefore, timetables and schedules may have to be altered and the rate of progress of the pedagogic programme may fluctuate quite a lot. There are also difficulties as to the number of trainees that the course may accommodate, particularly when the arrival of a mobile action at a certain locality and community arises a great deal of interest in the local population, which makes it necessary to carry out a strict selection of participants. In some of these mobile programmes, the unexpected is an important element, for example, in the training programme for peasant or "campesino" participation or the participation of urban communities imparted by SENA as well as on programmes based on the PER methodological proposal, that is to say training for small rural enterprises promoted by Cinterfor among VTIs of the region. In those cases, it is the participating community who defines the contents and orientation of the training as well as the sequence of the teaching process. It is therefore, especially difficult to foresee the availability of human, technical, teaching and material resources that will have to be deployed along the whole process. The same happens to the wide range of programmes for small and micro enterprises where above all the consultant and

technical assistant components are introduced very often as the course proceeds, and in accordance to the needs expressed or detected in the enterprise in question.

Some of these situations also occur in the non-conventional training centres that have started to emerge in several VTIs, for example, the management of the public training-production workshops run by INA, is radically different from that of traditional training centres. There participants cover training stages according to their own individual itinerary and, at the same time, they carry out productive practices which they had themselves very often lay down. In all training production workshops, the mere combination of these two components poses new management problems. Apart from the delicate balance between both of them, the preceding stage of supplying inputs and designing products as well as the subsequent marketing, does not always have a sufficiently low profile, which affects the management of training in an excessive manner. This can also be said about teaching enterprises, where the entrepreneurial criterion of production or rendering of services, which is the vehicle for learning a trade, introduces any number of dilemas for operational management.

More open ended approaches such as distant training and technological dissemination actions have their own special management mechanisms. In the case of the former, the remote control of participants, tuition and monitoring, the organisation of practical courses and discussion groups, etc., although easy to organise call for accurate design in order to be handled efficiently and safely. With regard to technological dissemination it calls for a special organisational and liaison effort between the sources of research and information and the dissemination media utilised in each case. In most cases they require open services available round the clock with trained personnel capable of supplying the necessary information to users when they take the form of events, such as fairs, exhibitions, meetings, etc., promotion and organisation activities are more intensive.

But it is no doubt in the rendering of non-training services where VTIs have had to make special efforts for setting up adequate management systems. The management, maintenance and utilisation of laboratories and workshops, combining timetables and spaces for training and for productive or technical assistance processes is often carried out in a casual way, not always responding to the technical criteria of organising agencies or units. They likewise imply the handling of resources provided by the users of the services themselves which sofar have been used quite freely of the units offering such services. When they are also governed by external standards, such as the case of quality control and very specially the validation of such controls by an official agency such as the

Metrology Agency of Brazil (IMMETRO) as happens to SENAI, technical and administrative controls combine in such a way that they are over and above the internal organisation of the executing agency.

The most serious problems of operational management are related very often to support services, such as the displacement of instructors and of other personnel associated with the training scheme. This implies the handling of vehicles, subsistence allowances, and fairs, and administrative mechanisms are not always speedy enough for the implementation of training activities. Something else that affects the timeliness of training action is the availability of instructors in the required specialisations. Some institutions, like INA, have consolidated a national clearing house of instructors which is centrally managed and attaches each one of them at a certain time to the different places where the services are required. But that is only possible in small countries. In the majority of cases, the displacement of instructors is something that they themselves resists, which results in temporary underutilisation of their services in their place of origin. In general, executing units maintain that there is not sufficient fluency in the supply of tools and materials or the replacement thereof. The problem usually lies in the fact that time has been miscalculated as supply mechanisms have been adequately contemplated but there are delays and things are seldom at the right place when needed.

b. Computerisation for management

Practically all VTIs are trying to iron out these hitches through the adoption of automated management systems. The wish to modernise the structures and operations of institutions has welcomed the use of informatics and microcomputers in the processes of operational management and the monitoring support services to VT, such as records of graduates, preparation of teaching material, internal training activities, organisation of teaching material, records of inter-institutional agreement and so forth. Although not yet widely disseminated, computerised systems are been gradually adopted even by the smaller institutions. Generally the process starts at the level of national headquarters.

We have already referred to the statistical information and operational control systems introduced in several institutions and which cover a wide spectrum of functional aspects. With regard to specific operational management, there are some very advanced experiences. The Brazilian SENAC is one of the VTIs at the vanguard at this respect. In the last few years it has been setting up a cultural approach of informatics and it has incorporated technical-administrative automation to the regular operation of its services. This includes integrated computer systems for training hotels and restaurants,

software for the area of hygiene and beauty, health and tourism, a system for the control of works and budgets, automated system for school management (SADME), and an automated system for the control of periodical publications. SADME is operated on Brazilian-made microcomputers which require only a short period of training for operators. They have three large modules: the student module, which operates for the selection, enrolment and certification of trainees; the teacher module which is used for the selection, placement and evaluation of instructors; and the course module comprising submodules for the determination of training needs, the preparation and evaluation of courses, and the design of curricular programmes in tune with local needs. The SADME system is already in application in Regional departments of SENAC after an experimental period at the Rio de Janeiro Regional Department and in the Federal District.

For its part, INA has embarked upon the introduction of a management information system called SIGINA, based on informatics and communication and comprising several subsystems. It brings together managerial, financial, administrative, technical and academic aspects. In the master plan for the implementation of SIGINA one of the first priorities is the teaching information subsystem. The master plan includes modules on pedagogy, human resources, VT needs, planning and control, courses, occupational certification, public training worshops, technical assistance to enterprises, and registration and guidance of participants. It was launched in 1988 and it is expected to be fully operational in three or four years' time.

We have already described SENA's statistical information system which in 1987 became fully operational through an entirely computerised network covering the whole national territory. On that basis, SENA is now designing an information and control system for costs which is on trial in one of its regional departments, Santander. SENATI, for its part, is also at the stage of designing a full system for the computerised management and control of operations which it expects to implement by 1990.

There is no doubt that the use of appropriate information and control systems will result in greater efficiency of the operational management of VTIs. However, one should note that despite the advantages of these systems, there is a limitation inherent in the very nature of the activities that VTIs implement. Their specificity, diversity and the fact that in the last resort, they depend on the orientation, sequence and rate that the users themselves impose upon them. Hence, that the institutions should be fully aware that it is not possible to introduce excessive controls and the risk that actions devised, and programmes conceived to be eminently flexible should become rigid owing to bureaucratic controls. In the last analysis, there is always a margin for decisions in the hands

of the personnel directly involved in implementation of projects. The only countervailing effect possible lies in the ethics, mystic and knowledge that that basic personnel may have about the importance of achieving specific and clear-cut objectives, using insofar as possible the management instruments available to them.

In fact, operational departments often show a greater degree of creativeness than central technicians to introduce innovations in teaching modes. For example, individualised teaching started off at the Euvaldo Lodi Training Centre, long before it was validated by the national headquarters of SENAI at Rio de Janeiro. In INACAP, modular programmes were developed at the Construction Centre and from there spread to the technical department. Besides, many of the non-conventional training modes applied by VTIs in the rural sector were born or adapted on the basis of spontaneous experiences of their operational units.

What is important is that, through the systematisation of information and the flows of communication it generates, it is possible for local or specific initiatives, as well as spontaneous innovations and experiments, to begin to permeate broader institutional contexts. This gives rise to the possibility of focusing in on creativity, examining its positive elements, and transfering it, decanted, to new areas of application. VTIs have begun to recognise the importance of analysing non-traditional experiences, monitoring them, and providing stricter follow-up and assessment, with a view to enriching the flexibility that has become essential.

5. EVALUATION AS A TOOL FOR MANAGEMENT

This trend to offer customised services to specific clienteles with whom clear-cut services are agreed upon, has automatically incorporated control and feedback mechanisms. External evaluation, which was originally designed to gauge the degree of compliance with quantitative and qualitative objectives as laid down in institutional plans, programmes and projects, is now limited to services rendered through open supply. In this area follow-up studies of graduates are still carried out to determine how they are placed in productive activities, what their occupational mobility is, as well as their advancement in the labour market and the quality of their performance at work.

These evaluation studies are fundamentally applied to the more structured training modes based on predesigned programmes, generally of long duration. Such is the case of apprenticeship schemes and the training of technicians.

Practically all VTIs that have apprenticeship schemes carry out at least sporadically, follow-up studies of their former trainees. Perhaps the institution that implements this task in a most systematic way is the Brazilian SENAI, specially at its Regional Departments of São Paulo and Rio Grande do Sul, where a system called SAPES has been set up, which operates through the mail to keep periodic contact with graduates. This system, which was experimentally created and applied at the São Paulo Regional Department, was later adopted by the Rio Grande do Sul Department, and at the moment it is now spreading to other Regional Departments and is becoming a standard for the evaluation of apprenticeship schemes througout the whole of Brazil.

The weight of apprenticeship schemes in terms of inputs and operational management, has led VTIs to give priority to evaluation studies for those programmes. So have done CONET, SENATI, INTECAP, INFOP, INCE, SENA, and INACAP. When modifications or variants have been introduced into apprenticeship schemes, especially in connection with the application of the dual system, these evaluation studies have been considered as fundamental instruments for decision-making with regard to the adjustments required in programmes consuming such a high proportion of financial, physical, human and material resources of VTIs.

As opposed to what can be usually seen in the area of formal education, even in its technical branches, VTIs have traditionally maintained a critical attitude with regard to the effectiveness of their activities and the impact of the services upon society, particulary in the sphere of production, employment and the socio-economic promotion of trained workers. This attitude is the result, to a large extent, of their need to gain recognition and support from external sectors. It has become embodied in a more or less systematic evaluation action, focusing on one of the following aspects or a combination thereof:

i. Technical teaching or curricular evaluation aimed at assessing the efficiency of educational standards in use and their effective compliance with the teaching learning processes. This kind of evaluation tries to appreciate the curricular quality of training activities, strictly as a function of their learning objectives taking into account factors pertaining to the content of programmes, methodologies, teaching materials, instructional aids, facilities and premises, teaching personnel and participants.

ii. Evaluation of the internal efficiency of operations, mainly oriented to measuring the quantitative return of the resources handled by VTIs, taking into account factors connected with costs, the use of physical and human resources and the flow of students in the training process, and

iii. Evaluation of the effectiveness of VT which tries to assess the relationship between the costs of training activities and the impact they may have from an economic and social point of view, taking into account factors connected with the placement and earning of trained workers, the productivity of enterprises, the usefulness of the skills imparted to the trainees, the adequacy of curricula to the contents of real occupations, the non-monetary effects of training on workers and enterprises alike, and the image of VTIs among public opinion.

Most of the evaluation studies of the first kind have been conducted fairly regularly by VTI themselves, with the aim of collecting useful information for decision-making on curricular adjustments or for operational planning. These studies look for light on very specific operational problems centered around the teaching-learning process. In contrast, internal efficiency evaluation studies are rather scarce. VTIs carry out this kind of studies mainly and almost exclusively when an experimental programme is put to the test in order to appraise its profitability for extended implementation.

What concentrates the greatest interest of VTIs with regard to evaluation is the external efficiency of their operation. In this case, the objective is to assess to what extent their programmes match the real qualitative and quantitative needs of production or of government social policies. Notwithstanding, this is the type of study that involves greater methodological difficulties and higher implementation costs. The cost-effectiveness approach is the most attractive method for VTIs to evaluate its external efficiency, since it allows a more desaggregated and multifacetic understanding of the problems found. Hence that VTIs prefer this method as compared with econometric ones, which give a more precise but rather aggregated picture. Cost-effectiveness studies are often conducted by VTIs themselves whereas the econometric approach is more frequently used by agencies external to VTIs, i.e.: research centres or governmental agencies interested in human resources, as well as international organisations of technical and financial assistance, as a support for global policy-making and resource allocation.

Contrarily to current opinion on the subject, most VTIs have numerous evaluation studies, in spite of which their influence on the management of these institutions seems to be limited, especially with regard to planning of VT supply. INA, SENA and INACAP seem to be the exception in this respect. This may be due to a number of factors that have greater or lesser influence in VTIs, and these factors have a great deal to do with the attitude of the institutional authorities regarding the usefulness of this kind of studies, with the organisation of evaluation functions within the institution itself, with the quality of the work they carry out and the readiness to accept change of

operational departments. In effect, the diversity of activities that may be evaluated as well as the multiplicity of possible objectives for evaluation lead to the fact that assessment studies should necessarily focus on partial aspects of the training task, for example, a given programme, so that an overall view can only be achieved after a long period of systematic data collection.

This delay seems to dampen the expectations of VTI directors who wish for immediate and safe responses to their questions as to the efficiency, effectiveness and equity of the services they render. Furthermore, the attitude of VTI management vis-a-vis the importance of evaluation shows fluctuations that later result in the intermitency of efforts in this area. Secondly, it is not unusual to find that departaments in charge of evaluation in VTIs lack clear-cut objectives. There is in them a mixture of evaluation approaches in the different research projects carried out. Besides these departments have scant resources and are misplaced in the organisational ladder. They are either too low down to affect strategic decisions or too high up to have any influence on tactical decisions.

In this respect it might be advisable to deconcentrate these functions so that impact evaluation may become coordinated with top management levels in the VTIs, whereas technical and managerial evaluation could link up with decision-making centres at the secondary level.

In the third place, evaluation studies tend to give priority to a mere measuring of facts, overlooking a diagnosis of the causes that explain problems, which is precisely what decision-makers expect of them. In other words, they are just descriptive studies rather than explanatory ones. The most important shortcomings are to be noted in the evaluation of costs and of the external effectiveness of VT.

Finally, the relative footlessness of evaluation studies is also the result of a resistance to change within VTIs, especially on the part of operational departments which probably do not receive the potential long-run benefits of the innovations suggested by these studies. They rather see the results as a threat to work routines and to personnel stability in their jobs. In this connection we may point out that very often personnel unions in VTIs play a leading role in this resistance to change. On the other hand, added to the limited importance of evaluation in decision-making processes for the reasons pointed out above, there are the considerable costs of collecting and processing of data by the regular information systems of institutions, and the reluctance of operational departments to subject themselves to an evaluation that they see rather as an interference. All this postpones the evaluation function to a secondary position in the scale of priorities of VTIs. Neither can it become a key

tool for management vis-a-vis the external sector. So it is not surprising that institutions should tend to lean on informal mechanisms to appreciate and assess the effects of the services they render, even through partial and sometimes sporadic channels. Although these methods may be criticised as lacking in a scientific approach and validity as sensors of the external effectiveness and internal efficiency from an overall institutional point of view, the shortcomings and limitations of systematic evaluation studies, make them comparatively useful instruments as they have a direct and immediate impact of a very concrete kind and they are easy to apply and cost much less.

VII

VTIs TECHNICAL-PEDAGOGICAL ORIGINALITY

The quality of the products turned out by VTIs is the yardstick for measuring their contribution to society. If that product is vocational training, the degree of efficiency, flexibility and effectiveness of their services is ultimately dependent on the technical-pedagogical bases on which the teaching-learning process is founded. Hence it is important not to lose sight that the position of VTIs vis-a-vis society, and thus the political definition and the planning of their activities, as well as their internal dynamics, patterns and ways of operating, are all organised as a function of the production of training services, which is their direct purpose and their *raison d'être.* Here we see the importance of examining to what extent the methodological bases of the training provided respond to, reflect and embody the imperatives of pertinence, adaptability, suitability and quality inherent to the objectives of the type of education for work provided by VTIs.

This chapter seeks precisely to present a view of the way in which VTIs fulfill their teaching goals, by looking into the methodological aspects that identify and characterise the particular technical-pedagogical nature of the VT these institutions deliver. The stress is on what for the purposes of this study have been considered VTIs' big methodological contributions to the teaching-learning process, which today constitute a considerable experience in perfecting and refining the organisational and pedagogical operations of an undertaking that was launched in the region with some scant imported experience and with no endogenous tradition.

This knowledge accumulated by VTIs is actually their greatest asset. It should be underscored that the building and evolution of the distinctive training methodology VTIs made their own in this region took very different paths from those of formal education and represented, at the outset and now as well, a true revolution within the context of Latin American education. This fact is striking, particularly since we now begin to speak very naturally of VT as a form of education, despite the fact that historical circumstances never favored a reciprocal assimilation of theoretical and methodological contributions and a mutual understanding of pedagogical progress and practices among the two major educational tendencies: that of formal education commandeered by the ministries of education, and that of VT, supported by the VTIs which are the

subject of this study. Only now we begin to see the effects of a receptiveness and interchange that would have been so beneficial for both from day one.

The methodological contributions of the VTIs, which were specially remarkable during their first years of existence, show such great creativity and significance in the institutional development of these organisations, that it is here that we find the crux of the singularity of their educational endeavour and form of insertion and behaviour in the labour-educational panorama of the countries of Latin America.

1. AN ANALYTIC, ACTIVE AND DYNAMIC METHODOLOGY

a. Occupational analysis and methodical series

The teaching-learning method adopted by VTIs in Latin America has been based on what has come to be called the "analytical, active and dynamic method". This methodology was of course not invented by the VTIs, but did in fact constitute a re-creation of diverse influences coming for the most part from abroad. In the United States during World War II a system was developed for rapid training of skilled labour to fill the jobs left vacant as soldiers went off to war. Workers were trained in highly pragmatic ways, in the companies themselves, by their supervisors or immediate bosses. It was also geared to simultaneously training supervisors in their new role as trainers, and to teach basic skills and know-how for the jobs, so that new workers and employees could start work quickly and efficiently, without detriment to production. The method called "training within industry" (TWI) was subsequently transferred to Europe, where it was applied during the years of post-war economic reconstruction. There it fused with the trend developed particularly in France, which involved creation of specialised vocational training centres. While they were different from the factories, these centres sought to replicate actual workshops, adapting them for teaching purposes yet ensuring that they reflected real production conditions. Out of these teaching workshops the Europeans had developed a conceptual approach and specific methodologies for vocational training.

It was these experiences that reached Brazil when SENAI was taking its first steps. The methodological process that arose there implied an enormous effort for adaptation to the new Brazilian reality. From there it would later be extended to SENA, and thereafter to all the VTIs that saw this analytical, active and dynamic methodology as the true basis for the teaching-learning process approach they were going to apply.

As a starting point the method implies a study of work, through socioeconomic research on the possibilities for expansion and needs for human resources

for the various sectors of the economy. These studies indicate which priority occupations require vocational training. After finding out the occupations for which training is required, the next step is a systematic study of those occupations, or an ***occupational analysis***, performed on a sample of companies varying in size, region and structure, by means of interviews with supervisors and workers, along with direct observation of performance of the occupation. On the basis of the systematic analysis of the occupation, a ***vocational monograph*** is drawn up, giving an ideal description of the fundamental characteristics of the jobs and the way they are performed. The vocational monograph makes it possible to draw up an ***analytic table*** of the operations and knowledge necessary for efficiently performing the job in question. Those operations and knowledge are organised pedagogically and will be the immediate target of the learning process, since the training curriculum will be based on them.

The knowledge and operations necessary for correctly and efficiently performing a clearly defined occupation are grouped by different theoretical and practical subjects, whose contents, intensity and duration will be specified in a ***study plan***. An ***analytical programme*** is then prepared for each subject, indicating the logical and methodological order for the units of instruction and what knowledge and operations should be included in each of them. Once the analytical programmes have been prepared, specialists then draw up the course contents in ***teaching units***. The most characteristic of these units are the technical or workshop subjects, which are the heart of vocational training. For each unit there is a specific set of operations, together with the knowledge necessary for performing them; each unit also includes useful exercises covering the operations and knowledge which, according to the analytical programme, should be assimilated in the unit. The key to the pedagogical design lies in the placement and presentation of these exercises, so that in doing them the student performs the practical operations and acquires the knowledge required in a logical and methodological order, going from simple to complex, from easy to difficult. Each unit is set out on complete ***instructional cards*** describing the exercise to be performed, indicating the tools and materials required, providing instruction as to their handling, and indicating the related knowledge to be applied. The units also have additional cards regarding safety and conduct standards that should be followed while doing the exercise.

The collection of units prepared for the different subjects - basic, workshop, theoretical and related areas - required for learning a specific occupation together form a ***methodical series***. Thus, a methodical series can be understood as the pedagogical presentation of the set of operations that should be performed and the knowledge that should be acquired for correctly performing a specific job. In active methods, which are fundamental in the psychology of

learning, the student is placed at the centre of the entire process, and the instructor is seen as a guiding and orienting agent. This teaching methodology is developed as a personal process, taking individual characteristics into account, respecting each student's learning capacity and pace, and as an active process, insofar as it fosters and promotes the student's participation in the learning situation. The chief medium for application of this method is the occupational methodical series (OMS), which is an ordered set of ***instruction sheets*** that contain basic information on the operations and technological knowledge related to an occupation.

The use of instruction sheets in VT is not recent. Back in 1868, Victor Della Vos, Director of the Imperial Technical School of Moscow, who was concerned with facilitating the training of engineers, designers and operators for the country's railways, was the first to use occupational analysis for the purposes of training and for organising the different processes and occupations to be taught in a systematised series of practical exercises, prepared by order of difficulty. The Della Vos method, presented in 1876 at the Philadelphia Centennial Exposition, created quite a stir. Following Della Vos other individuals studied the field, including Charles R. Allen (1919), R.W. Selvidge (1923), V.C. Fyklund (1943), and others who sought to perfect the process of occupational analysis and preparation of instructions sheets.*

Following Selvidge (1943), this process culminated in the configuration of the occupational methodical series, which would be brought to Brazil by Roberto Mange, a Swiss engineer. SENAI adopted the OMS in a more complete form, based on the experiences then undertaken by the Regional Department of Sao Paulo, with ILO collaboration.

b. Application of the methodology

The methodology described does not merely imply the techniques for preparing units in order to know what to teach; it is also necessary to know how vocational training is going to be delivered, based on the contents defined. In the first place, correct application of the units presupposes the acquisition of a series of materials: tools, machinery and equipment. Once the "materials" problem has been resolved, then there is a second point: the place where the training is to take place. Workshops and classrooms must be designed; each workshop is to be used for a particular specialty, which implies defining physical components such as light, spaces, size, etc., so that it reproduces real working conditions as closely as possible. The workshop design involves

* Charles R. Allen: *The Instructor, the Man and the Job*, New York, Lippincott, 1919; R.W. Selvidge and V.C. Fyklund: *Principles of Trade and Industrial Teaching*, 2nd. ed., Peoria, Illinois, Manual Arts Press, 1946.

placement of the work positions for the worker-students (12 of them according to the original methodology), and for the instructor, as well as for the necessary material for developing the respective units. It is also necessary, especially in classrooms for theoretical subjects, to provide the appropriate teaching aids. The materials, instruments, installations, criteria for selecting aids, and characteristics of the instructors constitute the ***didactic package.*** Finally, the workshop design determines the configuration of the training centres, which are a physical complex geared to housing all the elements that come into play when providing training.

The actors of training are fundamentally the instructor and the worker-student. The instructor is equipped with a didactic package draw up specifically for his or her specialty. Each unit is developed over one or several vocational training sessions, depending on the amount and complexity, as well as the intensity indicated in the curriculum. These sessions progressively undertake a synthesis, reversing the process of analytical decomposition of the occupation. On the basis of the notions and tasks set forth in each unit-exercise of the methodical series, the set of operations and knowledge established in the analytical table is gradually put together, finally reconstructing the job. At this point the job is no longer in the abstract, but instead is embodied in the worker-student who has become a skilled worker.

The guiding principle of the process is "learning by doing". This principle implies a close linkage between classroom and workshop, which is reflected in the distribution of space in the first centres. In VT practice, the instructor is a technical expert who has practiced the occupation he or she teaches in a real company; moreover, the instructor must have a full mastery of the analytical method (it is part of the training as instructor), and the specific teaching units for which he or she is responsible. In practice, the technique followed has traditionally been called the "four-step method", taken directly from TWI:

1. The instructor says and does.
2. The worker-student says and the instructor does.
3. The worker-student says and does.
4. The worker-student does and the instructor supervises.

In sum, the methodology is defined as analytical, because it is based on the analysis and decomposition of occupations and jobs, so as to establish programme contents. It is active, because its application implies constant creative and practical work by the student, with the instructor's support, in the development of skills and the acquisition of knowledge. It is dynamic, because its survival depends on a constant effort for adaptation, by means of systematic occupational analysis, to the ever-changing needs of the production apparatus.

This methodology was rigorously designed and practiced, with all of its implications, during the first years of existence of most of the VTIs in Latin America. It was this approach that was used to prepare the methodical series for the training of apprentices in the specialties considered "universal" occupations, particularly in the industrial area: machine-tools, welding, automobile mechanics, electricity. It had a decisive influence on the layout of workshops, the importing of machinery and equipment for those facilities, and even the architectural design of the training centres that were the original sites for learning. The methodology was progressively expanded to include the training of adults and other economic sectors, first the trade and services area, and then the various areas of the agriculture and livestock area.

This transfer and adaptation was not without its serious difficulties. When the division of labour is clear and jobs are specific, occupational analysis makes it possible to determine, for each job, what is done (tasks), how it is done (operations), in what order (steps), with what instruments (equipment, tools and materials), and what is to be produced at each stage of the entire production process. It further distinguishes between fundamental tasks and secondary tasks or those assigned incidentally to the person performing the job. But this was not evident beyond the limits of the factory and it was necessary to make progressive adaptations.

The greatest limitation of the occupational analysis method was seen when VTIs began undertaking training for non-modern sectors of the economy. Firstly, the scant division of labour in these sectors does not allow for identification of specific jobs through an orthodox occupational analysis. In the second place, as indicated in chapter IV of this study, work with these sectors implied going far beyond technical training, to include aspects of business management and comprehensive advisory services to production units. Occupational analysis was then structured by product, rather than only by jobs which did not reflect a clear description of tasks.

The evolution of the original methodology, designed for large centres and for the formal economy, led VTIs to a methodological renewal geared to correcting the existing deficiencies. This methodological renewal was channelled into two fundamental lines of work: one geared to projecting traditional vocational training methods out of the centres, through non-classroom methods; and one within centres themselves, to develop a more flexible, tailor-made and specific methodology for production training.

Two basic points are implied by VTIs entering a process of "de-schooling" VT. On the one hand, the technical-pedagogical organisation must be conducive to a flexibility of process, methods and contents which are adaptable to the specific

needs of a programme and the characteristics of its users. On the other hand, appropriate physical infrastructure arrangements must be made to take training out of the classroom, with all the relevant methodological implications. In the light of these two aspects we shall take a look, over the rest of this chapter, at the methodological contributions of VT.

2. MODULAR DESIGN

a. Flexible curriculum

The big jump forward in the method took place in view of the understanding that jobs are interrelated and are organised into occupational families. Occupational analysis thus began addressing the specific occupational area or family, in line with the real connections between jobs in companies. This makes it possible to detect and define not only the changes in occupations already known, but also to identify those arising on the basis of changes in the job market and technological development. Moreover, the occupations identified in each family are analysed according to their reciprocal relations in terms of activity, knowledge, skills and common and specific requirements.

On the basis of this input it was possible to establish a flexible and open curriculum that would permit monovalent as well as polyvalent training, on an on-going basis, offering intermediate outlets for particular occupations in the job market and entries for vocational upgrading at higher levels: this is how the modular approach to VT programmes came into being.

The institutions that have adopted modular programming as a training strategy abandoned the study of isolated occupations and undertook an analysis of technically similar occupations pertaining to a single occupational specialty or branch. This new approach makes it possible to detect the occupations existing in a family, the relationship between each occupation and the others, the skill levels required for each one, and the lines for promotion within the family. This gives shape to occupational structures that are in fact the most important result obtained from the analysis of groups of related occupations, insofar as it makes it possible to visualize mobility among the occupations, and their relative complexity, in line with the job contents. The blocks of tasks that pertain to a single group of occupations makes it possible to identify the skill contents shared by the various occupations of a family, and to determine the differences in contents that exist among them, thereby constituting the basis for establishing a modular structure for training programmes, in accordance with the occupational structure of the family in question.

The graphic representation of that structure gives us a ***vocational training itinerary***, made up of instructional models, which indicates the alternative training routes or paths starting from a basic module, and which offers trainees the possibility of joining the training process or of entering the job market at any time. By permitting skill training in stages, through occupational modules that correspond to real skill levels, it allows workers to exit to the job market at intermediate stages, and to return successively to the training process for upgrading or updating, when technological changes so require.

The analytical study of work, taking economic activities, occupational families, occupations, jobs and tasks as references, and identifying the levels of production technology, management, and organisation inherent to the production processes involved, makes it possible to structure a ***modular system*** of training as a planning strategy leading to the organisation of programmes in successive skill levels within occupational families, with a view to adapting to the manpower needs of production activities. This training strategy provides the participants with training alternatives based on the demands of the labour market, and on personal interests and skill levels, and provides for entry at different levels of the process, and intermediate and final departures, within the framework of an occupational family.

The concept of the modular system is not new to Latin America. It arose in the 1970s when the objectives of continuing education led to thinking in terms of the need to provide training in modules of complete technical knowledge which could be undertaken over the course of the worker's active life, moving to the next higher occupational level each time. It was first implemented at INA in Costa Rica, and from there it moved to SENAI, where it was worked on in depth for a broad range of occupations. The ILO and CINTERFOR contributed to its expansion among other VTIs and to technical cooperation for pedagogical preparation of modules that have been transferred to many countries throughout the world.

b. Pedagogical design

The initial organisation of training in courses, each one of which could be considered a totally differentiated training module, responded to specific circumstances and needs, but tended to be internally inflexible when it came to achieving a unified training level among groups of participants having different characteristics, experiences and knowledge, or to rapidly satisfying a specific need on the part of a given company.

It has been the application of pedagogical modules that has responded to such demands, by permitting organisation of training contents into self-

sufficient units that make it possible for the participant to achieve mastery of a task or a set of compatible tasks, due to the flexibility for programming in line with the educational characteristics and the job experience of the workers.

The modular system of pedagogical design organises a set of tasks that are to be learned progressively. These tasks are grouped into occupational modules that incorporate the amount of training necessary to move from one skill level to another within a particular occupation, and which may be common to several occupations within one family or specific to a single occupation. Hence they are basic training programmes which can be offered separately, in uninterrupted or interrupted succession, and which individually or in combination should lead to a transfer of the skills required for performing a useful function in productive activity. The basic contents of each occupational module are defined in this way and are dealt with pedagogically so that the tasks involved in each can be learned. The tasks are grouped by the similarity or complementarity of the operations involved, which makes it possible to design exercises whose execution implies progressive learning. The necessary technological information is selected for each exercise, so as to ensure that the practical tasks and operations are correctly executed, and the basic general knowledge affording access to technology and performance of operations is organised. The curricular design reflects the pedagogical structure organised by instructional modules, with specification of the pedagogical strategies, didactic materials and media, instruments and procedures for evaluation, and teacher and trainee profiles.

This process of transformation of occupational modules into pedagogical modules is what is known as pedagogical modulation. A pedagogical module is thus the inter-related and inter-dependent set of basic knowledge, technological knowledge and vocational practices permitting the acquisition of the skills to perform the operations corresponding to a group of tasks pertaining to an occupational module.

The pedagogical module presupposes a specific instructional sequence that permits integration and mutual strengthening of theory and practice, and it is therefore a complete pedagogical unit, even though it can be taught in different instructional settings, such as the classroom for basic knowledge, the laboratory or classroom-workshop for technological information, and the job site or workshop for operating practice.

The instructional or pedagogical modules combine easily to satisfy the specific requirements of companies and the particular needs of participants. This is based on the principle of trainees' participation in the definition of their own training objectives and content. The principle is a fundamental aspect fostered in diverse programmes, such as those for urban and rural development

at SENA; those for company service at INACAP; those for personalised training given at INA's public training-production workshops; those aimed at micro and small enterprises at SENATI, INFOTEP and INTECAP, among other institutions; the programmes of the individualised training system at SENAI or the SENAC pedagogical enterprises; and those geared to meeting the training needs of special economic or social groups.

Pedagogical modulation as curricular organisation, and instructional modules as didactic support material, also constitute the instruments for structuring the skill certification system. Occupational tests, based on module content, thus allow institutions to offer diverse training possibilities for surmounting the technological and practical deficiencies detected in the occupational diagnosis obtained through such tests. The surmounting of those wants is carried out through specific courses for small groups having common needs, preferably through self-training mechanisms. This can be done thanks to pedagogical modulation, which makes it possible to offer each participant exactly what he or she needs to reach full mastery of the occupation in question.

3. TEACHING MEDIA AND MATERIALS

The role played by teaching materials in the training process is fundamental, since they are the physical elements that represent the curricular contents of the programmes, which make them transferable, which give concrete form to the organisation of instructional contents, and which serve as support and as a means for application of the educational methodologies. Teaching materials act as a support for the teacher-student relationship in the teaching-learning process, and at the same time they are a concrete instrument for the programme contents, which are reproducible and adaptable according to the needs and the specific objectives of the programmes. It is teaching materials that permit systematisation of the vocational training experience, so as to make it repeatable and applicable to a growing number of beneficiaries, thereby increasing the coverage capacity of the institutions applying it.

This material, today considered essential for undertaking training actions, was almost nonexistent at the outset of VTIs. Back then, the teacher taught the apprentice through words. The demonstration of how a job was done was always accompanied by an oral explanation; the instructor informed the student as to the minimal technology he or she should know, and demonstrated how to execute a particular job. Despite the fact that the method applied was already structured on the OMS, the lack of teaching materials for the broad range of occupations covered did not ensure a uniformity of information, since instructors in the same area covered technological subjects according to their

own style of communicating and in line with their professional experience. This diversity of procedures give rise to the first VTI teaching materials, which were largely a copy of manuals produced outside the region, or in some cases prepared by the institutions themselves as a guide for the instructor, with very similar structures for all such guides. A simple look at the first manuals was sufficient to see the great repetitiveness of titles, and a more in-depth analysis of the content of each of them showed not only the great similarity among them, but also a gradual loss of quality and currentness.

The limitations of these manuals, largely due to the fact that the material had been produced for persons very different from those attending VT centres in Latin America, led to a pioneer experience in the production of teaching material, with the profiles defined in occupational analysis as the starting point.

a. Basic collections

To organise the operational sequence and the technological contents of teaching materials, the latter were structured based on three different types of instruction sheets. One, the ***task sheet***, contains the design of the work to be done, the dimensions, the material to be used, the execution process, and the tools and instruments necessary for performing a specific task. The objective of this task sheet is to permit a first contact showing the student **what to do**, in addition to awakening the student's interest in the work. The second, called the ***operations sheet***, prepared for each operation of the process, specifies the steps and substeps to be followed for execution of the task, as well as the key aspects and precautions, and is geared to teaching **how to do** the job. The purpose of the ***technological information sheet***, in turn, is to provide the participant with the technological information to be applied immediately in performing the operations, and it refers essentially to the equipment, tools and materials to be used in executing the tasks; it thus indicates **what to use** in performing the job. This provides for the didactic structuring of the occupational methodical series.

Despite the advantages of the teaching material so conceived, VTIs, and particularly the smaller and newly established ones, were not in a position to cover the preparation costs for OMSs and for manuals. Thus there arose a regional initiative for preparation of Basic Collections fully using the methodology based on instruction sheets, but introducing a novelty in terms of organisation.

Its primary characteristic is its flexibility in dealing with the subjects, since, with each operation or item of technological information on a separate sheet, it allows for selection of those corresponding to a particular task, thereby facili-

tating the structuring of occupational methodical series, as well as the substitution, review and updating of occupational contents due to technological changes or to regional or local variations.

The Basic Collections start with a universal profile, on the basis of which the technological knowledge inherent to each operation is identified. Thus each Basic Collection comprises a set of ***operation sheets***, identified on the basis of a universal profile, and of the corresponding ***technological information sheets***. Since they are aimed at the programme planner, the Basic Collections act as a source of information on a given occupation, which allows the planner, taking into account a regional or even a local profile, to extract from the Collection only the operation and technological information sheets corresponding to the specific training need in question. Each institution, starting with a basic collection and in line with a particular profile, prepares the respective ***task sheets***, thereby transforming a basic collection into an occupational methodical series. From each collection it is thus possible to obtain as many methodical series as there are specific training profiles to address.

The preparation and application of basic collections was promoted by CINTERFOR, which as of 1969 directed and coordinated a cooperative effort among the VTIs of the region to prepare teaching materials of this sort, which are known as Cinterfor Basic Collections (CBCs). Between 1971, the year in which the first CBC was produced, and 1979, when the regional effort was suspended, 33 CBCs were prepared and distributed for occupations in the three economic sectors. Preference was given to the secondary sector, for which the Practical Encyclopaedia of General Mechanics was published, covering 13 occupations, 264 operations and 416 technological subjects. All the collections have been translated into Portuguese, 15 into English, and a few into French as well.

The Basic Collections, in addition to being the basis for the OMSs and instructional manuals, which was their original purpose, have become an invaluable source of information for preparing the modular teaching material which today is used by the majority of VTIs, in programmes for young people and adults alike, and in different delivery modes, such as training at centres, mobile training actions, in-plant training, and distance training. The instructional modules, as complete pedagogical units comprising the technological knowledge and vocational practices, permit the acquisition of skills to execute the operations corresponding to a group of tasks representing a specific training objective.

The instructional models, given their structure, are basically self-teaching materials. Thus, in addition to clearly describing what each student should be capable of doing after an instructional sequence, they provide instruments for

evaluation which, applied at the beginning and end of each module, and during the training process, act as diagnostic elements for determining to what extent the participants possess or have acquired the knowledge and skills related to the learning activities, on the basis of which the training actions can be reinforced so as to attain the established objectives. The learning activities are a series of stimuli that keep the participants actively involved in their own learning process. Individuals learn more if instead of limiting themselves to listening or reading they perform activities such as designing, writing, comparing, analysing, verifying, executing, and everything else proposed in the module. Through the learning activities participants are given information that is dosed in terms of quantity and difficulty; examples that facilitate understanding; images that clarify concepts; exercises that reinforce learning; summaries highlighting major aspects; and partial evaluations that allow them to test what they have learned.

b. New media

Written and audiovisual didactic resources have been used by VTIs from the outset, and their evolution and modernisation have been constant. While it is true that initially they were often used without testing their value as a support for the training process, little by little progress has been made in their conceptualisation and experimentation, so as to provide more efficient means for attaining the specific objectives of training. The material most widely used is written, in the form of manuals, booklets, pedagogical modules, instruction sheets, etc., to such an extent that the term "teaching material" is often restricted to only this type of resource. Nevertheless, VTIs have travelled an interesting route in incorporating audiovisual media in the training process.

Thus television and radio, as communication media, are used in different ways by almost all the institutions, especially those involved in distance training programmes, who in addition to using standard "booklets" also use other complementary media, such as video and audio tapes, folders, and the resources available at the participants' worksites and places of residence to support independent learning.

Video tapes are generally used for subjects considered complex, where it is necessary to show real experiences or complete processes, and for those specialties where students are at an educational level that prevents them from learning exclusively with text materials.

SENA uses slides, radio and television programmes, but primarily videos, given their easy handling. Most of these resources are prepared by the

institution at its teaching centres in Cali and Bogota, based on the contents drawn up by instructors at the regional units offering the programme.

At its television production centre in Rio de Janeiro SENAC is preparing sixty programmes for the business and service area, and the pertinent video cassettes are available to the private sector through the recently created "Business Video Club". At SENAI in Sao Paulo, in addition to the programmes for reading and interpreting technical mechanical drawing and applied mechanics which the institution has been offering since 1978, a television studio is about to be completed for production of educational programmes to complement the teacher's efforts and preparation of teaching "packages". Moreover, super 8 movies, long used by SENAI for demonstrating operations in its individualized training system for different occupations in the metal mechanics area, have now been replaced by video tapes and are used by all of the institution's regional departments.

Generally speaking, the dissemination of video tapes as an aid for the teacher and the participant in many learning situations, and primarily in self-teaching, is one of the didactic resources generating the most interest at institutions, along with the use of other visual aids such as slides, transparencies, etc. Open and closed circuit television, combined with video cassettes, is becoming the primary resource for broadening training action coverage and for strengthening the quality of those actions.

In the area of the most recent innovations in educational technology, the use of the computer as a teaching medium is being studied slowly and carefully. At various institutions programmes are underway in the area of informatics and computers, with multiple applications in the administration of VTIs themselves and in development of the training process, as well as for training in programming and advanced technology equipment and machinery. In all these cases the computer plays a dual role of teaching resource and subject of the teaching-learning process.

Only a few VTIs have addressed the specific role of the computer as a teaching medium, among whom we could mention SENAC and SENAI in Brazil, SENATI in Peru, SENA in Colombia, CONET in Argentina, and not many more. Others, like INA, have plans to introduce computers in their advanced educational technology over the coming years, and there are still others who feel that the time is still not ripe for doing so, since a "computer culture" must first be developed. The trend is to use computers more intensively in institutional management and process supervision and administration, before making them part of their educational technology.

The relative timidness that now exists regarding use of the computer as a didactic resource is due in part to the fact that the preparation of teaching programmes is very expensive, and although they can be purchased at a lower cost, such programmes are frequently not in line with national realities, or with the techniques and technologies being used in Latin American countries.

c. Preparation and updating of teaching resources

The fact that teaching resources are considered important and valid tools for increasing the quality of training has led the institutions to create units devoted to developing and testing such resources, such as SENAC's National Television Production Centre and SENA's Teaching Centres. Similarly, the teaching materials that earlier were prepared exclusively by teachers and supervisors responsible for the entire process, from conception through production, editing and printing, are now being assigned to groups of technical specialists who are responsible for specific functions, with the groups being composed of teachers, psychologists, specialists in contents, drawings, and layout, photographers, proofreaders and editors.

Centralised production has also been adopted at some entities with a view to guarantying the quality of the materials and the uniformity of training. The SENAI National Department, for example, has the responsibility of providing teaching materials to all the Regional Departments, particularly those that have less human and physical resources available for production of such materials.

Despite the enormous amount of experience accrued in this field by the institutions, there are still some problems. The accelerated development of technology means that the material rapidly becomes obsolete, and it is difficult and costly to update it as frequently as required. Careful research and respect for the technical standards required for its preparation limit timely availability. Moreover, in certain high technology areas it is difficult to find writers capable of the task in the job market. In view of this situation some institutions have opted for acquiring multimedia "packages" prepared by other entities, which are validated on the basis of the course programmes, with supplier firms being responsible for the required adaptations, in line with experimental applications.

Furthermore, the technification process being undergone by training in the region to respond to the constant changes in the organisation of production and of labour has translated into the establishment of new strategies and the implementation of innovative educational methodologies, which are based on the availability of the appropriate teaching materials. This implies that the

institutions need to have trained personnel for designing, preparing and applying this material.

CINTERFOR, recognising the technical capacity of some of the institutions of the region in this field, has since 1985 been carrying out a cooperative programme geared to instituting, at regional level, a methodology for preparation of written teaching materials to serve as a basis for training skilled personnel in this area, and to standardise norms and basic procedures for the preparation of such materials, thereby facilitating exchanges among those put together in each country. This is beneficial for the region, insofar as it avoids duplication of efforts and makes instructional material available in a shorter time and at a lower cost.

This system is already in place in the port sector, where the methodology promoted by CINTERFOR has made it possible to train instructors at the port training centres in Argentina, Uruguay, Paraguay, Peru, Brazil, Mexico, Panama and Colombia. As a result of the workshop-courses held in those countries, 13 modular teaching manuals have been prepared for specific occupations in the sector. The materials are regularly exchanged among the centres.

4. INDIVIDUALISED TRAINING

a. Specificity and efficiency

Most of the teaching methods have been designed and applied with the average student in mind, i.e., the trainee who could be considered representative of the group in terms of intellectual level, aptitudes, interests, attitudes, knowledge, experience and personality traits. Nevertheless, groups are not made up of average students, but instead are heterogeneous, and although they may be composed by persons with almost identical characteristics, they tend to become increasingly differentiated as the training process advances, because of the interests of the group members, the development of their skills, and even the influence of physical and social factors.

As a result, by using a standardised collective training system whereby all the students receive the same technological information and carry out the same activities simultaneously, degrees of training effectiveness are lost, since not all group members learn in the same way or at the same rate.

In a single group there are never two individuals who are completely alike in terms of learning ability. These considerations of a psychological sort, in addition to other no less important ones such as the most rational use of

facilities, the gradual exit of workers from training, and the economics of materials, led training institutions to implement a methodology geared more toward learning objectives than to teaching. The point of departure depends on the individual characteristics of the participants, and on the very varied social and environmental conditions involved. The instructor provides orientation and guides the student during the learning process on the basis of preestablished goals and not merely as a transmitter of equal doses of knowledge in line with a uniform pattern of teaching units.

This is an active and flexible methodology *par excellence*, insofar as it appeals first to observation and then to reflection and explanations; it provides theoretical and technical principles as practice is performed; it makes maximum use of audiovisual aids; it leads the participants to discover solutions on their own; it promotes discussion; it fosters experience and personal exchanges; it breaks down each problem into its component parts; it teaches only one subject at a time, keeping in mind that it is advisable to go on to a new area only when the previous one has been fully assimilated; it consolidates learning through repetition of exercises, training evaluation and self- checking of results and progress. In sum, it applies the principle that is basic to the active methodology: "To learn by doing."

Individualised training was adopted at Latin American VTIs as a result of the analysis of the circumstances limiting the full and timely satisfaction of the demand for training for productive activity, using collective strategies for training the necessary human resources.

b. Pioneer experiences

Application of pioneer experiences in the region goes back to 1966, and their primary promoter was Professor Donizetti do Rego Monteiro, at that time the Director of the Euvaldo Lodi Training Centre at SENAI's Regional Department in Rio de Janeiro, Brazil. It was found there, and this can be generalised to include other countries, that collective training, with programmes having a fixed duration and organised into academic years or semesters, implied certain difficulties in the training of labour required by industry, since the systems were established, even if not intentionally, as if they were geared to persons whose sole responsibility was to attend courses and for whom family, social, economic and job problems, particularly at the personal level, were not factors to be taken into account for the purposes of achieving the training goals.

The school-like organisation of courses, particularly those of the apprenticeship sort, with a three-year duration, only allowed for promotion within the process, from one semester to another, in line with certain standard expecta-

tions for theoretical as well as practical learning. Failures at the end of each semester were quite common, and those who did not abandon the centre for this reason had to repeat the course, thereby increasing the time required for completing training. For these and other reasons of a personal sort, the number of workers who finished the full course was very small, and thus the established training needs were not satisfied, and training costs rose.

Apart from that, workers seeking to take courses varied greatly in their characteristics, with very different levels of theoretical and practical knowledge. The vast majority, regardless of whether they were already working or not, sought to solve their own occupational deficiencies, which were not at all likely to be the same from one person to the next in a group, who ultimately were given the same treatment and the same preestablished programme.

The dropouts caused by the organisation of courses in semesters, requiring students who failed courses to repeat lengthy periods of study, left vacant training workposts that could be filled with other participants only when the course was started up again. This meant that facilities were underused for long periods of time.

In view of these considerations training was reorganised to provide the necessary flexibility to be able to appropriately address the diverse situations of trainees. The idea was to be able to accept trainees at any time during the year, and to take advantage of their technological and practical knowledge in order to organise training, upgrading and updating programmes based on that knowledge and responding effectively to the individual needs of workers.

This methodology, tried and initially applied to adult courses at the Euvaldo Lodi School, was later used for training young people and was gradually implemented at the other training centres in Rio de Janeiro and throughout the state. Today it is the methodology applied at all SENAI Regional Departments, since the initial trials and the first applications revealed a series of advantages over collective training.

In 1975, CINTERFOR, in its interest to disseminate innovative experiences that could contribute to the improvement of vocational training in the region, decided to analyse the SENAI methodology through direct observation.* Publication of the results of the study created an interest in the method among the institutions, and many of them turned to SENAI for a fuller knowledge of its administration and functioning, with a view to transferring it to their respective countries.

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* Santiago Agudelo Mejía. ***Formación individual.*** Montevideo, Cinterfor, 1977.

Little by little various institutions began implementing the method. One of them is SENA, which bases its technical-pedagogical policies on the principles of modular, individualised continuing training. In defending this policy it points to the fact that in individualised vocational training the educational process is centred on the student, since it is based on his or her potentials, values, skills, interests, experiences, learning style, motivation, objectives, capacity to participate and to solve problems. The teacher provides personalised attention and facilitates learning by orienting, answering questions, diagnosing, and recommending learning resources, activities and methods for evaluation in line with the needs of each student. Through this system students should achieve a mastery of the proposed objectives and thus move on from one instruction module to another only when they have fully mastered the previous one. It is the student who assumes responsibility for his or her own learning, planning the work, organising studies, and selecting strategies and support media, with the on-going orientation of the instructor as a facilitator and advisor in the training process.

Some training institutions, like INFOTEP, INA and SENATI, are introducing individualised teaching, and others are planning to do so, once they have surmounted the limitations deriving from adjustment of material and human resources for correct application of the method.

c. Advantages and limitations

Despite the implementation difficulties initially involved in this strategy, its application is considered to contribute to improving the efficiency of vocational training, in view of the following:

- Each student progresses in line with his or her own aptitudes, effort and interest, without hindering or being hindered by the learning rate of other group members.
- Each student is given the help and guidance he or she requires, without interfering with the progress of the rest of the group.
- It allows students to begin and end their training at any time, which, in addition to the benefits it provides for the institution and the student, allows for timely satisfaction of the human resource needs of companies.
- It permits a more rational use of the operating capacity of training centres, by immediately filling the workposts left vacant by students completing their training and dropping out.
- It significantly increases the number of persons trained with the same available resources, and satisfaction of the quantitative demand is therefore also greater.

- It fosters the active participation of students and develops initiative, creativity, a critical spirit, and the habit of self-training.
- It ensures training quality, since the process does not continue without corroboration of a mastery of the preceding stage.

A system of individualised training using the directed study technique allows for a flexible and dynamic administration of training, under which entries and exits can take place at any time during the year, since duration of the courses is variable and depends only on the individual characteristics of the students. Thus, for each student, the course begins when a workpost becomes available at the training centre, and ends when the participant shows that he or she has successfully completed the last task in the established programme. The CINTERFOR study showed that the experience at the SENAI Euvaldo Lodi Centre yielded positive results, both in terms of the lower total average number of hours of instruction per student, and in terms of the more intensive use of the capacity available.

The structure, operation and, particularly, the supervision of this type of system is more complex than under traditional systems of group training with preestablished training periods.

In sum, administration of centres where the methodology is individualised training implies forecasting, with a fair degree of accuracy, the number of workposts that will be available weekly as students come to the end of the tasks scheduled for the different courses. Based on this information, new students are selected and registered, and, after covering the subjects related to the occupation in which they are going to be trained, for example, mathematics, drawing, language and sciences, they begin their "task studies", using study sheets for the operations and technology required for preparing the "work plan" for a particular task. From here onward, students constantly go back and forth from classroom to workshop and vice versa, each time they finish preparing the plan for a task and execute it correctly.

The flexibility of the system requires individual monitoring. Each student has evaluation cards for the related subjects, for task studies and for workshop practice, which facilitates movement, since training does not have to take place obligatorily in a specific workplace, and does not depend on a group or a specific instructor. Instead, the student is assisted by the instructor who has a workshop spot available at the particular time. This makes evaluation more objective, since the student is subjected to the opinion of various instructors. The instructor profile is more complex and thus requires a major effort for selection and training of teaching staff.

Under this system there is no repeating courses or subjects, like under collective systems; promotion takes place throughout the course, unit by unit in the related subjects, and task by task in the practical portion, since the student moves on to a new unit only when he or she has satisfactorily completed the previous one, thereby ensuring a mastery of the material.

Individualised training is, however, more suitable for some occupations than for others, and it is difficult to apply particularly in those specialisations where tasks are to be performed by more than one student in coordination.

5. SKILL CERTIFICATION

Most workers join the work world without any specific vocational training. Little by little they acquire the skills and knowledge to perform their job functions, some more efficiently than others, and many of them manage to cover at least the minimum requirements the occupations demand. Nevertheless, the occupational knowledge acquired by workers empirically is not formally recognised.

a. Accreditation of competence

VTIs set themselves the task of taking best advantage of and recognising the capital of knowledge and experience accrued by workers, and to do so they implemented the methodology of skill certification. Checking and accrediting the professional competence that prospective trainees had acquired on their own brought multiple benefits. Among them was greater efficiency, due to a more rational use of human, physical and economic resources, by concentrating them on the training strictly necessary for each student, and thereby broadening coverage. It also provided for greater effectiveness of the programmes, which were reduced to complementary training modules specifically designed for the deficiencies detected, instead of providing training using the total contents of a standardised course. This results in savings of time and money, both on the part of the workers and on the part of the institution and companies, since, with the elimination of subjects already mastered, training is shorter, greater interest is sparked among the participants, and greater adaptation to the training process is achieved, as it provides an immediate response to the individual's difficulties in job performance.

The standardisation of the different situations of workers in terms of skills levels is done through a process that formally recognises their professional competence to perform the functions inherent to their occupations, regardless of how their knowledge and skills were acquired.

Skill certification has two dimensions: one of a technical nature and the other of a political nature, with the two necessarily being complementary. The first refers to the measuring of occupational qualifications, and the other to the legal or institutional recognition of those qualifications. The VTIs in the region long debated the advisability of creating official services in charge of formally recognising the occupational qualifications of workers or accrediting existing services. It was acknowledged that it was necessary to consolidate the technical infrastructure required for verifying possession of such qualifications, including occupational analyses, assessment, instruments, and qualified personnel to perform the certification process. Consequently, in Latin America certification was initially geared to developing the technical side of the process, although at the same time legal provisions on the subject were also put in place in various countries. The first step was to prepare objective, reliable and valid instruments, called ***occupational tests***, to ensure that the skills and the knowledge the workers demonstrated were those actually required for properly performing the tasks of a given occupation.

Occupational tests are basically ***diagnostic tests***, i.e., they make it possible to compare the candidate's profile with the occupational profile. This profile provides the necessary elements for making the decision to certify the vocational aptitude of the worker - if his/her profile matches the demands of the occupation perfectly - or to target training on those aspects where he/she showed a lack of knowledge of the specific technology or did not correctly execute some fundamental steps or operations of the job process.

The diagnosis of the occupational qualifications of workers, obtained as a result of this process, thus becomes a highly useful instrument for finding out the qualitative needs of the workforce. It has made it possible for institutions to organise flexible modular programmes which, by responding to the specific deficiencies of workers, foster continuing training, decrease dropout, and permit the most rational use of resources and facilities. All of this implies a bigger and more timely response to the demands of productive activity.

Recognition and acceptance of certification are supported by the fact that, unlike ***work certificates*** issued by employers regarding the years of service and the nature of the job performed, and ***study certificates*** to which not all workers who actually possess the occupational skills have access, ***skill certification***, by ignoring the process in which knowledge and skills were acquired, opens the door for formal recognition of occupational qualifications to be considered a right of all workers.

b. Range of applications

The most significant achievements of skill certification, deriving from the actions carried out since the outset of the project promoted by CINTERFOR in 1975 with the cosponsorship of the Federal Republic of Germany, can be appreciated by the interest the programme has awaken in the region: 26 institutions in 19 countries have undertaken actions geared to preparing technical elements for application of certification, and some of them have organised services and established the legal basis for implementing it. Results can also be seen in the influence skill certification has had on VTI policies and programmes.

Following are various examples of the acceptance certification has had in Latin America.

In 1977, INA of Costa Rica created a Certification Department, with specialised personnel and specific functions relating exclusively to the administration and development of the certification system. Its policies provide for skill certification as a means for facilitating professional promotion of workers, and in fact its Organic Law establishes that to achieve such purposes INA shall have the responsibility of "developing a system for officially certifying the knowledge and skill levels of workers seeking evaluation in the areas covered by the Institute, regardless of the way in which such knowledge and skills were acquired."

INA organises its training programmes with certification and modulation as its main principles, with the two of them forming part of the mechanisms used to more easily adapt to the needs of the country's economic, social and labour structure. To facilitate worker promotion, it has designed "professional itineraries" for the various specialties, which define the occupations, occupational levels, and lines for promotion, establishing the different ways of moving up within a particular specialty, either by taking training courses or by verifying qualifications in occupational tests. In the preparation of occupational analyses and in the design of professional itineraries and occupational tests, there is participation of representatives of employer and worker organisations and of the government sector, through "liaison committees", with a view to ensuring technical recognition of the certification tools.

This institution, which began its experience with the occupation of residential electrician and then moved on to milling machine operator, leveling machine operator, automobile mechanics and civil construction, today offers a certification programme covering some 42 occupations pertaining to 15 specialties.

To satisfy the needs detected at the individual level through occupational testing, workers are trained through self-learning techniques, both in plants and at training centres. This has made it possible to reduce the cost of materials and equipment, and to decrease training time by up to 40% in comparison to regular courses.

At present SENA, whose policies include validation and certification of workers' job experience, uses the method of measuring occupational qualifications for establishment of quality control of training provided by the institution, through theoretical-practical tests given during the training process, both to apprentices and to workers taking upgrading courses. For this purpose it has banks of testing elements for the majority of the courses it gives, and it has prepared specific assessment instruments for occupations in the three economic sectors.

Cuba has organised a system of worker evaluation equivalent to skill certification, whose purpose is to ensure that each workpost is occupied by a worker having the theoretical and practical knowledge required by the job. The evaluation is applied to labourers, service workers, administrative workers, and technicians who acquired their skills through practice and thus do not have the respective degree. Technical-teaching occupations are excepted from this programme.

The evaluation relates to the worker's theoretical and practical knowledge of the job. It is administered by permanent committees that operate at each of the work centres with more than 25 workers. There are some 17,000 such committees throughout Cuba, and they prepare the exams based on job description, which number approximately 10,400.

SENAI's Regional Department in Espirito Santo, Brazil, initially undertook activities that involved an experiment with worker certification in lathe and machine-tool setter-operator occupations. An assessment of this experience showed that the methodology was valid and appropriate for organising apprenticeship and occupational qualification courses. Its implementation was not geared specifically to formal recognition of skills, but instead to formulation of training programmes based on the reality of the job market. Given the results obtained, application was extended for the same purposes to eight Regional Departments.

As a result of the certification actions promoted by CINTERFOR, one of the objectives set forth in the Paraguayan 1977-1981 Five Year Plan for National Economic and Social Development was "to implement certification of occupatio-

nal qualifications of workers, with a view to officially recognising and certifying the knowledge and skills acquired by them throughout their professional lives, in order to establish rational and appropriate skill levels for labour and thereby gain a better knowledge and organisation of the job market."

To fulfill this objective the Ministry of Justice and Labour created the "National System for Certification of Occupational Qualifications of Workers in the Construction Sector". In order to implement the system, the pertinent analyses were used to define the occupations and their respective levels, which would be the subject of certification, and the minimum requirements for each case were established in ministerial resolutions.

The legal basis for certification in Guatemala, established by government resolution, provides that "persons not having a document accrediting their experience in a particular occupation and who would like to be on file with the Register of Non-University Technical Professions, may take the tests established for such purpose by Technical Institute for Training and Productivity (INTECAP) or any other public institution indicated by the Ministry of Labour and Social Security, with a view to obtaining a certificate of training so accrediting them."

In response to this provision, INTECAP began its technical preparation in this field with the occupations of electrician and mechanical structures, and continued in other construction areas. At present, assessment instruments have been prepared for 34 occupations pertaining to the secondary sector, and in most of them certificates have been granted following verification of qualifications using occupational testing.

Mexico gives great importance to skill certification, to such an extent that article 153-U of its Federal Labour Law establishes that "when a training programme exists, a worker refusing to receive such training because he/she believes that he/she has the necessary knowledge for performing his/her job and the job immediately above his/her, must present documents accrediting such ability or take and pass, at the entity providing training, the sufficiency exam indicated by the Employment, Instruction and Training Coordinating Unit (UCECA). In the latter case the corresponding certificate of job skills shall be issued to the worker."

The VTIs that have undertaken certification actions agree that, in addition to the benefits deriving from recognition of occupational qualifications, application of this strategy has permitted the following:

- The establishment of a uniform methodology for occupational assessment which has proven to be appropriate for evaluating worker competence in relation to established minimum occupational requirements.

- Adaptation of vocational training programmes to the realities of the job market, as a result of the use of occupational analysis for preparing occupational tests.

- The designing of a methodology to carry out occupational analyses, the products of which are useful not only for certification purposes, but also for the preparation of training programmes.

- Standardisation of basic subregional occupational profiles, with a view to preparing assessment instruments making it possible to recognise, when the respective agreements so permit, the occupational qualifications of workers in the countries composing such subregions.

- Promotion of research and use of suitable training methods to respond to the training needs detected by occupational testing, by providing a diagnosis of the qualifications and deficiencies of workers.

- Active participation of employers, workers and governments in the establishment and operation of systems and services for skill certification and in the planning and programming of training actions.

- Technical cooperation among VTIs in the region, seen in the exchange of methodologies and in the training of the personnel responsible for certification service.

6. THE SUCCESSFUL PROPOSAL FOR DESCHOOLING VT

One of the most interesting contributions of the VTIs is the fact that they have succeeded in the proposal for deschooling VT, which they had set themselves as a goal from the very outset. The formal delivery modes for technical and vocational education had not succeeded in moving away from the traditional school situation. Thus, VTIs took it upon themselves to offer a flexible and non-school-like kind of training, avoiding the use of the physical infrastructure as a fixed condition for the VT process. The banishment of classroom teaching provided real possibilities of access on the part of the diverse groups of the population and production units that remained outside the scope of formal education initiatives and centre-based instruction, thus allowing VT resemble real work situations.

What we have been stressing here is that VTIs have not been satisfied with the role of training "schools". They have developed multiple options for providing training in a flexible way in a context that is as close as possible to the natural conditions of the work environment. Through their effective deschooling they have achieved a true democratisation of their programmes and a versatility which has allowed them to massively expand coverage using limited and low cost infrastructure.

The proposal for deschooling made by the VTIs has been definitively consolidated and represents an enormous potential for flexibility, which in itself constitutes a wealth of knowledge and a form of validation which has also served as an inspiration and a model for other agencies and institutions interested in non formal education.

From the point of view of the operational arrangements geared to achieving this goal of deschooling, from the outset the VTIs established delivery modes that would little by little gain ground over training at centres. Thus, training via mobile units and in-plant training came to be classics. Added later was distance training, and today we can see that deschooled contexts are achieved not only by these various modes, but instead by a flexible combination of these diverse means for giving shape to operational strategies in line with the needs, availabilities, and objectives of each of the groups trained.

Deschooling of training implies much more than taking the courses out of the fixed centres which, despite the fact that they were conceived, structured and equipped in the image and likeness of the enterprises, inevitably ended up closer and closer to the stereotyped school. The initial tendency toward the building of centres has now been losing ground, due to reasons of costs as well as to a new concept of what VT is. That tendency has given way to the fostering of those modes that reach out to the target population of the training, seeking maximum identification with the work place and environment.

Most of the VTIs already have a physical infrastructure distributed throughout national territory and relatively sufficient to address all fields of training underway. Younger VTIs still have certain deficiencies in terms of physical installations, but the trend is towards building fewer and fewer centres, and when they are built, to see them from the outset as a more dynamic focal point for reaching out to the external environment.

a. Expansion through flexible structures

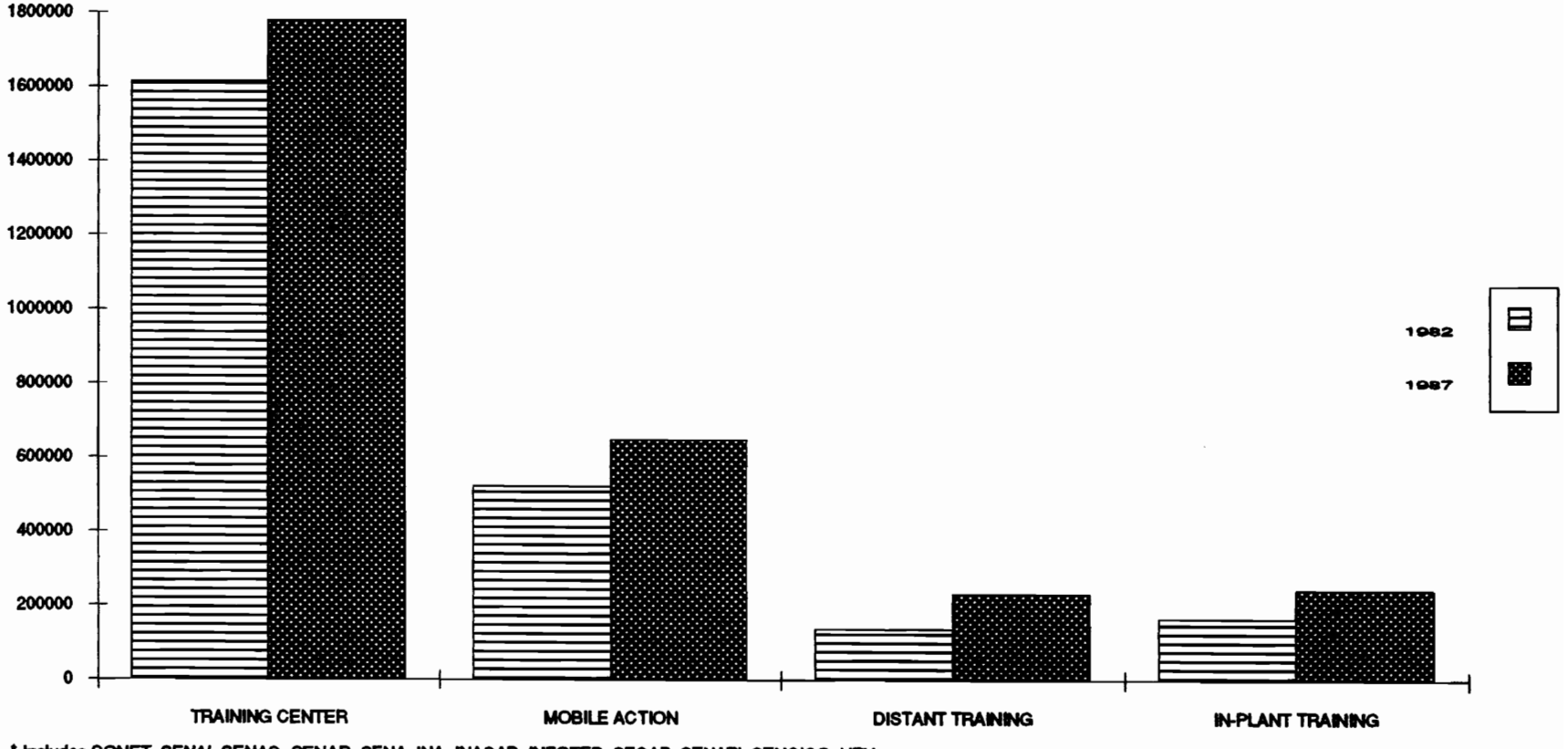
VTI enrollment statistics by delivery mode indicate that while in-centre training continues to represent the largest proportion of enrolment, its growth

rate has been lower than modes operating outside centres, such as mobile actions, distance training, and on-the-job training. Graph VII.1 shows enrolment for each of these modes for the twelve institutions studied in depth in this research, comparing enrolment for each of the modes for 1982 and 1987. Upon making a finer distinction in terms of the nature of the centres, we find that part of the enrolment corresponds to programmes which, although undertaken at centres, imply a greater degree of deschooling than the conventional modes. Thus we see combined in-centre/in-plant training, represented primarily by apprenticeship and, in some cases, by technician training, plus training at what are here called non-conventional centres (pedagogical enterprises, collaborating centres, community centres, public workshops, etc.), although their comparative coverage is still low. What we do find is that, on the whole, training at conventional centres does not exceed 50% of enrolment for the VTIs studied. Graph VII.2 illustrates this situation for ten of the VTIs studied in 1987. In this case CONET and UTU have been excluded, since they are VTIs that, by absorbing technical education and VT into a single item, would distort the graph for distribution, due to the fact that technical education is fully centre-based.

The degree of use of deschooled modes varies widely among the different VTIs. Graph VII.3 shows the behaviour of the twelve VTIs studied in this regard. Unlike the CONET and UTU situation mentioned, we find that SENAR, INFOTEP, INA and SENA are the VTIs that most use out-of-centre training modes. At SENAR, this is due to the fact that practically all activities are undertaken through mobile units, even when some are combined with support from centres, training agencies, and community workshops. INFOTEP, given its relative newness, started out by emphasising non-centre training modes. In fact, it only has one polyvalent training centre, and the majority of its courses are carried out through mobile action and in-plant training; it also has part of its enrolment in non-conventional centres, which in this case is training through collaborating centres. INA also has a very high percentage of training through mobile actions, and, of its in-centre enrolment, the majority is in public workshops for training-production. While SENA still has a broad network of centres of diverse sorts, it has reached almost 50% enrolment through mobile actions (47.29% including Grassroots Vocational Promotion Programmes for rural - PPPR - and urban - PPPU - areas). A scant 27.38% takes place in centres, while 12.15% is in-plant training, and, a particularly striking fact, 12% of 1987 enrolment was in distance training courses. SENA's 90 fixed training centres act as bases for operations for the deschooled modes. Through this system, SENA's coverage now reaches nearly 90% of all municipalities in Colombia. The enormous effort for deschooling at SENA has implied a true revolution within the institution. If in the last decade the big jump had been in the generalised implementation of the urban and rural

Graph VII.1

GLOBAL ENROLLMENT BY MEANS OF TRAINING FOR TWELVE VTIs* (1982-1987)
(absolute numbers)

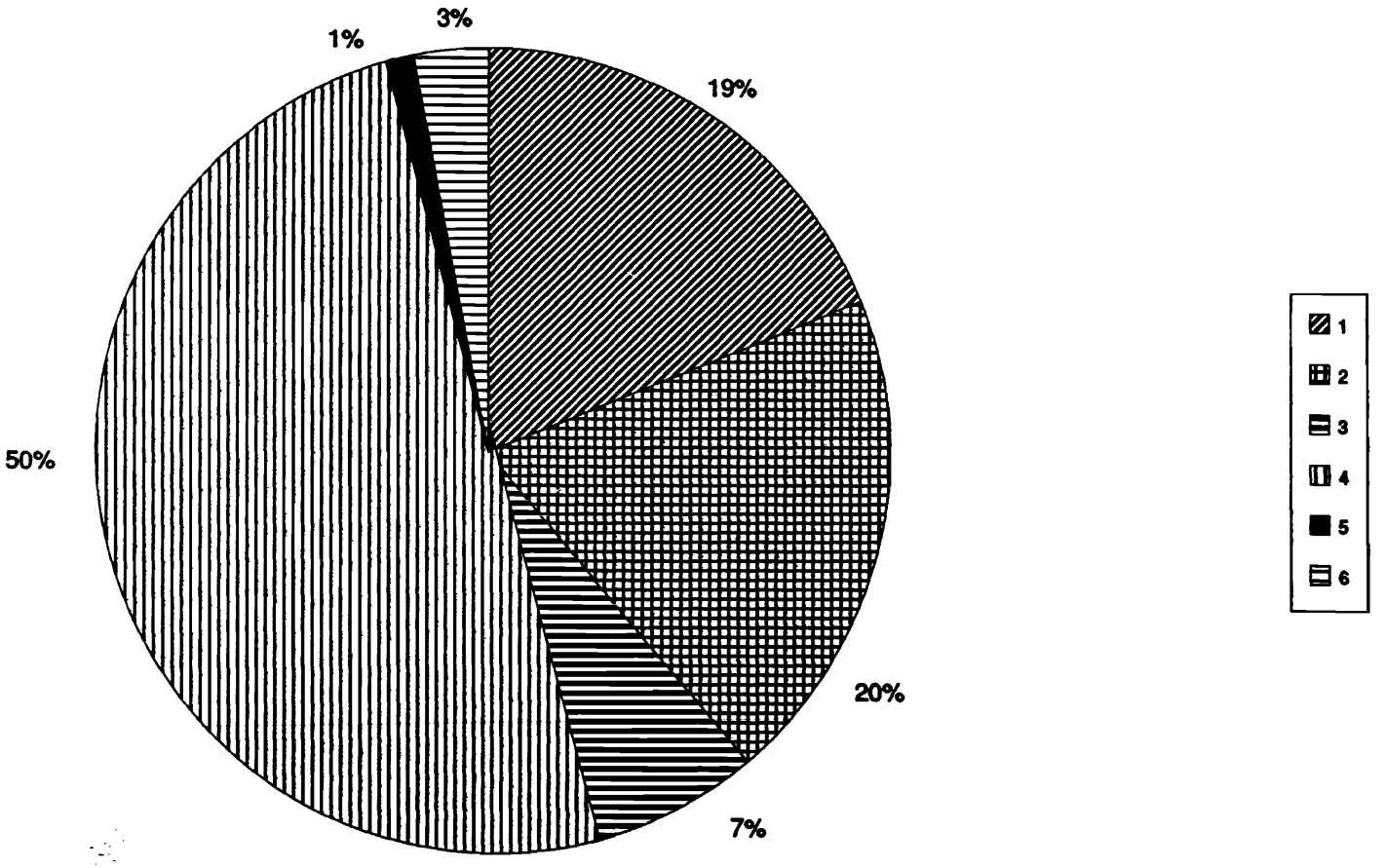


* Includes CONET, SENAI, SENAC, SENAR, SENA, INA, INACAP, INFOTEP, SECAP, SENATI, SENCICO, UTU.

Source: 1965-80: Anuarios estadísticos de la FP, Cinterfor.
1987: Survey to VTIs. Regional study.

Graph VII.2

DISTRIBUTION OF GLOBAL ENROLLMENT BY MEANS OF TRAINING FOR TEN VTIs* (1987)
(percentages)



1 MOBILE ACTIONS - 2 IN-PLANT TRAINING - 3 DISTANCE TRAINING - CONVENTIONAL CENTRES

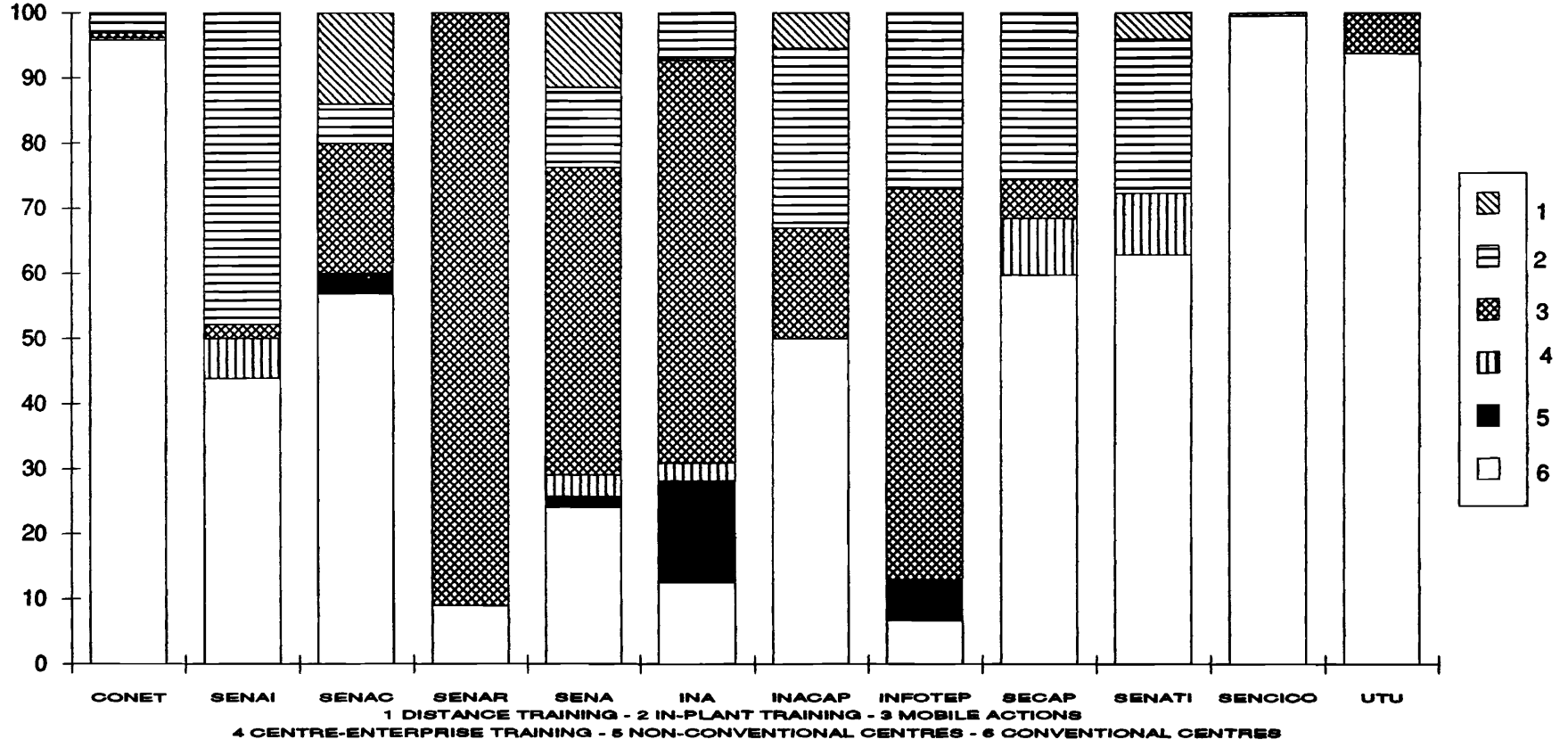
5 NON CONVENTIONAL CENTRES - 6 CENTRE-ENTERPRISE TRAINING

* Includes: SENAI, SENAC, SENAR, SENA, INA, INACAP, INFOTEP, SECAP, SENATI, SENCICO.

Source: Survey to VTIs. Regional study.

Graph VII.3

DISTRIBUTION OF ENROLLMENT BY MEANS OF TRAINING FOR TWELVE VTIs (1987)
(percentages)



Source: Survey to VTIs. Regional study.

PPP, operating thorugh highly flexible mobile actions, in this decade the decisive turn was towards the implementation of a highly elaborate distance training system.

SENAI has a massive infrastructure distributed throughout the country, including 711 training units for 1987. This network consists of 230 training centres, 16 technical schools, 94 agencies and 106 centres for instruction, 250 mobile units, plus a growing number of technology centres, in addition to 8 operational training units and 3 personnel development centres, all of a non-conventional sort. 490 of these units belong to SENAI itself, while 192 are under agreements with enterprises, and 29 operate under cooperation with other agencies. SENAI's mobile actions are carried out on the basis of mobile units whose operation was definitively strengthened by a loan agreement between the Brazilian government and the World Bank in 1977. The units' teaching methodology is based on individualised instruction that is adapted to the needs of the participants, including both individuals and enterprises.

Unlike other VTIs, at SENAI the actions undertaken through mobile actions are primarily used to reinforce in-plant training. Mobile units go to far away enterprises, setting up shop on their premises, and acting as a support for training that complements and alternates with the installations of the enterprises themselves. Also addressed by the mobile centres are communities where access to centres of diverse types is difficult. The apparently small number of enterprises and community associations served disguises the multiplying effect of the action carried out by these units, since they very often serve large establishments, and on other occasions have significant social repercussions through attention to micro and small enterprises or communities hard to reach by other means.

At SENAC, most of the 1987 enrolment (56.7%) was handled at the 170 vocational training centres and micro-centres. Nevertheless, 19.6% was covered by mobile actions, 6.1% by in-plant training, and 3.8% in pedagogical enterprises that can be considered non-conventional. In addition to a strong trend toward increasingly intensive use of mobile actions, at SENAC a special effort is being made in the area of distance training, through tele-education programmes, which in 1987 covered no less than 13.6% of its total enrolment. As at SENA, there has been a move toward distance training as one of the best ways to achieve deschooling.

INACAP is one of the VTIs that has been using mobile training programmes since the nineteen sixties. Nevertheless, this is not reflected in enrolment, since as the reader will remember, INACAP is involved in a massive training action for middle and upper level technicians which represents one-third of its

enrolment, and which by its very nature is carried out entirely at the 20 training centres throughout the country. INACAP does, however, use mobile actions, particularly in its programmes in rural areas and in association with regional and local development funds. INACAP has also been one of the pioneer VTIs in the application of distance training.

At SECAP and SENCICO, in-centre training is even more the rule, despite the fact that SECAP does make growing use of in-plant training, mobile actions, and joint in-centre/in-plant training efforts. SENATI shows the opposite trend from the other institutions, in the sense that it has discarded the mobile action training mode, since it feels it is not very efficient and is difficult to control. In spite of the fact that it has 7 mobile units, it has deactivated their use. It is, on the other hand, fostering the expansion of tele-education, as a way to bring training to the farthest corners of the country, and as a support for the work done by its 27 centres and its increasing efforts towards in-plant training.

Although detailed data is not available for other VTIs, it is clear that the regional scene involves a varied cast of organisational, operational, and technical-pedagogical modes, which reflect a serious effort towards deschooling the programmes and adapting to demands in each case. In sum, the fixed centres go on fulfilling the purposes of longer-term methodical training, with specific practice in workshops and laboratories. But the concept of those centres has changed, and today they are no longer used as simple school-workshops, but instead as focal points for a series of activities that are not necessarily undertaken within the physical premises of the centres themselves. Thus they constitute open and flexible nuclei for exchanges with the community, with an attitude geared to serving the enterprises, the workers, and the community in general, so that they may all have access to the training, research, experimental work, and thought emanating from the centre.

b. The universal and unique prototype of VT centres

The first efforts of these institutions were logically geared to establishing a physical infrastructure where training could take place. All of them started by building VT centres which, from the outset, were set on being different from the traditional schools and on being more like work centres. They were sought to project an image and a cultural, social and pedagogical environment that would be clearly identified with the factory context and the work place, attractive to young people and workers who could seek training, which would not intimidate users with an academic environment outside their daily reality, and which at the same time would be functionally appropriate for the requirements inherent in the task of job training. The VTIs made special efforts for the centres to

incorporate architectural elements and equipment that would be congruent with such aspirations.

Back in 1968, at a meeting sponsored by CINTERFOR within the framework of project 043, undertaken in Mexico, the subject of VT centres was specifically addressed. One of the resolutions of that meeting read as follows: "The functional bases for the design of buildings for VT should be established as the result of a careful, systematic and objective investigation of the diverse factors that should be considered, taking into account the experiences thus far, so that the architectural plans are not conceived on the basis of intuition, but instead of concrete, evaluated and updated premises, thereby avoiding the mistakes in the economic, functional and psychopedagogical aspects that frequently affect projects which do not take such criteria into account." This resolution, drafted over two decades ago, already underscored the concern regarding VT centres, as well as the clear acknowledgement on the part of VTI directors of the importance of the appropriateness of the physical site in which training takes place.

CINTERFOR supported the interest of the institutions in clarifying the methodological criteria and the set of norms of regional scope that would serve as guidelines for the building of appropriate centres, as well as their environmental and didactic equipment. Multi-purpose areas came to replace conventional school desks and traditional workshop tables and benches. Simulation of reality is frequently used instead of real equipment, thereby contributing to the economy of the system and providing new pedagogical strategies in moving from concrete to abstract thought. These concepts clearly were not new. Nevertheless, VT leaders had the virtue of absorbing, updating and systematising, as a basis for their day-to-day activities and for future proposals, concepts such as the flexibility to adapt to changing circumstances; provision of possibilities for expansion, without detriment to initial functioning; the search for optimum yield of the installed capacity, in terms of physical space as well as equipment; prudence in the administration of financial resources; preferential use of local technical and material resources; extreme sobriety in constructions; maximum formal functional use of materials; equipping of the training spaces in line with the dual purpose of learning and the student's future transition to the industrial context.

The synthesis of the will for standardisation and of concepts like those set forth in the foregoing paragraph gave rise to a prototype centre which was both universal and unique. Its universality was such that a series of plans could be rolled up and tucked under an arm to be carried from one country to another - as Alfonso Wilches,a well-known and recalled organiser of VT in SENA, would say - without the installation at the new site undoing the original project. Its

uniqueness lies in the fact that the same functional plan can be built of concrete, with a large portion of its walls and roofing made of wood covered with aluminium siding in Brazil, while in Uruguay the same reinforced concrete structure can be covered with ceramic tiling on the walls and roof.

It should be pointed out, however, that this is not the result of mere speculation by architects and/or engineers in the framework of technical meetings. To a great extent, the basis for this universality-uniqueness is found in the educational criteria which throughout the Americas have guided training for work, in line with the interests of each country, in the choice of areas for training. The merit of the building professionals has been their full understanding of such concepts when they designed the architectual programmes and gave them shape in projects and technical solutions.

Following this initial mode of in-centre training, new delivery modes began to be tried. Each one required different solutions in terms of space and teaching equipment. Thus the system of mobile units has had the most varied of implementations. Small automobiles, buses, trailers, trains, and even a boat, the "Samauma", which calls on the ports and small landing sites along the Amazon, carrying training given jointly by SENAI, SENAC, and SENAR.

Under a rather different approach, we also have experiences such as INA's public workshops, set up within the communities, which have made use of resources in line with the possibilities of the respective communities, which generally speaking are very modest. Finally, at the opposite extreme, we see programmes such as the technological centres emerging at VTIs today. Thus, for example, there is SENAI's "Euvaldo Lodi" Centre in Rio de Janeiro, the result of an intelligent use of international technical cooperation, in a push toward frontier technology. At the centre, the numerical control equipment is used not only for training, but is also applied to pilot production activities for enterprises, which constitute an interesting model for promotion of technological innovation.

In sum, requirements of each delivery mode give rise to new ideas, which in turn provide multiple opportunities for application. This constant testing, correcting, reinventing, and dissemination is one of the most noteworthy characteristics of the VTIs: the flexibility to adjust to changing real life conditions and to promote innovative responses.

The first VT centres were primarily of a fixed sort, associated with the apprenticeship mode. That is to say, they were fully built as non-movable sites. Soon there appeared semi-fixed sites, which are generally lightweight constructions that can be moved after a relatively long period of operation at one place,

to another place where their services are needed. At present the VTIs have a major network of school units defined as centres, both fixed and semi-fixed, which constitute the most visible image of VTIs throughout their national territories. The twelve institutions studied in depth in this research, corresponding to nine countries, have a total of 1,382 centres, although this figure naturally includes school units of widely varied dimensions, types, and operations. What we want to show is that the institutions are very well equipped, which gives rise to a physical presence of VTIs in the public eye, expressed in the form of building facilities throughout practically all the national territory. But, as we will see below, such units are only a part of their sites for action in the different regions and locations.

c. Diversification of centres

As a whole, the VTIs have diverse types of centres, according to the specific functions for which they are used. Thus we see ***regional centres***, which frequently also house the headquarters for the management or the agencies whereby the the VTIs decentralise into the diverse regions. They can be used for a particular area of activity or for several, and they can also be used as the focal point for other actions, be they mobile, distance, or in-plant training. The ***specialised centres*** are sites for training actions in clearly defined and limited areas or specialties. ***Sectoral centres*** handle training for a sector or branch of economic activity, with a broader range of occupations. ***Polyvalent or multiple centres*** house, under one roof, training for diverse branches of activity or specialties offered simultaneously.

Nevertheless, much ground has been covered since the initial establishment of these four basic types of training centres. The new forms that are appearing throughout the region respond to the imperative to make centres more flexible, to incorporate new functions, and to adapt to the specific nature of the training for certain activities or at different locations. The increasingly frequent combination of training and production, as two elements that are interrelated in training for work, particularly when dealing with disadvantaged populations, led to a new form of centres, seen in what are called ***pedagogical or didactic enterprises***, which operate simultaneously as enterprises and as VT programmes. Didactic enterprises have had significant acceptance at SENAC and SENA, in diverse areas of commerce and services, but they also exist at other VTIs. SENAC's pedagogical enterprises are based on a teaching methodology and also on a VT delivery mode, with enterprise-like facilities and characteristics, open to the public, thereby making it possible for participants to fully or partially experience the routines of a real enterprise. SENAC today has a network of 69 pedagogical enterprises in the areas of restaurants (15), hotels (3), beauty salons (42), cafeterias (6), travel agencies (1), supermarkets (1), and

gas stations (1), at all of which specialised personnel is trained for the different jobs involved in such activities. The innovations brought in by the pedagogical enterprises include direct attention to the public, providing the trainees with real working conditions, and the matching of operating costs with the final product, thereby seeking financial self-support.

The ***public workshops*** for training-production, initially launched by INA and which are beginning to be adopted by other VTIs in the region, are a type of centre specifically designed for attention to the informal sector of the economy and marginal low-income groups, through highly deschooled training programmes. INA's public workshops, of which there are now 14, two of which are in the agro-livestock area and the rest in industry, commerce and services, are open to young people and adults in their free time, according to their individual availabilities. At the workshops, each participant designs his or her own curriculum in line with personal objectives, which can go from preparation of an operational model to the acquisition of knowledge and skills that would be the equivalent of, or even go beyond, a regular course. Training cum-production workshops have come to be an extremely innovative and positive experience. They provide for total deschooling of the programmes, and in that light have offered real possibilities for training and upgrading to the most disadvantaged social sectors, and to independent workers and micro-enterprise operators who have found in the workshops a highly positive environment for development of their technical as well as managerial skills. INA's public workshops began in 1982, and by 1983 they had already trained 2,188 people. In 1987 the number of trainees reached 4,500 and for 1988 the number is expected to reach 7,200.

These non-conventional centres, along with mobile actions, are being used by INA to provide mass fulfilment of the social goals that are essential to VT.

INA's initiative gave rise to the creation of the first INFOTEP public workshop. A young institution, unlike the other VTIs, INFOTEP started out with the clear idea that it would not take on a heavy physical infrastructure, but instead would opt for a very agile mode, which it calls ***collaborating centres***. This means that INFOTEP transfers financial and technical resources to other, generally public or non-profit private entities who have facilities which with slight modifications can be used for the purposes of VT. In general they are entities which, even in cases where they do have lengthy training experience, lack the capacity for updating their infrastructures, particularly in terms of equipment, as well as the methodological and pedagogical supports required for proper operation. Thus, part of INFOTEP's action is carried out through these collaborating centres, and INFOTEP has in fact built only one centre of its own,

which it uses for direct training, as well as for experimentation, with didactic materials and training of instructors for itself, and for the collaborating centres and enterprises.

SENAR is following a course similar to that of INFOTEP, through actions delegated to public or private entities linked to programmes for rural areas and which have the technical, administrative and operational infrastructure for undertaking training actions.

In Mexico, ICIC has experimented with a novel form of deschooling represented by the ***training camp*** mode. This mode involves units to which building industry workers and unemployed or underemployed persons in a particular zone can turn for training programmes. The camps are located in building complexes with more than 1,000 workers, where one or several construction companies are building major works. Here we should underscore the collaboration provided by the construction companies themselves.

The newest version of training centres comes from SENA, which has created what it calls ***community centres.*** There are basic facilities built by SENA, often with community participation, on land provided by the municipalities or by community organisations. SENA has furnished them with workshops and basic training and communications equipment (video, etc.) and has turned them over to community organisations, so that they may manage them as local resources centres for training, development of productive organisations, and community development in general. This type of centre is a recent experience, in line with SENA's goal of decentralisation of services and organic articulation with broad processes of community development. It is still very new and has not yet been evaluated (there seem to be - as might be expected - many difficulties), but it does warrant careful study, given its innovative potential.

Another variation on fixed infrastructure is what is called the ***didactic farm***, where in addition to demonstrative activities, actions involving technological information are undertaken in agro-livestock areas, providing knowledge to interested individuals through visits, internships, and other events. SENAR is devoted exclusively to the rural sector, and has established several such farms. The actions undertaken at SENAR's didactic farms include training of independent workers, and internships for rural workers and SENAR instructors.

INA has also developed a model farm project on two hectares of land, where the basic purpose is to show how, in that limited space, it is possible to achieve high production and profitability.

At SENAI, the specialised centres are in fact true technological centres, where not only training, but also multiple activities for research and technological development are carried out, and where non-conventional services, such as those described in Chapter III of this report, are delivered.

Some of them are called technological centres per se. But moreover, recently SENAI has created a sort of technological centres at many of the specialised schools for a particular branch or area of economic activity. The newest ones are those created in the area of food technology and transportation technology. These new types of centres constitute a profound change in the nature of SENAI nuclei. The multiplicity of activities along with the integration of diverse activities involved in a technological and economic context, give rise to active links with the industrial, scientific and technological community, as well as with the public in general. Perhaps the most complete example is that of CETIQT, which constitutes a nucleus for applied research as well as for experimentation in the whole chain of activities related to the chemical and textile industries, including fashion designing and manufacturing.

As indicated above, the image of the training centre isolated from other operating modes, which was frequent in past decades, has changed and the centre is now a focal point from which connections are made with other modes. They are also used as information and documentation centres, and -more recently - technological consultancy service. Moreover, the centres facilitate technological upgrading of instructors where no specialised centres exist for such activities.

In sum, while training centres are perhaps the farthest mode from true deschooling, their operations have in fact become remarkably flexible in recent years.

In the search to transform VTIs fixed training infrastructures into increasingly open and flexible units, we find reflected a growing effort toward achieving the goal of deschooling which the VTIs set for themselves even within their own centres.

SENA of Colombia, an institution which has long been involved in this search, has recently conceived a radical transformation of training centres. Under this proposal the students or participants become users of knowledge which they learn and absorb on their own; the "educator" becomes a promotor of learning and a facilitator of knowledge, who devotes a large portion of his or her energies as researcher, to the creation and recreation of the knowledge required by the users.

The "base of operations" of this proposal is no longer a space compartmentalised in classrooms, workshops and complementary services. It is a highly flexible structure; more than a school it is a technological development centre, which is highly versatile and at the service of all citizens. This renewed and renewing centre will be organised spatially in three fundamental areas:

- Theoretical-practical training areas: classroom-workshops, workshops, laboratories.

- Areas for management, processing and delivery of information: audiovisual information, bibliographical information, electronic or systematised information.

- Areas for integration, participation and culture: auditoriums, exposition areas, free spaces, cafeterias.

The aforesaid flexibility must permit management of the training space by the actors themselves. The concept of the theoretical-practical training area is closely linked to that of open teaching, which is reflected in a single, "informalised" and fully equipped space: low modular room dividers; specially designed work places; teaching modules (blackboards, flipcharts, screens); multimedia units (TV, betamax, computer, overhead projector, etc.).

A space for institutional information will make full data available on subjects ranging from the possibilities for each individual situation to forms for instant and automatic registration. Moreover, the space for electronic information is to provide broad databases and advisory services regarding applications in general and for enterprises in particular. The bibliographical information space shall provide data on books and periodicals related to technology and the corresponding support for computerised bibliographical systems.

Finally, each one of these centres will form part of a larger, national system established around a "technology and culture centre", which would have the following functions:

- The most complete public technological library in the country, set in the framework of the project for technological information and dissemination.

- An informatics centre, for managing computers and access to electronic services.

- A permanent area for exhibition of educational and technological innovations appropriate for experimentation and apprenticeship.

- Basic laboratories for technological testing.

- A comprehensive centre for conventions and seminars, including auditoriums, conference halls, press rooms, etc.

This centre, a sort of "self-service educational (technological) supermarket", would constitute a model "training centre for the future", as an area for public use, permanent service, and modular management of spaces and functions, where users have direct and immediate access to information and experimentation, and are allowed to "learn" what they specifically need, when they need it.

d. Extra-mural VT

It is mobile actions that basically allow VTIs to make their training programmes accessible to the most disadvantaged sectors. Special mention should be made of the usefulness of mobile actions in reaching remote rural areas. But they are also useful in reaching lower income populations in cities, as well as in providing access to programmes by people involved in the informal levels of the economy. The common characteristic among these mobile actions is that they adapt to the conditions of the place where they are temporarily installed, while at the same time their programmes are structured in strict conformity with the economic, social and cultural characteristics of the users. Frequently they also take into account the family situation of course participants and provide complementary measures for fostering motivation and attendance on the part of those who, because of their condition, are not inclined to go to structured training centres.

At SENAC the mobile units permit attention to densely populated zones on the outskirts of large cities. In 1973, the SENAC Regional Department in Sao Paulo created a type of mobile training unit called UNIFORT, geared to low income populations and providing totally free services in the most needy areas of Greater Sao Paulo. Over the last two years UNIFORT was active in 30 Sao Paulo regions, and provided VT to almost 14,000 students. It organised 528 micro units for production and provision of services, in addition to fairs, exhibitions, campaigns on the subjects of health and job orientation.

While SENAI's mobile units are basically designed to reinforce in-plant training programmes, they have also had social repercussions given that they reach out to the most distant and densely populated zones, whose inhabitants have difficulties in getting to SENAI centres. In line with the needs detected by its Regional Departments it planned the construction of mobile units for refrigeration, electrical commands, hydraulic commands, pneumatic commands, industrial sewing, diesel mechanics, and later, bakery techniques and

sewerage systems. Although SENAI had already had several experiences in training with mobile units for some fifteen years, it was in this last decade that the network of available units was expanded, and the mobile mode came to be a major component at the VTI.

Special mention should be made in the case of SENAI of the technology which the VTI developed on its own for the design, construction and equipping of mobile units, specifically in line with the needs that were to be filled. It undertook complex research on the demand for labour, the stock of equipment, utensils and tools necessary for VT in each occupation, undertaking even the selection of such equipment and the study and design of kits or teaching devices that could act as a substitute for and demostrate the work performed with real equipment. SENAI's experience in designing and building this simulated equipment as well as the mobile units themselves, constitutes in itself a wealth of knowledge with enormous projections for the region. In fact, the traditional way of dealing with this process was to see what kind of mobile units were available on the market, particularly in the developed countries, that would be most appropriate to import for the VTIs. The innovation, then, in the case of SENAI, is that the VTI itself analyses its needs and develops prototypes with a high degree of national components. This should be noted as one of the many subproducts of training that are being amassed by the VTIs. At present, SENAI is building more units for the area of electronics and programmable logical controllers.

As we have said, SENAR undertakes all its activities throughout Brazil's vast rural sector through mobile units. The peculiarity of these units, which are self-transporting vehicles or trailers specifically designed and equipped to meet the training needs of independent workers and rural dwellers of the lowest income sectors of the population, is that they are linked with community pedagogical workshops in which there is intensive participation of the rural population involved. SENAR also uses its mobile units for training diverse agricultural support service activities (animal and plant health), and even general services such as health, as well as training in diverse building specialties, with a view to self-building. These programmes have been significantly developed by SENAR in recent years and have been geared to training workers residing in rural or rural-urban areas, for construction of a basically rural nature. We should note that SENAR's mobile units have been built with technical cooperation from SENAI, which, as mentioned above, has developed its own technology for the design and production of such units.

SENA uses mobile actions to carry out its grassroots vocational promotion programmes for rural (PPPR) and urban (PPPU) areas. These major programmes, which have been significantly expanded in recent years, are under the

aegis of a central unit at the General Direction of SENA, called the Social Policy Office, and embody an entire conception of training for disadvantaged social sectors, which seeks extreme flexibility in methods and contents, and which is generally executed on the basis of inter-agency agreements and active participation of the community, which in this way takes responsibility for its own training. It is thus a highly deschooled mode, and both SENA and the users, as well as other participating agencies, have been satisfied with the results of these programmes, and particularly with the significant new opportunities they have implied for persons and groups who otherwise would be excluded from training.

Mobile actions are also highly relevant at INA, and are responsible for no less than 81.3% of enrolment, 84.7% of graduates, and 60.3% of course/hours. These actions are carried out intensively for training in rural zones but are also used in outlying urban areas.

At CONET the monotechnical missions are basically geared to low income persons in rural zones, especially in those areas where CONET does not have a fixed infrastructure. In 1987 the 33 monotechnical missions covered a total of 1,869 enrollees, representing 6.0% of total CONET enrollment in VT programmes. At UTU, the 99 semi-fixed centres are responsible for the mobile programmes.

e. Distance training

The most significant innovation in recent years in the area of deschooling is the generalised implementation of distance training. Distance training, as conceived today at various VTIs, has its origin in the radio and correspondence training that appeared in Latin America quite some years ago. In fact, in 1947 Acción Cultural Popular of Colombia instituted an educational programme through Radio Sutatenza, using radio broadcasts, written materials and tutorial actions, with a view to fostering the improvement of living conditions among Colombian peasants. In Brazil, around the same time, SENAC of Sao Paulo launched its University of the Air, broadcasting courses for training busenessmen and their employees. INCE of Venezuela began giving correspondence courses in 1966, and its experience served as a reference for other countries. Implementation of this mode took place in a more generalised way around 1970, both in formal and nonformal education, at the secondary, technical and university levels, such as the case of Universidad Nacional Abierta of Mexico (UNAM, 1971), Universidad Nacional de Educación a Distancia of Costa Rica (UNED, 1978), and Universidad Nacional Abierta of Venezuela (UNA).

At VTIs, the 1970s marked the beginning of actions using this training mode. INACAP of Chile established its National Distance Training System in 1972; SENAC of Brazil structured its National Tele-education Programme in 1976 to offer correspondence courses for the tertiary sector; that same year, SENA of Colombia organised its programme for Vocational Training via the Mass Media, which later came to be called the Distance Training Centre. After seven years of experimental application and technical consolidation the SENA programme was instituted at a national level; in 1978, after an experimental course in reading and interpreting technical mechanical drawing given on open circuit TV, SENAI of Sao Paulo organised the Distance Training System. At present, in addition to the institutions mentioned, there are others such as INA, INTECAP, INCE, SENATI, and CONET who offer vocational distance training programmes. Naturally, their coverage and form of operation vary, ranging from correspondence instruction with tutorials exclusively at a distance, applied only to teaching of basic and technological contents or to occupations not requiring practical skills, to application of more comprehensive approaches that lead to true vocational training by incorporating tutorials in person for orientation and support, student groups, and vocational practice, thereby making it possible to reach training objectives for occupations involved in different production activities.

The trend seen in Latin American VTIs is toward programmes that can truly achieve the same objectives as other training modes. Thus, the directors of various institutions, aware of the potential of distance training for meeting demands left unsatisfied by in-person delivery modes, have felt it advisable to establish, with CINTERFOR's support, an inter-American system for cooperation on vocational distance training, composed of all CINTERFOR member institutions using this training strategy in their regular action plans.

Given the development reached by SENA in the application of this strategy, both in terms of conceptual approach and of quantitative achievements (which in 17 different activities represents 10 % of the 600,000 persons assisted by this institution annually), administration of the inter-American system has been entrusted to it, through the Coordinating Nucleus operating at its headquarters.

The system seeks to foster and strengthen vocational distance training at institutions in the region, through a cooperative service covering essential technical, pedagogical, methodological and administrative aspects for effective application of this training mode. Hence, its specific purposes are as follows:

- To offer advisory, information and documentation, training and technical assistance services concerning aspects required by the institutions.

- To define processes for materials design, training of teachers and students, management, and media production.

- To disseminate the use of this educational technology so that other countries and institutions may benefit from it.

- To undertake joint research and development projects.

- To strengthen the key areas of this delivery mode at the institutions already using it.

- To exchange experiences on all aspects of distance training with other educational and vocational training entities.

Since establishment in 1987, there have been three regional meetings of the Technical Operating Committee, composed of the persons responsible for distance training at SENAI, SENAC, SENA, INA, INACAP, INTECAP and INCE. The meetings provide for in-depth studies of conceptual, methodological and operating aspects and for the establishment of plans for action. The projects being carried out on a cooperative basis by the institutions on this Committee are aimed at fields related to the promotion and dissemination of the programmes and the system; evaluation of the process and of impact; design and adaptation of written and audiovisual teaching material; training of human resources involved in distance training; information and documentation; student organisations; and management of the institutional system.

Distance training is conceived in such a way that the teachers, students and media act in coordination to facilitate learning. These components are not unlike those of any educational system, but in this training strategy they have special characteristics and operate differently. Students are individuals who for diverse reasons are excluded from the traditional education service and must independently take charge of their own learning process; the teachers, in addition to fulfilling the pedagogical profile of all facilitators of educational processes, are also aware of the didactic possibilities of the communication media and have the skills to apply them; and the media which in other delivery modes are marginal supports, here become the primary element for transmitting the training contents.

For distance training programmes, all the VTIs make essential use of ***tutoring*** and of ***teaching resources***, and some of the institutions that have evolved further in developing this educational technology, such as SENA and INACAP, have incorporated ***student groups*** and ***study groups*** as highly important complementary elements for strengthening the technical, organisational and social training of students.

Tutoring is a service providing individual guidance and pedagogical assistance to the student during the self-learning distance process, as a means of support for achieving effective vocational training. Distance tutoring, using a means of communication such as letter or telephone, as well as in-person tutoring through direct contact between the instructor and the student or a group of students, are the forms used to a greater or lesser extent by the institutions. Through them, tutors respond to questions by students regarding technical, organisational and operational aspects of the programme; moreover, they provide support for students to find solutions to personal, family or social problems hindering their training progress. From the technical and didactic point of view, the tutors motivate students when they come into the programme and reinforce that motivation throughout the process; they guide them in regard to planning their learning process, study techniques, procedures for doing exercises and developing motor skills; they clarify difficulties related to contents and complement the self-learning process, advising and guiding them in line with their individual characteristics; they make contact with students who remain out of touch for longer than expected, who do not request any service, or whose performance declines; and they encourage exchanges with other students, as well as studying in small groups.

Since in distance training the communication between the teacher and the student generally does not take place in person and is deferred, and participants must undetake their learning independently, in their everyday work setting the use of various teaching resources is essential for successful learning. For this reason VTIs combine diverse media that fulfill specific functions, in line with the target group and with the contents of the training programme for which they are to be used. The media are shaped in such a way as to truly deliver self-training and motivational contents; they respond to modular objectives and structures, are available for tutors and students, form easily reproducible homogeneous packages, and permit individual study at the students's own pace.

The learning process is carried out using printed material in the form of self-training units, considered as the teaching master means for distance training. The units are delivered and are studied gradually, according to each participant's pace. Each of them contains the learning activities and the guidelines for self-evaluation, as well as indications to use other media as necessary. Support media are also used to expand upon or reinforce certain contents when the printed material is not enough. Such media are generally visual, such as pictures, maps or graphs, or audiovisual, such as video cassettes, films and didactic recordings.

Groups are another major element. They give participants a chance to meet, according to their affinities and geographic proximity, with or without the instructor, to undertake different activities, such as studying materials, analysing contents and applicational possibilities, and practicing. The also encourage social, cultural, sport and labour integration, and community development. They are particularly useful for carrying out training evaluations which reinforce learning, and to verify the mastery of the technological and practical objectives established for a specific training action. They provide a greater degree of certainty for the institution issuing the respective certification, which has the same value as certifications obtained through in-person delivery modes.

Some institutions (SENA has the most experience in this area) have fostered the formation of study groups in which students in the same specialty meet to exchange knowledge on matters related to the occupation in which they are being trained. They are promoted by the instructors themselves, who also encourage the existence of monitors as a fundamental resource for development of such groups. The monitors are students in any of the specialties for motivating and orienting their study-mates in regard to didactic and technical aspects, as well as in the organisation and orientation of study groups. They also have the purpose of promoting the formation of civic organisations or cooperatives whereby students can generate their own employment on the basis of enterprises related to their area of study.

At present, SENA's distance training programming has 786 monitors distributed among the institution's different regional centres, some of whom have promoted the legalisation of student organisations and the establishment of cooperative work groups.

At some VTIs distance training has been recently channeled through tele-education, and especially, through televised programmes that provide general and basic knowledge on certain specialties. SENATI has been very satisfied with the increase in actions carried out through its industrial tele-school programme which is broadcasted three times a week in an arrangement with the country's public television channel. SENATI has prepared innovative pedagogical packages for the industrial tele-school and at present has fourteen such packages in printmaking, book binding, shoe-making, ready-made garments, carpentry, foundry, basic electronics, etc. The industrial tele-school programme classes are supplemented by a self-teaching booklet that is published in a Peruvian weekly newspaper. SENATI claims that the programme has had major repercussions and is very low in cost.

SENAC makes the same assessment of its tele-education programme. In the period from July 1978 to July 1988 it covered 334,000 workers and job

candidates in courses such as office clerk, secretary, accounting clerk, letterer, poster design, writing techniques and business math. The modules given on television are supplemented by material sent out by mail, plus an evaluation of the learning process through written work sent in by the students. In addition to individual participation a large number of enterprises use SENAC's tele-education programmes to train their employees. SENAC's tele-education centre offers a special programme called "Distance Training with Local Supervision" in which an enterprise may participate with one or more groups of employees through a programme tailormade to its special needs.

CONET created its excellently equipped technical tele-school in 1969. During its first years it provided theoretical-practical courses for electronic assistants and fashion assistants. The actions were reinforced with didactic material sent out by mail, evaluation questionnaires, etc. At present, the activities of the tele-school are fairly limited and are basically geared to provision of educational videos in support of the teaching provided at CONET's technical schools. Nevertheless, it has significant potential and is being reexamined by CONET authorities with a view to modernising programme organisation, obtaining greater coverage, implementing better controls and making the activity more profitable and effective.

Many distance training experiences were not consolidated. The difficulties were due to factors such as a lack of validation of this methodology, a lack of clarity regarding goals and mechanisms to put it into practice, a certain confusion between the promotional activities of the entities through the mass media and distance training activities, budget restrictions on acquiring appropriate equipment, and limited training options for the personnel responsible for the programmes.

Nevertheless, due to the low cost involved in its mass application, even though it does require a significant initial investment and constant methodological and operational support, it is highly useful in expanding institutional coverage. Moreover, it is an undeniable means for deschooling which lends itself very well to simple basic training and to more complex technological updating and upgrading processes. The VTIs have now built up much more sophisticated distance training systems with a view to making this delivery mode a real and effective means having the same levels of effectiveness and quality as the conventional services provided through in-person training modes.

PART THREE

VIII

FINANCIAL POLICIES AND PRACTICES OF VTIs

In the countries of Latin America the institutionalised VT systems were born out of State initiative. During periods when the development concept prevailing in the region assigned the State the major responsibility in propelling import-substitution industrialisation, it was completely logical for the State to provide for the financing and the operation of VT services guarantying the availability of skilled labour to fill the needs of the newborn industries and of diverse economic activities in the primary sector (which would supply part of the inputs for manufacturing and exports to obtain foreign exchange) and the tertiary sector (to support the network of associated services).

Thus, as seen in the foregoing pages of this study, in almost all the countries VTIs were established by government decisions. Though in some cases they were by juridical constitution in the private sector, there is no doubt that these VTIs are the "official" entities which act in the public sphere and with financial resources that are in some way ensured by the State, even if the primary origin of the funding is the private sector (as is in fact the case for all taxes paid by individuals to the State).

In earlier chapters we analysed the way in which the State's role evolved in the provision of VT services, with the emphasis on the changes in the operational functions. Some essential references for understanding those changes in VT operation were made regarding aspects of reassignment of responsibilities for financing of such services, in particular those provided by the VTIs which were the subject of this study. To fill out the picture of the transformations that have taken place in this field of action, this chapter seeks to provide a more detailed analysis of the political-financial aspects of the VTIs, underscoring the new trends appearing on the Latin American scenario, their influence on traditional mechanisms and sources of financing for VTIs, and the dilemmas this poses at the level of overall public policies, and at the level of VTIs themselves.

Except in some exceptional cases to which we will refer over the course of this chapter, in the region we still do not find the adoption of drastic measures affecting the core of the financial bases which the State provided for VTIs from their outset. Nevertheless, in most of the countries one can sense an air of

change in economic policy-making circles that will certainly affect VT and VTIs in particular. For this reason we have attempted to cover all movements of interest on the political-financial plane -regardless of how small or incipient they may be- with a view to opening up perspectives for an in-depth discussion of a subject which has rarely been touched upon in VT studies in the region.

This is a very slippery terrain, as might be expected. In the first place, little information is available beyond the formal legal documents and routine budget reports of VTIs, through which it is not possible to detect qualitative innovations. In the second place, it would seem that the VTIs themselves and the circles closest to them have still not become fully aware of the magnitude of the pressures for radical changes in this area, and the profound implications they can have. In general, the concerns are centered on the effective and immediate availability of resources and their allocation, more than the prospective exploration of different possible scenarios for an adequate financing platform for VT in the future. In the third place, it is naturally a very sensitive subject which gives rise to major polemics, since it has an undeniable political backdrop. It is difficult to venture opinions on the diverse options adopted or to be adopted in the area of VT financing, since the analysis involves multiple criteria related primarily to efficiency, effectiveness and equity of services, set in an ideological context regarding the role of VT in economic-social development.

In any event, it would seem worthwhile to contribute to the thought on this issue based on the evidence revealed by VTI experience in the recent past, regardless of how difficult it may be to extrapolate from there. To this end, this chapter seeks to illustrate the diverse formulas and mechanisms used in the Latin American countries for VT financing, naturally making reference to resources of public origin, as they relate to the effects of financial policies in this area. Despite the fact that in most countries this terrain has been relatively stable since the time of official institutionalisation of VT, in some of them there have been very interesting innovations. Similarly, there has recently been use of administrative and financial mechanisms which, although existing from the outset, had not been used during times of greater budget certainty and stability.

While the changes in many cases have not taken a very clear course or reached a significant magnitude, they are interesting from the qualitative point of view, as options to be taken into account for the decisions that will necessarily have to be dealt with by those having the power and the responsibility to define the financial frameworks for VT in the years to come.

VTIs have been considerably adept at surmounting difficulties and at trying new formulas, within the prevailing legal systems. They have even shown an ability to react quickly when those systems have changed. Moreover, when the

legal systems have remained static from a formal point of view, but have left room for obstacles and bottlenecks in VTI financing, the institutions have shown significant imagination, creativity and wisdom in dealing with the new situations and in surmounting critical aspects. This should be underscored, as it bodes well for their ability to cope with periods of generalised economic crisis, like the one at hand today in Latin America.

The challenge is great since VTIs must join the general "belt-tightening" effort required by economic adjustments, precisely during periods when a massive, high quality contribution is asked of VT, with a view to providing skilled human resources to ensure the technical progress essential to the economic recovery of the countries.

1. THE ROLE OF THE STATE IN VT FINANCING: CRITERIA AND EVALUATIONS

Provision of VT services in many countries of Latin America is a clear example of State intervention to correct supposed distortions that the regulation of these activities would have if undertaken by the market. In fact, it has been argued that private provision of VT services would not attain the most advisable quantities or composition, as the enterprises would not invest but in very specific training programmes, avoiding a more general training - for example, for universal occupations - because the workers would take possession of the benefits from this training (there would be externalities in the workers' favour). In turn, the less qualified workers would not invest sufficiently in their own training either, even if it were to be of a general nature enabling them to have access to the benefits deriving from their increased productivity. But they would not make this investment, either because they lack the resources or because of difficulties in obtaining access to the capital market or because of lack of information on VT and employment opportunities. Furthermore, production of VT services can lead to considerable scale economies - in equipment, teaching staff and educational technology - that make it advisable to implement the activity through a large, quasi-monopolistic producer, regulated by the State through subsidies or with the direct participation of the government in the governing bodies of VTIs. It is obvious that these ideas have been an important basis for the creation of most of the official VTIs in Latin America.

The main partial interests involved when establishing a subsidised VT programme are the following: a. the workers that are trained, with the expectation of an increase in their income and other non-monetary benefits, in exchange for their personal learning effort and the cost of the time they put into their training; b. enterprises that employ trained workers to benefit from their

greater productivity, in exchange for higher salaries. Attraction of a greater share of the profits from increased worker productivity will depend directly on the specifications of the training given and on the strength of the enterprise's internal job market. Insofar as these conditions are fulfilled, the enterprise will not need to transfer to the salaries all of the increase in productivity in order to attract and retain trained workers. Furthermore, enterprises will often have to pay more taxes, either to make direct contributions to financing VTIs - e.g., through a tax for VTIs on the payroll - or as a consequence of greater profits arising from the employment of skilled personnel; c. the VTIs that receive subsidies from the State and other income to cover the cost of producing VT services; d. the national treasury which has to finance subsidy of VTIs, but at the same time, can levy higher taxes on increased production and sales arising from trained workers and on the contributions for specific allocations established for the benefit of VTIs; and, e. the rest of society that can benefit from externalities and the distribution effects of VT. However, some sectors may be harmed by public operation of public VT programmes, such as workers who were already skilled and whose salaries may fall as a result of the greater availability of trained human resources (sacrificed economic income) and the potential beneficiaries of alternative use of public funds other than in VT programmes (the social opportunity cost of public expenditure on VT).

Table VIII.1 presents a list of the main positive and negative effects that a VT programme may have, from the partial standpoint of the sectors that are directly or indirectly interested in it.

The current questioning of the role held by the State over the past half-century in all spheres of economic and social activity in the countries of Latin America has also had repercussions on its role in the specific field of VT. We now find insistence, with greater or lesser pressure from circles both inside and outside VT, on the need to modify the State's role, primarily as it relates to financing of VT services with public resources. In the light of adjustment policies emphasising a balance in public finances, particularly through reduction of fiscal deficits, there is a logical questioning of to what extent the State should continue providing the bulk of financing for VT services and what the most appropriate mechanisms for it are, with a view to guarantying maximum efficiency, effectiveness and equity. The analysis of alternative options for allocation of the scant public resources available naturally comes into play here. Thus today we find a renewed interest in appraising the efficiency and effectiveness of the VT provided by the VTIs and, of course, in overall evaluations of the VTIs themselves as the institutional figure responsible for this task at the official level.

Table VIII.1

OUTLINE OF THE POTENTIAL MAIN COSTS AND BENEFITS OF A VT PROGRAMME, BY INTERESTED SECTOR

COSTS	BENEFITS
WORKERS	WORKERS
- Opportunity cost of time given to training. - Personal effort in learning - Additional training expenses (texts, transport, materials). - Registration fees (if any). - Increase in income tax.	- Increased salary. - Occupational mobility. - Social status. - Job satisfaction. - Self-esteem. - Personal fulfillment. - Better work relationship.
ENTERPRISES EMPLOYING TRAINED PERSONNEL	ENTERPRISES EMPLOYING TRAINED PERSONNEL
- Increased salaries. - Taxes specifically aimed at subsidising VT. - Higher income tax.	- Higher productivity, output, quality and economy of inputs. - Lower cost of supervision. - Lower cost of work accidents and illness. - Lower cost of maintenance and repair of equipment. - Less down time because of faulty equipment. - Less staff rotation. - Longer useful life of equipment. - Better organisation climate. - Greater capacity for technological innovation.
GOVERNMENT (TREASURY)	GOVERNMENT (TREASURY)
- Subsidies to VTIs.	- Greater collection of income tax (from additional income of the trained workers and of the enterprises employing them). - Taxes specifically devoted to VT.
VTIs	VTIs
- Cost of producing VT services. - Various taxes.	- Government subsidies - Registration fees. - Other income for transfer and sale of goods or services.

Table VIII.1

COSTS	BENEFITS
OTHER SECTORS OF SOCIETY	OTHER SECTOR OF SOCIETY
- Lower salaries for already qualified workers, due to increased availability of this type of personnel. - Workers displaced towards less productive occupations or unemployment by newly trained workers (displacement supply). - Potential beneficiaries of other public programmes sacrificed in favour of VT subsidies (cost of social opportunity of public expenditure in VT).	- Social peace. - Intergenerational benefits. - Greater technological development. - Lower prices of productos to the consumer (increase in surplus for consumers). - Lower cost of qualified personnel to other producers through increased supply of this resource (increase in producers' surplus). - Employment of other workers in activities undertaken because of availability of qualified workers (complementarity effect). - Employment of workers who replace those being trained (replacement effect).

Note: In the social consolidation of costs and benefits of a VT programme, related taxex and subsidies should not be taken into account in order to avoid duplication of accounting of efforts.

The issue of VT evaluation is polemical and conclusions satisfying all the parties involved have not yet been reached regarding the criteria that must be taken into account, or the most appropriate, valid and reliable methods for grasping the results obtained on the basis of the criteria chosen in each case by the appraiser.

The most discussed subject is evaluation of "external efficiency" which endeavours to measure the relation between the cost of VT and the benefits it provides to workers, enterprises and to society, considering factors regarding employability and income of trained workers, enterprise productivity, the use of the skills acquired by the workers, adaptation of programme contents to real job requirements, non-monetary effects of training for workers and enterprises, and the image of VTIs in public opinion. This is the evaluation approach that is of most interest for education policy purposes. In short, evaluation of external efficiency of VT tries to measure the degree of quantitative and qualitative adjustment between the production of trained personnel by VTIs and the job market's demand for this type of resource, with special reference to the economic and social consequences arising from said match or mismatch.

Eventual lack of adjustment between supply and demand of trained personnel on the job market is usually due to the following anomalies: a. Unsuitable curricula design of VT programmes, that do not bear relation to the requirements for knowledge and skills in real jobs; b. excessive supply of trainees as compared to existing job opportunities, with consequent under-utilisation of trained personnel who do not find jobs in their specialisation; and, c. artificial evaluation of educational requisites in jobs as a reaction by employers to a redundant supply of trained personnel on the job market. This conduct, together with free education, may set off inflation in educational demand -known as "credentialism"- which further worsens the problem of underutilisation of human resources.

From the methodological approach, it is possible to distinguish the following ways of tackling the problem ex-post evaluation of external efficiency of educational programmes in general, including VT: a. cost-benefit evaluation; b. examination of the income function, and c. evaluation of cost-effectiveness. These approaches vary less in the research techniques used - surveys among workers and employers - than in the conceptual models that they are based on and the criteria for evaluation produced by these models. Thus, methods a. and b. essentially correspond to an economic approach and an econometric treatment of the problem, while method c. considers rather variables representing non-monetary values, which, logically, are measured in a more subjective way, such as: occupational mobility, job satisfaction, job performance, use of knowledge and skills, among other factors.

a. Cost-benefit evaluation

Evaluation of cost-benefit is a method used to evaluate investment projects, usually in the public sector, and systematically considers all the costs of resources involved and the flow of benefits in terms of production and income that are expected (ex-ante evaluation) or that have been obtained (ex-post evaluation). In general, the approach of the evaluation is a social one, and this implies correcting market values of inputs and outputs to reflect the real social cost and benefit of the project, considering the necessity of making additional adjustments to take distributive effects into account. In the case of VT programmes, evaluation of cost-benefit is based on the theory of human capital initially developed by Becker*. An attempt is made to compare the cost of VT with increased productivity of the workers being trained; this implies considering VT as a form of investment - in human capital - which is able to generate an additional flow in production and income over a relatively long period.

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* Becker, G.- ***Human capital: a theoretical and empirical analysis with special reference to education.*** New York, Columbia University Press, 1964.

Generally, the worker's salary is used as a proxy of the value of his/her productivity, so that the difference between a trained worker and an untrained one, is measured by the difference between their respective salaries.

The evaluation of cost-benefit in a VT programme may be carried out from the standpoint of the worker, the enterprise or society, and the results will possibly be different according to the way costs and benefits are distributed among the various sectors of society. When dealing with subsidised VT programmes, usually neither the workers nor the enterprises provide significant direct support for the cost of these programmes, but they do receive the greater part of the benefits either from increased salaries or profit. Under these conditions, the private profitability of VT - for the trained worker or the enterprise employing him or her - will be greater than social benefits, that have to take all the costs into account.

Notwithstanding the fact that cost-benefit analysis is, theoretically, the most suitable way of evaluating the social benefit of a VT programme, this approach has conceptual and methodological limitations that should be borne in mind when judging the validity of its results. Conceptually, its main weakness resides in the supposition that salaries are a good yardstick of workers' productivity.

In addition to the imperfect structures of the labour and product markets - monopolies and monopsonies respectively - which explain the discrepancies between wages and labour productivity on a microeconomic scale, there are other situations in which wages do not represent the social productivity of labour which, finally, is the interesting factor in evaluating the benefits of public VT programmes. According to Metcalf*, these situations may be classified as follows: a. non-competitive conditions and factors other than wages in the determination of employment and wages; b. externalities; and, c. transient imbalance in the labour market.

With relation to externalities, which are the subject of interest concerning social profitability of VT financed with public resources, it should not only be considered the costs and benefits to the directly involved parties: the workers receiving the training, the enterprises employing them and the government subsidising them, but also to other sectors of society that may be affected indirectly, either favourably or unfavourably by such a programme. The advocates of VT usually quote the following among the main social effects induced: a. inter-generational benefits referring to the fact that every educated

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* Metcalf, D.H.- ***The economics of vocational training: past evidence and future considerations.*** Washington, D.C., 1986. (World Bank Staff Working Papers, 713)

individual will, in turn, be a better educator of his descendants; b. social peace as a consequence of the effect of VT on employment and equity; c. a fall in delinquency, adn particularly juvenile delinquency, achieved by rescuing from vagrancy individuals in situations of extreme poverty, unemployment and with no hope of progress; d. dissemination of a work culture suited to the purpose of social harmony and economic development; and, e. encouragement of technological creativity within society.

In addition to these immeasurable effects, considerable indirect economic consequences may arise, specifically concerning production and distribution of income, which are often passed over in evaluation studies of VT. Among these consequences the following should be underscored: a. increase in consumer and producer surplus, caused by an eventual fall in the prices of products and wages, both in real terms, arising from increased productivity and of the supply of trained workers, respectively; b. the value of the production of those workers who are replacing the ones being trained, whereby there is a reduction in social opportunity cost of the time taken up by the latter during training (this has been called the "replacement effect"); c. the value of the production of other workers employed in activities that would not have been carried out if the trained workers had not been available (this is known as the "complementarity effect"); thus, a VT programme can contribute to creating job opportunities for other workers who otherwise would have been underemployed or unemployed; and, d. the value of the production of trainined workers that could have been made by other workers, even less qualified ones, and who have been displaced towards less productive jobs or who have become redundant (this is known as the "displacement effect"). Obviously, in this case there has not been a real increase in production, but simply a redistribution of the same jobs among other people, favouring the newly-trained workers. This happens when there is a redundant supply of trained personnel and "credentialism" prevails when hiring human resources.

Omission of the replacement effect and the complementarity effect underestimates the social profitability of a VT programme. On the other hand, when a displacement effect occurs, the salary of the new trained workers does not represent an increase in total production, and therefore, overestimates the social profitability of VT. In other words, in this case the market wage of the newly-trained workers exaggerates their "shadow wage rate", which measures the value of production forfeited if these workers are taken away from those jobs.

The practical and theoretical limitations are enough to suggest that wage variations are, in the best of cases, a partial yardstick and, in the worst of cases,

a mistaken yardstick for measuring the impact of a VT programme on the development of a country.

As an alternative to the cost-benefit evaluation of VT, using wages as a productivity indicator, it is sometimes possible to measure the impact of training directly on the workers' productivity, mainly by considering output on the job (that is, the amount of production per time unit), production quality, and input economy.

In general, the greatest methodological difficulty in these studies lies in isolating the effects of traiing from other factors that can influence productivity simultaneously, either in physical terms or in terms of value. In fact, there are two main points of view from which it is possible to examine directly -without resorting to salaries- the impact of VT on an organisation: a. the workers' individual performance, considered as a measure of their output and integration in the organisation's community; and b. the workers' collective productivity, considered as added value produced by the organisation in relation to the amount of labour employed.

VT may have an impact on some of the factors of the workers' output and productivity, particularly those regarding their abilities, role perception, and, to a certain extent, their job disposition. Practical difficulties in controlling other factors that may influence workers' output and productivity are the greatest obstacles in obtaining reliable results in studies on VT profitability at the enterprise level.

This approach implies taking into account all the costs and benefits, measuring their value in money in line with the market prices for the inputs used and the products obtained, and making the necessary adjustments to include any externalities and distributive effects, according to how those costs and benefits are shared by the different socioeconomic strata of the population. The parties most interested in this type of evaluative study tend not to be the VTIs, but instead governments, higher education authorities, and international financing and technical cooperation entities, who are interested in assessing social and educational policies from a higher perspective.

VTIs generally feel such studies are too expensive, take too much time, and are not very reliable to be used for making decisions on everyday operations. Table VIII.2 summarises the results of some cost-benefit studies for VT programmes in Latin America. Keeping in mind the conceptual and methodological limitations of this approach, as well as the dangers of generalising the conclusions of such studies and using average values that can hide a great diversity

Table VIII.2

RESULTS OF COST-BENEFIT ANALYSES OF VT IN LATIN AMERICA

COUNTRY-VTI	COURSES/PROGRAMMES	RATE OF RETURN SOCIAL	PRIVATE	METHODOLOGY
Brazil-SENAI	Apprenticeship	37-43		Cross-section. Comparison with control group.
Brazil-SENAI	Apprenticeship	58-168		Cross-section. Comparison with control group.
Brazil-SENAI	VT, following primary education	24.0		Cross-section. Comparison with control group.
	VT, following secondary education	23.0		
Colombia-SENA	Apprenticeship, following 5 to 9 year of formal education	13.2-18.7	70.7	Cross-section. Sample = 261 graduates of SENA apprenticeship courses with 5 to 7 years job experience. Comparison with control group. Minimum SPR values, adjusted for personal factors.
	Apprenticeship, following 10 to 11 years of formal education	22.8-17.8	64.0	
Colombia-SENA	Apprenticeship	10.3	17.1	Cross-section. Sample = 386 graduates of SENAapprenticeship courses with 1 to 8 years job experience. Comparison with control group and controlled by age and formal education.
Colombia-SENA	Apprenticeship	22.6	31.6	Cross-section. Sample = 1925 graduates of different SENA courses, with 1 to 13 years of job experience. Comparison with control group and controlled by formal education (formal education taken as 9.4 years, which reflects the general mean).
	Promotion courses	29.7	60.6	
	Upgrading courses	24.4	53.9	
	Qualification courses	12.9	167.7	
	Courses in general	14.1	36.0	
Chile-INACAP	Initial training and upgrading courses	50.0		Estimate based on costs and projected salary increase, offset by 30 % due to presumed effect of the experience factor.
Chile-INACAP	Initial training and upgrading courses	29.6		Cross-section. Sample = 960 graduates of different INACAP courses in 1966. Pre- and post-training income compared, with useful life for VT investment of 10 years, and with wage difference decreasing uniformly.
Chile-INACAP	Initial training and upgrading courses	20.0		Revision of previous study (7) on basis of better background data.
Chile-INACAP	Apprenticeship	18.0		

of training conditions, it is nevertheless worthwhile to comment on some of their conclusions, such as: a. in Colombia there appears to be a certain complementarity between VT and formal education, in the sense that a higher educational level can strengthen the benefits of training; in fact, apprenticeship at SENA is more profitable, from the social point of view, when it is provided to persons having completed ten to eleven years of formal education; on the other hand, the private profitability for such individuals appears to be less, probably as a result of the fact that many of them finance this additional education after having studied at SENA. Similarly, Jiménez, Kugler and Horn* observed a strong complementarity between VT at the SENA and formal schooling: for example, for an average male individual, with some 25 years of job experience, the effect of SENA - understood as an accumulated wage differential - is 26.1% with eleven years of schooling, and 6.3% with eight years of schooling. Gómez and Libreros** reach similar conclusions: an ex-SENA student earns 17% more than his peers when both have completed secondary education, and only 6.7% more when both only finished primary school. On the other hand, Puryear*** concludes the opposite, and indicates that the independent contribution of apprenticeship (at SENA) to earnings (of the worker) declines as the subject acquires more formal education and, consequently, the two educational modalities seem to be, to a certain point, interchangeable: b. another interesting conclusion of the study by Jiménez, Kugler and Horn, and which can be generalised, refers to the high sensitivity of the results to small variations in data; for example, it it is assumed that during the training period students produce nothing, the social profitability of SENA programmes as a whole decreases from 14.1% to 6.7% and, in the same way, greater use of SENA's capacity, assuming 25 students per class instead of the average of 19, raises the social profitability of these programmes to 16.1%; and, c. the social profitability of VT seems to be greater than that of other educational alternatives, and even than that of investments in capital assets, as seen in Table VIII.3.

Finally, as could be expected, the private rates of return seem considerably higher than the social rates, due to the fact that the training services are subsidised. Moreover, Jiménez, Kugler and Horn observed that with SENA, while the lowest social profitability corresponded to the qualification programme (long courses): 12.9%, said programme was in fact the most profitable for the

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* Jiménez, E.; Kugler, B. y Horn, R.- ***Evaluación económica de un sistema de formación profesional: el Servicio Nacional de Aprendizaje (SENA) de Colombia.*** The World Bank, 1986. (Education and Training Series, Discussion Paper No. EDT 24S)

** Gómez, H. y Libreros, E.- Formación profesional y mercados de trabajo. ***SENA: Educación, formación profesional y empleo***, Bogotá, 1984.

*** Puryear, J.- ***Estudio comparativo de la formación profesional en Colombia.*** Montevideo, Cinterfor/OIT, 1977. (Estudios y monografías, 25)

Table VII.3

RATES OF SOCIAL RETURN OF VARIOUS FORMS OF INVESTMENT (5 %)

TYPE OF INVESTMENT	Brazil (1967-1968)	Brazil (1972-1973)	Chile* (1977)
General middle-level education	14-25	11-35	17
Vocational training	37-43	58-168	18
Capital assets	12-14 (1969)	36 (1978)	15 (1940-61)

Source: Correa, H.- Programas de educación ocupacional en países latinoamericanos: reseña de evaluaciones. Montevideo, Cinterfor/OIT, 1984. (Estudios y monografías, 64)

* In the case of Chile, the relatively low social profitability of training can be affected by the significant economic recession and the high unemployment rate in the period under study.

students: 167.7%. It is vitally important to recognise the differences between social and private profitability when educational policy must opt between efficiency and equitability.

b. The analysis of income's function

The analysis of the function of workers' income is a different methodological approach to the problem of evaluating the external efficiency of VT. In this case, an attempt is made to estimate, using statistical regression methods, the relation between the workers' wages, as a dependent variable, and the factors contributing to explaining said wage, among which the different forms of education are to be found. In the supposition that wages reflect work productivity correctly, it should be possible to measure, using the income factor, the contribution of education and other factors to productivity. This is another approach to the theory of human capital, based on the analysis of private returns on education, initially developed by Mincer.*

The main conceptual limitations on the analysis of income function as a method of evaluating profitability of education and VT lie in the following aspects: a. the private output rate of education (or VT) obtained is correct to the extent of the validity of the assumption that the private cost of education (or VT)

* Mincer, J.- ***Schooling, experience and earnings.*** New York, Columbia University Press, 1974.

is only the opportunity cost of the time taken up in trainng by the individual*; b. the model does not formally include the direct costs of producing educational services (or VT), so it is not possible to directly infer the social output rate of these investments; c. wages are not always a suitable way of measuring productivity, considering the reasons already set out; and, d. when a dichotomic variable is used to represent VT, there is an implicit supposition that its impact on wages is a constant percentage, whatever the level of other variables, unless complementary variables are introduced in the model.

This approach to evaluating VT external efficiency has the advantage, over the cost-benefit method, of simultaneously including the different factors that contribute to salary, and to worker productivity, while it is also possible to statistically measure the validity of the results. On the other hand, its chief limitations concern the omission of costs and the need to obtain data from a sample generally larger than that required in the cost-benefit approach**. Perhaps for these reasons VT evaluations using this approach are relatively rare. Nevertheless, it is interesting to note the conclusions of two significant experiences of this sort, published in the last decade, both referring to programmes at SENA-Colombia. Tables VIII.4 and VIII.5 show the main results of the Puryear study*** concerning graduates from the SENA Apprenticeship Programme, between 1965 and 1967, whose job situation was compared with a random sample of workers in Bogota having primary or secondary education, by means of a survey carried out in 1972. This paper concludes, on the basis of the values of regression coefficients, of the correlation coefficient, and of the t statistic value of the model as follows:****

- Possession of a SENA apprenticeship certificate is associated positively with the workers' income (standardised regression coefficient =0.57) at least for those workers having between 5 and 7 years job experience, as was the case with the subjects in the sample; thus, the fact that the SENA variable explains a large proportion of the wage variation, notwithstanding the inclusion of other

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* Gallart, M.A.- ***Educación y trabajo: un estado del arte de la investigación en América Latina.*** Centro Internacional de Investigaciones para el Desarrollo, Canadá, y Centro de Estudios de Población, Buenos Aires, 1986, p. 39.

** The cost-benefit method makes it possible to construct an ad hoc control group, and control in advance, in the sample design, the non-experimental variables.

*** Op. cit.

**** Regression coefficients measure the variation of the dependent variable (the wages' natural logarithm) caused by the unit increment of the respective independent variables. The correlation coefficient measures the variance percentage of the dependent variable that can be explained by the model. Statistic measures the distance, in standard units of error, of the estimated value of the regression coefficient in relation to the value of the nil hypothesis (that is, regression coefficient equal to zero). Any t value above 2 makes it possible, then, to disgard the nil hypothesis with a considerable degree of confidence.

Table VIII.4

RESULTS OF HOURLY WAGE REGRESSION

INDEPENDENT VARIABLES	STANDARDISED REGRESSION COEFFICIENTS
SENA graduate (a)	0.37 (10.80)
Formal education (years, squared)	0.28 (8.00)
Enterprise with more than 5 workers (a)	0.23 (6.85)
Work experience (natural log of months)	0.23 (6.98)
Father's socioeconomic status (natural log)	0.15 (4.70)
Other type of non-formal training (hours)	0.07 (2.00)
Correlation coefficient: R2 adjusted	R2 = 0.559
Standard error of residues (SE)	SE = 0.424
Sample size (N)	N = 448
T values in brackets	

Source: Puryear, J.- ***Estudio comparativo de la formación profesional en Colombia.*** Cinterfor/OIT, 1977. (Estudios y monografías, 25)

variables strongly associated with income, suggests some type of "SENA effect" on income.

- This effect is greater on those workers who only have little more than primary education (standardised regression coefficient = 0.57), and decreases as the individuals complete additional years of formal education (standardised regression coefficients = 0.25 and 0.29, for people with 7 to 9 years and 10 to 11 years of formal education respectively). This result suggests that VT and formal education are not a complement but rather a substitute, contrary to the conclusions of the studies by Jiménez, Kugler and Horn, and Gómez and Libreros.

Furthermore, the Jiménez, Kugler and Horn study also uses analysis of the income function to compare the effects of various factors on salaries, distinguis-

Table VIII.5

RESULTS OF NATURAL LOGARITHM REGRESSION FOR HOURLY WAGE ACCORDING TO LEVELS OF FORMAL SCHOOLING

INDEPENDENT VARIABLES	STANDARDISED REGRESSION COEFFICIENTS		
	5 to 6 years form. educ.	7 to 9 years form educ.	10 to 11 years form. educ.
SENA graduates (a)	0.57 (8.98)	0.25 (4.26)	0.29 (2.89)
Work experiences (months)	0.14 (3.67)	0.39 (6.75)	0.29 (3.00)
Other type of non-formal training (hrs)	0.18 (4.50)	0.03 (0.50)	0.09 (1.00)
Socioeconomic status of father (a)	0.03 (0.48)	0.19 (3.25)	0.18 (1.86)
Company with more than 5 workers (a)	0.25 (4.87)	0.32 (5.39)	0.14 1.45)
Primary education of private school (a)	0.11 (2.11)	0.04 (0.74)	-0.06 (-0.66)
Aspires to going on to university (a)	-0.06 (-1.05)	0.11 (1.91)	0.06 (0.65)
Correlation Coefficient R2 (adjusted)	0.59	0.44	0.29
Standard residual error (SE)	0.40	0.40	0.48
Sample size (N)	N = 174	N = 178	N = 87

T values in brackets

(a) Dichotomic fictitious value: 1 = presence of attribute; 0 = absence of attribute

Source: Puryear, Jeffrey: *Estudio comparativo de la formación profesional en Colombia.* Cinterfor/OIT, 1977. (Estudios y Monografías, 25)

hing five different VT modes of SENA, as follows: apprenticeship, promotion, upgrading, qualification, and mobile programmes. This work is based on data from a series of surveys carried out between 1979 and 1981 over a sample of 1410 SENA graduates, and a control group of 1023 non-SENA workers. Table VIII.6 shows the main results, which support the following conclusions: a. the output rate for SENA training increases when combined with higher levels of work experience and formal education, so SENA training appears to be more a complement than a substitute for these factors. This conclusion in regards to formal education, is the opposite of Puryear's conclusion, and may be due to differences in coverage of the samples; and b. apprenticeship, promotion and upgrading programmes show the highest output rates (0.58; 0.716 and 0.241 respectively). On the other hand, the effect on income of qualification and mobile programmes would seem to be statistically insignificant or negative: 0.03 and less than zero respectively. In an amplified Mincer model also included in the study, the corresponding rates are 0.128; 0.173 and 0.131 for the first group, and 0.091 and 0.165 for the other programmes (see Table VIII.7).

c. Cost-effectiveness evaluations

Evaluation of cost-effectiveness of VT means to compare its costs with its effectiveness, in terms of its "contribution to providing specific solutions to problems on the path towards a final objective"*. In this approach, VT is conceived as a project, or part of a broader project, that can be represented as a systematic model describing relationships between inputs, activities, results, intermediary objectives and final objectives.

Frequently, VT programmes pursue multiple objectives that are partial aspects of a higher aim to contribute towards increasing the population's well-being. Among these objectives, the most common in evaluation studies are the following:

- Reduce unemployment and underemployment, through greater occupational mobility of workers being trained.

- Make the most of acquired knowledge and skills, both through employment of workers in the specialisation they have acquired, and through adaptation of the contents of VT to job requirements.

- Encourage economic development, insofar as greater supply of trained personnel stimulates investments.

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* Bas, D.- ***Cost-effectiveness of training in the developing countries.*** Geneva, ILO, Training Policies Branch, 1987 (Discussion Paper, 19) p. 8.

Table VIII.6

RESULTS OF NATURAL LOGARITHM REGRESSION OF WAGES ACCORDING TO MODALITIES OF SENA VOCATIONAL TRAINING

INDEPENDENT VARIABLES	SENA IN GENERAL	REGRESSION COEFFICIENTS				
		APPRENTICESHIP	PROMOTION	UPGRADING	QUALIFICATION	MOBILE PROGRAMMES
SENA graduate (a)	0.1228 (4.25)	-0.0406 (0.21)	0.9321 (3.50)	0.0757 (0.32)	0.1412 (0.61)	-1.1340 (5.16)
Schooling (years)	0.1124 (23.16)	0.0875 (17.09)	0.0859 (15.98)	0.0846 (15.16)	0.0879 (17.95)	0.0850 (13.66)
Experience (years)	0.068l (14.56)	0.0522 (9.22)	0.0528 (8.90)	0.053l (8.66)	0.0522 (9.70)	0.0539 (7.93)
Experience (years, squared)	-0.0012 (-10.84)	-0.0007 (-7.97)	-0.0007 (-4.80)	-0.0007 (-4.70)	-0.0007 (-5.19)	-0.0008 (-4.28)
SENA* schooling		0.026l (2.14)	-0.0367 (2.33)	0.0l48 (1.06)	0.00l7 (0.12)	0.0949 (5.73)
SENA* experience		-0.0288 (-0.9l)	-0.003 (-0.l7)	0.0033 (-0.2l)	0.0119 (-.83)	0.0111 (-0.79)
SENA* experience^2		0.0034 (1.84)	-0.0001 (-0.24)	-0.0002 (-0.45)	0.0002 (0.81)	-0.0003 (-0.94)
Constants	10.05	10.844	10.786	10.743	10.758	10.519
Correlation coefficients: R^2	0.27	0.313	0.364	0.286	0.313	0.39
Size of sample	N = 2433	N = 1373	N = 1309	N = 1316	N = 1273	N = 1239

T values in brackets

(a) Dichotomic fictitious variable: 1 = presence of attribute; 0 = absence of attribute

All the independent variables of the model have not been included.

Source: Jiménez, Emmanuel; Kugler, Bernardo; Horn, Robin: *Evaluación económica de un sistema nacional de formación profesional: El Servicio Nacional de Aprendizaje de Colombia (SENA.* The World Bank, Report No.EDT24S, l986.

Table VIII.7

RESULTS OF NATURAL LOGARITHM REGRESSION OF MANUAL WAGES ACCORDING TO MODALITIES OF SENA VOCATIONAL TRAINING

INDEPENDENT VARIABLES	SENA IN GENERAL	REGRESSION COEFFICIENTS				
		APPRENTICESHIP	PROMOTION	UPGRADING	QUALIFICATION	MOBILE PROGRAMMES
SENA graduate (years of training)	0.150 (9.21)	0.128 (6.85)	0.173 (9.64)	0.131 (.354)	0.091 (2.30)	-0.165 (1.04)
Schooling (years)	0.108 (22.44)	0.091 (19.01)	0.087 (17.13)	0.087 (16.52)	0.088 (19.08)	0.104 (17.16)
Experience (years)	0.07 (15.13)	0.056 (10.72)	0.058 (10.40)	0.057 (10.22)	0.050 (10.48)	0.065 (11.41)
Experience (years, sqaured)	-0.001 (-10.87)	-0.001 (-5.82)	-0.001 (-5.81)	-0.001 (-5.94)	-0.001 (-5.71)	-0.001 (-8.59)
Constants	10.088 (92.78)	10.787 (95.36)	10.755 (86.23)	10.693 (86.11)	10.766 (97.98)	10.013 (73.09)

T values in brackets

All the independent variables of the models have not been included.

Source: Jiménez, Emmanuel; Kugler, Bernardo, Horn, Robin: *Evaluación económica de un sistema nacional de formación profesional: el Servicio Nacional de Aprendizaje de Colombia (SENA).* The World Bank Report No. EDT 24S, 1986.

- Encourage technological development, insofar as the availability of trained personnel stimulates creativity and technological progress, leading to a higher rate of economic growth in the future.

- Raise worker productivity and wages, particularly for individuals with fewer resources.

- Provide the opportunity to acquire knowledge and skills to people who are marginated from formal education.

- Reduce differences in social stratification and facilitate social mobility.

- Instill a sound work culture for economic and social development, in accordance with the prevailing model of economic and labour relationships.

- Satisfy the individual's secondary psychological needs relating to his work, such as: self-esteem, personal fulfillment, socialisation, and recognition.

- Satisfy the enterprises' needs concerning personnel training, such as: induction of new workers, adaptation of workers to the specifications of their job descriptions, adaptation of workers to technological and organisational changes, adaptation of personnel to new jobs as a consequence of plant expansion, and replacements and internal movement of personnel.

Analysis of cost-effectiveness consists, in general terms, of: a. identifying inputs, activities, results, intermediary and final objectives of an experimental project; b. assigning a value, ideally in cardinal terms, either to the results, intermediary objectives or final objectives, according to the proposed level of evaluation. The evaluation scale chosen should make it possible to compare the merits of the project with those of alternative projects that compete for the use of the resources; c. measuring the cost of the project, preferably in money; and, d. to estimate the output of the project, relating its cost with its effectiveness, which generally will be measured in physical units; thus it is possible to obtain cost indicators per proposed objective unit or output (in objective units), per cost unit.

Most of the evaluation studies on VT cost-effectiveness considered in this summary have been sponsored by the respective VTIs, attempting to obtain information that would support their current operational decisions. Therefore, and given the heterogeneity of the courses offered by these institutions, said studies are generally fairly disaggregated although limited in their methodological rigor. In effect, studies frequently reach programme, occupation or specific

course level to avoid the risk of so-called "generalisation and aggregation traps".*

Essentially, VTIs use these studies to evaluate the achievements of their courses or programmes over a period of time or among themselves. However, studies rarely explicitly consider the cost of training actions and mainly concentrate on effectiveness aspects.

In this respect, a clear similarity is to be observed as to the various dimensions of the effectiveness that they are interested in analysing and which generally refer to the following aspects: a. employability of VTI graduates; b. convergence of graduates towards jobs related to their specialisation; c. the degree to which graduates' knowledge and skills match the job requirements; d. the segments of the labour market to which graduates have access; e. the opinion of employers and direct superiors concerning the graduates job performance and the quality of their training; f. the graduates' opinion on the usefulness of VT in improving their employability and job performance; and g. the effects of VT on the workers' wages. Following is a summary of the results of a few evaluation studies of this kind, referring to the said aspects.

1. Employability of VTI graduates

On this subject, evaluation studies attempt to find out if training favours access to employment and protects workers from unemployment. For this purpose an indicator which is often used is the proportion of employed and unemployed workers following training. For this purpose a survey is carried out at least six months following their graduation. Table VIII.8 shows the results of some of these surveys, and it may be seen that employment rates fluctuate in a margin of between 39.9% for graduates from upgrading courses given at SENAC's VT centres in Brazil, and 100% for graduates from courses on handicrafts with semi-precious stones given by the Chilean INACAP. Unfortunately, these studies do not provide data for a control group, and therefore it is not possible to infer any differential effect of VT on access to employment.

Other commonon indicators related with employability of trained workers are those that measure the horizontal and vertical occupational mobility of these people. In this respect, Table VIII.9 shows that most of the graduates work in jobs related to the specialisation in which they received training, with the exception of graduates from some of the SENAI (Sao Paulo) courses, such

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* The generalisation trap refers to the doubtful supposition that a particular training action can be equally effective in a different context. The aggregate trap refers to the danger of implications based on average values concealing the diverse forms of training.

Table VIII.8

DISTRIBUTION (%) OF VTI GRADUATES BY OCCUPATIONAL POSITION

COUNTRY	COURSES/PROGRAMMES (a)	VTI	OCCUPATIONAL POSITION				SOURCE
			A1	A2	D1	D2	
BRAZIL	Upgrading courses, CFP	SENAC	25.9	74.1	39.9	60.1	(18)
BRAZIL	Upgrading courses, EP	SENAC	35.1	649	63.5	36.5	(18)
BRAZIL	Lathe operator, CAI	SENAI-SP			90.0	10.0	(17)
BRAZIL	General mechanic, CAI	SENAI-SP			70.0	19.0	(17)
BRAZIL	Maintenance electrician, CAI	SENAI-SP			67.0	33.0	(17)
BRAZIL	Automobile mechanic, CAI	SENAI-SP			82.0	18.0	(17)
BRAZIL	Mechanic, CEP day session	SENAI-SP			78.0	22.0	(I7)
BRAZIL	Bench mechanic, CEP night session	SENAI-SP			9I.0	9.0	(I7)
BRAZIL	Machine-tool operator, CQP-I	SENAI-SP			86.0	14.0	(L7)
BRAZIL	Automobile mechanic, CQP-I	SENAI-SP			90.0	10.0	(17)
BRAZIL	Electrician, CQP-I	SENAI-SP			90.0	10.0	(17)
BRAZIL	Technical level courses, HP	SENAI-SP			82.0	18.0	(17)
BRAZIL	Technical level courses, CQP-IV	SENAI-SP			97.0	3.0	(17)
BRAZIL	Apprenticeship courses	SENAI-RJ			87.3	12.7	(20)
BRAZIL	Apprenticeship courses	SENAI-SP			90.4	9.6	(20)
CHILE	Apprenticeship courses	INACAP			69.4	30.6	(20)
CHILE	Artisanry - semi-precious stones	INACAP			100.0		(16)
COSTA RICA	Apprenticeship courses	INA			93.6	6.4	(20)
PERU	Apprenticeship courses	SENATI			95.7	4.3	(21)
VENEZUELA	Apprenticeship courses	INCE			90.0	10.0	(20)

A1 = employed before course
A2 = unemployed or inactive before course
D1 = employed after course
D2 = unemployed or inactive after course

(a) See Annex for meaning of abbreviations.

Table VIII.9

DISTRIBUTION (%) OF VTI GRADUATES NOW WORKING, BY RELATIONSHIP OF EMPLOYMENT TO SPECIALITY LEARNED

COUNTRY	COURSES/PROGRAMMES (a)	VTI	OCCUPATION-TRAINING RELATIONSHIP		
			A	B	C
BRAZIL	Lathe operator, CAI	SENAI-SP	53.0	25.0	22.0
BRAZIL	General mechanics, CAI	SENAI-SP	41.0	20.0	39.0
BRAZIL	Maintenance electrician, CAI	SENAI-SP	45.0	23.0	32.0
BRAZIL	Automobile mechanic, CAI	SENAI-SP	21.0	15.0	64.0
BRAZIL	Mechanic, CEP day session	SENAI-SP	35.0	23.0	42.0
BRAZIL	Bench mechanic, CEP night session	SENAI-SP	35.0	48.0	17.0
BRAZIL	Machine-tool operator, CQP-I	SENAI-SP	24.0	21.0	55.0
BRAZIL	Automobile mechanic, CQP-I	SENAI-SP	5.0	3.0	92.0
BRAZIL	Electrician, CQP-I	SENAI-SP	9.0	30.0	61.0
BRAZIL	Technical level courses, HP	SENAI-SP	66.0		34.0
BRAZIL	Technical level courses, CQP-IV	SENAI-SP	87.0		13.0
BRAZIL	Apprenticeship courses	SENAI-RJ	70.0		30.0
BRAZIL	Apprenticeship courses	SENAI-SP	73.6		26.4
CHILE	Apprenticeship courses	INACAP	77.7		22.3
CHILE	Artisanry - semi-precious stones	INACAP	100.0	0.0	0.0
COSTA RICA	Apprenticeship courses	INA	92.4		
COSTA RICA	Apprenticeship courses	INA	61.0	21.9	17.1

A = graduates working in occupations for which they were trained
B = graduates working in related occupations
C = graduates working in other occupations

(a) See Annex for meaning of abbreviations.

as: automobile mechanic (apprenticeship modality); machine-tool operator; automobile mechanic, and electrician (all in the first level of the qualification modality). Of course, this is not a totally appropriate measure of job mobility, as the variety of jobs included is ignored. In this respect, the analysis referring to graduates of the training course for lathe operators given by SENAI (Sao Paulo), is a better illustration, as it refers to the average jobs carried out by these workers over a two-year period, as follows:

Average jobs	SENAI graduates	Non-graduates
More than one in biennium	25.2%	6.8%
One or less in biennium	74.8%	93.2%

Furthermore, Table VIII.10 shows the wide range of hierarchical positions held by the graduates; however, most of them are in fact at a level in acord with the final objectives of the respective courses: for example, the graduates from apprenticeship qualification and upgrading courses mostly work as skilled workers, whereas graduates from technical courses usually carry out technical jobs.

2. Convergence of graduates towards jobs related to their specialisation

This aspects of the effectiveness of VT programmes is essentially related to their quantitative dimensioning in relation to job opportunities in the respective specialisations. In this sense, an eventual surplus of trained personnel in a given specialisation would be seen in the presence of inactive, unemployed graduates, or by graduates working in jobs that are unrelated to the skills they have acquired. This aspect is examined in Tables VIII.8 and VIII.9. Furthermore, it should be remembered that this type of disadjustment may be caused by factors relating to possible failures in the processes of information, vocational guidance, and in recruitment and selection of VTI students.

3. Degree to which knowledge and skills given to graduates match job requirements

This dimension of the effectiveness of training programmes refers to the qualitative harmony between knowledge and skills provided by VTIs and the specifications of the jobs carried out by their graduates, considering those who are in jobs connected with their specialisation. Through the examination of this aspect, an attempt is made to identify possible curricular deficiencies or surpluses, which might be due to a lack of VTI knowledge of the real job content

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* Pastore, J. y de Assis, M.- ***Resultados de uma avaliação da formação profissional.*** São Paulo, SENAI, 1978.

DISTRIBUTION (%) OF VTI GRADUATES NOW WORKING, BY GRADE LEVEL OF POSITION HELD

COUNTRY	COURSES/PROGRAMMES (a)	VTI	A	B	C	D
BRAZIL	General mechanicl, CAI	SENAI-SP	4.0	37.0	29.0	30.0
BRAZIL	Maintenance electrician, CAI	SENAI-SP	7.0	39.0	24.0	30.0
BRAZIL	Automobile mechanic, CAI	SENAI-SP	3.0	52.0	13.0	32.0
BRAZIL	Mechanic, CEP day session	SENAI-SP	4.0	64.0	18.0	14.0
BRAZIL	Bench mechanic, CEP night session	SENAI-SP	6.0	86.0	7.0	1.0
BRAZIL	Machine-tool operator, CPQ-I	SENAI-SP	12.0	61.0	11.0	16.0
BRAZIL	Automobile mechanic, CPQ-I	SENAI-SP	8.0	73.0	6.0	13.0
BRAZIL	Electrician, CPQ-I	SENAI-SP	8.0	72.0	7.0	13.0
BRAZIL	Technical level courses, HP	SENAI-SP	75.0	25.0		
BRAZIL	Technical level courses, CPQ-IV	SENAI-SP	63.0	37.0		
BRAZIL	Lathe operator, CAI	SENAI-SP	10.8	58.2	30.1	0.9
BRAZIL	Apprenticeship courses	SENAI-SP	1.9	87.6	8.3	2.2
CHILE	Apprenticeship courses	INACAP	10.3	55.9	13.7	20.1
COSTA RICA	Apprenticeship courses	INA	18.0	36.1	4.2	41.7
COSTA RICA	Apprenticeship courses	INA	42.9	56.2		0.9
COSTA RICA	Upgrading courses	INA	39.4	57.5		3.1
COSTA RICA	Qualification courses	INA	11.5	52.1		36.4
PERU	Apprenticeship courses	SENATI	45.0	26.4		

A = technicians, supervisors.
B = skilled workers.
C = semi-skilled.
D = auxiliary workers, non-skilled workers and others.

(a) See Annex for meaning of abbreviations.

or to an inability to match the content of training programmes to technological changes with the necessary speed, or to a polyvalent curriculum design, in which case a certain degree of disadjustment is inevitable. This question may be examined from various points of view, and the most common are those illustrated in Tables VIII.11 and VIII.12.

4. Segments of the labour market to which graduates have access

The examination of this subject is usually based on the interest shown by VTIs in knowing the distributive effects of their activities, in relation to the productive sectors that benefit from the supply of trained human resources. The fact that large enterprises usually appear as the major employers of VTIs' graduates does not seem casual, but is most probably a consequence of a deliberate option by the VTIs for a curricula design in line with the model of division of labour and the technology prevailing in the modern production sector. On the contrary, the profile of qualifications of VTI graduates is less adapted to the requirements of small enterprises where a lesser degree of division of labour prevails and rudimentary technologies are used.

Frequently, the attitude of VTIs regarding the problem of distributive effects is ambivalent. In fact, some institutionis feel themselves to be more committed to the modern production sector that makes major contributions towards their financing through the traditional payroll tax for VT, and therefore, attempt to repay this tax with their services. In this case, interest is on minimising distribution effects towards other non-contributing sectors. At the other extreme are those institutions that feel themselves to be more committed to governmental social policies geared towards supporting small producers, who try to channel their services towards this sector in a greater proportion than the amount of this sector's contribution. Unfortunately, sometimes this policy is not duly implemented in the curricula design of the courses, which continues to respond to the paradigm of the large enterprises. This social orientation of some of the VTIs has received greater push over the last decade as a consequence of the economic crisis and stagnation of employment in the modern sector. Table VIII.13 shows some evidence highlighting the importance of large enterprises in the labour market for VTI graduates. From another point of view, data contained in Table VIII.14 ratify the attractiveness of the modern sector for VT graduates - in this particular case for lathe operators trained at the SENAI (Sao Paulo). The corresponding research concludes that "these professionals have always worked in jobs having a more structured market, establishing relations on the basis of a contract duly supported by labour legislation. In this respect, there is no major mobility between segments of the labour market.*

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* Pastore, J. y de Assis, M.- Op. cit., p. 28.

Table VIII.11

PERCENTAGE OF GRADUATES WORKING AT OCCUPATIONS RELATED TO THEIR VOCATIONAL TRAINING AND WHO CLAIM TO FREQUENTLY USE A LARGE PART OF THE KNOWLEGE/SKILLS LEARNED

COUNTRY	COURSES/PROGRAMMES (a)	VTI	PERCENTAGE
BRAZIL	Upgrading courses, CFP	SENAC	51.1
BRAZIL	Upgrading courses, EP	SENAC	69.1
BRAZIL	Apprenticeship courses	SENAI-SP	87.8
CHILE	Apprenticeship courses	INACAP	65.1
HONDURAS	Upgrading courses (industry)	INFOP	67.7
HONDURAS	Upgrading courses (agriculture)	INFOP	55.1
HONDURAS	Upgrading courses (admin. and serv.)	INFOP	43.2
VENEZUELA	Apprenticeship courses	INCE	84.0

(a) See Annex for meaning of abbreviations.

Table VIII.12

PERCENTAGE OF GRADUATES WORKING AT OCCUPATIONS RELATED TO THEIR VT, BY DEGREE TO WHICH THEIR KNOWLEDGE/SKILLS MATCH THE JOB REQUIREMENTS

COUNTRY	COURSES/PROGRAMMES (a)	VTI	A	B	C
BRAZIL	General mechanic, CAI	SENAI-SP	25.0	45.0	30.0
BRAZIL	Maintenance electrician, CAI	SENAI-SP	19.0	44.0	37.0
BRAZIL	Machine-tool operator, CQP-I	SENAI-SP	30.0	52.0	18.0
BRAZIL	Electrician, CQP-I	SENAI-SP	30.0	47.0	23.0
BRAZIL	Mechanic, CEP day session	SENAI-SP	29.0	54.0	17.0
BRAZIL	Bench mechanic, CEP night session	SENAI-SP	26.0	59.0	15.0
BRAZIL	Technical level courses, HP	SENAI-SP	17.0	56.0	27.0
BRAZIL	Technical level courses, CQP-IV	SENAI-SP	12.0	62.0	26.0

A = surplus knowledge/skills
B = sufficient knowledge/skills
C = insufficient knowledge/skill

(a) See Annex for meaning of abbreviations.

Table VIII.13

DISTRIBUTION (%) OF VTI GRADUATES BY SIZE OF COMPANY AT WHICH THEY WORK

COUNTRY	COURSES/PROGRAMMES (a)	VTI	S	M	L
BRAZIL	General mechanic, CAI	SENAI-SP	28.0	17.0	55.0
BRAZIL	Maintenance mechanic, CAI	SENAI-SP	22.0	17.0	61.0
BRAZIL	Automobile mechanic, CAI	SENAI-SP	53.0	12.0	35.0
BRAZIL	Mechanic, CEP day session	SENAI-SP	27.0	22.0	51.0
BRAZIL	Bench mechanic, CEPnight session	SENAI-SP	17.0	25.0	58.0
BRAZIL	Machine-tool operator, CQP-I	SENAI-SP	31.0	22.0	47.0
BRAZIL	Automobile mechanic, CQP-I	SENAI-SP	38.0	22.0	40.0
BRAZIL	Electrician, CQP-I	SENAI-SP	34.0	23.0	43.0
BRAZIL	Technical level courses, HP	SENAI-SP	27.0	21.0	52.0
BRAZIL	Technical level courses, CQP-IV	SENAI-SP	6.0	14.0	80.0
BRAZIL	Apprenticeship courses	SENAI-RJ	18.6	31.4	50.0
BRAZIL	Apprenticeship courses	SENAI-SP	25.4	44.2	30.4
CHILE	Apprenticeship courses	INACAP	31.0	44.2	29.7
COSTA RICA	Apprenticeship courses	INA	43.3	36.7	20.0

S = Small companies: 1 to 100 workers in the first ten data; 1 to 49 in the last four data.

M = Medium-sized companies: 100 to 499 workers in the first ten data; 50 to 499 workers in the last four data.

L = Large companies: 500 or more workers.

(a) See Annex for meaning of abbreviations.

Table VIII.14

DISTRIBUTION (%) OF LATHE OPERATORS BY LENGTH OF TIME IN FORMAL EDUCATION

TIME IN FORMAL MARKET	SENAI GRADUATES	NON-SENAI GRADUATES
Up to 50 %	0.9	3.4
51 % - 80 %	3.9	12.5
81 % - 95 SOURCE%	8.7	9.1
Over 95 %	86.5	75.1

Source: (15)

Table VIII.15

PERCENTAGE OF SUPERVISORS WHO FEEL THAT PERFORMANCE OF VTI GRADUATES IS EQUAL OR SUPERIOR TO THEIR PEERS

COUNTRY	COURSES/PROGRAMMES	VTI	% FAVOURABLE OPINIONS BY FACTORS					
			A	B	C	D	E	F
BRAZIL	Apprenticeship courses	SENAI-RJ	81.0	N.A.	78.0	N.A	N.A.	N.A.
CHILE	Apprenticeship courses	INACAP	81.0	86.9	80.9	85.8	90.5	N.A.
COSTA RICA	Apprenticeship courses	INA	93.7	93.7	93.7	99.0	50.0	N.A.
VENEZUELA	Apprenticeship courses	INCE	96.0	95.0	97.0	97.0	N.A.	N.A.
COSTA RICA	Courses, diff. modalities	INA	89.9	88.7	N.A.	N.A.	89.3	86.7

A = Attitude toward safety
B = Responsibility
C = Output
D = Work quality
E = Inter-personal relations
F = Initiative

5. Opinion by employers and supervisors on job performance of graduates

Through the opinions of employers and supervisors on work performance of graduates, VTIs attempt to learn how the market evaluates the quality of the VT they are providing. This classification of performance is usually based on the consideration of various factors, either by comparison with other similar workers or by means of a conventional point scale. Tables VIII.15 and VIII.16 show results of various evaluation studies regarding this aspect. Other approaches to this subject refer to: a. employers' opinion on the quality of VT given by the institutions; in this respect, a survey concerning SENA (Colombia), concludes that over half of the managers and heads of personnel qualify the training given by that institution as "good" and almost one third consider it to be "very good"*, and b. the preference shown by employers and supervisors in hiring personnel (see Table VIII.17).

6. Graduates' opinion on the usefulness of VT in their jobs

Another subject that is repeated in the evaluation of VT effectiveness is its usefulness as a means to satisfy the graduates' objectives as to jobs, job performance, professional progress, and economic progress. Sometimes, studies also include considerations by graduates on VT as a direct means of satisfaction of needs such as: social status, recognition, self-esteem, and personal fulfillment. In some cases, the graduate's opinion on the usefulness of training is subjective and does not correspond to observable effects it may have had on his well-being; for example, training may have been a significant advantage in the search for employment, but if the graduate's expectations were higher, his opinion will be negative. Table VIII.18 shows the results of some studies that explore graduates' opinion on the importance of VT.

7. Effects of VT on graduate salaries

Through this aspect, an attempt is made to evaluate the contribution of VT to workers' income. In this respect, it is a partial evaluation of the profitability of VT, as it does not include direct costs for the production of services, nor opportunity costs. In general, in order to isolate the effect of VT, wages of graduates are compared with those of similar workers that have not been trained, or with the previous wages of the same graduates. For example, a Chilean study reveals that the average monthly income of graduates from courses in handicrafts of semi-precious stones reached as much as US$ 274,

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* Gómez, H. y Libreros, E.- Op. cit.

Table VIII.16

SUPERVISORS' EVALUATION OF PERFORMANCE OF VTI GRADUATES ON POINT SCALE BASIS (MAXIMUM = 100 POINTS)

COUNTRY	COURSES/PROGRAMMES	VTI	GRADE POINTS BY FACTORS						
			A	B	C	D	E	F	G
BRAZIL	Lathe operator, CAI	SENAI-SP	85.6	N.A.	69.9	82.7	88.7	63.9	58.4
BRAZIL	Maintenance electrician, CAI	SENAI-SP	97.2	92.0	79.3	84.2	84.6	73.9	73.0
BRAZIL	Electrician, CQP-I	SENAI-SP	97.9	93.0	75.5	86.8	89.6	81.9	62.5
BRAZIL	Mechanic, CEP day session	SENAI-SP	95.8	90.0	74.9	81.1	81.5	69.3	72.6
BRAZIL	Bench mechanic, CEPnight session	SENAI-SP	96.0	92.4	78.9	83.7	86.0	75.4	72.3

A = Attitude toward security
B = Responsibility
C = Output
D = Work quality
E = Inter-personal relations
F = Initiative
G = Experience

Source: *SENAI-São Paulo: dez anos de avaliação.* Sao Paulo, SENAI, 1986.

Table VIII.17

DISTRIBUTION (%) OF HIRING PREFERENCES OF MANAGERS AND SUPERVISORS

COUNTRY	COURSES/PROGRAMMES	VTI	% OF PREFERENCES BY BACKGROUND OF CANDIDATES				
			A	B	C	D	E
CHILE	Apprenticeship courses	INACAP	44.1	26.5	25.0	4.4	
COLOMBIA	Diverse courses	SENA	55.5	9.6		17.9	17.0
COSTA RICA	Apprenticeship courses	INA	16.0	12.0	72.0		
VENEZUELA	Apprenticeship courses	INCE	53.0	35.0		2.0	10.0

A = VTI graduates
B = Graduates of similar training institutions
C = Graduates of any training institution (indifference)
D = Workers trained on the job
E = Other or no response

Table VIII.18

PERCENTAGE OF VTI GRADUATES ACKNOWLEDGING THE IMPORTANCE OF VT IN JOB ACCESS

COUNTRY	COURSES/PROGRAMMES	VTI	% FAVOURABLE OPINIONS
COSTA RICA	Apprenticeship courses	INA	82.9
COSTA RICA	Upgrading courses	INA	55.2
COSTA RICA	Qualification courses	INA	54.6
PERU	Apprenticeship courses	SENATI	83.6

Table VIII.19

AVERAGE WAGE OF LATHE OPERATORS IN SAO PAULO, BRAZIL, BY AGE (IN Cr$ PER HOUR)

AGE (YEARS)	SENAI GRADUATES	GRADUATES OF OTHER SCHOOLS	TRAINED ON JOB
20 - 24	14.36	9.87	11.61
25 - 29	21.34	12.98	17.04
30 - 34	25.45	16.19	20.92
35 - 39	26.68	19.51	23.27
40 and over	25.02	22.93	24.07

Source: Pastore, J. y de Assis, M., op. cit.

against US$ 70 for untrained artisans*. In the same way, a survey of graduates from various specialisation courses of SENA (Colombia) shows that for a set of 32 jobs these people earned more than the rest in 26 jobs, the average wage difference being 16.5%, while 5 jobs had no difference, and in only one the graduates were at a disadvantage**.

In some evaluation studies, the effect of other factors that may contribute to explaining wage differences between graduates and non-graduates, such as age or schooling, has explicitly been controlled, as shown in tables VIII.19 and VIII.20. A different approach is used in studies by INFOP (Honduras), in which instead of a control group they have compared graduates' salaries before and after training, as can be seen from Table VIII.21.

Finally, some less structured studies simply register the graduates' income profile, and do not compare them with other workers or with their previous situation, as illustrated in Table VIII.22.

Evaluations of VT cost-effectiveness not only permit a multifacetic and more disaggregated analysis of the problem, but also generally involve comparatively lower costs and less execution time, which makes them especially useful for operational management of VTIs. This is reflected in a relative abundance of studies of this sort, sponsored by the institutions.

d. Uncertain conclusions

In short, all methods of evaluating external efficiency of VT have a common intention of measuring its contribution to increasing individual well-being (of the worker or the enterprise) or collective well-being. Methods based on economic approaches - such as: evaluation of cost-benefit and analysis of the income function - endeavour to measure the gains in terms of well-being, considering the costs and benefits of VT according to market values of the resources spent and the production generated by the trained workers. The cost-effectiveness method, on the other hand, aims at measuring efficiency of VT within a process seeking given economic or non-economic objectives. The main limitations of economic approaches lie in the fact that the market price system may fail to capture all the costs and benefits of an activity, particularly at the social level, while cost-effectiveness evaluations, although able to consider a wider spectrum of partial effects, implies, in the final analysis, a subjective measurement of impact on individual or collective well-being.

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* Cornejo, R.; Pérez, A. y Bruna, G.- ***Evaluación de resultados de la capacitación artesanal impartida por el INACAP en Combarbalá.*** Santiago de Chile, SENCE, 1977.

** Gómez, H. y Libreros, E.- Op. Cit.

Table VIII.20

AVERAGE WAGE (IN COLONES) OF GRADUATES OF INA, COSTA RICA, AND COMPARABLE WORKERS BY EDUCATION LEVEL AND AGE

	GRADUATES	NON-GRADUATES	DIFFERENCE (%)
PRIMARY EDUCATION			
Under 25 years of age	6.732	6.613	1.8
25 - 29 years of age	10.072	7.680	13.1
30 and over	10.782	10.502	2.7
SOME SECONDARY EDUCATION			
Under 25 years of age	9.214	7.109	13.0
25 - 29 years of age	12.074	9.646	12.5
30 and over	12.112	12.800	-5.4
COMPLETED SECONDARY EDUCATION			
Under 25 years of age	9.652	9.228	4.6
25 - 29 years of age	13.183	12.215	7.9
30 and over	14.796	14.101	4.9

Source: INA. *Evaluación de la situación ocupacional de los egresados de la capacitación y formación profesional impartida por el INA: 1976-1983.* San José de Costa Rica, 1976. (Proyecto INA-IIPE/UNESCO

Table VIII.21

WAGE VARIATIONS OF GRADUATES OF UPGRADING COURSES AT INFOP, HONDURAS, COMPARED TO PREVIOUS SITUATION

AREAS DE ESPECIALIDADES	% DE EGRESADOS SEGUN VARIACION SALARIAL		
	A	B	C
Industrial courses	41.6	22.2	36.2
Agricultural courses	41.7	41.7	16.6
Administration and services courses	40.9	8.4	50.7

A = No wage increase
B = Wage increase attributed to vocational training
C = Wage increase not attributed to vocational training

Source: INFOP. *Propuesta para un estudio de evaluación del impacto de la formación profesional.* Tegucigalpa, 1987. (Proyecto INFOP-OIT)

Table VIII.22

DISTRIBUTION (%) OF VTI GRADUATES BY WAGE LEVELS (IN TERMS OF MINIMUM LEGAL WAGE)

COUNTRY	COURSES/PROGRAMMES (a)	VTI	A	B	C	D	E	F	G
BRAZIL	VT at centres	SENAC	26	41	13	7	3	1	9
BRAZIL	Training at educational enterprises	SENAC	19	28	15	15	7	2	14
BRAZIL	General mechanic, CAI	SENAI-SP	2	32	36	27	3		
BRAZIL	Maintenance electrician, CAI	SENAI-SP	4	24	29	28	15		
BRAZIL	Automobile mechanic, CAI	SENAI-SP	10	48	21	16	4	1	
BRAZIL	Mechanic, CEP day session	SENAI-SP	1	10	18	38	31	2	
BRAZIL	Bench mechanic, CEP night session	SENAI-SP	1	1	3	22	62	11	
BRAZIL	Machine-tool, operator,CQP-I	SENAI-SP		16	31	40	12	1	
BRAZIL	Automobile mechanic, CQP-I	SENAI-SP	1	26	20	30	19	4	
BRAZIL	Electrician, CQP-I	SENAI-SP	1	8	19	41	28	3	

A = less than minimum wage
B = 1 to 2 times minimum wage
C = 2 to 3 times minimum wage
D = 3 to 5 times minimum wage
E = 5 to 10 times minimum wage
F = 10 or more times minimum wage
G = no response

(a) See Annex for meaning of abbreviations.

ANEXO

Despite the effort made in VT evaluation, as can be seen in the empirical evidence reported, it is practically impossible to reach generalised conclusions to provide a reliable basis for adopting overall policies regarding the establishment of margins or alternative uses for public financing of VT. There are multiple criteria involved in the evaluation of VTI activities. They are public instruments geared to serving human resource development policies tied to economic growth and productivity, and simultaneously to those for social promotion, what makes the task a difficult one indeed. Appropriate measuring of VT profitability and of the degrees of efficiency, effectiveness and equity attained by VTIs is still a pending item on the agenda of evaluation research.

In any case, regardless of the refinement of the conceptual approaches and the research methodologies, the subject will continue to be polemical as long as it retains its enormous political and ideological connections. Moreover, VT has the virtue of being located half way between the objectives of economic efficiency and social equity, and it is therefore a field of activity in which the two criteria should converge and counterbalance one another.

With regard to the efficiency and equity criteria, it is obvious that those managing VTIs are aware that available resources should be invested according to economic and social demands, endeavouring to provide a fair distribution. Furthermore, as several combinations of public and private resources do exist in VTIs, it is essential to also analyse the opportunity costs of expenditures on training, in relation to the needs of other social and economic sectors, such as investment in infrastructure works, health, housing, etc. National authorities in general, particularly the executive and legislative power, and VTIs themselves, are becoming more concerned as to justify the participation of the state in the overall national training effort and to determine its adequate amounts and mechanisms.

National financial policies are closely connected with the above. It is evident that Latin American countries are undergoing a serious economic and financial crisis. Frequently their sources are attributed to the large public deficits stemming from the weight of servicing the external debt, the size of state bureaucracies, the inefficiency of public enterprises, tax evasion and so forth, that have a negative effect on investment and therefore on economic reactivation. To solve this problem, some countries have introduced drastic measures of economic adjustment, which in general give priority to overcoming endemic public deficits. Accordingly, financial policies play a decisive role in any attempt to put order into the economies with a view to promoting a renewal of investment, economic modernization and budgetary balance.

An analysis of financing of VT is at present interlinked to the reorientation of public spending in general and state intervention. Thus, VTI financing is undergoing a stage of deep changes that can be seen in a transition towards new modes of obtaining resources and fresh criteria for their allocation.

As usually happens during transitional periods, neither all countries nor all institutions move at the same rate or in the same direction; of course, there were already differences at the initial stage or starting point for each country and institution. To quote an obvious example, the complex combination of financial instruments used for VT in Brazil is quite different from the relatively straightforward funding, traditional to the Colombian SENA.

2. MECANISMS FOR PUBLIC FINANCING OF VT

Public financing of VT is based on the assumption that the State should ensure the development of human resources to support national development, covering those areas that private initiative is not prepared to finance. Public financing of VT in Latin American countries is carried out through various channels:

a. Subsidies to VT specialised institutions.

b. Tax incentives granted to enterprises for VT purposes.

c. A system of grants and fellowships for VT.

d. The financing of monitoring and supervisory bodies for VT implemented through private and public funding.

e. Resources devoted to VT from budgets of diverse public and governmental departments.

f. The financing of training components in investment or development projects of a public or private nature.

g. The financing of special training programmes at national, sectoral, regional or local level.

In the general picture of countries of the region some of these channels have had greater historic importance, and others constitute innovations of particular interest as an alternative forms for public financing of VT. We shall concentrate on the most important ones in greater detail. Notwithstanding, public financing operates in countries of the region side by side with the wide range of VT activities, funded on a private basis, both by enterprises as by private individuals, through different training agents or directly.

a. Subsidies to VTIs

As a result of industrialisation processes and faced with a lack of skilled manpower, governments had to organise structured VT systems. These systems were supposed to fill in the gaps of formal education to qualify this type of worker and to make up to the incapability and lack of tradition among enterprises to carry out the training task in a speedy way.

The response adopted by most countries of the region was to create the VTIs that we have been referring to in this document. The basic rationale for all this was based on the following aspects:

i. The long term social returns of training with a view to expanding the development of the productive structure.

ii. The need to give equal opportunities to those in no position to pay the costs of their own training, whether enterprises or private individuals.

iii. The operation of scale economies through wide coverage at national level, since fragmented or atomised bodies might increase costs.

iv. The concentration on national VT policies and strategies instead of sectoral or regional subdivisions.

v. The tutelage and participation of the State as the leader for the promotion of economic development and the design of social policies.

The combination of all these factors led to the configuration of these VTIs, whose main financing formula was generally an earmarked tax paid as a compulsory contribution by firms and enterprises, worked out as a proportion of their respective payrolls. This formula ensured for a long time the stability and financial solidity of VTIs. At the same time, it opened up a means of permanent and close connection between businesses and governments. Finally, being a tax contribution whose amount varies according to the total amount of wages paid by firms, the evolution of revenues of VTIs would reflect that of the demands generated by the growth and development of the economy.

But there are also other ways of public subsidy to VTIs. The dividing line between them is a matter of the degree of compulsion exerted upon contributors. Thus, among sources based on a mandatory contribution we may mention deductions from the payroll and withholding on production. Among the non-compulsory sources are the explicit and implicit contributions by the national treasury, be them regular or not.

1. Compulsory contributions: payroll tax

Until about fifteen years ago, payroll levies were the overwhelmingly predominant way of funding VTIs. That situation began to change towards the middle of the last decade as a result of the process of restructuring due to the economic crisis afflicting the different countries. Revenues shrank in some countries as a result of the lowering of the real value of payrolls and, on the other hand, VTIs were required to look after disadvantaged social sectors. More recently a new element has appeared stemming from the adoption of adjustment financial policies. In connection with VTIs this has led to the need to diversify sources of funding in general and in particular, has raised questions regarding the validity of the payroll tax.

The financing mechanism foreseen in the founding charter of most of VTIs in Latin America, laid the bulk of contributions upon businesses, ranging in general from 0,5 to 2% of their respective payrolls. The contributors vary from one country to another, so that in some of them State enterprises and governmental bodies do not contribute, whereas in others they do. The lower limit as to the number of workers in the contributing companies also changes from one country to another. In some cases workers also make a financial contribution. However, and in general terms, the main burden of contributions is born by enterprises through taxes. These founding charters also foresaw additional funding sources and original combinations for financing training, which deserve further exploration. In fact, in the last few years, several Latin American countries have introduced important innovations for the overall financing of VT, and in some cases this has directly affected the traditional formula for VTI financing.

The transformation or supplementation of contribution through the payroll levy has taken place in the following manner:

- In Argentina, in 1981, payroll tax was eliminated under the pressures of a general restructuring of public expenditures. It was replaced by budgetary contributions which have tended to diminish.

- In Brazil, the payroll tax has not only been maintained but has also grown as far as its real value is concerned. However, co-financing between enterprises and VTIs through specific agreements for deductions of contributions from the latter, has acquired greater importance and reached high absolute figures in the last few years. Thus, the amount of revenues entering VTIs budgets has diminished.

- In Colombia two events have simultaneously taken place. On the one hand, the validity of the payroll tax has been questioned, and on the other hand, its destination has been diversified through the compulsory destination of funds to programmes that are not part of traditional VT endeavours, either directly through SENA or through other public bodies, such as the Ministry of National Education, for example.

- In Costa Rica, despite the fact that payroll contribution rose from 1 to 2% in 1983, revenues were affected by several fiscal policy measures that obliged INA to accumulate surpluses that were transferred to a common fund for purposes other than VT.

- In Peru, SENATI continues to be mainly financed by payroll taxes, but the resources thus collected have been lowering during the past decade. As in the case of Brazil, it seeks to supplement its funding through agreements with enterprises.

An analysis on what is occurring in Colombia, may contribute to show light on this financing formula based on a compulsory levy on payrolls and the institutional reactions that have emerged regarding tax policies.

As pointed out earlier, fiscal policies in vogue for structural adjustment of Latin American economies stand against specifically allocated taxes and earmarked public funds that break up cash unity and budgetary flexibility for the State. These new policies are giving priority to internal transfers of funds throughout the governmental structure, trying to eliminate budgetary rigidities by sectors or institutions. The Colombian Law 55 of 1985 can be seen as a result of these intentions and may be interpreted as an attempt of the State to remove the rigidities of fund allocations specifically destined to SENA. This Law ascribed new functions to SENA and authorised it to make agreements with the corresponding governmental services if it was unable to look directly after the new responsibilities. In this way, the principle of strengthening cash and budgetary unity was made at the expense and to the detriment of SENA's institutional specialisation and its internal budgetary flexibility.

Another objection that has arisen from fiscal policies to SENA's financing mechanism relates to the type of contribution. The argument is that any tax on wages increases the cost of manpower and thus has a negative effect on employment and on the flexibility of labour relations. Certain circles have already suggested the replacement of payroll levies by a proportion of the Value Added Tax. What cannot be foreseen is how long the Colombian government may take before introducing changes.

Under such circumstances, various options have been considered as substitute financing to compensate for the eventual loss of resources to this or other VTIs facing a similar situation. For instance:

- Resources from municipal administrations for training programmes. The decentralisation and deconcentration policies adopted by the Colombian government in favour of municipal autonomy and the consequent release of funds in that direction may lead SENA to compete as an executing agency in the market of training programmes at local level.

- Resources contributed by firms and enterprises. Within the framework of Colombian financial policies, the adoption of tax rebates does not seem to be viable; what might be considered is a legal requirement for contracted training programmes within the market that might lead SENA to compete for such resources with other public and private organisations, non-governmental bodies, universities and training entities.

- Budgetary contributions by the State to special projects. It is possible that the Colombian State might continue to sponsor or will increasingly sponsor through its own budget or through subsidised credit, training programmes for underpriviledged sectors such as the unemployed or underemployed, etc., who cannot cover their own training costs. In such a situation it is also probable that SENA should compete, as pointed out in the previous paragraph, with other public or private bodies, for contacts from the government.

If measures like the ones mentioned above should become widespread and the financial policies sketched out should grow and develop in that direction, it is quite possible that many of the rigidities nowadays affecting SENA, may be overcome. In the search for new financing formulas, SENA may have to look for more space to develop its initiative and creativeness. The increasing weight of an independent income or the sale of services might create a greater flexibility to the institution's spending style. It might also require the allocation of risk funds in order to develop marketing programmes, such as the identification and encouragement of demand, the more active promotion of programmes offered, costs adjustments and so forth.

2. Compulsory contributions: withholdings on production

This type of contribution is a response to a search for an alternative to the payroll levy. Some branches like the construction industry or the rural sector are organised in such a manner that a levy on the payroll is not meaningful, as labour relations in those sectors are not based on the traditional wage mechanisms.

Withholdings of earnings from production is a mechanism used by some entrepreneurial chambers in Mexico, with a view to financing training activities in some specific sectors, such as the sugar industry or the construction industry. The system has also been adopted by SENCICO in Peru and by the Uruguayan COCAP. It is an approach that has not become widespread to the rest of the countries, although most of them do have schemes for sector training.

The adoption of such a mechanism in Mexico responds to some precedents that may be mentioned here. As established by the Federal Labour Law currently in force, it is mandatory for employers to offer training to their workers; therefore, the main financing source is the contribution made by the employers themselves; they, on the basis of their programmes and approaches for implementing training, cover the total expenditure. In general, Mexican employers have adopted specific financing mechanisms that exist side by side with other sources and regimes for securing funds; often these are formulas designed by the employers while others are agreements with workers' unions after collective bargaining.

Among the mechanisms devised by the employers, are the institutes by industrial branches, aimed at the development of sectoral training activities. Different financing approaches are applied to these institutes. One is the purchase of training services from an institution set up by their respective chamber; this is the case of the Textile Training Centre (CATEX). But withholding on production has been adopted by the construction industry where the contribution from the different firms to the Training Institute for the Construction Industry (ICIC) is in proportion to the volume of sales. ICIC offers to all of its affiliated enterprises a large range of training services. ICIC resources are set as a contribution of 2 per thousand that each builder or constructor must pay on the total amount of his work contracts, both in the public and the private sector. ICIC renders its services to enterprises without linking its training activities to each firm's contribution, which lead us to think that a redistributive effect also benefits smaller enterprises with a relatively lower concentration of labour. ICIC is therefore very different from CATEX, where each firm or enterprise contributes as much as it can buy, that is to say the one who can afford more, gets a better share of its services.

Another financing approach based, like ICIC, on the withholding of production is that of the Training Institute of the Sugar Industry (ICIA). Being ICIA managed jointly by workers' union and the employers' association of the sugar industry, the decision about the quota for the financing of training was achieved through collective bargaining. The pattern established was a specific amount of money per kilo of standard base sugar produced. The most serious limitations

of this scheme is that the total amount of resources obtained is closely tied to the fluctuations of production (good or bad crops), to national and international market prices and to wage increases.

Levels of income of VTIs based mainly on the obtainment of resources through the withholdings of production earnings are closely associated with the ups and downs of the economic evolution of the sector in question. That is to say, resources vary according to the behaviour of the corresponding sector making it difficult to establish medium and long-term programmes. Funds collected in this way tend to relate mainly to the specific and circumstancial interests of the sector's businesses. Due to the nature of this kind of financing and the needs of the productive units, these VTIs are highly selective in their recruitment. Their programming is mainly oriented towards already employed workers and to a lesser extent, to new entrants to the labour force.

Cyclic fluctuations resulting from this type of financing have prevented some VTIs from introducing programmes over and above levels for skilled and semi-skilled workers. Up-to-date these VTIs have not contemplated the possibility of assistance and advisory services to enterprises of the sector or to participating in matters relating to the development or technological innovation of the industries they cater for. This mechanism imposes a severe restriction on the possibility of generating a solid and workable infrastructure with technical and pedagogical resources, and also there is little leeway for innovation and change, the development of personnel, new methodologies, teaching resources and so forth.

3. Budgetary contributions from the national treasury

Several VTIs of the region receive different types of contributions from the national treasury for the financing of their training activities. In general, they are of two kinds: overall and specific budgetary contributions.

From the point of view of public financing, this scheme allows governments to control the volume of resources allocated to VT in accordance with economic and social priorities. Besides, it does not undermine the flexibility of tax management nor does it affect the supply and demand of factors and products in the marketplace. Also, governments are in a better position to control the social distribution of training services.

The efficiency and cost-effectiveness of training services financed in this way are quite likely to be low when direct State production is concerned, since public institutions are not particularly worried about evaluating the qualita-

tive and quantitative training needs of the marketplace and tend to be conservative in their choice of programmes.

VTIs receiving optional subsidies from the State such as CONET, UTU, as well as originally INACAP and SENAR, have to bargain for the contributions every year or for each project, which obliges them to be careful about their internal efficiency and to justify before the governmental financial authority the economic or social impact of the activities they implement. This funding scheme simplifies control of the income of VTIs as it is negotiated with one single source. On the other hand, it entails insecurity in the long-term which inhibits the possibility of development of these training institutions.

The resources financing the Argentine CONET and the Uruguayan UTU are overall budgetary contributions and for both institutions are the sole source of financing for their activities. As opposed to that VTIs like INA, SENA, INCE and to a lesser extent SENAI and SENAC, receive or have received in the past, specific budgetary contributions for the funding of special programmes such as literacy campaigns, overall rural development, and programmes targeted on disadvantaged sectors or unemployed groups.

If we look closer into the case of Argentina, we shall see that the contributions from the Ministry of Education and Justice to CONET have been declining in real terms along the last decade. This tendency seems to be due to a shrinking of the real budget allocated to the Ministry both in absolute terms as within the national budget. The relative stagnation of contributions to CONET shows up the financial weakness of an institution that despite its enormous size, is almost exclusively dependent on the national budget allocated by the central government. The restrictions imposed by the budgetary system currently in course prevent CONET to secure any other source of income, such as through the sale of services or by signing direct international agreements for loans, or earnings through interest rates. Naturally, this stagnation of CONET income and resources in the first place affected the investments area, both as to physical infrastructure (buildings, development of a net of mobile units) as well as equipment (workshops, laboratories, inputs in general) and secondly, the deterioration of salaries and remuneration levels measured in real terms, has led to the situation in which a large number of teachers and directors work for the institution only on a part-time basis.

Explicit contributions from the fiscal budget, regardless of being overall or specific contributions, are not always a regular source of income. If they are compared to payroll taxes, it is quite evident that they entail great difficulties through a lack of regularity and unpredictability. Delays and uncertainties

overshadow VTIs that depend on this kind of allocation from national funds. In general, these public contributions are conditioned by restrictive policies particularly when there is fiscal deficit in the country in question. They are also subject to the chronic problems of inelasticity of fiscal earnings in certain highly inflationary economies, like Argentina, Brazil and Peru, among others in recent years.

They are vulnerable to budgetary inertia and are exposed to justified or unjustified changes in the preferences of politicians for the allocations of public resources. For all of these reasons, VTIs depending on this source of funding tend to become stagnant, their planning deteriorates, their efficiency is undermined and they are exposed to political pressures, to the detriment of their technical capacity and their social and economic impact.

Implicit subsidies charged to the national budget are the result of the good will of a certain government to a given VTI. They do not offer a guarantee of continuity, nor are they been compared in most cases, with alternative targets for public expenditure. In that regard, they may, unwillingly, disguise inefficiency in the allocation of resources, apart from the difficulty to quantify their costs and benefits. There is no doubt that they will tend to be suppressed if Latin American countries continue to implant orthodox tax policies.

b. Tax incentives

Tax incentives for VT have been introduced in several countries of the region. In some of them they have been in force for several years: in Chile since 1976, in Brazil also since 1976, in Argentina, since 1981. In other countries, although legal provisions of the same sort exist, they have been found to be used in a very limited way or to still not have become operationally effective. As examples of this we should cite the cases of Mexico, where small enterprises can opt for certain tax benefits for training their workers,* and Uruguay, where although legal provisions date back to 1987, the respective regulations are yet to be drafted. It could be assumed that the lack of use of these tax incentives in Mexico and Uruguay, along with their restricted use in the other countries where they have been implemented, could in the short term lead to their elimination in the framework of the fiscal reforms (or adjustments) currently under study by treasury authorities and the parliaments of the respective countries.**

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* In the case of Mexico, although tax legislation was aimed at encouraging training in small scale enterprises, these were as all other enterprises, obliged to afford the costs of hairing.

** Just before finishing the editing of this report, fresh information indicates that in Brazil fiscal incentives have been deactivated. Though no legal measure hast yet been adopted in that sense, governmental authorities in charge of authorising tax rebates have deliberately suspended the approval of training programmes.

Our analysis of tax rebates will refer, therefore, to Argentina, Brazil and Chile. The schemes adopted by these three countries are not identical but they are all based on authorising enterprises to deduct expenses incurred in training their workers up to a certain level. Results that may be observed through the application of the system in these three countries, lead to comments which are probably common to the fiscal incentives of that kind that may be applied in any other country.

Tax incentive policies for the promotion of training have been one of the most significant modifications introduced in the public financing picture in this area. For several years high expectations were held as to the effect these financial measures would have on the expansion of training of workers. Likewise the measures adopted by Brazil and Chile were associated with the creation of so called "national systems" for the training of manpower and the promotion of employment. Not less important was the fact that, through these measures, a more active participation by employers was sought and greater mobilisation as well as the incorporation of new human and material resources to the national training effort. In the case of Argentina and Chile, we might add that tax incentives (whether they be tax credits, in the case of Argentina or tax exemptions in that of Chile) were enacted as a substitute of traditional financing mechanisms. In the former case, by replacing a tax on technical education, which had been the equivalent of levies on payrolls, and in the second case, as a substitute to appropriations of the national budget granted by the Executive Power to INACAP as the official VTI.

Chronologically speaking, the first of these three reforms took place in Brazil. Towards the end of 1975, the Brazilian government passed Law No. 6297 whereby firms were allowed to deduct from their income taxes equivalent to twice the expenditures invested in vocational training projects, and up to a ceiling of 10% of taxable earnings. For the purposes of enactment of this law, VT was defined as all activities implemented for the immediate training for work of individuals, minors and adults, through methodical apprenticeship and learning, occupational qualification, further training and technical specialisation at all levels. It must be noted that this tax deduction on incomes did not only apply to VT; during these years, similar tax incentives were introduced in Brazil for the promotion of a "Workers Food Programme" (Law 6321/76) and for the provision of transportation vouchers for the workers.

After ten years of operating the tax rebates system, a balance carried out by the National Manpower Council of the Brazilian Labour Ministry showed rather discouraging results: only a small number of medium sized and above all large enterprises, (never more than 5.000 in the year, out of the total of two million productive units) had benefited from Law 6297; out of the total potential

of tax incentives allowed, the greatest percentage occurred in the year 1984 when only 6.5% was utilised. Besides, nearly 60% of the enterprises that resorted to the benefits of this law, were concentrated in the largest cities of Sao Paulo and Rio de Janeiro; the percentage reaches nearly 90% if Rio Grande do Sul, Parana, Santa Catarina and Minas Gerais are included. In other words: the impact was small, highly concentrated and showed few indications as to an effective mobilisation of new (or additional) resources for training; some isolated evidences would seem to indicate that these grants are being mainly utilised by enterprises which already had ambitious training programmes but no information is available so as to verify if the total resources being allocated to training by enterprises, increased or not.

In spite of these non encouraging results as for the expected objectives of the law, it would be simplistic to think that this is the main reason for the present criticism and resistance to it arising from the governmental financial authorities; it would seem rather that it stems from attempts to simplify tax policy, reduce tax incentives in general and abolish earmarked utilisation of taxes.

In Argentina, a tax credit regime was introduced by Law 22.317 of 1980. Until then, some 10% of the CONET budget came from a payroll tax, called a tax for technical education. That tax disappeared in the framework of a much broader economic policy adopted in the country at that time, and which to a certain extent sought to base tax collection on the criteria of the unity of funds and the elimination of tax income for specific purposes.

The abovementioned law stipulates that enterprises may deduct from their tax obligations up to eight per thousand of overall wages packet, as expenditure on technical education and training dispensed to workers. CONET is in charge of course supervision and control and of the spending and the granting of certificates to enterprises for use when they pay their obligations to the General Tax Department.

The Argentine Construction Chamber has promoted a variant of this system by acting as an intermediary. As a result of an agreement subscribed with CONET, the Chamber set up a vocational training centre and a support body which is called the Cesar M. Tolledo Training Centre Association. This association collects funds from contributions of the affiliated firms and manages the organisation and delivery of training courses, negotiating with CONET the corresponding tax credit certificates. CONET acts as the supervisor and controller of employer's management operation of the training Centre. This intermediary scheme is somewhat similar to the Chilean system where the sectoral bodies called OTIR (Intermediary Training Organs) acts as middleman

between the National Training Authority (SENCE) and the executing training agencies called OTEs.

Besides, CONET also has 13 centres called Private Factory Schools, which are in fact educational units depending on industry, where the fiscal credit regime of Law 22.317 is also applied for the exemption of tax obligations. Supervision of these schools is in the hands of the General Technical Education Division of CONET.

As opposed to the cases of Chile and Brazil, in Argentina, the governmental financial authority sets the tax credit limit that CONET may grant. In 1988, that ceiling was equivalent approximately to 2.3% of the CONET budget for that year.

The Chilean experience in the matter of tax rebates deserves more detailed attention, as it has more widespread enforcement. Since 1976, the whole national VT system was restructured, being its cornerstone the introduction, through Decree Law 1446, of a mechanism of tax deductions for enterprises for their direct expenses in training of their workers. Simultaneously, the traditional public financing of INACAP as official VTI, deriving from contributions from the Production and Development Corporation (CORFO), was gradually discontinued. This flow of public funding to INACAP, as well as the usual extra contributions it had been receiving from the State, has since declined at a rate of 20 percent a year.

SENCE was established as a new body exercising the role of national training authority, dependent on the Ministry of Labour. Its explicit function is to control the use of tax deductions and to supervise the performance of the various executing agencies (training operators) from the public and private sector. Within this framework INACAP, the former organiser of VT in the country, became just one of the many training operators, selling services to enterprises and to the State itself. Nevertheless, it is still the most important entity of the system, being the agency that sells the greatest volume of services in the market. It has the advantage of having physical infrastructure, human resources and the accumulated experience of thirty years of operation.

On the basis of this organisational scheme, the role of the State, is confined to creating the necessary conditions so that employers may set in motion the resources authorised for training by the State. This training is implemented by the training agencies called OTE, in accordance with the directives laid down by the government. The rationale underlying this reform was the validation of the training programmes by the potential beneficiaries themselves. It is a

search based on efficiency and effectiveness criteria whose indicators are automatically incorporated in the demand. In other words: rather than ex-ante and ex-post evaluations, the Chilean approach recognises, in the validation by demand, an automatic way of assessment.

This framework has led to a proliferation of executing agencies intended to cover all regions of the country, all economic sectors and the whole of the economically active population. In 1988, there were 732 executing agencies authorised by SENCE; however, only 400 were operational.

Although the volume of resources obtained through tax deductions has been steadily increasing, it was about 6.7 million dollars in 1987 which represents only a small percentage of the potential. There is no fixed ceiling as to the global amount of deductions allowed, and the bodies that fix the amount of resources are the enterprises, concretely the employers; they decide whether to use incentives or not, they choose the training programmes that suit best and select the executing agency, etc. The Chilean State controls and supervises the system in two different ways: SENCE, as technical authority, must evaluate the quality of the training tasks carried out and authorises the corresponding deductions, while the governmental financial authorities monitor the adequate use of the resources that have been deducted from taxes.

In summary, the scheme adopted in Chile is based on the concept that executing agencies (OTEs) are able to interpret the true demands and requirements of the decision-making bodies, that is to say, the enterprises. It is an explicit, earmarked subsidy, specifically designed to stimulate and to measure in a relatively direct manner, the expenditure incurred in training activities. However, there is no evidence as to the net effect of this encouragement on all the VT being delivered. Surveys carried out are usually based on the assumption that funds coming from the incentive are additional to the total volume of resources already devoted to VT. But no study has been carried out as to the "switching effect" of this incentive. It is possible that enterprises benefitting from it would in any case have implemented some VT programmes with or without this type of encouragement.

Tax incentives give rise to the always difficult problems of verification and control. In the three countries in question there is evidence that incentive is sometimes denatured through resources being deflected towards programmes that do not respond to the foreseen objectives or by irregularities in the execution of programmes or in the claiming of the tax rebate; a situation that might reinforce the hypothesis that the true benefit of tax incentives has been overestimated.

At least in Chile and Brazil, where some evaluations have been made in this respect, the application of tax rebates has concentrated benefits in large enterprises in the more developed regions of the countries and at the highest levels of the occupational ladder in the most dynamic sectors. This might lead us to suppose that these fiscal incentives have a regressive effect. In both countries a number of measures have been taken tending to counter these shortcomings and focused on more equitable objectives in the application of tax incentives. The range of initiatives in this regard is very interesting, particularly because it has stemmed from practice and assessment of the results obtained.

The most widespread measure utilised in this respect is to promote the association of small and medium-sized enterprises by sectors of activity so that as a whole, they may take advantage of fiscal incentives through economies on a large scale, as the case of the OTIRs in Chile. An effort has also been made to favour access of these productive units to subsidised services offered by VTIs, as in the case of Brazil, through tax rebates from services contracts with SENAI and SENAC.

In general, tax rebates imply financing by the State the training imparted and decided upon by firms. The latter command the allocation of resources in accordance with their own particular interests, which may or may not coincide with national, social and economic priorities. By artificially lowering the costs of VT for enterprises as consumers over investment in training may occur from the macro-economic point of view.

To sum up, although this approach implies better matching of VT supply and demand, it is not quite clear whether that demand corresponds in fact to real needs, because it might be magnified. Besides it is at least controvertible that this kind of demand should be handled by the State, especially when there is a specific training component which is the exclusive and immediate interest of each individual enterprise, externalities being minimal.

In all these systems based on tax rebates many VTIs compete with each other for the subsidised demand stemming from enterprises. This kind of competition encourages operational efficiency within the institutions, but very often it boosts prices and marketing aggressiveness of the suppliers, to the detriment of the quality of the services offered. Enterprises do not know how to evaluate this aspect or are not very interested in doing so. Besides, atomised supply is an obstacle to scale economies in the production of the training services. This can be clearly seen in Chile where most of the OTEs do not have an adequate infrastructure or high quality teaching staff.

To compensate the deviations already mentioned, in all three countries other parallel or complementary public financing modalities have been established, which contribute to draw a more complex panorama in the financing and operation of VT.

c. Grants and fellowships

The public financing mechanism associated with fellowships and educational grants is not widespread in the region. In several countries, some special programmes for disadvantaged sectors have used the awarding of grants to selected individuals. But these initiatives have generally been fairly limited and have not had a significant impact. If we exclude the grants offered in special cases by the VTIs themselves and by other private or public agencies to facilitate access to training courses by disadvantaged individuals, Chile is the only country where a massive VT financing system is supported by the awarding of grants.

In Chile, the system is a complement to the mechanism of tax rebates for enterprises, since it is geared to financing training in paid courses, for individuals who by definition are excluded from the enterprise tax incentives: the unemployed, young people seeking to enter the job market, the handicapped, groups in a situation of critical poverty, independent workers, micro-enterprise and informal sector workers in general, etc.

The system of grants and fellowships is managed by SENCE, simultaneously with the authorisation of training programmes that firms and enterprises charge to tax incentives but through a separate channel . It functions through tenders called by SENCE in the market of executing agencies (OTEs) recognised by governmental authorities.

The selection of beneficiaries is done through the municipalities by means of a system of permanent surveys to establish what persons in the poverty fringe may have access to the social support awarded by the State through its nutrition, health, education and employment programmes.

The OTEs are in charge of carrying out the training activities of the programme. Until some time ago, SENCE only reimbursed the expenditures on actions carried out by OTEs when these proved that more than two thirds of the graduates had obtained remunerated jobs, at least in the three months pursuing the courses. But that control measure was short due to the difficulties of checking up on the effects and as a result of the general unemployment situation that reigned in the country at that time.

Training demands are also detected at regional level through municipalities in accordance with manpower needs required by the enterprises in their respective areas of influence or to look after the possiblities of self employment generation. In general the programme covers several training groups, such as people affiliated to the Minimum Employment Plan, inmates at adaptation centres, minors in irregular situations looked after by the National Minority Service, handicapped or for the labour retraining of workers as in the case of former miners of the National Coal Mining Company.

From 1977 through 1987, SENCE looked after the needs of more than 300,000 persons through its grants and fellowships programme; it did so by means of 19.000 courses imparted by various OTEs; each course had an average duration of 100 to 300 hours, that is say six to twelve weeks, on occupations in the following sectors: agriculture and livestock production, forestry, construction, services, mining and craftsmanships. Forty percent of the total resources were approximately devoted to the agriculture and livestock sector; another forty percent for industries and construction and the remainder (rather less than 20%) for the commerce and services sector.

The SENCE grants programme has a cost of between 800.000 and one million dollars a year. For the 1977-1987 period, the accumulated total expenditure represented approximately a fourth of the total devoted to tax exemptions. In 1987, SENCE financed 9,000 grants and fellowships to a total of nearly one million dollars which is only a tenth of disbursements by the State through tax incentives in the same year. This shows that the relative increase of exemptions utilised was much higher than the grants programme, which on the contrary, diminished ostensibly as from 1980 both in terms of the number of trainees and of resources allocated to it.

Also in Chile, the National Employment Secretariat (SENAEM) which is under the jurisdiction of the Ministry of the Interior, has developed a similar mechanism to that of SENCE. As from 1986, SENAEM has been offering training courses for young people from 18 to 24 years of age, who are the ones who have less access to programmes offered by enterprises based on tax incentives and to the grants programmes of SENCE. SENAEM gives priority to pre-occupational training activities, whereas the majority of the SENCE coverage is aimed at adult workers.

Towards the end of 1986, SENAEM launched a National Training Programme for young people affiliated to Special Employment Programmes. This scheme offers better and more stable job openings with improved remunerations and possibilities for professional development. This is promoted through

the incorporation of young people to remunerated employment in the public and private sectors according to a detection of needs of labour markets and making adequate use of the natural resources of each region.

Like the SENCE programmes, these programmes have defined a scheme of descentralised management enabling regions -through their municipal authorities - to identify the training actions that suit best local requirements for skilled manpower.

Since 1986, and until the end of 1988, SENAEM trained 22.000 young unemployed affiliated to Special Employment Programmes. From the beginning these courses were fundamentally aimed at economic sectors in growth, such as export activities, import substitution activities and services deriving from the development of some sectors as that of the regions in general. In other words, the programme tries to ensure that resources invested in training should be effectively turned into better employment opportunities for beneficiaries.

In 1989, an Overall Programme for Youth Training was proposed aimed at 25.000 young men and women in a situation of extreme poverty; this Programme is being jointly implemented with municipalities with high unemployment rates and critical socio-economic problems. Its objectives are to provide training to young people in the 18 to 24 age group with no labour experience to give them access to self employment and easier access to the labour market. The total cost of the programme has been estimated at 3.900.000 dollars. These costs covered financing of 250 hour/courses (the equivalent to three months), teaching materials and a monthly subsidy for transportation and food. Apart from the 250 hours of tuition, trainees have to attend periods of practice at enterprises and develop adequate work habits.

In Chile fellowship systems have become a way to alleviate the concentrating effects of tax incentives and to look after the needs of population groups and sectors that, due to their very nature, do not have access to that kind of tax exemption. In spite of their positive effects on equity, they suffer from the same limitations as tax rebates as far as the guarantee of quality of the programmes implemented is concerned.

d. Other resources of public origin

In addition to the three chief mechanisms for public financing of VT mentioned above, States have provided, sometimes regularly and sometimes sporadically, other means for channeling resources of public origin into fulfillment of this task:

- One has been the establishment - and respective financing - of entities acting as national VT authorities. Generally they have been government agencies functioning within already existing government administration bodies, generally the ministries of labour. Their functions are to coordinate, foster, regulate, supervise, monitor and guide the VT undertaken by public and private executing agencies. They are the core of the "national systems" for VT that we referred to in Chapter I of this study. In cases where the countries provide tax incentives for VT, these authorities also perform the task of authorising tax deductions by the beneficiary enterprises and entities, in view of the programmes which must be submitted for their approval. In general, such authorities have had limited resources, and that weakness has prevented them from being able to truly lead a coordinated VT system at national level. But they should be recognised as supplementary State support to VT financing.

- Another channel for public resources has been budget allocations for training programmes at government entities and State enterprises. In some countries, like Chile, there has been generalised authorisation of a maximum portion of budgets of publicly administered bodies to be allocated to training of employees and officials. In other countries, spending on personnel training is discretional and varies according to the importance or need recognised by the directors in each case. In practically all the countries, the large State enterprises maintain true training schools for their workers, which means significant resources, even when it has not been possible to quantify the amount. Nevertheless, the amount of resources allocated to training by government administrations in countries chronically affected by fiscal deficit is presumably very small.

- There has also been an increasing trend toward State financing of special training projects geared to certain areas of economic activity, of the population, or geographic locations within the country. Such projects are not necessarily executed through regular public financing mechanisms for VT, and do not necessarily involve official VT entities exclusively, even if they are part of the State apparatus. Many of these projects have special social development or investments funds available to them, coming from sources other than traditional VT funding. Nevertheless, VTIs are frequently required by governments to execute such programmes, for which they are also provided with additional resources. This is the case of the multiple social programmes undertaken by governments since the mid-1970s (and even earlier in some countries).

- A new channel, which has accompanied the processes of territorial decentralisation and sectoralisation in the management of economic activity on

which the countries of the region have embarked, is the inclusion in development projects (be they national, sectoral, regional or local) of budget allocations specifically for financing the training component of workers involved in the execution of the project or who will be required as a result of the project. For the purposes of this study it was not possible to establish or estimate the amount of such funds. Nevertheless, there is evidence that increasing consideration is being given to the training component and its financing, as a relative novelty in the formulation of investment and social development projects at government level.

- Finally, it should be noted that VT in general - and frequently VTIs in particular - has been receiving a flow of public resources originating out of the international technical and financial cooperation contracted, in the way of loans, by the governments. In spite of the fact that in some cases it is the VTIs themselves that contract such reimbursable cooperation, and who therefore assume responsibility for the debt, we have indicated this heading as another channel for public financing of VT, since in many cases governments, sacrificing alternative uses of fresh external resources, have privileged VTIs by allowing them part of the loans taken directly by them.

3. DIVERSIFICATION OF VTI SOURCES OF FINANCING

a. Reaction to the crisis

In spite of the fact that, as we have seen, most Latin American VTIs have resources of public origin as their primary financial base, the various and difficult crisis situations they have had to face and continue facing at present have led them to try different mechanisms, with a view to diversifying the sources of their income. As the diversification makes headway, the financial vulnerability of the VTIs, deriving from their dependence on a single source, diminishes. But, on the other hand, the availability of resources comes to depend on the VTIs' ability and efficiency in attracting new markets: in being forced to experiment with new forms of funding, they have also had to diversify the services they provide.

Therefore, this subjet should not be interpreted in a narrow, exclusively financial sense. Although the availability of resources by VTIs has not been easy at a time of crisis, economic readjustment and widespread innovations in labour and productive processes, it has also resulted in a serious effort on the part of institutions to improve the efficiency and effectiveness of their performance. They have been obliged to readjust their action in terms of the present

demands of productive structures and of population. And last but not least, the need to seize new and different resources has led them to create participation mechanisms for their users.

Diversification of financing sources of VTIs was possible, to a large extent, because they found receptivity in productive structures. Firms and enterprises trust in the ability of VTIs to supply them with adequate services enabling them to upgrade their productive capacity. On the other hand, because VTIs in their daily contact with the market, managed to identify in time the new demands emerging from the renewal of investment and were able to act with flexibility, imagination and speed, joining forces with agents responsible for the modernization and reactivation of production.

It is difficult to discriminate how far it has been the opening up and availability of non conventional funding sources that has led VTIs to follow new roads in the supply of services and the way in which they offer them. Or, on the contrary, how far these new roads were not a triggering factor in the search of alternative financial sources. It would rather seem that there is an interplay between both, acting as a positive circle - although not devoid of certain vices - making for flexibility, adaptability and innovation in VTIs performance.

Innovation in VTIs has been highly associated with the revitalising injection of fresh funding from different sources. To cater for new clienteles (rural and urban small and micro-enterprises, the under-employed and the unemployed, and other disadvantaged groups), to design new training strategies due to "deschooling" delivery modes, to update technology and to launch non-conventional services going far beyond training, would probably not have been possible without more flexible and diversified sources of funding. But it is also true that the need and the pressure to act on these fronts, due to the very dynamics of the production apparatus and the social situation, were the lever for seeking resources to fund the new needs and actions.

There is some evidence that may be quite enlightening in this respect. Traditionally, VTIs of the region operated with an ordinary budget almost exclusively derived from levies on employers' payrolls. When some of them (INCE, SENA, INA, to quote but three of them) started to project their action towards underprivileged urban and rural social sectors, they received from their respective governments budgetary reinforcements in order to do so. In other words: originally, these "special programmes" were financed with supplementary funds supplied by the national treasury. At present, however, conditions have changed substantially. Many of these "special programmes"

have become part and parcel of the regular activities of VTIs and therefore they are financed by the VTIs themselves, with their regular budgets. Furthermore, in the area of financing there is a novel trend: many VTIs do not suffer from cut backs in their budget in an explicit manner, but they are called upon very often to look after extraordinary multisectoral programmes (together with health department, housing divisions, employment departments, infrastructure works, etc.) and they have to fall back on their ordinary budget to defray the costs of this intervention.

Besides, insofar as some VTIs started to act with enterprises over and above the conventional areas, that is to say VT, they had to play other roles that had not been traditionally contemplated: the suply of overall training services, the provision of partial technical services (training of instructors, teaching material, design of programmes and courses), technical consultancy and assistance (also on a partial or full time basis, according to the case), etc. Although initially these activities were free of charge, as they grew and acquired a certain weight, they were recognised as a possible source of funds (sometimes monetary funds, on other occasions in the form of equipment, machinery, raw materials, services , etc.). Nowadays it is not infrequent to find that some VTIs are in the market competing with other suppliers of services, (either training services or technical assistance services). In some cases, success in this competitive struggle is vital for the survival of the VTI because budgetary resources available depend upon it. Therefore (and not just in strictly financial terms) this competition begins to give VTIs a new thrust: they have to produce quality programmes at costs that are adapted to the realities of the market; they have to validate the quality of their services in the market and they have to reach fluent coordination with the surrounding environment and organise the constant updating of their programmes, personnel, etc.

b. Sale of training services

A fundamental characteristic of Latin American VTIs, congruent with their public financing formula, has been no-charge services. From the outset it was understood that training should be totally free for all individuals participating in the courses offered by the VTIs.

Similarly, the enterprises requesting training services for their workers were to be serviced without any cost whatsoever. The underlying principle was that if the enterprises are the ones making the financial contributions -in the way of taxes- to support the VTIs, they are entitled to reap the benefits of those contributions, in services provided free of charge by the VTIs. In the case of individual users of training services, the idea was that training would not only

not imply any cost whatsoever (except the opportunity cost of the time and effort invested in training), but also that it was a social benefit to which every citizen was entitled. Therefore, with a view to compensating for the inequality of opportunities among the potential users of training, many VTIs established financial assistance for participants in their courses, in order to favour access by those at a greater disadvantage.

Consequently, charges for training services, both to individuals in the way of registration fees and to enterprises or groups of users for training packages, is a relatively new fact on the VTI scene. The sale of habitual services is contrary to the operating logic and the tradition of the vast majority of these institutions. Of the official VTIs analysed in this study, INACAP is perhaps the only one that systematically charges for its training services, and this is derived from the simple and clear fact that in Chile all VT operating agencies (OTE) - including INACAP - must survive on the market and are financed only by the sale of services. Individuals can pay directly, or make use of the educational credit system in effect in the country, or apply for the grants controlled by SENCE or SENAEM with State funds. In the case of enterprises, the costs they pay to INACAP (or any other OTE they choose) for training services may be deducted as a legal exemption from their taxes.

The question that can be asked in this identification of alternative sources of financing in Latin America is not whether it is advisable to charge enrollment fees or not. The pertinent question is whether such fees should become a significant source of financing among total VTI income. The answer, based on the experience thus far, would in general terms be as follows:

- The payment of enrollment fees reflects individual demand, which is not necessarily related to the current or probable occupation of the candidate. It may be disconnected from enterprise prospects for evolution of technology and market. It is generally a disinformed demand, which most of the time is motivated by the aspiration to a general technical training, with a view to higher education. Although individual decisions regarding the purchase of educational products should be rational, given the reasons indicated, it is possible that demand may not correspond to real job market opportunities.

- From the point of view of equity, enrollment fees exclude persons who cannot pay (unless some kind of compensatory mechanism is available). It is thus a more stratified attention, with clearly regressive incidence.

INACAP competes with other agencies not only in the sale of courses to enterprises, but also - by bid - to grant programmes financed by the government,

geared to offering training to disadvantaged sectors and to persons seeking to enter the job market. In the sale of training services to enterprises and to the government, INACAP has repeatedly held first place among the some 800 executing agencies recognised in the country. Thus, at least for this VTI, the charging of enrollment fees has come to constitute a fundamental source of funding, and practically its only one since all budgetary allocations from the State were suspended.

On a fairly exceptional basis, some other VTIs charge enrollment fees to individuals or enterprises, especially in the case of special or tailormade courses, or those given at times expressly requested or which, because they are outside the established programming, would imply sacrificing resources assigned to other committed programmes, or courses required by persons, enterprises, groups or sectors who are not established target groups of the respective VTI. SENATI, for example, only sells enrollment to individuals when places are left vacant by the enterprises in the user sector. SENATI and SENAI also charge enterprises for start-up services for their training units and training of their instructors in certain cases. As of 1988, SENAI was authorised to charge for such services to enterprises having less than 500 workers, which fees the latter can take in the way of tax rebates. Other entities also sell management development programmes (SENA, SENATI, INAGRO). An illustrative case is that of CATEX in Mexico, which is totally financed by the sale of its training services to textile companies.

VTIs also sell training services to the State, under certain governmental, departmental, provincial or municipal projects, in addition to sectoral ones. Since VTIs have traditionally been financed with public funds, until not long ago they were expected to provide such projects with training services free of charge. Nevertheless, along with the trend toward decentralisation and growing application of deconcentrated and project-specific budgets, VTIs have learned to negotiate their contributions to a broad range of investment projects. Some reservations still exist, but at least we find some formulas for shared financing with such users, when VTIs are not paid for in full for the services through allocations for training expenses in the budgets for such projects.

c. Sale of non-conventional services

For some years now, various VTIs have been involved in the sale of non-conventional services as part of their activities vis-a-vis enterprises. This fact warrants examination in at least two dimensions: on the one hand, as it relates to the strengthening of links between VTIs and production units, through activities that are not, basically, the training of human resources; and on the

other, given the implications this work has for VTI financing. We will take up the second aspect below; the first was referred to in full in Chapter III of this report.

While the sale of VTI services arose at the beginning of the 1980s, amidst the economic crisis which various VTIs began to face due to the adoption of economic adjustment policies (with their respective impacts on budget policies and public spending), such sales did not as a priority address an imperative for diversification and expansion of sources of financing. In other words, some VTIs appealed to the sale of services more as a new source of work for their personnel (threatened by unemployment due to the severe spending restrictions forced on the VTIs by budget cuts), than as a source of "special" income that would serve to palliate the negative effects of the budget cuts (resulting from a decrease in revenues from payroll taxes, deriving from a reduction in the global number of salaried workers.

At present few VTIs keep a close accounting of the monetary and non-monetary income received for the provision of assistance, advisory, consultancy, materials testing and quality control services, among others. In any case, some have indicated that the revenues from the sale of services has started to become significant. Perhaps the figures still do not have a big impact in terms of overall VTI budgets; but they do count when it comes to budget breakdowns for some operating units, as is the case of the SENAI technological centres, the SENA national centres, or specific SENAC programmes, to cite only a few examples.

Beyond the specific weight taken on to date by cost-recovery from non-conventional services, as well as the fact that originally the sale of services was not strictly aimed at generating funds, it must be recognised that over the years such activities have come to be a clear example of diversification of funding for VTIs. The sale of services in fact constitutes one of the original contributions emanating from the VTIs to cope with the increasingly frequent budget cuts faced by educational and training institutions as a result of financial deficits.

Expansion of this channel of VTI financing is being undertaken cautiously, since institution managers are aware of the fact that too massive and unrestricted a change toward such non-conventional activities could come to distort the training function itself. To some extent, there is an awareness of the fact that the sale of non-training services should not affect or undermine the quality of training services provided; because of this, VTIs seek to reach a balance so that in seeking additional resources the entity does not displace its basic commitment to the training and development of human resources.

Non-conventional services offered and charged for by VTIs, vary. They can include technical assistance and advisory service on production, organisational and marketing aspects; technical work in the area of quality control, expert appraisals, industrial design (tools, parts and products); operating research regarding methods and techniques in the development of new products, improving productivity and quality, etc.; finally, technical and technological dissemination, by means of circulation of information on technical innovations, new materials, tools, instruments and machinery, as well as development of new products and processes.

As indicated above, income is not always monetary. It should be said that services are generally priced in line with market values, i.e., they are not subsidised. The modes of supply vary from those jobs implying a basically intellectual component, to those relating to the rental of machinery and equipment for production of molds, prototypes, and even parts of broader production processes. Similarly, we should reiterate that these developments are not taking place at all the VTIs, nor even in all the operating units within the same VTI.

What should be pointed out is that non-training VTI services are beginning to constitute a new mode for cost-recovery. But access to such resources is limited not only by the scientific-technological capacity of the VTIs, but also by the fact that non-conventional services are always subordinate to the essential training function, and their results are valued, above all, insofar as they enrich the VTI itself.

For this reason we find that provision of non-conventional services can go only to certain limits, beyond which such actions may lose their pedagogical meaning. In other words: the sale of services can serve as a source of funding, but also as a bridge bringing the VTIs closer to the enterprises they are to serve; it should also be a mechanism that makes it possible to update curriculum contents, upgrade the occupational qualifications of the instructors, and adapt the technical-pedagogical resources used by the VTI to design the teaching-learning process, in line with the market.

d. Cost-sharing agreements

Beyond the funds coming into the VTIs budgets, these institutions have also put in place a series of measures that allow them to commit users and partners in co-financing agreements whereby there is a sharing of contributions and expenses. While VTIs do not receive additional monies for their budgets under such agreements, they do save on expenses they previously had to cover to provide the same services.

Cost-sharing agreements with enterprises are a supplementary funding channel of VTIs programmes which has become popular and widely institutionalised in Brazil and which also occur, although in an incipient manner, in Argentina, Colombia and Peru. The Argentine CONET has frequently adopted a very creative approach of informal cofinancing among enterprises, communities and vocational schools, at certain places through cooperative units. The limitations of the system are unevenness among the school units capacity to generate these arrangements, according to the greater or lesser degree of creativeness of enterprises and the community in general, the flexibility of CONET local authorities and the links established among all of them. In Colombia it is carried out through agreements of SENA with entrepreneurial sectors as a result of the identification of labour demand by both. They are agreements that do not lead to such an uneven territorial development as in the case of the Argentine mode. However, they have a high sectoral concentration of activities. In Peru, this funding channel is primarily the result of the marketing activities of SENATI, an institution which decided to adopt an aggressive strategy in the search for markets and/or the backing of enterprises through their payroll taxes.

To a certain extent, the formal type agreements supported by the laws governing SENAI and INCE, which allow enterprises to deduct part of their mandatory contributions to the VTI in order to execute programmes directly, have acted -paradoxically- like co-financing agreements between enterprises and VTIs. It should be remembered that these formal agreements were conceived to foster the transfer of VT responsibilities from VTIs to enterprises, as indicated in detail in Chapter III of this study. The available evidence shows, however, that the enterprises add significant sums from their own resources to the contributions they withhold. Since such agreements provide for articulated work between the respective enterprises and the VTI, in the long run they turn into joint programmes funded with resources pertaining to the VTIs (the amounts withheld by enterprises) and to the enterprises (the amounts added to the others).

In the case of SENAI there are three types of agreements, the first two only applicable to large enterprises with over and above 500 workers, and the third is of more flexible application. 1) Agreements of exemption of the general payroll tax whereby enterprises withhold up to 80% of their contribution. 2) Agreements of partial withholding of the additional contribution of 0.2% on the payroll imposed on larger enterprises up to a 20% . 3) Terms for technical and financial collaboration, similar to the first type, although the withholding percentages fluctuate from 10 to 30 percent.

Although only a few a of the enterprises authorised for exemptions or withholding of their contributions to SENAI make use of these agreements (only 6.5% of the companies, according to 1982 data), what has been shown is that the enterprises have invested in the programmes financed under the agreements, in amounts five times that of the contributions withheld from the VTI. In 1982, 16% of the expenses of programmes carried out under the agreements were covered by contributions withheld from SENAI, and 84% by supplementary contributions from the enterprises.* In 1987, this proportion reached 92% of the total costs, thereby ten-folding the amounts withheld for training in enterprises.

The Venezuelan INCE adopted a similar scheme which is applied in two different manners: on the one hand, enterprises may deduct up to 60% of their contribution to INCE in order to implement direct training programmes under the supervision of INCE; on the other hand, they may contribute these withheld earnings to sectoral INCEs.

While in the case of INCE there is no evidence that the enterprises complement the resources retained from their contribution to the VTI for the joint programmes under "deduction agreements," they do complement the direct resources of INCE under "teaching agreements," which are typical cost-sharing accords with the user enterprises. In 1988 INCE had agreements of this sort with eight large associations in different sectors.**

In general terms, the assessment and forecast that can be made with regard to these cost-shared agreements are the following:

- These agreements constitute a guarantee of efficiency in the allocation of resources. As they mean a complement and discretional expenditure by enterprises of an optional kind, they have to fit into the express or implicit evaluation for optimising expenditures. In this respect, agreements are a more adequate instrument than tax incentives or budgetary contributions.

- Agreements promote a proper relationship among training, occupation and employment, which is at the basis of VT.

- They also legitimise VTIs vis-a-vis employers and workers and reactivate the effective participation of enterprises in the planning, programming and evaluation of training activities.

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* Silva, A.I. Granda e.- Os acordos SENAI/empresa..., op. cit.

** INCE: Memoria 1988.

- Cofinancing agreements effectively raise the overall volume of resources allocated to VT and Brazil is a positive example of this in Latin America. When these agreements imply for the enterprise a matching fund which is proportional to the amounts withheld by VTIs, the economic significance of their contribution is transformed.

- The agreement provides then a contribution of VTIs devoted to a service with externalities and scale economies, but in that case, it could also be a stimulus, a seed for the allocation of additional resources that significantly strengthen the VT field and widen the scope of action of VTIs without increasing their budgets.

- They also break up the routine programming inertia of VTIs and they promote an updating of their courses and make VTIs an indirect factor in the retraining of workers, the dissemination of new technologies and the promotion of greater competitiveness within the economy.

e. International cooperation

Technical and financial international cooperation has been a very important source of income for VTIs. Despite the plentiful resources transferred to VTIs under this rubric, it is difficult to estimate how far they went. In any case, we have to underscore that international contributions have been decisive for the institutional development of nearly all VTIs of the region and for their consolidation.

At the beginning VTIs sought international support, (both on a multilateral and bilateral basis), with a view to achieving their launching institutionalisation and consolidation. At present, these international resources are increasingly channelled at achieving the transfer of productive technologies. This means that the initial stage of receiving equipment and almost automatically accepting technical pedagogical packages for training in different trades and specific economic sectors, has been left behind. After VTIs managed to consolidate their institutional capacity, their main interest lies in the absorption, assimilation and adaptation of productive technologies appropriate to the national and regional economic realities.

A few examples suffice to give us some idea as to the magnitudes that we are referring to. According to a high official of the DSE agency for technical cooperation, VT was from the beginning one of the main aims of German assistance. A study carried out at SENA towards the late seventies, showed that that VTI was one of the colombian entities that have taken the greatest

advantage of technical assistance offered by international organisations and foreign governments and enterprises. The Brazilian SENAI is at present benefitting from cooperation from nearly all the countries of the European Economic Community, Canada, the United States, Israel and Japan, in key areas of operation. Just in expert and consultant services, according to data confined to Germany, Italy and Japan and UNIDO, SENAI received assistance from 38 technicians during the 1980/1987 period.

It is practically impossible to quantify the volume of contributions obtained by VTIs through international technical cooperation. But a casual look makes it possible to see to what extent the fresh and special funds it provides have permitted establishment of the most sophisticated workshops and training centres, experimentation with the most innovative methodologies, training of a large part of VTI personnel, technological updating, and opening up of new lines of training and non-conventional services, as indicated in the preceding chapters of this study.

This source of financing has been particularly important in terms of diversification, in part because it is a channel that VTIs have used with great flexibility and variety, having learned to skillfully negotiate the terms of each cooperation project. But the diversification of sources of international cooperation itself should also be underscored. Apart from the traditional agreements with official agencies of industrialised countries and with international development agencies and banks, they have negotiated with multiple private interlocutors, in new circuits which until recently were virtually unexplored by VTIs and, in general, by public institutions of all sorts in Latin America. Add to this the novelty for other spheres implied by the magnitude of the flow of horizontal cooperation between VTIs, which has become customary in the region, and we get a notion of the importance of international technical cooperation in financial terms.

Until recent years, a large part of international cooperation was non-reimbursable. At present, however, also decisive as sources of renovation for VTIs are the resources deriving from loans obtained from international development banks. Contrary to what happens with other public entities, generally speaking the loans obtained by VTIs are repaid by the institutions, i.e., INA, SENA, SECAP, and INFOTEP (to cite some examples) assume the debt. Mention should also be made, however, of the peculiar case of Brazil, where the government obtains and assumes responsibility for repayment of the IBRD loans it transfers to SENAI and SENAC, without cost to the two institutions.

There are some paradoxical cases in the flow of international technical cooperation. For example, while INACAP was in the governmental orbit and its

financing was ensured by the Chilean treasury, it received important contributions from international cooperation. When it became a self-financed institute, however, this support was discontinued. Nevertheless it is now when INACAP needs it most since though it continues to be the "official" VTI in Chile, it is budgetarily dependent on the sales of services to firms and individuals. Thus, it has no surpluses for investment enabling it to modernise and expand its physical and technical infrastructure. Thus, a VTI which has managed to develop an original financing model, to survive and to grow has now restricted possibilities of receiving fresh resources to continue performing as a centre of excellence in the area of VT in Chile.

4. FINANCIAL MANAGEMENT OF VTIs

The original financing formula chosen for VTIs on the basis of the payroll levy, made them highly flexible and capable of adaptation, with mechanisms for automatic adjustment so they could react to labour market demands. VTIs could afford to abandon rigid budgetary mechanisms that hampered the management of most public organisations.

Economic crisis that broke out in the mid-seventies together with the economic restructuring and the impact of the technological revolution on the organisation of production and work processes, considerably altered the structure, size and make up of the labour force in the region. Among other things, payrolls diminished and real wages deteriorated. As a result of these phenomena, the income of VTIs from the payroll levy began to dwindle.

As from that moment, VTIs have had to diversify their sources of financing which has tested their operational flexibility and their financial management mechanisms. They had to learn to handle other types of funding coming from less stable sources and have therefore been exposed to greater fluctuations in regard to the availability of operational income. In particular, the sale of training and non-conventional services has become a new element in the financial management of VTIs.

Flexibility in the financial management of VTIs also appears through channels which are not necessarily monetary. Most institutions of the region receive donations of equipment and raw materials which are used in the operation of their training centres, through agreements with enterprises. Hence, that it is very difficult sometimes to estimate their income through these mechanisms of contributions in kind.

To estimate the amounts of financing of VTIs of the region is difficult. There are a number of factors affecting the compatibility of figures. Not all VTIs provide sufficient information, so that series are frequently incomplete. Values in general are expressed in national currencies. High rates of inflation afflicting some countries and the fluctuations of the US dollar also affect the possibility of awarding a constant value to the several VTI incomes. Thus, budget analyses and financial statements must be done very cautiously, specially if comparability among VTIs is attempted. Each one has its own financial basis and has experienced a particular evolution in this regard.

In any case, an initial approximation at least in order of magnitude, can be seen in the Table VIII.23 on current incomes of VTIs. In general, it may be said that some entities have experienced a remarkable development, at least in the period 1975/1987; they are SENAI, SENAC, SENA, INA, INACAP, UTU. Reasons explaining these increases for each VTI are:

- Benefits accrued for SENAI and SENAC (Brazil) as from 1986 due to the economic expansion of the Cruzado Plan and the elimination of the wage ceiling, (called maximum reference value) that had until then been applied to calculate the transfer of funds to training bodies by the institution for financial administration and social security (IAPAS) which is the body in Brazil entrusted with collecting enterprise contributions for VT and social security.

- In INA (Costa Rica) the improvement was due to an increase in the rate of contribution by enterprises from 1 to 2% of their payrolls and the enlargement of coverage of levy payers, including agricultural producers, the public sector and other income earners. This was accomplished through the organic law of the National Training Institute, number 6868 of the year 1983.

- INACAP (Chile) went through a critical budgetary situation in 1975 as a result of a harsh policy for curbing public expenditure. This crisis was surmounted in two ways: 1) when tax incentives were introduced for VT at enterprises and, 2) when INACAP devoted a greater capacity for supply of higher technical education on a self-financing basis.

- The Colombian SENA increased the number of contributing enterprises by removing limitations of capital and personnel numbers through Law 21 of 1982, and;

- The Uruguayan UTU benefitted from the promotion that education received in general in Uruguay when the new democratic government took over in 1984.

VTIs' REGULAR INCOME FOR 1975-1985-1986 and 1987
(In thousand US dollars of each year)

VTI	COUNTRY	1975(a)	1985(a)	1986(a)	1987(b)
CONET	Argentina	100,667	156,110	123,076	n.a.
SENAC	Brazil	35.014	43,712	88,372	n.a.
SENAI	Brazil	90,681	95,859	153,741	198,000
SENAR	Brazil	---	5,891	8,879	4,300
SENA	Colombia	31,235	80,940	93,122	107,327
INA	Costa Rica	3,360	19,987	21,122	18,960
INACAP	Chile	1,651	7,656	8,642	6,788
INFOTEP	Dominican Rep.	---	2.026 (b)	2,522 (b)	2,750
SECAP	Ecuador	3,281	5,755	5,213	n.a.
SENATI	Peru	6,254	3,746	8,340	4,272
SENCICO	Peru	---	1,860	1,809	2,700
UTU	Uruguay	7,127	11,226	16,336	n.a.
TOTAL		279,270	434,768	531,174	*

* Lacking data, it is not valid to compute the global amount..

SOURCES: (a) Cinterfor/OIT: *Anuario estadístico de la formación profesional en América Latina.*
(b) Survey to VTIs. Regional study.

Despite the important magnitude of resources managed by VTIs, the incidence of their income on the national budget is relatively small, as can be seen on the table of regular income of VTIs in relation to GDPs. In effect, the regular incomes of these institutions as compared to the gross domestic product of the respective countries ranges from 0.33% in Chile to 3.89% in Costa Rica. (See Table VIII.24 and Graphs VIII.1 and VIII.2).

VTIs obtained funding from a variety of sources, although the main ones follow under the category of government subsidies. Table VIII.25 shows the main sources of income of VTIs for the year 1987 and their comparative weight for each one. We see that most of these institutions obtain their resources mainly from a payroll tax paid by enterprises: SENAC, SENAI, SENA, INA, INFOTEP, SECAP, SENATI, INCE. This source provides more than three quarters of the cash income of SENA (82.0%), INA (78.4%) and SENATI (86.0%).

Since their inception, VTIs have faced various difficulties for collecting their payroll tax. Evasion of the tax by enterprises, delays and the withholding of funds by official collecting bodies, are difficulties aggravated during high inflationary periods, and had led to adopt various strategies. Recently created VTIs are more tolerant of evaders, due perhaps to their difficulties regarding an efficient performance keeping within the budgets that they do have. These VTIs do not always have the capacity to implement programmes according to the resources that they are entitled to collect. Other VTIs with a longer history and more experience are more aggressive in seeking different channels to achieve compliance with the legal norms that entitle them to collect those moneys. Such are the cases of INA, SENA and INCE.

The allocation of regular fiscal resources to VTIs, on the other hand, is only important in the case of public institutions like the Argentine CONET or the Uruguayan UTU as well as of SENAR in Brazil until 1988.* Tax incentives and the demand for training from enterprises is an important item, although not a determining factor in CONET, SENAI, and SENAC. Instead, it is the decisive source for INACAP. These institutions sell their services in competition with other agencies, to enterprises that may deduct part of that expenditure from their tax obligations. In the case of INACAP, the charge of an enrollment fee and the sale of courses to private persons, enterprises and public organisations represents the main source of financing at present, which constitutes a radical

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* SENAR is at present being transferred to the National Confederation of Agriculture (CNA) by virtue of the Constitution of 1988. Nevertheless, its new funding source has not yet been established.

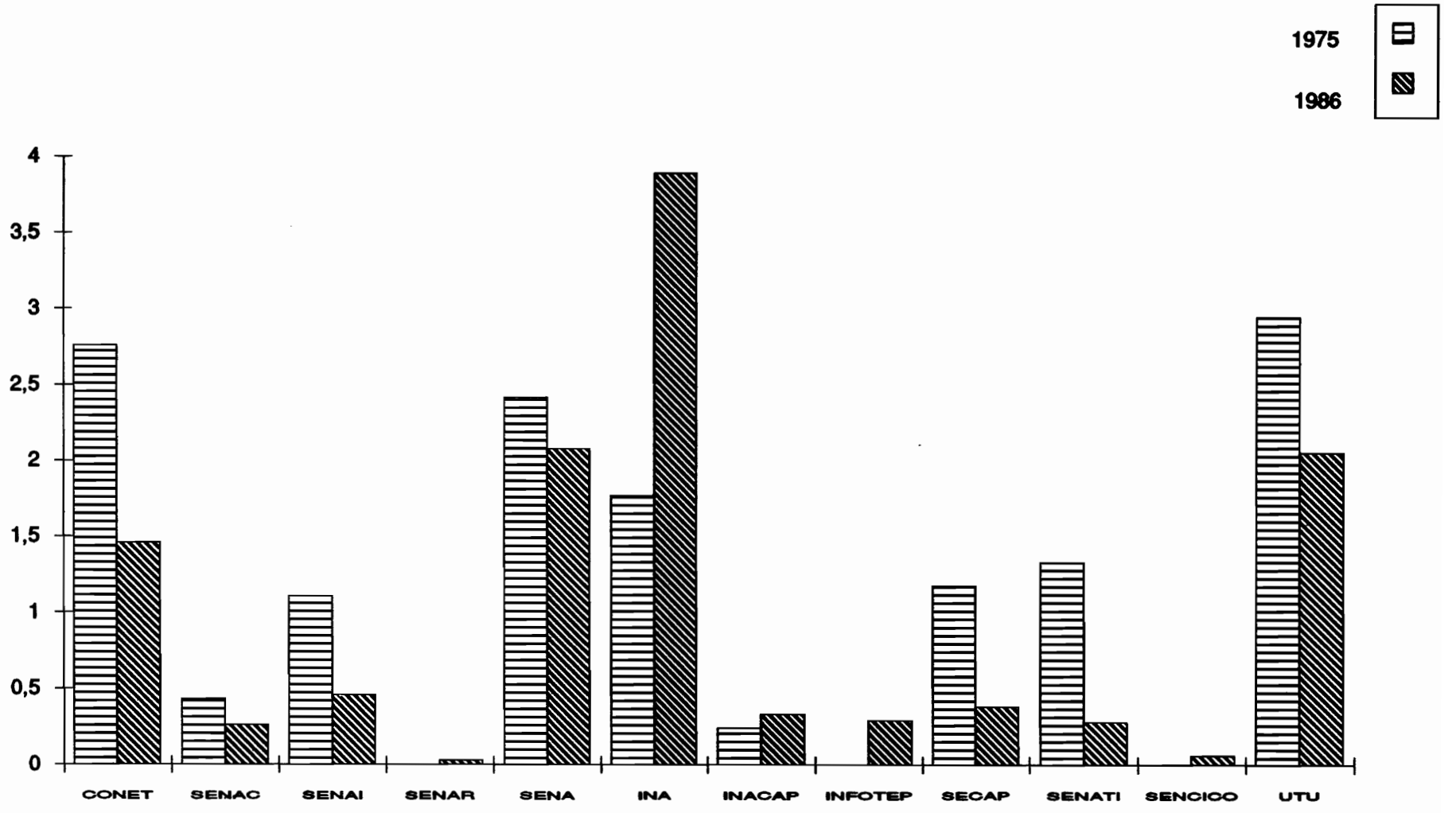
VTIs' REGULAR INCOME AS A PERCENTAGE OF GNP FOR 1975 AND 1986
(in million US dollars of each year)

VTI	COUNTRY	1975(a)			1986		
		VTI	GDP	VTI/GDP (x 1,000)	VTI (a)	GDP (b)	VTI/GDP (x 1,000)
CONET	Argentina	100,7	36,551	2.76	123,1	84,100	1.46
SENAC	Brazil	35,0	81,455	0.43	88,4	333,784	0.26
SENAI	Brazil	90,7	81,455	1.11	153,7	333,784	0.46
SENAR	Brazil	---	81,455	---	8.9	333,784	0.03
SENA	Colombia	31,2	12,887	2.42	93,1	44,842	2.08
INA	Costa Rica	3,4	1,919	1.77	21,1	5,427	3.89
INACAP	Chile	1,7	7,110	0.24	8,6	26,239	0.33
INFOTEP	Dominican Rep.	---	---	---	2,5	8,713	0.29
SECAP	Ecuador	3,3	2,797	1.18	5,2	13,638	0.38
SENATI	Peru	6,3	4,752	1.33	8,3	29,469	0.28
SENCICO	Peru	---	4,752	---	1,8	29,469	0.06
UTU	Uruguay	7,1	2,416	2.94	16,3	7,963	2.05

SOURCES: (a) Cinterfor/OIT: *Anuario estadístico de la formación profesional en América Latina, 1975 y 1986.*
(b) BID: *Progreso económico y social en América Latina, 1988.*

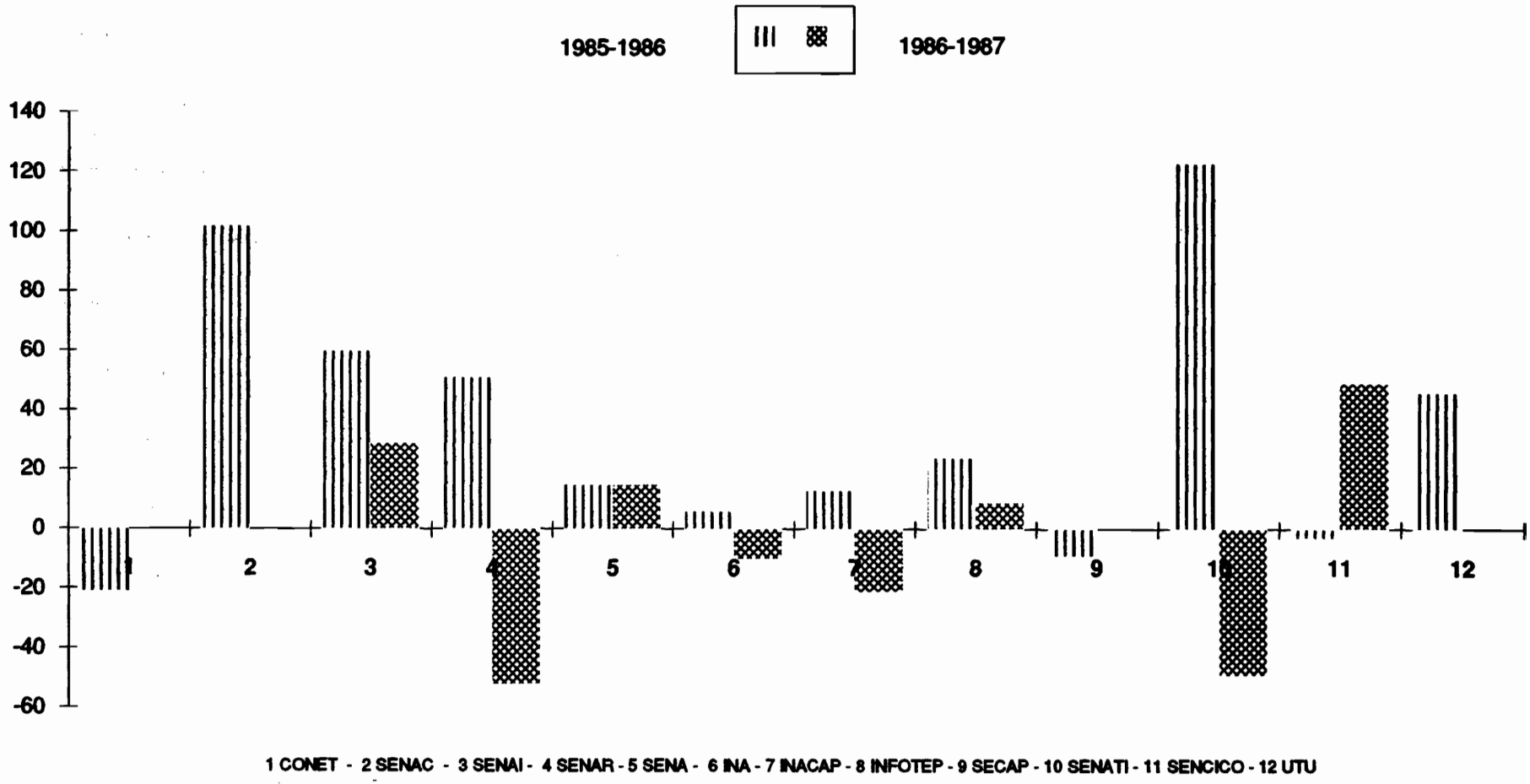
Graph VIII.1

VTIs' REGULAR INCOME AS COMPARED TO GNP (1975 - 1986)
(°/oo)



Sources: Cinterfor/OIT: *Anuario estadístico de la formación profesional en América Latina*, 1975 y 1986.
BID: *Progreso económico y social en América Latina*, 1988.

VARIATION IN VTIs' REGULAR INCOME AS COMPARED TO GNP
(1985 - 1986 y 1986 - 1987)



1 CONET - 2 SENAC - 3 SENAI - 4 SENAR - 5 SENA - 6 INA - 7 INACAP - 8 INFOTEP - 9 SECAP - 10 SENATI - 11 SENCICO - 12 UTU

Sources: Cinterfor/OIT: Anuarios estadísticos de la formación profesional en América Latina..
BID: *Progreso económico y social en América Latina*, 1988.

Table VIII.25

MAIN SOURCES OF FINANCING FOR 13 VTIs
(1987)

	CONET	SENAC	SENAI	SENAR	SENA	INA	INACAP	INFOTEP	SECAP	SENATI	SENCICO	UTU	INCE
1. Payroll tax		XX	XX		XX	XX		XX	XX	XX			XX
2. Production tax											XX		
3. Appropriations from fiscal busget	XX			XX	(--)	(--)		(--)	X		(--)	XX	X
4.Fiscal incentives to enterprises	X	X	X	(--)			XX						
5. Workers income tax								X					X
6.Tuition fees		(--)	(--)				XX			(--)			
7. Sale of services and products		(--)	X		(--)		(--)			(--)			
8. Cost-sharing agreements	X	(--)	X	X	X	X	(--)	(--)	(--)	X	(--)	(--)	X
9. Transfers for projects		(--)	(--)	(--)	X	X	X	(--)	(--)	(--)			(--)
10. Other		(--)	X		X	X		X	X	X	X		(--)

SYMBOLS: XX = Main source
X = Secondary source
(--) = Sporadic source

FOURCE: Surveys to VTIs. Regional study, Cinterfor, 1988

change with regard to the situation prevailing up to the mid-seventies when INACAP was mainly financed with regular allocations from the fiscal budget.

The sale of services and allied products of VT, such as technical assistance, production services and other products, does not appear in balance sheets as an important source of income for VTIs. In fact, with the exception of SENATI (1.9%), other institutions have not registered the earnings under this item. Some VTIs have pointed out that these services are charged in kind or are given free of charge with promotional purposes. But what often happens is that earnings in this respect are collected and spent at basic units that generate them and they are not recorded in the central budget of the respective VTI.

The item "other regular income" is quite significant in most VTIs. This item mainly includes income from investments such as rentals, dividends, interests and monetary correction. In the case of the Sao Paulo SENAI it also includes the sale of services and products. Probably, in most VTIs these financial investments are made with temporary cash surpluses but mainly they stem from the overall budgetary surplus that nearly all VTIs have at some time.

This surplus may be due not only to a chronic redundance of resources, as it might seem at first sight, but also as a consequence of expenditure restrictions imposed by governments as in the case of INA and SENA. Usually, it is a deliberate strategy on the part of institutions which use these surpluses as a back-up mechanism to face up to the risks of inflation which undermine the real value of their earnings. And also the risk of economic contraction that might shrink the basis of their funding or delays in the approval of annual budgets by government.

The balance sheet of some VTIs for the year 1987 shows that the "operational incomes" of these VTIs were sufficient to finance their regular expenditures. Furthermore, the items "other regular incomes" and "capital incomes" exceeded their needs for investment. Thus, considerable budgetary surpluses are generated which, as indicated above, constitute a supportive mechanism that institutions created in order to confront the risk of economic instability.

These surpluses are usually coveted by governments trying to induce VTIs to invest them in government bonds or the public debt, to make deposits in the state banks or just to transfer them to other government institutions as happened to great part of the resources of the Colombian SENA when Law 55 of 1985 was passed. In effect, in 1987 INA and SENA transferred resources to other institutions to the tune of 20% and 77% of their budgetary surpluses, respectively.

5. CHALLENGES AND PROSPECTS IN THE FINANCING OF VTIs

VT systems have had to face a dual challenge in the last fifteen years; on the one hand, they have had to reestructure their finances and their institutional organisation to endow them with flexibility for a change, and stamp them with a dynamic growth to justify the efficiency of the sector vis-à-vis other alternative uses of social resources. On the other hand, they have had to reform their programmes in order to ensure a two fold flexibility: flexibility to look after the leading sectors of high technology and flexibility to cater for the non-structured sectors that give a new shape to the labour force.

This latter adaptability is particularly difficult to achieve taking into account that it is an informal labour force, that is to say anonymous, scattered, independent, lacking of institutional resources to make demands in the market or from the State.

This two flexibility requirements are sometimes difficult to reconcile. VTIs have managed to respond with great success to this enormous requirement for adaptation. We can hardly find, within the public administrations within the Latin American countries, any other entities capable of reviewing themselves as quickly and efficiently as these VT bodies. We shall now summarise this process distinguishing between financial adaptation and that of institutional reorganisation.

The forces behind the current changes of the financing of VTIs are of different origin and act in different directions. The picture is blurred by simultaneous forces acting toward different types of change. Nevertheless there are some predominant forces, common to almost all countries of Latin America. We shall quote only three of them:

a. The external factors of change

1. The restructuring of economies

Currently there is a global reorganisation of the production, distribution and consumption spheres throughout the region. This process affects the contents, approaches and strategies of VT in various ways:

- The decentralisation of large enterprises and their fragmentation into smaller production and services units, multiplies the number of users, financers and executors of VT programmes and calls for new and more diversified programme contents.

- The flexibilisation of the labour market emphasise the training of occasional, subcontracted or independent workers. This blurs the channels connecting workers with VT programmes and calls for a readaptation of the programme contents. Labour instability requires flexible, modular and ongoing programmes, catering for all age groups and multiple social strata.

- The transfer of public resources to territorially decentralized levels, giving intervention to communities and to the private sector in the allocation of such funds, shifts attention from economic sectors towards territorial development. This in turn calls for greater decentralisation of programme contents as a function of regional and local development and throws the door open to new agents, such as financers, executors and users of VT programmes.

- The modified labour markets and the reshuffling of occupational structures undermines the representativeness and legitimacy of traditional union organisations and falls back on grass roots corporative workers' organisations predominantly on a regional or local basis.

- The transformation of productive processes makes programmes and technologies soon become obsolete. This calls for an accelerated technological updating and for the renewal of curricular contents according to the changing needs of firms and enterprises.

2. The decline of the welfare state

The decline of the all powerful welfare state, that had been omnipresent in the region during the last few decades, is an element that has also impinged on the economic and social context of VTI financing.

There is an increasing decay of the role of the state as the decisive element in the execution of social policies to mitigate social inequalities, promote the redistribution of incomes, relieve poverty, curtail levels of unemployment and underemployment, etc. The leading role that the state had ascribed itself in the sixties and even until the end of the seventies in the dissemination of technical progress is also being displaced by a reality where the logics of capital - based on the interests and behaviour of the most modern firms and enterprises of the economy - has taken on a predominant importance.

One of the central subjects in all discussions relating to educational policies refers to the subsidiariness of the state in this matter and the actual role and potential effect of private sectors in education. On the other hand, at present there is not only an ideological/political debate of this matter, but there is also

a greater participation of the private sector in the supply of educational services at all levels (pre-school level, primary, secondary education, higher studies and university level).

This loss of influence of the welfare state also leads to the design of substitute forms of state intervention in the training of workers. But these forms are still not clear-cut and while this happens, uncertainty pervades the planning of VTIs in the medium and long term, and at the same time private sectors gain greater participation in the management of training programmes.

3. The new financial and public spending policies

Measures of fiscal readjustment adopted in recent years and those under political, economic and legislative examination, are deeply changing configurations of all calculation of resources and expenditures among the different sectors of activity. Measures invoking assumptions of budgetary balance and rigidity, unity of budget and cash flows, etc. obviously also affect VTIs as these organisations, until quite recently, had based their funds almost exclusively on what they collected through specific taxes.

These new policies operate through multiple channels, among them the following:

i. An emphasis on the redressing of public spending through the recommendation of making territorial and sectoral budgets independent from the central national budget; promotion of financial self-sufficiency of decentralized institutes; reaching cash flow and budgetary unit and the abolition of appropriations with a specific destination, and a greater flexibility and ongoing evaluation of public expenditures. Stress is now laid on effectiveness and efficiency of expenditures is zealously guarded.

This reorientation of fiscal and tax policies have in turn their effect upon the financing of VT in the following manner:

- In claiming for flexibility, unity and the abolition of income with specific destination, they go counter implicitly or explicitly to the traditional predominant way in which VTIs were funded, that is to say a levy on enterprises payrolls.

- In strictly separating sectoral and regional budgets from the central national budget it restricts or suppresses budgetary and territorial transfers in favour of decentralised entities dispensing VT.

- By promoting independent fiscal efforts, it resorts to financial cooperation forms between local communities and VTIs.

- By lying stress on evaluation and flexibility, variable budgets and civil and labour contracts of a temporary nature are promoted.

ii. An assumption that the private sector is more efficient and effective than the public sector. This implies the evaluation and practical validation of VT programmes in the marketplace to the detriment of the assessment of their socio political effect, all of which results in pressures in favour of the sale of services and a certain underestimation of training imparted free of charge. It also favours backing of programmes that, though not directly validated in the market, are managed directly by private firms.

iii. A search for efficiency in the handling of public resources available in cash. This is a supplementary policy to that of cash unity and consists of demanding a financial management in accordance with the returns of the financial market at a given moment. This leads VTIs to obtain returns through the placements of the surpluses that they often have.

There are also pressures in the opposite direction, often deriving from a resistence to change and to burocratic normative inertia, particularly regarding contractual and auditing aspects. But it also derives from movements which in certain countries seem to go counter to the economic policy trends pointed out above. In Costa Rica, for example, a few years ago, income devoted to INA more than doubled in amount; whereas in Brazil, the recent Constituent Assembly envisaged to nationalise VTIs. VTIs like the Colombian SENA and the Argentine CONET are nowadays more than never under the control of the state.

The preceding comments go to show that a number of pressures of different kind and strength are acting upon the financing of VTIs. Obviously this phenomenon has had its impact on the daily life of these institutions which have been forced to modify their role and their objectives. A new configuration has emerged regarding their character and development: they have changed strategies, plans and programmes, they have reordered administrative, technical and operational routines, etc. It may be said that to a large extent, VTIs are witnessing an incipient but deep structural reorganisation as the result of the new financial arrangements. To face up to these different forces, VTIs have been adopting gradually and specifically the budgetary and operational responses for each national and institutional context.

b. Responses underway

In the financial area, the main challenge has been to diversify traditional VTIs' sources of funding. As an alternative or supplementary measure, by broadening the destination of funds raised from the payroll levy. This alternative channel is being explored in different ways:

- Some VTIs have widened their range of training services by entering in technical education and by delivering training programmes to new segments of workers such as the informal sector, the peasant or campesino sectors or senior citizens or women who had not been linked before to the labour force.

- Practically all VTIs have diversified their financing sources and have watered down their exclusive dependence on levies on payrolls. The main additional sources of funding are, at present, the following: cofinancing agreements with enterprises, the securing of tax incentives to VT, contributions from the national, regional, sectoral or municipal budgets, the selling of services and enrollment fees.

With the exception of contributions from the National General Budget, all the other mechanisms are equivalent to the validation of the VT programmes in the market place.

In this adaptation process, VTIs have had to respond simultaneously to two new demands: one, the government requirement that they may act as an agent for social policies aimed at the full integration into the labour market of sectors that had been relegated from the economically active population; and second, the entrepreneurial demands pressuring for the modernisation of programmes and equipment, personnel and infrastructures of these institutions.

Having to attend to different kinds of requirements, immersed in different institutional orders and belonging to different national contexts, each VTI has had to strike its own balance: some have placed greater emphasis on agreements with enterprises, others have relied further on tax incentives or on contributions by the Central Government Budget, others by resorting to enrollment fees or diversifying their programmes and multiplying the uses of the levies on payrolls.

Specific institutional and organisational readjustments of VTIs have occurred simultaneously with the financial changes:

- Identifying the current or potential demand, stemming on the one hand, from the general population and the governments social programmes and on the

other, from those coming from new processes for the production and distribution of goods and services by enterprises. For that purpose, some VTIs have set up marketing departments that study the individual or sectorial needs of their clients. Others have become closely associated with decision-making spheres at government level in connection with social programmes and work jointly with them in the planning of their programmes, as well as with enterprises to design training programmes suited to emerging demands.

- Lowering their general overhead and other costs that are not easy to recoup, such as the building of new infrastructures and the investment on equipment. VTIs associate with enterprises and governments for that kind of investment or seek a multipurpose utilisation of their existing infrastructure. They also resort to the borrowing or rental of others' infrastructure so as to reduce fixed assets.

- Constituting an adaptable and flexible staff of instructors, and other personnel, capable of looking after changing demands in different places. With that end in view, VTIs are gradually increasing new approaches such as consultancy, subcontracting of services, and above all, establishing temporary hiring for specific programmes or projects.

- Following up and carrying out joint evaluations with enterprises and governments of shared interest programmes.

c. Financial scenarios for VTIs

Having successfully coped with the initial steps of accommodating to the new social and economic forces, VTIs still have to cover further stages in the readjustment process. All these stages, naturally, are different from one country to another and from one VTI to another. In any case, possible scenarios vary and each VTI and each VT system is likely to continue making progress in accordance with the corresponding real life environment where it operates.

If we accept the hypothesis that most VTIs would have to diversify or at least supplement their traditional source of funding, and that different institutions have shown signs of adaptability to new circumstances, we might establish, by way of example and for purely analytical purposes, a set of options to the current models of VTIs funding.

- First category (the financial scheme at greater risk): institutions that continue to essentially depend on levies on payrolls. It does not seem that imminent change will come about though abrupt discontinuation of levies,

(such as happened a few years back at Argentina and Chile), but rather through gradual changes regarding the allocation of these levies either by turning them into the General Treasury or by temporarily freezing a portion of VTIs funds either by transferring them to specific projects or for other purposes. This is what is happening at present in SENA and INA. Payroll levies are criticised on the grounds that it is an earmarked tax which implies a risk of rigidity and inefficiency, and a tax on wages that would tend to discourage demand for manpower and aggravate the unemployment situation. These arguments will continue to be a threat to this kind of financing in the foreseeable future, if current adjustment policies keep underway.

- Second category: VTIs financially dependent on national budgets. These institutions enjoy comparative stability and can anticipate their funding, based on results from a previous period, or in the worst hypothesis depending on budgetary inertia. This is what happens specially in Argentina. However these institutions are vulnerable to changes of priorities in the allocation of resources and the current pressures in favour of a base zero budget. As the income elasticity of fiscal earnings is usually slightly below that of payroll levies, we might suppose that these VTIs will tend to a relative stagnation of their income. As the struggle and competition for budgetary appropriations has to take place in a political sphere, a break will be placed on the development of the institution in question and will reinforce other structural pressures (such as trade union and burocratic forces behaviour, etc.). All this will inevitably lead toward a freezing of programmes and operations.

- Third category: institutions that are mainly dependent on tax rebates. They differ according to their internal organisation and the kind of tax incentive applied. In this case, we can refer to what is happening at present in Chile. A scheme in which the VT system is characterised by a multiplicity of VTIs competing with one another for the resources released by tax incentives. These institutions, faced with the options and preferences of employers, must show effectiveness and efficiency. They have to be concentrated, updated and sell their services. They should streneously control their costs and optimise their resources. VTIs operating under this financial scheme are validated by the market and legitimised by government opinion and the opinion of workers and employers. Despite these virtues, this kind of arrangement is also in danger; its Aquiles' heel is the constant questioning and surveillance on the part of the authorities as ato how they use the tax rebates mechanisms.

- Fourth category (the financial scheme that grants the least risks): institutions which are increasingly co-financed through agreements and contracts with enterprises. Although these co-financed agreements might hypothetically

be the main source of income, the financial stability, the capacity for planning and foreseeing possible demands and the need of having matching funds to encourage the drawing up of agreements, require the guarantee of other funding sources. Such is the case of Brazil, where these agreements are supplemented by levies on payrolls. Criticisms that might be aimed at the latter for their inefficiency and for being a tax on employment, vanish in view of the close connection existing between contribution and demand and the additional funding shared by enterprises.

Like tax incentives, cost-sharing agreements and contracts with firms and enterprises bring VTIs in closer contact with the market, with technological innovations and a more acute understanding of the retraining needs of workers already employed. In a general way, such VTIs are more aware of the restructuring of production and services that has taken place everywhere. But as opposed to the tax incentive mechanism, co-financial agreements do not generate tied funds that have to be formally utilised by the enterprises. On the contrary, they are funds freely available to firms and which they may opt to add to their compulsory contribution to VTIs. In fact the only possible criticism of co-financing agreements lies in the uneven availability of funds by the different economic sectors, in that only those that have sufficient sources can propose significant arrangements to VTIs. This unevenness tends to aggravate the unequal development. Some sectors are stimulated to the detriment of others that should warrant special attention on the basis of social, economic or political considerations. Despite this limitation, there is no doubt that these arrangements channel training towards the more competitive sectors with better prospects of returns for the country. For that reason, they are one of the most dynamic and promising sources of income.

VTIs will probably continue to promote a process of partial substitution and supplementation on contributions from payroll levies until they consolidate a new mix of funding sources. Levies on payrolls should continue to play a fundamental role but not exclusive or even a major one in this new balance of financing sources. Its main role should be that of maintaining the regular activities of VTIs and encouraging the funnelling of additional public and private resources towards VT. The following measures would be required:

- To obtain, in the short term, governmental subsidies or contributions of an explicit nature (and different from levies on payrolls) for covering the general costs of training (not just vocational training) of the new labour force. Consequently VTIs should keep separated accounts and financial programming for the rendering of such services. They should gradually transform regular budgetary contributions into explicit transfers for the attention of governmental policies with quantification and explicit justification of costs and benefits.

- In the medium and long term, to increasingly fall back on enrollment fees, or better still, on contributions from union and associations of independent workers. This will mean the gradual development of a cofinancing policy of programmes by independent occasional or subcontracted workers who make up the new labour force of the informal market. In this way, government subsidies would be replaced by cofinancing schemes with the participation of new levels of workers interested in vocational training.

- To maintain a certain proportion of income stemming from payrolls levies and to use it more actively to encourage cofinancing by enterprises and governments for the implementation of specialised programmes. In this manner, although levies on payrolls may decrease as the main source of income, they will continue to be required on a permanent basis.

- To include coprogramming and cofinancing with territorially decentralised bodies. By virtue of the decentralisation programmes that all countries of the region have undertaken, intermediate levels (States, provinces, departments or regions) and local levels (usually called municipalities or districts) will have increasing funds and will be able to channel part of them to meet specialised training demands arising from their new responsibilities.

- To promote campaigns to illustrate and show the connection existing between contributions based on payroll levies and the adaptation of VTIs to the new entrepreneurial and governmental requirements.

From an institutional point of view, the goals should be the following:

- To establish closer links between the planning of training programmes and financial planning, strictly specifying costs for each programme and endeavouring to endow each one with its own funding scheme. The overall financial package of a VTI will then consist of a combination of sources; each for a specific purpose.

- Further decentralisation of the decision-making processes regarding investments and programmes, in order to provide more appropriate responses to the new demands stemming from local bodies both in the public and private sectors.

- To cut back on overhead and fixed investments, and to give them multipurpose applications whenever possible.

- To adequate planning and evaluation processes, emphasising the requirements and receptiveness of the market, giving the need to attract new funds on the basis of the sale of appropriate products and services.

d. Cautions and risks

Based on the evidence provided in this chapter it would seem evident that VTIs are faced in the short-term with the need to reorganise their financing systems, having in mind the imperative of flexibility and effectiveness of their operation.

Nowadays VTIs of the Latin American region are accelerating their search for new financing formulas. They are working their way towards interinstitutional agreements that share not only monetary financing but also responsibility for the supply of physical, material, technical and human resources. Although in many cases supervision and responsibilities of VTIs is not delegated by them due to the nature and scope of the activity undertaken, this type of agreement encourages cooperation and coordination of resources with enterprises, private sources of financing, non-governmental and governmental organisations, e.g. municipalities, local authorities, sectoral and regional development bodies and so forth. However, this new mechanisms are still to be recognised, organised and properly implemented. Furthermore, an effective system to encourage VTIs to carry out these activities is also required.

There is evidence of threat about the removal of earmarked taxes to finance VT. Some of the advantages and disadvantages stemming from accummulated experience of the application of this type of financing in the region is given below.

VT levies constitute public resources designated for a specific purpose, and therefore go counter to some of the principles that are being increasingly introduced in the handling of public funds in Latin America: namely, cash unity (fiscal equilibrium as a single entity, so that surpluses in some areas have to make up for deficits in others), decentralisation of public expenditures (regional authorities ought to have a greater power in the handling of public funds), and fiscal flexibility (public finances as an instrument of the general economic policy of the State with the consequence that the State may freely dispose of all the resources transferred to the public domain, either through taxes, levies and other income, in accordance with government priorities). An additional source of conflict is the fact that contributing enterprises often see payroll taxes in favour of VTIs, as a mandatory expenditure calling for a matching service equivalent to what they are paying. This undermines the redistributive potential of those resources.

Last but not least, a tax on wages discourages employment. Some specialists have argued that the negative effect on employment supposedly exerted by payroll taxes, by making labour more expensive, does not appear to be signifi-

cant. Along this line of analysis, Bernardo Kugler and Alvaro Reyes, in their classic *Financiamiento de la educación técnica y vocacional en América Latina,** provided the first evidence of this sort, followed by other studies on the subject throughout the region.

Furthermore, in the long run, with real wages tending to decline, the recomposition of the profile of the labour supply (with more skilled workers available) would tend to strike a balance in the employment situation.

From the point of view of VTIs, financing based on specific payroll taxes is an ideal formula in many aspects. For them, this is a relatively secure source that they can handle with great autonomy as in the past, and which has favoured their long-term development.

Besides, these resources and the responsibility assumed by VTIs vis-a-vis society and particularly, vis-a-vis the entrepreneurial sector that contributes to these taxes, have helped to set up large institutions with a good educational technology and highly concerned to adapt their teaching to the needs of the labour market, both in quality and quantity. Nevertheless, they do not seem to be that much concerned about their internal efficiency, what could be detrimental to the scale economies that they have already reached.

The other side of the coin is that this financing scheme is more costly for collection and incurs the risk of evasion. These shortcomings tend to increase specially when there are no penalties for evaders, and when the VTI itself collects the tax. In the long term the problem may worsen as a result of the reshuffling of the productive structure which is taking place in some countries, which favours atomisation of contributors and the disappearance of formal employment ties in some sectors, such as agroindustry, the graphic arts and construction sectors, among others.

Equity in VTIs lies in their redistributive vocation which they have achieved to different degrees. Such as they were conceived, financing mechanisms that support the work of VTIs might define them as elements that concentrate their benefits on enterprises of the more dynamic and modern sectors of the economies, that is to say, the large productive units that reach high economic levels and are located in poles and regions of greater development. However, the notorious tendency of VTIs to act increasingly with segments of the population outside the above sectors, make them an effective factor for redistribution. The scope of VTIs' activities are not any longer concentrated mainly on the more

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* In: Brodersohn, M. y Sanjurjo, M.E.- ***Financiamiento de la educación en América Latina.*** México, Fondo de Cultura Económica, 1978. 654p.

advanced sectors; quite the contrary, they are tackling and giving priority to less developed sectors which can make little financial contribution to their resources. Furthermore, in several of the VTIs' founding charters, the channelling of resources towards underprivileged regions has been foreseen, e.g. SENA, SENAC, SENAI, SENATI, and others. In other cases the redistributive mechanisms are based upon special subsidies received by VTIs from their respective governments for the attention of less favoured sectors.

Finally, a clear example of this redistributive effect is seen in the fact that while at various VTIs the majority of resources collected through the payroll tax come from the modern industrial sector, a portion of them does not "get back" to that sector in services, but instead is often used in the financing of programmes in the rural sector (which, on the other hand, generally makes a rather insignificant financial contribution to most VTIs) and programmes in the informal urban sector.

New financial mechanisms might impinge upon the equity effects of VTIs. New avenues opened up so far are essentially of a convertible nature. Namely, the direct sale of services or through fiscal incentives, the withholding of production earnings and agreements of cofinancing and discounts to large enterprises, etc. Only the sale of services to governments, either at national, regional or local level, might protect the redistributive effects.

Hence the importance of the choice of the appropriate type of financial reform that might be introduced into VTIs. It should take into consideration a combination of sources and financing machinery, not losing sight of the principles of equity which are fundamental to VTIs, under the pretext of improving the overall efficiency in the handling of public resources.

GENERAL APPRAISAL

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At the threshold of the 1990s, the countries of Latin America face a dilemma that leaves no room for hesitation. The extent of the crisis is such that getting back on the road to development inescapably implies a deep-seated reorganisation of economic activity, capable of coupling effective growth with sustained progress on the social plane.

It is now recognised that raising productivity indices and improving product quality are *sine qua non* conditions for competing with better chances on the world market. In view of the inevitable globalisation of the economy at international level, the challenge consists of identifying, generating, building and making use of the comparative advantages of each country, sector, region and location, getting the most out of the available resources. It is also essential not to continue resorting to the deterioration of wages and working conditions, and to the indiscriminate exploitation of natural resources as a way of bringing down the prices of traditional products in order to make them competitive on the external market. The best -and apparently the only- way to achieve an increase in the volume and value of exports capable of putting right the balance of payments and leaving a sufficient margin for new investments and for unpostponable social spending, is to base competitiveness on technical progress and the skills of our human resources.

Naturally, the design and implementation of an appropriate human resources development policy -no matter how suitable it may be for the new requirements- are not enough, unless they are tied to and tuned in with the establishment of the necessary conditions in the macroeconomic sphere, and of the appropriate measures for correcting the imbalances that have existed over several decades. A very close influence is also exerted by decisions as to trade and exchange policies, technology policies and, particularly, industrial policies, since it is industry that clearly must lead the productive transformation being sought. The fostering and diversification of industrial activities, as well as their dynamic interrelationship with the other sectors of economic activity, are the key to increased competitiveness and to possibilities for growth in exports containing greater value added.

The comparative advantages for the production of the countries of the region inevitably depend on the efficient use of the available resources and the ability to undertake activities that increasingly incorporate intellectual value added.

This implies steadily raising the skill level of the workforce and strengthening the internal management base, making their on-going participation in technological innovation and technical progress possible.

In this perspective, vocational training takes on a crucial role. This study recapitulates the landmarks and outstanding facets of the evolution of the institutions which embarked on the official mission of training labour to sustain the development of productive activity in the countries of the region. We have looked into the most significant changes that were introduced to respond to the progressive transformation of economic and social demands. And we have attempted to convey and give dimension to their current behaviour, exploring the prevailing practices and recent innovations.

As we set out on the final decade of the 20th century, and in view of the decisive change today required of productive activity in the Latin American countries, it is reasonable to ask to what extent the vocational training institutions (VTIs) appear to be in a position to respond to the breadth of the challenge.

The answer to this question has been the polestar of this study. It is undoubtedly difficult to make generalisations and to reach overall conclusions. Nevertheless, the balance of the analysis is, to say the least, favourable. Despite the great individual differences, the VTIs show a significant degree of flexibility and ability to adapt, which has been put to the test on repeated occasions in very different circumstances. They have evidently shown more versatility than the regular education system, even in its vocational, technical and professional modes and levels; and they have also shown a clear will to make use of their greater freedom to try new solutions and to seek better responses to the demands of the work world.

Clearly, VTIs concentrate and administer - fairly autonomously - a significant volume of resources, particularly as compared to the rest of the government-administered institutions which are subject to constant budget cuts and pressure to channel their resources toward alternative uses. Most of the VTIs have long had, given the legal basis of their financing itself, a financial security and stability, along with a progression of budgetary resources, which have allowed them the luxury of a certain economic ease. Older institutions, particularly, have been able to accumulate a physical and technical infrastructure which, after having reached a level deemed sufficient, has allowed them to free up resources for exploring new fields. Intensive growth, covered by the availability of funds, put them in a situation where the challenge was no longer to do more of the same, but instead to expand by doing new things. Innovation thus took root as an institutional practice, forming part of the culture of VTIs themselves.

The reasons for change come out of the constant pressure deriving from close contact with demand. The mere fact that VTI management has from the outset incorporated the participation of employers and workers, along with governments, has forced the institutions to provide an on-going conciliation of the direct and real interests of the parties involved. At the same time, this became a source and a measure of external legitimation. VTIs thus reflect a commitment to the improvement of the quality and efficiency standards of their services. As a result, they tend to relegate ambitions regarding internal efficiency to a second plane.

In general terms, VTIs are so convinced of the importance of having their services achieve the specific objectives established in each case, aiming toward broad and ambitious institutional policies and goals, that they are often willing to obtain them even at the cost of great effort and probably excessive resources. Thus, the balance between efficiency in operation and effectiveness of the results is difficult to achieve, and tends to often be tilted in the direction of the latter. The vocation of VTIs is public service, attention to economic and social demands in a global and long-term perspective, and for that reason the criterion of immediate profitability is relatively foreign to their code of ethics.

On the other hand, the diversity of actions they have achieved, in their effort to work for specific objectives and based on effectiveness, has led them to show an insistent and often inordinate daring in offering "tailormade" services, capable of providing ad hoc responses for each specific situation, sector, group or demand, going beyond advisable limits in terms of efficiency in the use and distribution of resources. Thus with a certain frequency we find a sacrificing of scale economy and mass supply, for excellence and adaptation of services to the varied requirements posed by the objectives sought in each case.

At present we find a renewed emphasis on the search for massive actions. "Packaged" courses and standardised curricular contents, applied on a large scale and at a lower cost, have lost their relevance and with that their popularity. It is interesting to note, however, that VTIs are attempting to recover their profitability without doing detriment to quality, through implementation of patterned methodological-operational processes, applied in a flexible way to a relatively homogeneous set of training contents. This is the typical case of courses for small and micro-enterprises, particularly in relation to management training, which have grown significantly among VTI actions in recent years. Added to this are new modes of action which various VTIs have incorporated in their everyday activities, such as the dissemination of technology through the communication media, seminars and workshops, fairs and demonstrations, pamphlets and other literature having, by definition, broad coverage.

Despite the fact that the installed capacity of the VTIs continues to be a major factor in their regular supply of services, programming "by clientele", which has been gaining ground rapidly, is kept - by its very nature - within the fairly strict margins of real needs. In any case, even in programming of regular courses open to the public or to enterprises in general, most VTIs say they always have more candidates than spaces available for training. Programming "by clientele" - and particularly non-conventional actions increasingly being undertaken by the VTIs - requires a strong dose of promotion and training of candidates. It is a question of winning over new interested parties, often by means of active marketing based on mechanisms for participation and involvement of users.

Another way they have tried to increase their productivity is through progressive transfer of their capacity to other public and private entities. This area is especially attractive insofar as it promises great potential for dealing with increased training needs at a time of decreased resources. In fact, the sustained rate of expansion of coverage of enrollment in VTIs on the whole from the time of their creation, began to fall off as of 1980. The curve described by the older institutions more or less repeats itself for the newer ones, with the respective delay.

This drop in the direct enrollment growth rate undoubtedly relates to the decrease in resources faced by the institutions as of the years of crisis; moreover, it reflects the relative stagnation of the quantitative demand on the part of traditional VTI "clienteles". What should be underscored, however, is that in most cases it seems to be tied to structural changes in the organisation itself and its operating strategies. These are the changes implemented by VTIs as a reaction to financial difficulties and to the attacks they began to receive from the outside, as well as in preparation for the new types of demands they began detecting in the market.

A key strategy widely used by practically all the VTIs has been work under alliances, conventions or agreements with other entities. The range of alliances is vast and diverse. Most notable has been the delegation to enterprises of part of the training operation functions. At some institutions this is based on legal formulas that permit the enterprise, under certain conditions, to keep for itself a portion of the compulsory contributions to the respective VTI, for directly executing training programmes for its workers. The VTI assumes an active role in terms of support, quality control, orientation, and tutorship. This practice has made it possible to extend the scope of VTI action, taking advantage of the capacity of the enterprises themselves, who frequently add significant resources to the programmes provided by virtue of contributions withheld from the VTI, or to direct resources provided by the VTI out of its own budget.

The alliances with multiple public and private entities for associating the training component with broader development projects or programmes have proliferated as a mechanism for ensuring the inter-institutional coordination supported by the VTIs without reservation at this point. Particularly in efforts addressing economically and socially disadvantaged groups, VTIs call upon (and are often called on by) other entities committed to a joint project, in which agreements are reached as to the contributions of each one, pooling forces and resources in order to gain broader coverage and substantive impact.

The third route for expanding coverage lies in modes of action having a multiplying effect. This includes the increasingly frequent VTI efforts to promote creation of training units at enterprises and to assist them in their operation, a line of action that has come to be a priority for some of the institutions. In this way, VTIs handle the creation and strengthening of the embryo of the training capacity, which will multiply itself in the production units. This effort to build the training capacity of enterprises is a clear example of the VTI spirit to foster training, even beyond their institutional borders. This line of action also enriches the renewed approach which has been expanding primarily in the area of training for peasant farmers and urban micro-enterprise operators, geared to training promoters and reproducers of training, coming not only from the beneficiary community itself, but also from the external agencies often involved in pluri-institutional programmes with VTIs. The goal is to set off a multiplying process.

VTIs have understood that their work is increasingly interrelated and linked to a multiple effort. On the one hand, undertakings associated with enterprises for services specific to each user, and at inter-institutional level for integrating different components in a coordinated response, have become a usual mechanism for VTIs as a way to respond precisely, flexibly, opportunely and appropriately - as well as with shared costs - to each of the different demands they encounter. Experience indicates that this sort of work is not easy. Often it is the VTIs that must continue on with the programme despite nonfulfillment of their counterparts, bearing the entire burden of the work agreed to. Yet despite such operational limitations, experiments with this sort of work are being perfected, making a growing projection and insertion of VT in broader endeavours with greater impact.

In the second place, VTIs have become convinced that training alone - even when there is a certainty of its application in the exercise of a job - is not enough to ensure greater productivity indices on the part of the individual worker or on the part of the enterprise where he or she works. Broader conditions, deriving from wage policies, management style, labour relations and working environment, come into play here. What is clear for the VTIs is that organisation of the

production process and the technological variable involved are decisive for a profitable use of the training acquired. This has led them to involve themselves in upper and more diverse levels of training, and along roads that go well beyond their original goals.

We begin to see an incipient but persistent trend in the training services provided today by the VTIs. They are increasingly involved in training of middle management and technical and technological specialists at post-secondary and even higher levels, which implies that they are going beyond the ceiling represented by skilled workers, and in some cases supervisors, which characterised the first stage of VTIs existence. Almost all of them, even the smallest and the newest included, have begun programmes of this sort, even without formal recognition or equivalence in the regular education systems. Although it is not a question of competition or duplication of the technical and vocational branches of formal education, it has given rise to a whole new series of relations - as well as some conflict - between the two systems. According to the VTIs, they started this line of work in response to an unsatisfied demand on the part of enterprises for levels higher than skilled workers, who could act as a bridge between the latter and engineers, but who would be imbued with the culture of work and production characteristic of the training delivered by VTIs.

In any event, this has led to a closer relationship, and in some cases to a growing interconnection and mutual influence between technical education and vocational training, which had been traditionally separated by a formal institutional division that had made them almost irreconcilable. The dividing lines would seem to be fading, and in several countries there has been work toward the integration of the two, and this occurs now not with the old aspiration of encompassing all educational efforts under a single authority - generally attributed to ministries of education - but on a the basis of equality and mutual reinforcement, preserving the respective autonomies but moving toward mutual convergence.

The advance toward technologically higher levels of training is one of the ways of taking on a renewed role in the development of technology and productivity. But it is not the only one. Perhaps one of the most salient features of the current profile of VTIs is the qualitative leap they have made upon entering the new field of provision of non-training services to production units. The route taken at first sporadically and as a limited response to specific requests at certain enterprises became clearer toward the end of the 1970s at the older VTIs having better infrastructure and greater support and recognition in the business world.

This new line of VTI action arose as a natural consequence of their identification with the needs of enterprises, particularly in the work undertaken with small production units. It was also spurred on by the economic crisis which to a certain extent was reflected in VTI budgets, leading them to seek new sources of financing in order to avoid having to cut back on their levels of activity.

A third reason would become increasingly important, once the most difficult moments of crisis had been surmounted: the aspiration of confirming legitimacy and solvency in the business context. VTIs set about proving that they were willing to closely follow the real needs of user enterprises, without limiting themselves to their traditional objectives. They made it clear that they would keep pace with technological change and innovation, and that they could provide responses in line with the new requirements. As a direct internal effect, the VTIs had a new and fluid input that allowed them to update and become technologically tuned in with production, and therefore enabled to improve the quality, efficiency and effectiveness of their training programmes.

These non-conventional services include advisory services to enterprises, particularly in terms of diagnoses and recommendations in all areas of business management; technical assistance, including collaboration and consultancy in matters directly linked to the production process, such as techniques for improving productivity, reducing costs, increasing production, etc.; technical work in production support areas, including services such as quality control, and design of products and prototypes, parts and tools; production work *per se*, such as elaboration and production of parts, and specialised machine work; applied research on methods and products to be incorporated in the production process; and dissemination of technology, emphasising the transfer of information on technical innovations, new technologies, raw materials, tools, instruments and machinery, as well as new products and processes that ensure technological updating of production units. These diverse categories of non-conventional services are addressed with varying frequency and intensity by the VTIs. What is characteristic in all cases is that such services are linked to training in the strict sense, comprising a comprehensive package of technical services offered to enterprises in line with their needs and demands.

Despite the fact that this is a still incipient line of work, everything seems to indicate that it will continue and expand at the VTIs in the region. It has stirred great interest, for the following reasons: its potential as a complementary and even alternative source of resources; its renewing and updating effect for training services; its appropriateness as a strategy for comprehensive attention to the needs of production units; its impact on the productivity of

enterprises; its value as a focus for experimentation and dissemination of new technologies; its contribution to technology transfer and to the interrelations between enterprises in different sectors and of different sizes and technological levels.

In the perspective of a reorganisation of production, the various sectors of economic activity will operate at different rates of expansion, change or decadence, as well as different rates of articulation with the trend toward productivity and international competitiveness. It is, however, clear that the interconnection of different sectors constitutes a decisive factor for the globalisation of growth and the upward spiraling of production. For this reason VTIs must necessarily very closely follow the evolution of each sector, so as to be able to respond in line with its particular rate of evolution. The region is already showing a tendency toward a certain compartmentalisation of VTIs in order to address the various production sectors. This is reflected in a more active participation of trade and union associations by sector and branch. In several countries we even find a certain flourishing of independence among enterprise sectors for institutionally resolving their VT problems themselves. While this has made it possible to establish close links with the market, it implies a certain risk of sacrificing overall flexibility. It should thus serve as an alert, so that training may find the balance between a global and comprehensive vision of economic activity, and the necessary discernment and differentiation among sectors. Excessive independence and fragmentation of training for the different sectors could turn into an isolationism that would not be highly recommendable in the light of what is sought, and at the same time paralyze the possibilities for change in emphasis among the different sectors according to their varying weight and needs over the course of time.

It is therefore essential for institutions to more precisely define their strategies for action at sectoral level within an overall perspective. One possibility that has proven to be appropriate is to continue along the route of sectoral specialisation of centres and programmes encouraging the active participation of the sector's production units, and even seeking forms of joint work and channeling of operational activities toward the enterprises themselves or toward intermediary bodies, when it is deemed advisable in terms of rationalisation of resources and effectiveness of the training provided.

In sum, the way in which VTIs are currently dealing with the new and increasingly complex needs of the production apparatus has contributed to a new profile of those institutions. It is ever a question of adjusting and adapting to a changing, diverse and multiple production apparatus. To do so they have shown considerable agility and flexibility, which has been possible thanks to the great autonomy acquired by these institutional formats since their outset,

and primarily to the ingredient of participation, which has become part of the very essence of VTIs and has allowed them to stay alert to the changes taking place in the economic and social environment.

In this sense, VTI style has to a certain extent been managerial, seeking new markets, creating new products and services, promoting and validating their acceptance, making an effort to improve quality based on the expectations detected among direct and indirect users, and committing themselves to providing the responses they are asked for, both implicitly and explicitly.

It could be argued that VTIs have come out of a certain introversion they had shown during the first years of their existence, which they were allowed because they had a clear goal to fulfill, because demand exceeded supply of their traditional services, and because they were at a stage of technical consolidation and the time had not yet come for a major opening up, like the one they undertook upon reaching maturity. Practically all the VTIs studied have had a more or less similar trajectory, which logically began at different historical moments, depending on their time of establishment.

From the outset, the seal of guarantee of these entities was based on the on-going participation and involvement of the interested sectors. The principle and practice of tripartism in their directing bodies included representatives of government, employers and workers, a system largely recommended and fostered by the International Labour Organisation.

The diversification of interested interlocutors led to a progressive expansion of representation on VTI directing bodies, primarily in terms of the different areas and sectors of government, and of different enterprise groups and sectors. Moreover, at various VTIs we begin to find directing boards and councils with representation of other social sectors, such as cooperatives, peasant farmers, artisans, small and micro-enterprise operators, solidarity groups, and even regional, provincial and municipal organisations, with a view to expanding the range of dialogue and involvement. Yet within and beyond the formal directing bodies at VTIs, we feel a generally veiled - yet sometimes explicit - struggle between governments and private sectors, to gain the upper hand in setting the course of the VTIs. Several of the institutions have begun to be increasingly pressured by the provisions of the state apparatus controlling their autonomy, committing them, on the one hand, to fulfillment of their priority social policies, and, on the other, to the general measures for reducing public spending and administration of resources in line with the stipulations of fiscal policies. At other institutions, enterprise sectors are gaining ground and exerting pressure in order to obtain specific responses to their immediate needs, in line with their production demands.

The VTIs have thus developed antennas for political interlocution in the most diverse sectors, as an essential survival strategy in a highly diversified, conflictive and changing context. The discipline of negotiation and concert has come to be one of the most peculiar characteristics of current VTI performance. That characteristic can be seen in the practical, short-term, in different mechanisms that show VTI initiative and receptiveness to new demands.

One such mechanism used widely today is that of liaison committees, advisory commissions, consultative committees, cooperation groups and other intermediary councils with representation of sectors, users and interested parties directly involved. At practically all the VTIs these bodies have become the most agile "sensors" for picking up real and specific demands. They operate not only as forums for the expression of needs, but also as sources of extra-budgetary resources, contributions in services and in kind, support and legitimacy, as well as monitoring and assessment instruments.

By insisting on participation and concert, and creating and using the interlocution mechanisms they themselves have designed, VTIs have shown a flexibility and an ability in politics and in marketing their work, at a level hard to find in other public services. It is their strategic response to the uncertainty of the present, a reflection of the true heterogeneity and multiplicity of demand, a manifestation of the constant search for currentness and legitimacy, and the testing of their versatility and adaptability to changing conditions.

The argument for VTI solvency is clearly the technical quality of their actions. When they set out on relatively new terrain, they were careful to establish their own know-how, inspired on the experiences of more advanced countries, even within the region itself, but with an effort to take their own route, supported by a distinctive educational technology and a *modus operandi* intentionally dissociated from traditional forms of education, including the education specifically geared to work. From that time forward, technical rigor became an imperative in gaining the space they have come to occupy. Excessive zeal in terms of technical quality has at times put a curb on innovation and flexibility, and has led the VTIs to stick to tried and proven processes and contents. They are "enticed", so to speak, by already established technical achievements, by the coherence of the processes, and by consistency in the organisation of pedagogical contents, at the risk of converting them into dogma and routine, and avoiding the constant revision required to ensure their true currentness and effectiveness. This is one of the factors contributing to institutional inertia, and which is embodied in staff that is accustomed to acting in line with certain pedagogical processes that have the guarantee of previous validations.

But it is also that rigor that keeps VTIs from innovating for innovation's sake. Experiments derive out of external pressures or unsatisfactory results with habitual practice; and only after they are given solid technical shape are they expanded. The greater the value the VTI sees in the recognition given to its technical quality as the basis for seriousness and reliability, the greater the distance between experimentation and official launching of an innovation, particularly in the technical-pedagogical terrain. Paradoxically, that same renown for technical competence authorises and leaves a margin for exploring non-conventional routes, a possibility exploited by the VTIs to a very variable extent and in very different ways.

This determines a variable range permitted between tradition and innovation. On the one hand, the respectability they have earned and the visible image that reaches the exterior are based on "classical" actions which, even when retouched, maintain the secure and accepted line. On the other hand, the cult of innovation always talked about by these institutions constantly impels them to open up new lines of action, get involved in non-conventional fields, fill spaces where gaps have been detected, adjust and vary their strategies and operating instruments.

The evidence gathered would lead us to sustain that innovations appear more in the way of additions than of substitutions. Except where they are geared to improving a previously existing function, activity or process - and even in those cases - innovations begin operating parallel to the traditional form. This situation is kept up until the innovations, generally introduced in an experimental way and with very reduced dimensions, become significantly recognised and accepted and show signs of comparative advantages. It is not frequent, however, for there to be conscientious evaluations of results of the innovations. In this field, the VTIs would seem to move much more by instinct and their political antennas than by rigorous technical evaluations.

This practice in the incorporation of innovations is consistent with the characteristic inherent to the political life of these VTIs, who are constantly bringing together the interests of diverse sectors, balancing at times conflicting expectations and demands, and seeking legitimation of their changes in direction among the various interest spheres. Moreover, reactions are different in each of those spheres, so that the whole generally represents the partial satisfaction of everyone, a goal which would not be obtainable by substitution.

In view of the diversity of the responses demanded, VTIs are working in parallel and apparently contradictory lines of action, on several planes. On the one hand, they continue deploying efforts geared to increasing productive capacity in the modern sectors, in line with their initial mandate, but in the

renewed terms that have been aforementioned. On the other hand, they have attempted - at this stage with significant progress and growing clarity - to address sectors that have been left behind, with a view to their participating at increased levels of productivity and income in the trend toward dynamisation of economic activity.

Initially, VTIs were called upon by their respective governments to enter the unprotected field of disadvantaged sectors and groups of the population, and they were even assigned resources to do so. This speaks to the public recognition of the force, momentum and versatility of these institutions to frequently take the lead in implementing social policies promoted by governments.

They have come a long and hard way since then, attempting to polish strategies and refine concepts for working with a vast, heterogeneous and hard to access conglomerate. The initial diffuse approach has evolved through a process of trial and error, toward increasingly precise and pertinent attention to the different categories distinguished today among such backward sectors. They have also incorporated a certain degree of selectivity in the target groups, and have gotten beyond mere assistance-type action undertaken until not long ago by many VTIs as their "social dues".

From the conceptual and philosophical point of view of their operation, in retrospect we can see a significant progression in the way VTIs have approached their task. Roughly speaking, we see three stages in the conceptual evolution of VTIs. The first stage is identified with the training of labour to hold the jobs available or foreseeable on the formal job market, at the level of skilled and semi-skilled workers. Consequently, action was concentrated on young people, with the apprenticeship formula being adopted, structured primarily for the so-called "universal" occupations in the manufacturing industry, and later expanded to cover occupations in commerce and services, and, to a lesser extent, agriculture. Adult workers also came to be included, but basically to retrain them for activities and occupations in the modern sector of the economy, at a time of rapid expansion.

The second stage, which starts to be seen in the mid 1960s in the pioneer institutions, is marked by a stress on social issues, as a result of the employment crisis and the marginality of large contingents of the population not absorbed by the modern sector. Here we have a change in concept and doctrine, moving attention away from the job and toward the individual, in the overall sense. Training was here geared to developing "human aptitudes" and not only "vocational" skills. This step was clearly marked by the conceptual leap reflected in ILO Recommendations 117 (1962) and 150 (1975), the principles of which were already being applied at VTIs.

The third stage, which is tenuously emerging in the region today, provides a rebalancing of the two previous stages and places the task of VTIs as a function of training individuals for "productive work", regardless of the conditions of that work in terms of levels of technology, productivity, and labour relations. This approach recognises that the production apparatus is not a duality between the modern sector and the marginal sector, but that it is made up of a heterogeneous set of economic units that vary as to size, levels of productivity and technology, prospects for stability and growth, links to the market, and degrees of organisation and permanence in production processes. The indirect goal continues to be vocational, professional and personal fulfillment of the worker; but the axis for action is the work performed, understood in the broader context of the production unit in which he or she is or will be inserted. The enormous variety of production units implies, in turn, varying working conditions and, naturally, very different VT requirements.

The target for VTI action today thus includes a whole spectrum of production units, from the most dynamic, characterised by rapid incorporation of frontier technologies, to the lower strata - called traditional or informal - and also including the intermediary strata, which more closely reflect the manufacturing model that had been the basis for the first VTI designs.

The range of demands thus opens up both horizontally and vertically, requiring from VTIs an enormous effort at diversification and institutional readjustment, from the level of policies through to the level of operating strategies and modes, as well as in teaching contents, processes and methods. The vast majority of Latin American VTIs are today involved in this movement toward innovation, experimentation, reflection and projection.

The distinctive characteristic is a constant and dynamic contact with enterprises - large, medium and small - which the VTIs have incorporated as a basic discipline for operation. Enterprises of the most diverse sorts have been demarcating the field of action for VTIs, and the way in which they plan, formulate and deliver their responses. Because of this, the transformation in the production apparatus could not but be reflected in new fields of action which have appeared to disprove some myths still associated with the long-lived traditional role of VTIs.

In fact, more than once it has been said that VTIs are excessively conservative, and that they drag around a heavy bureaucratic machinery, trailing behind the advances in the changing reality of the work world. Nevertheless, despite the inevitable inertia of any large organisation for public service with a relative protected market (given their long-held quasi-monopolistic status in the VT field), VTIs have managed - with advantages over the vast majority of

educational institutions - to keep fairly steady pace with the transformations taking place around them. Moreover, the crisis that affected their availability of resources at the outset of the 1980s, rather than paralysing them, in fact encouraged them to seek out imaginative solutions.

A solution explored by various VTIs was the attraction of complementary sources of financing. It should be remembered that while the VTIs of the region obtain their income primarily through payroll taxes, they have found ways to expand and diversify their resources for some time now. The contracting and sale of training and non-training services to public entities or private firms has been a constant at many VTIs in the region. This has enabled them to address new areas and to act with greater flexibility, while at the same time avoiding a dependence on or subordination to sectoral interests, and the effects of periods of recession. This on-going exercise of attracting additional resources has compelled them to validate their products on the market, rather than following traditional systems for socio-political validation of their services. Thus the ability to adapt - and in this case to foresee - shown by the VTIs materialises in a plasticity that guarantees broad bases for support even at times of crisis, and which helps them to better meet their obligations and mandates.

Nevertheless, except in a very few cases, the VTIs that have advanced through the sale of services have still not managed to implement differentiated administrative and accounting structures providing for appropriate mechanisms for attracting resources and managing finances more in line with the predictable fluctuations in cash flows and with the new forms of contracting of services by enterprises, sectoral organisations, local governments, investment projects, development programmes, and other initiatives originating outside the VTIs themselves. Joint work with such agents is hampered by a lack of administrative and financial versatility to adapt to the specific characteristics of each concrete project involving a given group of partners. The inevitable opposition and tension this implies are seen in conflicts between technical and administrative areas, and between central and local operating units, within the organisational structure. It is a question of a balance in constant movement, on the one hand, between the flexibility and creativity sought by the technical specialists, and the essential administrative controls seen by the latter as hindrances to operation; and on the other hand, between centralisation and local autonomy. In this field the advances are more meager than desirable for adjusting to an imminent process of regionalisation and decentralisation of public administration and of the production apparatus itself, on which the countries of the region are embarked.

The pressure on the VTIs, who are asked to show increasing levels of profitability, has grown in recent years, primarily from the political and

economic spheres interested in getting a hand on their resources and ready to even propose alternative institutional and organisational formulas. In some countries the issue has reached high spheres of political discussion, mobilising legal initiatives which in extreme cases have promoted radical change in the prevailing VT system, putting the very existence of strong VTIs in check.

The criteria for allocation of resources inherent in the currently prevailing fiscal adjustment policies are an attempt against the traditional formulas for VTI financing. There are arguments for drastic cuts in public spending, the unity of fiscal funds, flexibility in allocation of State resources, decentralisation of budgets to local governments, and self-sufficiency of autonomous government entities. Such criteria are obviously opposed to taxes having a specific, earmarked application, as is the case of the payroll tax that supports most VTIs.

Nevertheless, the institutional and economic capacity of production units and of social groups is still not sufficient to free the State from its responsibility to propel development on the basis of the appropriate and massive training of its human resources. Thus, in the matter of financing of VT, dynamic agreements should be reached to provide for the availability of VT resources to at least meet strategic needs in frontier technology sectors, as well as the demands of sectors not in a position to assume the costs of their training. This does not mean that institutions should not, in turn, continue taking advantage, insofar as possible, of the spaces available for attracting resources from external sources, imposing a criteria of ordered selectivity based on carefully identified priorities.

It should also be recognised that the financial resources available to VTIs have on many occasions served (or have been used) as seed money, i.e., have made it possible to increase certain resources provided for training actions, in a snowballing effect, with contributions by the State, enterprises, private entities, international organisations or bilateral aid. Thus the funds managed by VTIs can have an amplifying effect. There is practically no VTI in the region that has not received significant contributions in international technical assistance, in the way of services of experts and consultants, equipment, technology, etc.; moreover, such contributions have in all cases been arranged thanks to the guarantees offered by these VTIs as counterpart contributors of resources.

Finally, in the area of financing, we should indicate that the flexible treatment given by VTIs to this question has made it possible for them not to limit their attraction of resources to strictly monetary contributions. VTIs very often receive goods and services, use of equipment on a temporary or permanent basis, raw materials, etc. No less important, the fact that VTIs have approached

other sources in the effort to broaden their action by multiplying their resources, has brought them a benefit that is not quantifiable in monetary terms: the possibility of gaining access to the reality they seek to address. In such activities, based on diverse agreements and arrangements, VTIs have gone into enterprises, reached marginal neighbourhoods, acted in rural zones, participated in large public works undertakings and assistance programmes, etc. From there, they have enriched and updated their training practices and their modes of attention; and they have been able to formulate clearer profiles of the needs and have a better understanding of the public at whom their work is targeted.

At the methodological level, the VTIs show significant advances, which have permitted flexibility in the provision of services, and for whose decisive and generalised implementation all that is needed is a refining, polishing and development of the experience already gained, and a break with the inertia of the less flexible traditions still prevailing in the way training is delivered. The achievements in terms of taking training out of the classroom, making intensive use of mobile programmes that go out into enterprises or communities; the change in the profile of training centres, increasingly making them into sites for the multiplication of technology transfers and with open access for users; the intensive use of new, recently implemented modes such as distance training and technological dissemination, should go hand in hand with an updating of the pedagogical tools for delivering training.

The incorporation of new technologies is still not sufficiently reflected in the didactic media and resources used by the VTIs. Here they run the risk of a gradual slipping away from the technological standards prevailing in the world of production. A decisive factor is the intensification of modes for periodic updating of instructors and curriculum programers, with a view to staying permanently in touch with changes in production processes. Solutions that have already been successfully tried include internship of teaching personnel in enterprises, attracting of production plant personnel to updating modules, hiring of specialists as temporary instructors, and, certainly, the participation of technical-teaching personnel in technological assistance, research and development activities. Technological updating, we repeat, is an essential condition for survival and legitimation of VTIs in a renewed and increasingly demanding training market.

All this effort for modernisation requires a constant and deliberate selectiveness in decision-making by VTIs, on the basis of objective information. With only a few exceptions, it is here that VTIs show a chronic weakness in the research field. Until now, research has been done sporadically and has been limited to excessively conventional methods for detecting needs. Encouragement can be found in the practices which have begun in connection with

universities and research centres, which undoubtedly highlight the value of research within VTIs themselves. As a result of the initial research and development experiences on the part of the more solvent VTIs in the region, training has begun to be linked to processes of research, development and dissemination of technologies, in a mutually reinforcing circuit.

The technical-pedagogical peculiarity of VTIs also warrants mention. In itself it constitutes a renewing contribution to education for work in general, which was able to transmit a culture of production and emotional and ethical values linked to work, on the basis of "learning by doing". Moreover, that methodological baggage has evolved and has been perfected to the point of constituting an asset in and of itself. The experience accumulated in terms of training structured in modular form, as well as individualised training, have permitted a flexibilisation of the teaching-learning processes and a greater efficiency and effectiveness of the training provided. The same can be said in relation to the technical-pedagogical processes that have been structured on the basis of non-traditional clienteles, primarily from the informal sectors of the economy.

What should be stressed is that VTIs have not been satisfied merely with the role of "schools". They have developed multiple options to deliver training in a flexible way, as close as possible to the natural conditions of the work environment. They have showed a willingness to change their traditional systems in order to adjust better and more fully to the demands of different segments of the clientele they work with, and to the nature and objectives of the specific programmes they provide in each case. Despite the resistances and rigidities inherent to educational institutions, these VTIs have been able to innovate and to hit the mark in highly relevant aspects of their training function.

The profile to which various VTIs in the region would seem to aspire, approaches that of true technology and productivity centres, going beyond the bounds of mere vocational training institutions. Nevertheless, their main function continues to be organised around training, which thus becomes the trigger for a transfer of technical progress in the labour area.

Bilateral and multilateral international cooperation, and particularly that of the horizontal sort which is frequently found among VTIs in the region, has contributed significantly to the diversification and constant renewal of policies, strategies, technical-pedagogical methodologies and processes, curricular development, training and upgrading of teaching personnel, technological recycling, updating of infrastructures, and, ultimately, to a constant process of dialogue and thought. These exchanges have been intensely favoured and fostered by CINTERFOR, with a view to promoting a transfer and maximum

usage of the technologies created and proven in this field, with the region's scale economies in mind.

The road is nevertheless not without difficulties. VTIs are currently concerned with staying at the right place between casuistry and flexibility. It is clear that, given the imperative of effectiveness, ad hoc responses must be made very much in line with the specific requirements of each sector, group, enterprise, and worker. But this also gives rise to a dispersion of institutional energies and a dilution of the scale economies that constitute one of the bases for organisation of VT in large quasi-monopolistic institutions, with a view to attaining maximum profitability of services.

At this stage, VT is going through profound changes and diverse reorganisations. VTIs are mobilised by various impulses, reconciling the external demands and pressures, and anticipating, foreseeing and restructuring their responses in order to take the best routes. We can no longer speak of a VTI model in the countries of Latin America, as a set of VTIs that respond to a common static pattern in the diverse countries of the region. Instead, the gamut of institutions and the strategies and modes through which they operate have been enriched significantly over recent years. Moreover, each VTI has set out on its own routes, which distinguish one from the other, and the VTIs now give shape to a regional panorama that proliferates in ideas, experiences, solutions and potentials. What remains, however, is a shared characteristic that emanates from their common nature and which derives from the driving force that marks their evolution and performance: the dynamics of the production apparatus and of the labour market.

The big decision lies in refining the criteria for selection that must govern VTI action in the future. The priorities chosen at upper policy levels must be able to flow easily and consistently through the organisation and be permeable to the demands of the context, conserving the ability already shown by VTIs to adapt over and over again to the transformations, but in manner ordered by a clearly identifiable driving axis. The times to come will demand even greater adaptability, in ever shorter time periods. The appraisal arising out of this study authorises us to predict that VTIs are well-equipped and prepared to meet that challenge.

BIBLIOGRAPHY

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Follows a selection of the abundant bibliography consulted for this regional study. The criteria used was to privilege the papers that might be useful for readers interested in deepen the different topics dealt with in this paper. It comprises a first part with general and basic bibliography, followed by a selection by issued and countries that constituted focus of the research. A selection of relevant legal instruments is added, as well as a list of the periodical publications consulted. Some publications mentioned in footnotes are not included in this bibliography.

Working papers and preliminary or unpublished papers elaborated by various authors in the framework of preparatory studies for the World Bank Policy Paper on Technical Vocational Education and Training in Development Countries were not included in this list, though they were valuable reference for the elaboration of the regional study. Also a number of internal papers of the ILO, and particularly of the Training Policies Branch, yet unpublished, offered guidelines and interesting views for several topics. Last but not least, within the operational strategy of the regional study a number of drafts, notes and specific papers were prepared which constituted inputs for specific subjects dealt with in the final report. The list of such contributions is included at the end of the bibliography.

I. BASIC AND GENERAL BIBLIOGRAPHY

This selection includes documents that bring information for a global view of vocational training with special reference to Latin America and which describe or appraise its evolution, economic and social context, historical background, growth and diversification of institutions and systems working in this area. It also gathers papers for thought on the priority issues addressed in the regional study.

Agudelo Mejía, S.- **La orientación profesional en América Latina: un estudio de diez países.** Montevideo, Cinterfor, 1982. 70p. cuads. (Estudios y monografías, 58).

--. **Terminología básica de la formación profesional en América Latina.** Montevideo, 1978. 60p.

Alexim, J.C.- **Cinterfor, un instrumento de la cooperación técnica regional.** Boletín Cinterfor, Montevideo, n. 109, oct.-dic. 1989. p. 69-78.

--. **El desarrollo de la formación profesional en la región y el papel de Cinterfor.** Boletín Cinterfor, Montevideo, n. 74, abr-jun. 1981. p. 3-13.

--. **La planificación estratégica en la formación profesional.** Boletín Cinterfor, Montevideo, n. 93, ene.-mar. 1986. p. 3-18.

Altaver, E.- La calificación de los recursos humanos y la complejidad del trabajo: comentarios al problema de la reducción. En: Labarca, G. comp.- **Economía política de la educación,** México, Nueva Imagen, 1980. 397p.

Amman, P.- **As teorias e a prática da formação profissional.** Brasília, 1987. 137p.

Andrade, A. Cabral de.- **Coordinación del sistema formal de educación con el de formación profesional en países de América Latina.** Montevideo, Cinterfor, 1978. 173p. (Estudios y monografías, 34).

--. **Problemas y perspectivas de los programas de educación-producción: algunas reflexiones.** Montevideo, Cinterfor, 1987. 100p. (Estudios y monografías, 72).

Arnold, R.- **Vocational training in Latin America.** Education, n. 2, 1988. p. 50-68.

Barbagelata, H.H.- **El tripartismo y la formación profesional en América Latina.** Montevideo, Cinterfor, 1980. 157p. (Estudios y monografías, 53).

Biasutto, C. comp. **Educación y clase obrera.** 2a. ed. México, Nueva Imagen, 1984. 161p.

BID.- **Informe anual 1988.** Washington, 1989. 162p.

--. **Progreso económico y social de América Latina: informe 1987.** Washington, 1987. 506p. (Fuerza de trabajo y empleo).

Blaug, M.- **La educación y el problema del empleo en los países en desarrollo.** Ginebra, OIT, 1974. 103p.

--. **An introduction to the economics of education.** Londres, Penguin, 1970. 120p.

Bischoff, J. y otros.- Trabajo productivo e improductivo. En: Labarca, G., comp.- **Economía política de la educación.** México, Nueva Imagen, 1980. 397p.

Braslavsky, C. y Llomovate, S.- **Hacia una comprensión integral de la desocupación juvenil en América Latina y el Caribe.** Buenos Aires, FLACSO, 1987. s.p.

Brodersohn, V.- **Capacitación y productividad frente al reto de la crisis.** Boletín Cinterfor, Montevideo, n. 92, oct.-dic. 1985. p. 29-48.

Caiafa Salgado, M.U. y Grossi Porto, M.S.- **Transformations technologiques, scientifiques, organisationnelles, économiques, sociales et culturelles du monde du travail ayant une incidence sur le monde de l'éducation.** Paris, UNESCO, 1986. 83p.

Campbell, C.P. y Muller, M.C.- **Non-formal vocational training programmes as a means of developing occupational skills.** Geneva, ILO/Vocational Training Branch, 1986. 100p.

Carnoy, M.- **Education and employment: a methodology for local policy research.** Paris, UNESCO, 1979. 31p.

--. **L'éducation et l'emploi: une étude critique.** Paris, UNESCO, 1977. 89p. (Principes de la planification de l'éducation, 26).

Carnoy, M. y Levin, H.M.- **Schooling and work in the democratic state.** Stanford, University Press, 1985.

Carnoy, M., Levin, H.M. y King, K.- **Education, travail et emploi.** Paris, UNESCO, 1981. 357p.

Carton, M.- **La educación y el mundo del trabajo.** Paris, UNESCO, 1985. 247p.
Casassus, J.- **Education and work: a review of major issues and experiences.** Paris, UNESCO, 1976. 41p.
Castro, C. de Moura.- **El ethos de la formación profesional.** Boletín Cinterfor, Montevideo, n. 61, ene.-feb. 1979. p. 3-9.
--. Investigaciones en economía de la educación: una agenda. **Boletín Cinterfor,** Montevideo, n. 58, jul.-ago. 1978. p.21-46.
--.Secundaria profesionalizante: ¿premio consuelo? **Boletín Cinterfor**, Montevideo, n. 56, mar.-abr. 1978. p. 3-26.
--. **Technical education for whom?** Rio de Janeiro, CAPES, s.f. 9 p.
Castro, C. de Moura y Andrade, A. Cabral de.- Cuando la formación no satisface la demanda ¿quién es el culpable? **Boletín Cinterfor,** Montevideo, n. 105, oct.-dic. 1988. p. 19-31.
CEPAL. Balance preliminar de la economía latinoamericana, 1988. En: **Notas sobre la economía y el desarrollo.** Santiago de Chile, n. 470/471, dic. 1988. p.15-40.
--. **Crisis y desarrollo en América Latina y el Caribe.** Santiago de Chile, 1985. 169 h.
--. **La juventud en América Latina y el Caribe.** Santiago de Chile, 1985. 181 p. (Estudios e informes de la CEPAL, 47).
--. **Transformación productiva con equidad: la tarea prioritaria del desarrollo de América Latina y el Caribe en los años noventa.** Santiago de Chile, 1990. 185p.
CINTERFOR. **CINTERFOR: 20 años de solidaridad.** Montevideo, 1984. 77p. (Documento presentado a la Reunión de la Comisión Técnica, 22, Cartagena, 1984).
--. **Diccionario enciclopédico de la formación profesional.** Versión preliminar. Montevideo, 1986. 116p.
--. **Directorio de servicios de información sobre formación profesional de América Latina.** Montevideo, 1981. 126p.
--. **Estudio prospectivo sobre la formación profesional en América Latina y el Caribe.** Montevideo, 1975. 2v. (Estudios y monografías, 17).
--. **La formación: reto de los años 80.** Extractos de la memoria del Director General de la OIT. Montevideo, 1980. 60p.
--. **Orígenes de Cinterfor.** Montevideo, 1974. 2v.
--. Seminario Internacional sobre Formación Profesional Comparada en América Latina, São Paulo, 1984. **Informe.** Montevideo, 1985. 2v. (Informes, 127).
--. Seminario sobre Desafíos Actuales de la Formación Profesional en América Latina, Caracas, 1982. **Informe.** Montevideo, 1983. 102p. (Informes, 112).
--. Seminario sobre Formación en la Empresa, México, 1982. **Informe.** Montevideo, 1983. 144p. (Informes, 117).
--. Seminario sobre Gestión de la Formación Profesional: las empresas y la formación profesional y la informática aplicada a la gestión de las instituciones de formación, Santo Domingo, 1986. **Informe.** Montevideo, 1987. 2v. (Informes, 130).
--. Seminario sobre Puntos Críticos de la Formación Profesional Hoy, Kingston, Jamaica, 1983. **Informe.** Montevideo, 1984. 144p. (Informes, 118).
--. Seminario sobre Sistemas de Formación Profesional en la Producción y Experiencias en la Vinculación de la Educación con el Trabajo, La Habana, 1987. **Informe.** Montevideo, 1989. 135p. (Informes, 135).
--. **Vocational training in-depth review.** Montevideo, 1984. (Inédito).
Coloquio sobre la Participación de los Trabajadores en la Formación Profesional, San José de Costa Rica, 1986. **Informe.** Montevideo, OIT/INTAFOP, 1986. 15 h. anexos.
Conferencia Internacional del Trabajo, 59 reunión, Ginebra, 1974. **Desarrollo de los recursos humanos: orientación profesional y formación profesional.** Ginebra, OIT, 1973. 75p. (Informe VIII (1) e Informe VIII (2)).
Conferencia Internacional del Trabajo, 66 reunión, Ginebra, 1980. **Memoria del Director General.** Ginebra, OIT, 1980. 169p.
Convención sobre la enseñanza técnica y profesional. Aprobada por la Conferencia General en su 25a. reunión, Paris, 10 de nov. 1989. Paris, UNESCO, 1989. 45p.
El Convenio 142 y la Recomendación 150 sobre orientación y formación profesionales: un análisis comparativo. **Boletín Cinterfor,** Montevideo, n. 41, set.-oct. 1975. p. 3-14.

Convenio sobre la orientación profesional y la formación profesional en el desarrollo de los recursos humanos: el Convenio 142. **Boletín Cinterfor**, Montevideo, n. 41, set.-oct. 1975. p.15-18.

Correa, H.- **Programas de educación ocupacional en los países latinoamericanos: reseña de evaluaciones.** Montevideo, Cinterfor, 1984. 76p. (Estudios y monografías, 64).

Corvalán, O.- **Comparative study of apprenticeship in Latin America: final report.** Santiago de Chile, CIDE, 1981.

--. **Educación formal y no formal con producción en América Latina.** Santiago de Chile, CIDE, s.f. 13h.

Dannemann, R.N.- Política y planeamiento de la formación profesional. **Boletín Cinterfor**, Montevideo, n. 104, jul.-set. 1988. p. 5-10.

--. Tendencias y cambios de la formación profesional en América del Sur. **Boletín Cinterfor**, Montevideo, n. 82, abr.-jun. 1983. p. 3-17.

De Simone, J.A.- **El desarrollo de los subsistemas de educación técnica y profesional en América Latina.** Santiago de Chile, UNESCO/OREALC, 1982. 18p.

Dougherty, C.R.S.- Los estudios sobre el mercado del empleo y la planificación del desarrollo de la mano de obra. **Boletín Cinterfor**, Montevideo, n. 89, ene.-mar. 1985. p. 3-39.

Ducci, M.A.- **Equity and productivity of vocational training: the Latin American experience.** Los Angeles, 1987. 41h.

--. **Formación profesional: el modelo latinoamericano.** (Trabajo preparado para la International Encyclopaedia of Education, Supplementary v.2, 1990).

--. **Formación profesional: vía de apertura.** Montevideo, Cinterfor, 1983. 102p. (Estudios y monografías, 61).

--. **Formación profesional y trabajo productivo: reflexiones introductorias.** Montevideo, Cinterfor, 1984. 12h.

--. Hacia una mayor responsabilidad de las empresas en la formación profesional: los caminos de América Latina. **Revista de la Asociación Chilena de Relaciones Industriales**, Santiago de Chile, 1989. 10p. (en prensa).

--. **Panorama de la formación profesional en América Latina.** Montevideo, Cinterfor, 1985. 24h.

--. **Proceso de la formación profesional en el desarrollo de América Latina: un esquema interpretativo.** Montevideo, Cinterfor, 1979. 135p. (Estudios y monografías, 44).

Dunning, H.- **Los sindicatos y la formación profesional: guía de educación obrera.** Ginebra, OIT, 1987. 83p.

Franco, M.L.P.B.- O ensino de 2o. grau: democratização? profissionalização? ou nem uma coisa nem outra? **Cadernos de pesquisa**, São Paulo, n. 47, nov. 1983. p. 18-31.

Frigotto, G.- Fazendo pelas maos a cabeca do trabalhador: o trabalho como elemento pedagógico na formação profissional. **Cadernos de pesquisa**, São Paulo, n. 47, nov. 1983. p. 38-45.

--. **Formação profissional e desenvolvimento económico e social.** Rio de Janeiro, SENAI, 1979. 130p.

--. **A produtividade da escola improdutiva: un exame das relações entre educação e estrutura económico-social capitalista.** São Paulo, Cortez, 1984. 235p.

Galeano Ramírez, A.- **Comprometámonos con el futuro.** Bogotá, SENA, 1982. 103p.

--. **La formación profesional del futuro.** Bogotá, SENA, 1984. 66p.

--. **Formación profesional, empleo, productividad: hacia una nueva concepción de la FP.** Bogotá, SENA, 1984. 17p.

--. **Hacia una revolución educativa.** Bogotá, SENA, 1982. 98p.

Gallart, M.A.- **Educación y trabajo: un estado del arte de la investigación en América Latina.** Buenos Aires, CENEP, 1986. 185p.

-- **Las escuelas técnicas y el mundo del trabajo: la carrera de los egresados.** Buenos Aires, CENEP, 1987. 184p. (Cuaderno del CENEP, 38-39).

García, H. y Blumenthal, H.- **Formación profesional en Latinoamérica.** Caracas, ILDIS, 1987.

García, A. y Gatica, J.- **Reindustrialización: una condición para el desarrollo.** Santiago de Chile, OIT/PREALC, 1985. 27p. (Documentos de trabajo, 264).

Gelpi, E.- **Transformaciones del mundo del trabajo y sus efectos sobre la educación.** Caracas, OREALC, 1985.

Gómez, V.M.; Hermet, G. y Munguía, J.- **Relaciones entre educación técnica, formación profesional: análisis comparativo internacional.** México, Fundación Javier Barros Sierra, 1981. 27h.

Gómez, V.M. y Peña, M.- **Problemas contemporáneos de desarrollo educativo. Separata de tendencias y problemas de desarrollo y planeación de la oferta de recursos humanos.** Bogotá, UNESCO/PNUD/ICFES, 1986. 28h.

Gómez Acevedo, R.- Formación profesional, cambio y desarrollo. **Boletín Cinterfor,** Montevideo, n. 88, oct.-dic. 1984. p. 53-62.

Gómez Jiménez, A.- **La participación de las organizaciones de trabajadores en la formación profesional: estudio regional.** Montevideo, Cinterfor, 1985.

Hallak, J. y Caillods, F.- Educación, formación profesional y acceso al mercado de trabajo. Boletín **Cinterfor, Montevideo,** n. 78, abr.-jun. 1982. p. 29-48.

--. **Education, formation et secteur traditionnel.** Paris, UNESCO, 1981. 150p. (Principes de la planification de l'éducation, 31).

--. **Education, travail et emploi.** Paris, UNESCO, 1981. 2v.

Illich, I.- **Deschooling Society.** New York, Harper & Row, 1972.

Incidencia de los procesos económicos y demográficos en la formación profesional de América Latina en la década de los 80. **Boletín Cinterfor,** Montevideo, n. 72, nov.-dic. 1980. p. 3-22.

Jallade, J.P.- **Desempleo juvenil y educación.** Montevideo, Cinterfor, 1988. 13h.

Jiménez Veiga, D.- La crisis, la deuda, el ajuste y el desarrollo de los recursos humanos. **Boletín Cinterfor,** Montevideo, n. 99, jul.-set. 1987. p. 3-25.

Kalil, N.L.- Experiencias en la negociación y la administración de la cooperación técnica. **Boletín Cinterfor,** Montevideo, n. 109, oct.-dic. 1989. p. 63-67.

Kalil, N.L. y Claussen, M.E.- **Planeamiento de la formación profesional: un modelo pedagógico.** Montevideo, Cinterfor, 1987. 125p. (Estudios y monografías, 71).

Kanawaty, G.- Fomento de las pequeñas empresas y del trabajo por cuenta propia. **Boletín Cinterfor,** Montevideo, n. 83, jul.-set. 1983. p.3-16.

--. Formación para un mundo en plena evolución: algunas reflexiones de carácter general. **Revista Internacional del Trabajo,** Ginebra, v. 104, n. 3, jul.-set. 1985. p. 333-342.

--. Tendencias en el mercado de trabajo: consecuencias para la formación. **Boletín Cinterfor,** Montevideo, n. 94, abr.-jun. 1986. p. 3-14.

Katzman, R.- Las transformaciones sectoriales del empleo en América Latina. **Revista de la CEPAL,** Santiago de Chile, n. 24, dic. 1984. p. 83-102.

King, K.- **The planning of technical and vocational education and training.** Paris, UNESCO, 1985. 43p.

Klein, E.- **El empleo y la juventud en América Latina.** Santiago de Chile, PREALC, 1986. 37p.

Kuenzer, A.Z.- **Pedagogia da fábrica: as relações de produção e a educação do trabalhador.** 2a. ed. São Paulo, Cortez, 1985. 203p.

Labarca, G. comp. **Economía política de la educación.** México, Nueva Imagen, 1980. 397p.

Labarca, G. y otros.- **La educación burguesa.** 5a. ed. México, Nueva Imagen, 1984. 341p.

La Belle, T. ed.- **Education and development: Latin America and the Caribbean.** Los Angeles, University of California, 1972. 732p.

--. **Educational alternatives in Latin America: social change and social stratification.** Los Angeles, University of California, 1975. 490p.

Lipset, S.M.- **Political Man.** New York, Doubleday, 1960.

Lucio Alvarez, R. y Trujillo, M.J.- **Una introducción a la formación profesional, hoy.** Bogotá, SENA, 1983. 119p.

McGinn, N,; Barra, N. y Harris, Ch.- **Recent experiences in the coordination of education, employment and technology in Latin America and the Caribbean: a state of the art review and annotated bibliography.** Paris, UNESCO, 1985. 105p.

Magendzo, A.; Barra, N. y González, L.E.- **Estudio comparado sobre cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe.** Santiago de Chile, UNESCO/OREALC, 1981. 151p.

Martínez Espinosa, J.- El enfoque de sistema en la formación profesional de América Latina. **Boletín Cinterfor,** Montevideo, n. 58, jul.-ago. 1978. p. 3-20.

Maslankowski, W.- Interacción de empleadores y de trabajadores en la formación profesional. **Boletín Cinterfor,** Montevideo, n. 79, jul.-set. 1982. p. 67-78.

Metcalf, C.H.- **The economics of vocational training: past, evidence, and future considerations.** Washington, World Bank, 1986.

Morales Gómez, D. y Gallart, M.A. ed.- **Tendencias en educación y trabajo en América Latina: resultados de un seminario regional.** Ottawa, IDRC, 1989. 155p.

Novaes, P.- Planeamiento de la formación profesional. **Boletín Cinterfor,** Montevideo, n. 104, jul.-set. 1988. p. 45-59.

Olivera, C.E.- **The administration of educational development in Latin America.** Paris, UNESCO, 1979. 151p.

OIT. **Formación profesional en América Latina.** Ginebra, 1951. 324p. (Nueva serie, 28).

Piqueras Arenas, J.A.- **El taller y la escuela.** México, Siglo Veintiuno, 1988. 219p.

Pisani P.,L.- Formación y empleo. **Boletín Cinterfor,** Montevideo, n. 52, jul.-ago. 1977. p. 3-17.

Pizarro, C.- Escuela y trabajo: una tesis provocativa. **Boletín Cinterfor,** Montevideo, n. 82, abr.-jun. 1983. p. 41-45.

PNUD.- **Education and training in the 1990s: developing countries' needs and strategies.** New York, 1989.

Prokopenko, J.- **La gestión de la productividad: manual práctico.** Ginebra, OIT, 1989. 317p.

Psacharopoulos, G.- **The economic returns to education in the process of development: an international comparison.** Amsterdam, Elsevier Scientific Publishing Co., 1972.

--. **To vocationalise or not to vocationalise? That is the curriculum question.** Washington, Banco Mundial, 1986. 24p. (Report EDT 31).

Rama, G.- **La evolución social de América Latina: 1950-1980: transición y cambio estructural.** Santiago de Chile, CEPAL, 1984. (inédito).

--. **La formación profesional ante los procesos de desarrollo y crisis en América Latina y el Caribe.** Montevideo, Cinterfor, 1986. 23p. (DOCREF/SEM/GESTION DE LA FP).

Recomendación sobre la orientación profesional y la formación profesional en el desarrollo de los recursos humanos: la recomendación 150. **Boletín Cinterfor,** Montevideo, n. 41, set.-oct. 1975. p. 19-47.

Régnier, E.M.- Calidad de la formación profesional. **Boletín Cinterfor,** Montevideo, n. 106, ene.-mar. 1989. p. 3-24.

Régnier, R.C.- La formación profesional y el trabajo productivo. **Boletín Cinterfor,** Montevideo, n. 102, ene.-mar. 1088. p.3-12.

--. La implantación del área de informática en el SENAC. **Boletín Cinterfor,** Montevideo, n. 97, ene.-mar. 1987. p. 3-19.

Reunión de Expertos sobre Estrategias de Formación Profesional, San José de Costa Rica, nov. 1988. **Informe.** San José de Costa Rica, INTAFOP, 1988. 30h.

Richter, L.- **Necesidades de formación profesional: determinación, control y seguimiento.** Montevideo, Cinterfor, 1987. 109p. (Estudios y monografías, 69).

Salm, C.- **Escola e trabalho.** São Paulo, Brasiliense, 1980.

Schiefelbein, E.- **Educación y empleo en América Latina.** Santiago de Chile, OIT/PREALC, 1978. 41p (Investigaciones sobre empleo, 10).

Schultz, T.W.- **Human capital: policy issues and research opportunities.** En: EEUU, National Bureau of Economic Research. Human Resources. New York, Columbia University, 1972.

South America, Central and the Caribbean, 1986. London, Europa, 1986. 582p.

Souza, P.N. Pereira de.- Teoría y práctica de la preparación para el trabajo. **Boletín Cinterfor,** Montevideo, n. 85, ene.-mar. 1984. p.3-14.

Stoikov, V.- **La educación y la formación profesional recurrentes.** Ginebra, OIT, 1975. 128p.

Tampe Birke, A.- Estructura, gestión y desarrollo de las instituciones de formación. **Boletín Cinterfor,** Montevideo, n. 108, jul.-set. 1989. p.3-15.

Tedesco, J.C.- **Educación y empleo: un vínculo en crisis.** PLANIUC, Valencia, Venezuela, v. 3, n. 5, 1984. p. 57-66.

--. Reproductivismo educativo y sectores populares en América Latina. **Boletín Cinterfor,** Montevideo, n. 84, oct.-dic. 1983. p. 67-78.

Tendencias y prioridades en materia de formación profesional: el decenio venidero. **Boletín Cinterfor,** Montevideo, n. 89, ene.-mar. 1985. p. 77-92.

Tobelem, A.- Estrategias alternativas para la organización de la formación profesional. **Boletín Cinterfor,** Montevideo, n. 74, abr.-jun. 1981. p.-15-32.

Tokman, V.- Estrategia de desarrollo y empleo en los años ochenta. **Revista de la CEPAL,** Santiago de Chile, n. 15, dic. 1981.

UNESCO. **Aprender y trabajar.** Paris, 1980. 358p.
--. **In-school and on-the-job technical education and training.** Paris, 1985. 105p.
--. **Policy planning and management in technical and vocational education: a comparative study.** Paris, 1984.
--. **The transition from technical and vocational schools to work.** Paris, 1983.
Uthoff, A. y Pernia, E.M.- **Una introducción a la planificación de los recursos humanos en países en desarrollo.** Ginebra, OIT, 1986. 53p. (Estudios básicos para capacitación en población, recursos humanos y planificación de desarrollo, 2).
Vera Godoy, R.- **Disyuntivas de la educación media en América Latina.** Santiago de Chile, UNESCO/CEPAL/PNUD, 1979. 92p.
Villalba, C.E.- Estrategias e instrumentos de calidad para la formación profesional. **Boletín Cinterfor,** Montevideo, n. 105, oct.-dic. 1988. p. 33-40.
Verhine, R.F. y Lehmann, R.H.- Obtenção de emprego industrial como função de educação nao-formal: um estudo de operarios em duas cidades do nordeste. **Cadernos de pesquisa,** São Paulo, n. 47, nov. 1983. p. 53-63.
Warde, M.J.- Algumas reflexões em torno da lei 7044. **Cadernos de pesquisa,** São Paulo, n. 47. nov. 1983. p. 14-47.
Weinberg, P.D.- Contribuciones de la formación profesional a la generación de empleo. **Boletín Cinterfor,** Montevideo, n. 90, abr.-jun. 1985. p. 3-25.
Wilches, A.- **Formación profesional.** 2a. ed. San José de Costa Rica, INA, 1971. 185p.
--. La formación profesional y su interrelación con la industria. **Boletín Cinterfor**, Montevideo, n. 75, jul.-set. 1981. p.3-28.
Ybarra Almada, A. y Martínez Alvarez, F. de J.- **Experiencias exitosas de capacitación en empresas en México.** México, s.e., 1985. 83h. anexos.

II. BIBLIOGRAPHY BY ISSUES

1. Pedagogics and methodology

Agudelo Mejía, S.- **Formación individual: sistema utilizado en el SENAI de Rio de Janeiro.** Montevideo, Cinterfor, 1977. 136p. (Estudios y monografías, 26).
--. **Lineamientos para la implantación de un servicio de certificación ocupacional.** Montevideo, Cinterfor, 1983. 67p. (Estudios y monografías, 59).
Alcántara, A. de.- **Métodos para la aplicación de las series metódicas ocupacionales.** Montevideo, Cinterfor, 1978. 73p. (Estudios y monografías, 37).
Argentina. CONET. **Capacitación a distancia para docentes conduciendo talleres del pensamiento reflexivo.** Buenos Aires, 1987. s.p.
Arnold, R.- **El sistema dual del aprendizaje en América Latina.** Baden-Baden, Nomos Verlagsgesellschaft, 1986. 524p.
Arquitectura escolar: los centros de formación profesional. **Boletín Cinterfor,** Montevideo, n. 96, oct.-dic. 1986. p.33-37.
Arroyo, M.- **Educaçao e trabalho.** Rio de Janeiro, 1981.
Avilés Torrejón, C.; Irigoin B., M. y Ponce C., S.- **Sistema Nacional de Capacitación a Distancia: SINCAD.** Santiago de Chile, INACAP, 1980. 87h. anexos.
Barbagelata, H.H.- **La institucionalización de la certificación ocupacional y la promoción de los trabajadores.** Montevideo, Cinterfor, 1979. 89p. (Estudios y monografías, 46).
Brasil. SENAI. **Unidades movéis do SENAI.** Rio de Janeiro, 1986. 51p.
Campos, A.P. de Souza y Lezcano, C.- **Unidades móveis.** Río de Janeiro, SENAI, 1985. 19p. Projeto SENAI/Mtb/BIRD.
Castro León, J.- Posibilidades y limitaciones del uso de los medios de comunicación de masas para la capacitación industrial. **Boletín Cinterfor,** Montevideo, n. 98, abr.-jun. 1987. p.77-83.
CINTERFOR. **Desarrollo de personal técnico-docente.** Montevideo, 1983. 3v.

CINTERFOR. **La educación a distancia: una alternativa.** Montevideo, 1989, 21p. (PRODIR).
--. **Métodos y técnicas para la formación profesional.** Montevideo, 1989. 109p.
--. Reunión de Expertos sobre el Sistema Modular en la Formación Profesional, San José de Costa Rica, 1982. **Informe resumido.** San José de Costa Rica, INA/CINTERFOR, 1982. 37h. anexos.
Colombia. SENA. **Estrategias del sistema dual de formación profesional.** Bogotá, 1982. p.v.
--. **La formación abierta y a distancia: perspectivas y propuestas.** Bogotá, 1987. 19p.
--. **La formación permanente, individualizada y modular: la política técnico-pedagógica del SENA.** Bogotá, 1984. 88p.
--. **Nuevos métodos de la formación profesional.** Bogotá, 1988.
--. **La organización de alumnos en el sistema de formación profesional a distancia del SENA.** Bogotá, 1989.
--. **Programa Nacional de Formación Abierta y a Distancia del SENA: marco general, actualidad y proyecciones.** Bogotá, 1988. s.p.
Colombia, SENA. **Unidad técnica: normas. Guía para análisis y adopción.** Bogotá, 1986. 20p.
Costa Rica, INA.- **Análisis ocupacional.** San José de Costa Rica, 1985. 44p.
--. **Certificación ocupacional en Costa Rica.** San José de Costa Rica, 1984. 29p.
Chang, L.; Reuben S., S. y Sanchez M., L.- **Capacitación-producción del INA de Costa Rica.** Montevideo, Cinterfor, 1985. 107p. (Estudios y monografías, 68).
Chile, INACAP. **El sistema de capacitación a distancia: tres experiencias realizadas.** Santiago de Chile, 1987.
Davini, M.C.- **Evaluación del sistema de producción de medios didácticos del CONET.** Buenos Aires, CONET, 1988. 54h. anexos.
Ecuador. SECAP. **Sistema dual: una estrategia operativa del SECAP.** Quito, 1985. 34h.
Fajardo, R.- **El aprendizaje en la Unidad de PISCO-ICA del SENATI: un caso exitoso de la implantación del aprendizaje dual en ciudades descentralizadas.** Lima, 1988. 156p. anexo.
Ferreiro, J.- **Un material didáctico de aplicación regional: las colecciones básicas Cinterfor (CBC).** Montevideo, Cinterfor, 1976. 76p.
Franco de Machado, C. y otros.- **La formación abierta y a distancia en el SENA.** Bogotá, SENA, 1983. 2v.
Frigerio, G.- **Sistema dual: evaluación y funcionamiento.** Buenos Aires, FLACSO, 1987. 285p.
Guatemala. INTECAP. **El sistema dual en Guatemala: una respuesta a la demanda del mercado laboral.** Guatemala, 1984. 16p.
Guibert, A. Azevedo de Paula y Romiszowki, A.- **Educational Technology in Vocational Training in Brazil.** Programmed Learning and Educational Technology, London, Association for Educational and Training Technology. v.17, n. 4, nov. 1980. p. 218-231.
Honduras. INFOP. **Informe de investigación sobre el sistema de "Aprendizaje dual".** Tegucigalpa, 1983. s.p.
Kalil, N.L. y Claussen, M.E.- **Metodología para la elaboración de material de instrucción.** Montevideo, Cinterfor, 1983. 75p. (Estudios y monografías, 63).
Kelly, R.J.- **The use of visual aids for the training of individuals with low literacy levels.** Geneva, ILO, 1986. 16p.
Maya Betancourt, A. y Prieto de Medina, H.- **La educación abierta y a distancia en Colombia.** Bogotá, Calidad, 1988. 576p.
La modaliad dual de aprendizaje en el SENATI. **Boletín Cinterfor,** Montevideo, n. 103, abr-jun. 1988. p.59-72.
Oehring, E.- Aprendizaje por Acción: desarrollo empresarial en la pequeña empresa. **Formación profesional al día,** INA, San José de Costa Rica, v.1, n. 1, 1985. p. 83-101.
Pereira, D. Rodrigues.- La enseñanza por correspondencia: una solución para los problemas educacionales. **Boletín Cinterfor,** Montevideo, n. 55, ene.-feb. 1978. p. 31-40.
Ponce, S.; Escobar, A. y Cepeda, A.- **Aplicación de la modalidad a distancia en el curriculum de las carreras profesionales de INACAP.** Santiago de Chile, INACAP, 1983. 26h.
Pujol, J.- **Análisis ocupacional: manual para instituciones de formación profesional.** Montevideo, Cinterfor, 1980. 134p. (Estudios y monografías, 48).
Romiszowski, A.- Uso de la enseñanza individualizada para formación en las empresas. **Boletín Cinterfor,** Montevideo, n. 61, ene.-feb. 1979. p.11-44.
La segunda etapa del INCE y la Dirección de Tecnología Educativa. **Boletín Cinterfor,** Montevideo, n. 45. may-jun. 1976. p. 31-40.

Seminario Internacional sobre Experiencias con Modelos de Aprendizaje en América Latina, Quito, 1985. Ponencias de la Delegación Alemana. Manheim, DSE, 1986. p.v.

Simposio Colombiano sobre Informática, Educación y Capacitación. Memorias. Bogotá, CIENA/SENA/UNESCO/CIID, 1987. 439p.

El sistema modular y su empleo en el INA de Costa Rica. **Boletín Cinterfor,** Montevideo, n. 69, may.-jun. 1980. p. 13-30.

La televisión en la formación profesional. **Boletín Cinterfor**, Montevideo, n. 96, oct.-dic. 1986. p.57-65.

Tryllinski, M.H.C.V.- **Avaliação das unidades movéis; subprojeto I evolução e caracterização, o atendimento por unidade móvel - período 1980-1983.** São Paulo, SENAI, 1985. 107p.

--. **Avaliação das unidades movéis; subprojeto II demanda por treinamento por unidade móvel e atendimento pelo SENAI.** São Paulo, SENAI, 1985. 43p.

--. **Avaliação das unidades movéis; subprojeto III análise do resultado do treinamento por unidade móvel: o treinado e seu desempenho profissional.** São Paulo, SENAI, 1985. 111p.

Las unidades móviles en Venezuela. **Boletín Cinterfor,** Montevideo, n. 51, may.-jun. 1977. p.19-51.

El videocasete como auxiliar en la capacitación. Boletín Cinterfor, Montevideo, n. 102, ene.-mar. 1988. p. 43-56.

2. Technology and productivity development

Albarrán, M.- **El Avance tecnológico: reflexiones sobre su impacto en la formación profesional.** México, CEDEFT, 1982. 17h.

Alfthan, T.- **The skill and training implications of new technologies: some issues.** Geneva, ILO, 1985. 25p. (Training Policies, Discussion Paper, 10).

Argenti, G.- **Dependencia tecnológica y sociedad: algunas reflexiones sobre los efectos de las nuevas tecnologías en América Latina.** Montevideo, CIESU, 1984. 15h.

--. **Efectos de las nuevas tecnologías en América Latina.** Montevideo, CIESU, 1985. 21p.

Assis, M.de.- **Implantação na formação profissional das mudanças tecnológicas nas indústrias: São Paulo.** São Paulo, SENAI, 1988. 120p.

--. **Inovação tecnológica, trabalho e formação profissional.** São Paulo, 1988. 41p.

--. Las nuevas tecnologías y la formación profesional. **Boletín Cinterfor,** Montevideo, n. 105, oct.-dic. 1988. p.67-83.

Ayala, V.; Bernal, M.E. y Méndez, J.- **Automatización industrial y formación técnica y profesional.** Bogotá, CEDE, 1986. p.v.

Barrera, M. y Selamé, T.- **El cambio tecnológico y las calificaciones de la fuerza de trabajo en Chile.** Santiago de Chile, CES, 1984. 55p.

Barriga Manrique, E.- Influencia de la capacitación en la productividad de la mano de obra. **Boletín Cinterfor,** Montevideo, n. 87, jul.-set. 1984. p.33-58.

Bas, D.- **Cost-effectiveness of training in the developing countries.** Geneva, ILO, 1987. 23p. (Discussion Paper, 19).

Bastos, J.A. de Souza Leao de Almeida.- Formación profesional e impacto tecnológico. **Boletín Cinterfor,** Montevideo, n. 108, jul.-set. 1989. p.39-52.

--. Formación profesional y ciencia y tecnología. **Boletín Cinterfor,** Montevideo, n. 103, abr.-jun. 1988. p.13-28.

--. Las nuevas tecnologías y la educación tecnológica: problemas y perspectivas. **Boletín Cinterfor,** Montevideo, n. 102, ene.-mar- 1988. p.27-42.

BID. **Progreso económico y social de América Latina: informe 1988.** Washington, 1988. 632p. (Ciencia y tecnología).

Brasil. CNPq. **Trabalhador, ciencia e tecnologia.** Brasilia, 1986. 82p.

Brasil. SENAI.- **Implantaçao do processo andragógico na área eletroeletrónica.** Porto Alegre, 1986. 18h.

--. **Indústria textil: inovações técnicas e qualificação do trabalhador.** Rio de Janeiro, 1987. 122p.

--. **Novas tecnologías.** Rio de Janeiro, 1985. 4v.

Brasil. SENAI. **Respostas da formação profissional as demandas tecnológicas do sistema produtivo.** São Paulo, 1984. 27h.

Castro, C. de Moura.- Formación profesional y productividad: ¿alguna luz en la caja negra? **Boletín Cinterfor,** Montevideo, n. 91, jul.-set. 1985. p. 3-38.

Colombia. SENA.- **Divulgación tecnológica: modalidad de acción.** Bogotá, s.f. 21p.

--. **Hábitat popular y tecnología.** Bogotá, SENA/Fondo Nacional de Formación Profesional para la Industria de la Construcción, 1989. 250p.

Confederación Francesa Democráctica del Trabajo. **Los costes del progreso: los trabajadores ante el cambio técnico.** Tr.J.I.Casas. Madrid, Blume, 1978. 288p.

Contreras, C.- **Bases para el fortalecimiento tecnológico de actividades productivas prioritarias y lineamientos para el diseño de un plan de desarrollo científico y tecnológico.** Guatemala, OEA, 1985. 111h.

Coriat, B.- **L'atelier et le chronometre.** 2a. ed. Paris, C. Bourgois, 1982.

--. Automatización programable y productos diferenciados: una visión sectorial de la automatización flexible y sus efectos. **El movimiento obrero ante la reconversión productiva,** México, CTM, ene. 1988. p.55-80.

--. **La robotique.** 2a. ed. Paris, La Découverte, 1984.

Costa, R.A.- Automatización y formación profesional. **Boletín Cinterfor,** Montevideo, n. 90, abr.-jun. 1985. p. 47-57.

Chang, L.- Cambios tecnológicos y formación profesional. **Formación profesional al día,** INA, San José de Costa Rica, n. 8, 1989.

--. **Innovación tecnológica: desafío para la formación profesional.** Montevideo, Cinterfor, 1987. 122p. (Estudios y monografías, 70).

--. Investigación de cambios tecnológicos en áreas prioritarias, en relación con la formación profesional. **Boletín Cinterfor,** Montevideo, n. 107, abr.-jun. 1989.

--. Tecnología, empleo y calificaciones profesionales. **Boletín Cinterfor,** Montevideo, n. 93, ene.-mar. 1986. p.33-43.

Ducci, M.A.- Impacto tecnológico y formación profesional. **Formación profesional al día,** INA. San José de Costa Rica, n. 6, 1988. p. 37-48.

Filgueira, C. y Argenti, G.- **Implicaciones del conflicto entre tecnología y sociedad: notas preliminares sobre el caso uruguayo.** Montevideo, CIESU, 1984. 67h.

Franco, L.A. de Carvalho.- **A escola do trabalho e o trabalho da escola.** São Paulo, Cortez, 1987.

Franco, M.A. y Franco, M.L.- **O ensino de 2o. grau: trabalho e educação em debate.** São Paulo, Cortez, 1988.

Gómez, V.M.- **El contexto de política tecnológica y las relaciones educación y trabajo.** Bogotá, CRESET, 1986. 27h.

--. Notas sobre el efecto posible de las tecnologías avanzadas sobre la calificación de los recursos humanos en países latinoamericanos. **Boletín Cinterfor,** Montevideo, n. 77, ene.-mar. 1982. p. 3-14.

--. **Relaciones entre innovación tecnológica, empleo y calificación ocupacional: el caso de la informatización de la producción.** Bogotá, Corporación Centro Regional de Población, 1983. 60h.

Gómez, V.M. y Del Valle, G.- **Informatización y desarrollo: necesidad de una política nacional integrada respecto a la innovación tecnológica.** México, STPS/OIT, 1983. 116h. (Proyecto MEX/PNUD/OIT/78/022).

Joselevich, P.- **Empleo y automatización en la industria del calzado.** México, STPS, 1986. 126p.

Kuenzer, A.Z.- **Ensino de 2o. grau: o trabalho como principio educativo.** São Paulo, Cortez, 1988.

Leite, E. Monteiro.- **45 anos de educação para o trabalho: a industria em ação.** São Paulo, SENAI, 1988. 149p.

--. **Novas tecnologias, emprego e qualificação na indústria mecánica.** São Paulo, SENAI, 1985. 149p.

Leite, E. Monteiro; Caruso, L.A.C. e Iwamoto, N.- **Automação microeletrónica na indústria: subsídios à pesquisa.** São Paulo, SENAI, 1984. 79p.

Lima, M.H. de y Carneiro, H.M Bonani.- **Novas tecnologias na indústria editorial e gráfica e impactos sobre a mão-de-obra.** São Paulo, SENAI, 1986. 120p.

Masó Frómeta, L.- **Transformaciones tecnológicas y organizacionales del mundo del trabajo y sus efectos sobre los programas de educación y capacitación.** Santiago de Chile, OREALC, 1985. p.v.

Melo, M.J. de.- **Inovação tecnológica e formação profissional: a indústria eletroeletrônica no Estado de São Paulo.** São Paulo, SENAI, 1986. 88p.

Mertens, L.- **Desarrollo tecnológico y empleo de mano de obra.** Brasil, 1987. 18h. Documento presentado al Seminario Internacional sobre Tecnología, Belo Horizonte, 1987.

--. **La estrategia del movimiento obrero ante la reconversión productiva en México: un modelo de interpretación.** México, 1987. Documento presentado al Seminario-Taller sobre Empleo, Salario y Productividad en el marco de la reconversión productiva, México, 1987.

--. **El movimiento obrero y las necesidades de capacitación ante la reconversión productiva: ¿reconversión de la capacitación?** México, 1987. 75h.

--. **Nuevas tecnologías y transformación del trabajo humano.** Caracas, 1989. 44h. Documento preparado para la mesa redonda latinoamericana sobre las nuevas tecnologías y sus implicaciones para las condiciones de trabajo, Caracas, 1989.

--. **La perspectiva de la dimensión económica y sociolaboral de la innovación tecnológica.** México, 1987. 27h. Documento presentado al Seminario-Taller sobre Empleo, Salario y Productividad en el marco de la reconversión productiva, México, 1987.

Moreno, F. y Moreno, D.- **Introducción al desarrollo tecnológico.** Bogotá, SENA/ACOPI/COLCIENCIAS, 1986. 125p.

Novaes, P.- **Tecnología y recursos humanos.** Montevideo, Cinterfor, 1979. 112p. (Estudios y monografías, 40).

OEA. **Informe nacional sobre la formulación de programas para el cambio tecnológico en productos y servicios de interés prioritario.** Guatemala, 1987. p.v.

Palomares, L. y Mertens, L.- **Automatización programable y nuevos contenidos de trabajo: experiencias de la industria electrónica, metalmecánica y petroquímica secundaria en México.** Problemas del desarrollo, México, p.10. (en prensa).

--. **El surgimiento de un nuevo tipo de trabajador en la industria de alta tecnología: el caso de la electrónica.** Análisis económico, México, ene.-jun. 1987. p.46.

Reunión Latinoamericana de Gestión de la Innovación Tecnológica, São Paulo, 1983. **Sinopsis de los problemas de la innovación tecnológica en América Latina.** São Paulo, CPqD/Telebrás. 1984, 76p.

Ribeiro, A.L. y Lima, M.H. de.- **Inovações tecnológicas e formação profissional na indústria textil.** São Paulo, SENAI, 1987.

Richta, R. y otros.- Transformaciones radicales en el trabajo, la calificación y la educación como consecuencia de la elevación obligatoria del nivel de calificaciones de los trabajadores. En: Labarca, G. comp. - **Económica política de la educación.** México, Nueva Imagen, 1980. 397p.

Rottmann, H.- **Reconversión productiva y condiciones de trabajo.** Querétaro, Venezuela, 1987. 21h. Documento básico elaborado para el Seminario sobre Reconversión Productiva y Condiciones de Trabajo, Querétaro, Venezuela, 1987.

Santos, S.- **Criação de empresas de alta tecnologia: capital de risco e os bancos de desenvolvimento.** São Paulo, Pioneira, 1987.

Selamé, T.- **Recursos humanos y mercado de trabajo en computación e informática en Chile.** Santiago de Chile, CES, 1986. 129p.

Seminario Revolución Tecnológica y Empleo, México, 1984. **Memoria.** México, STPS/OIT/SCFI, 1984. 215p.

Silva Solórzano, E.- **Las transformaciones tecnológicas en las zonas rurales.** Santiago de Chile, OREALC, 1985. 15h.

Tangelson, O.- Revolución tecnológica y empleo. **Boletín Cinterfor,** Montevideo, n. 107, abr.-jun. 1989. p. 19-33.

Testa, J.- **La incorporación de las máquinas herramientas computarizadas en un contexto de transición tecnológica.** Buenos Aires, CEIL, 1987. 135p.

Tobelem, A.- Medición de la productividad y formación de mano de obra. **Boletín Cinterfor,** Montevideo, n. 72, nov.-dic. 1980. p.23-34.

Trylinski, M.H.C.V. y Prado, N.- **Inovação tecnológica e formação profissional na indústria da construção.** São Paulo, SENAI, 1987. 173p.

Zólio, M.F.- **Inovações tecnológicas na indústria textil em Minas Gerais.** Belo Horizonte, 1987. 90h.

3. Disadvantaged sectors

Aguirre, R. y Méndez, E.- **El trabajo informal urbano en Uruguay: una aproximación a través del análisis de las encuestas de hogares.** Montevideo, Centro de Investigaciones Económicas/ Ministerio de Trabajo y Seguridad Social/PREALC/PNUD, 1987. 32p.

Andreani, R.- **Capacitación para jóvenes desocupados: formación personal y social.** Santiago de Chile, CIDE, 1984. 64p.

Arboleda, G., J.U. y Calderón H., G.- **La formación profesional en los sectores populares.** Montevideo, Cinterfor, 1989. 81p. (Estudios y monografías, 74).

Bobillier, C.- **Rural non-farm skills: how to deliver them.** Geneva, ILO, 1987.

Brasil. Governo do Estado de Minas Gerais. Secretaria de Estado do Trabalho, Ação Social e Desportos. **Projeto atendimento as populações de baixa renda nas areas de formação profissional e emprego: plano operativo.** Belo Horizonte, 1984. s.p.

Brasil. Ministerio de Trabajo. Secretaría de Mano de Obra.- **La formación de mano de obra para la promoción social de poblaciones urbanas de baja renta.** Brasilia, 1981. 26h.

Brasil. SENAC. **Ações de formação profissional junto as populações de baixa renda: políticas e orientações metodológicas.** Rio de Janeiro, 1985. 16h.

--. **Relatório final da execuçao do Projeto Formaçao Profissional e Orientaçao para o Trabalho para o Populaçao de Baixa Renda.** Brasilia, 1985. 75p.

Brasil. SENAI.- **Plano operativo: Projeto Baixa Renda.** Rio de Janeiro, s.f. 9p.

Cinterfor. **Pobreza, marginalidad y formación profesional.** Montevideo, 1982. 233p. (Estudios y monografías, 57).

--. **Projet PER: rapport final d'activités.** Montevideo, 1985. 144p. (Projet 7.2.1.)

--. **Reunión Consultiva sobre Educación y Formación Profesional para Grupos Marginales Urbanos, Quito, 1981.** Informe. Montevideo, 1982. 52p. (Informes, 111).

--. **Seminario sobre Estrategias de Formación para el Sector Rural, Brasilia, 1988.** Informe. Montevideo, 1989. 162p. (Informes, 137).

--. **Seminario sobre Estrategias de Formación para el Sector Informal Urbano, Caracas, 1986.** Informe. Montevideo, 1988. 233p. (Informes, 132).

Colclough, C. y Hallak, J.- **La problématique de l'éducation rurale: équité, efficacité et emploi.** Paris, UNESCO, 1975. 27p.

Colombia. Departamento Nacional de Planeación. **Plan Nacional para el Desarrollo de la Microempresa.** Bogotá, SENA, 1984. 23h.

--. **Programa de paz en el SENA: capacitación de la comunidad para la gestión del desarrollo.** Bogotá, 1985. 13h.

Corvalán, O.- **La capacitación de los jóvenes y los trabajadores del sector informal urbano: problemas, políticas y estrategias.** Santiago de Chile, CIDE, 1981. 54p.

--. **Concepts and methods used in the analysis of employment and training in the informal sector of Latin American Countries.** Geneva, ILO/Vocational Training Branch, 1987.

--. **La contribución de la pequeña industria al empleo.** Santiago de Chile, s.e., s.f. 39h.

--. **Criterios, prioridades y estrategias de la formación orientada al sector informal urbano.** Santiago de Chile, s.e., 1985. 36h. anexos.

--. **Los programas de capacitación para los trabajadores del sector informal en América Latina.** Paris, UNESCO, 1983. 117p.

Corvalán, O.; Cariola, L. y Cerri, M.- **Empleo y capacitación en los talleres informales de Santiago de Chile.** Montevideo, Cinterfor, 1984. 150p. (Estudios y monografías, 66).

Corvalán, O. y Lizarzaburu, A.- **Programas de capacitación para trabajadores del sector informal en América Latina.** Paris, Centro de Investigación y Desarrollo de la Educación, 1985. 181p. (Informe de investigación IIPE, 53).

Costa, M. Marques y Prescivalle, O.- **Estratégias da formação profissional frente a crise do emprego.** São Paulo, CENAFOR, 1984. 46h.

Costa Rica. INA. **El Instituto Nacional de Aprendizaje en las poblaciones marginales.** San José de Costa Rica, 1981. 12h.

--. **Programa de formación profesional para la mujer.** San José de Costa Rica, 1986. s.p.

--. **Reglamento para uso de talleres públicos.** San José de Costa Rica, 1986. s.p.

Costa Rica. INA. **Talleres públicos de capacitación-producción.** San José de Costa Rica, 1983. 19p.

Chang, L. y Ducci, M.A.- **Formación profesional para la mujer.** 2a. ed. corr. Montevideo, Cinterfor, 1978. 214p. (Estudios y monografías, 20).

--. **Realidad del empleo y la formación profesional de la mujer.** Montevideo, Cinterfor, 1977. 124p. (Estudios y monografías, 24).

Chang, L.; Reuben S., S. y Sanchez, M.L.- **Capacitación-producción del INA de Costa Rica.** Montevideo, Cinterfor, 1985. 107p. (Estudios y monografías, 68).

Directrices para la actividad de la OIT en el fomento de la participación popular en el desarrollo rural. **Boletín Cinterfor,** Montevideo, n. 94, abr.-jun. 1986. p.81-87.

Ecuador. Ministerio de Trabajo. **Creación de la Fundación Guayaquil para apoyo al sector informal urbano (SIU).** Quito, 1985. 29h.

Escobar, S., W.- **Realidad y alternativas de apoyo a la microempresa.** Cali, Fundación Carvajal, 1985. 15h.

Fluitman, F.- **La formación para el trabajo en el sector informal: tema de actualidad para los años noventa.** Ginebra, OIT, 1989. 24p. (Documento de trabajo, 16).

--. **Training in the urban informal sector of developing countries: some recent findings of local observers.** Geneva, ILO/Vocational Training Branch, 1987. 43p.

Fundação Getúlio Vargas. Instituto de Estudios Avançados em Educação. **Setor informal: origens, características e dimensões.** Rio de Janeiro, 1981. 168p.

Fundación Carvajal. **Programa de ayuda a microempresarios.** Cali, 1985. s.p.

Galeano Ramírez, A.- **La experiencia del SENA en la formación profesional vinculada al desarrollo de los niveles informales urbanos de la economía.** Bogotá, SENA, 1981. 8h.

García Huidobro, J.E.- **Capacitación laboral de jóvenes desocupados.** Santiago de Chile, CIDE/ FLACSO, 1986. 112p.

Gatica, J.- **La evolución del empleo formal e informal en el sector servicios latinoamericano.** Santiago de Chile, OIT/PREALC, 1986. 43p. (Documentos de trabajo, 279).

Gutiérrez Luque, F.- **La estrategia promocional para la capacitación y el desarrollo en el nivel informal urbano de la economía.** Bogotá, SENA, 1981. 15h.

Jiménez Veiga, D.- **Talleres públicos de capacitación-producción; sector urbano.** San José de Costa Rica, INA, 1983. 19p.

King, K.- **The African Artisan: a study of training, technology and the informal sector in Kenya.** Edinburgh, Centre of African Studies, 1975. 265p.

--. **Training for the urban informal sector in developing countries: issues for practitioners.** Geneva, ILO/Vocational Training Branch, 1987. 51p. (Discussion Paper, 8).

Leite, E. Monteiro y Caillods, F.- **Education training and employment in small-scale enterprises: three industries in Sao Paulo, Brazil.** Paris, UNESCO, 1987. 459p.

León, A. y Arriagada, I.- **Las mujeres en el sector informal de la economía.** Santiago de Chile, CEPAL, 1987.

López, F.M. y González Trujillo, C.- **La habilitación ocupacional como respuesta a las necesidades de capacitación de los pobladores urbanos de Venezuela.** Caracas, INCE, 1981. 21h.

Mayans, J.- Sistema de capacitación para la organización campesina. **Boletín Cinterfor,** Montevideo, n. 94, abr.-jun. 1986. p.15-26.

México. Secretaría de Educación Pública y Secretaría del Trabajo y Previsión Social. Comité Técnico de Planificación de Recursos Humanos. **Necesidades de educación, capacitación y adiestramiento de los sectores marginados, urbano y rural.** México, 1982. 2v.

Mezzera, J.- **Crédito y capacitación para el sector informal.** Santiago de Chile, OIT/PREALC, 1987. 63p. (Investigaciones sobre empleo, 29).

Necochea, A.; Duran, L, y Trivelli, P.- **Urbanización y sector informal en América Latina: 1960-1980.** Santiago de Chile, OIT/PREALC, 1990. 105p.

Oehring, E. **Seminarios: actualización en técnicas de diagnóstico en la pequeña y mediana industria y la microempresa.** METAPLAN. Bogotá, OIT, 1984. 125h.

Osorio Castro, M.A.- **Pedagogía para la participación popular.** Bogotá, SENA, 1986. 114p.

O'Sullivan-Ryan, J.- Capacitación y autogestión en el sector informal urbano en Venezuela. **Boletín Cinterfor,** Montevideo, n. 103, abr.-jun. 1988. p.29-43.

--. La formación para el trabajo en Venezuela. **Boletín Cinterfor,** Montevideo, n. 89, ene.-mar. 1985. p. 53-70.

OIT. PREALC.- **Sector informal: funcionamiento y políticas.** Santiago de Chile, 1978. 369p.
Piña Riquelme, C.- **Sector informal: estrategias ocupacionales y orientaciones ideológicas.** Santiago de Chile, OIT/PREALC, 1981. 84p. (Monografía, 20).
Pisani, L.- **Contribución de la formación de mano de obra a la promoción social.** Brasilia, Ministerio de Trabajo, 1980. 27h. (Documento de Trabajo, 10).
Promoción profesional popular: veinte años de capacitación para el sector informal de la economía. **Boletín Cinterfor,** Montevideo, n. 100, oct.-dic. 1987. p. 35-47.
Raczynski, D.- **El sector informal urbano, controversias e interrogantes.** Santiago de Chile, CIEPLAN, 1977.
Ramírez Guerrero, J.- **La capacitación de recursos humanos como elemento de política social: consideraciones a partir de la experiencia de formación profesional en América Latina.** Montevideo, Cinterfor, 1987. 55p.
--. **Informe sobre los programas de formación para el sector informal urbano en Venezuela.** Caracas. s.e., 1986. 121p.
--. **Opciones estratégicas para la formación profesional en el sector informal urbano.** Montevideo, Cinterfor, 1988. 58p. (Estudios y monografías, 73).
--. **Programas de formación para el sector informal urbano en Colombia y Venezuela.** Montevideo, Cinterfor, 1988. 134p.
Regent, S.; Ruétalo, J. y Lasida, J.- **Experiencias educativo-productivas con jóvenes desocupados y subocupados en Montevideo, Uruguay.** Montevideo, Foro Juvenil, 1987. 38h.
Rodríguez, E.- **Los jóvenes trabajadores.** Montevideo, Foro Juvenil, 1982. 42h.
Scully, T.- **Políticas de capacitación de jóvenes en los sectores rezagados en Santiago de Chile: perspectivas y posibilidades.** Santiago de Chile, CIDE, 1980. 37p.
Seminario Internacional de Educação, Formação Profissional e Emprego nas Periferias Urbanas, Bahia, 1987. **Informe.** Bahía, MEC/Universidade Federal da Bahía, 1987. 161p.
Seminario sobre la Formación Profesional y la Pequeña Empresa del Sector Informal. **Informe.** San José de Costa Rica, DSE/INTAFOP/INA, 1986. 38h.
Seminario Taller sobre Educación e Ingreso al Trabajo de Jóvenes de Sectores Populares. **Informe final.** Santiago de Chile, PIIE/UNESCO/OREALC, 1984. p.v.
Tirado, R., G.- Asistencia a microtalleres y pequeños empresarios de zonas marginales. **Boletín Cinterfor,** Montevideo, n. 98, abr.-jun. 1987. p. 55-58.
Tokman, V.E.- **El sector informal hoy: el imperativo de actuar.** Santiago de Chile, OIT/PREALC, 1987. 24h. (Documentos de trabajo. 314).
Vega Bezanilla, G.- **Orientaciones para la formulación de políticas, estrategias y programas de formación profesional para grupos marginales urbanos.** Montevideo, Cinterfor, 1981. 44p. (Documentos de referencia).
Vidart Novo, G.- **La capacitación y el adiestramiento hacia los trabajadores del sector informal urbano.** México, OIT, 1982. s.p.
Villagrán Streeter, P.- **Un modelo de desarrollo y formación profesional del sector informal urbano en la región metropolitana de Santiago de Chile.** Santiago de Chile, Fundación DUOC, 1984. 98p.
Wilches Chaux, G.- Las microempresas, la participación comunitaria y el desarrollo regional. **Boletín Cinterfor,** Montevideo, n. 87, jul.-set. 1984.
Ybarra Almada, A.- Concepto y enfoques de la capacitación rural. **Boletín Cinterfor,** Montevideo, n. 87, jul.-set. 1984. p.15-31.

4. Financing

Banco Mundial.- **Financing education in developing countries: an exploration of policy options.** Washington, 1986. 67p.
Brasil. SENAI. **Acordos de insenção e retenção das contribuções devidas ao SENAI.** Rio de Janeiro, 1987. 35p.
Brodersohn, M. y Sanjurjo, M.E.- **Financiamiento de la educación en América Latina.** México, Fondo de Cultura Económica, 1978. 654p.

Castro, C. de Moura.- **Financiamiento de la formación profesional en América Latina.** Montevideo, Cinterfor, 1979. 46p. (Estudios y monografías, 42).

Castro, C. de Moura; Assis, M. Pereira de y Oliveira, S. Furtado de.- **Enseñanza técnica: rendimientos y costos.** Montevideo, Cinterfor, 1978. 235p. (Estudios y monografías, 35).

Castro, C. de Moura y otros.- **A educação na América Latina: um estudo comparativo de custos e eficiência.** Rio de Janeiro, Fundação Getúlio Vargas, 1980. 225p.

CEPADES/IIK.- **Costo y financiamiento de la educación técnica y formación profesional.** Asunción, 1982. 162p. anexos.

Cortez, R., C.- **A ley 6297/75: um incentivo a formação ou a reprodução?** Rio de Janeiro, PUC, 1981. 137h.

Dougherty, C.- **Cost-effectiveness of training delivery modes: a review.** Washington, Banco Mundial, 1987. 17h.

Hegelheimer, A.- **Financiación de la formación profesional.** Mannheim, Fundación Alemana para el Desarrollo Internacional, 1986. 87p.

Jiménez, E. y Kugler, B.- **The earnings impact of training duration in a development country.** Separata de: The Journal of Human Resources, Wisconsin, v. 22, n. 2, 1987. p.-228-247.

Jiménez, E.; Kugler, B. y Horn, R.- **Evaluación económica de un sistema nacional de formación profesional: Servicio Nacional de Aprendizaje (SENA).** Washington, Banco Mundial, 1986. 87p. anexo.

Kugler, B. y Reyes, A.- **Financiamiento de la educación técnica y vocacional en América Latina.** En: Seminario sobre el problema del financiamiento de la educación en América Latina. Washington, BID.

Lourié, S.- **New strategies for financing diversified forms of education and training.** Paris, UNESCO, 1987. 11p.

Martínez Espinoza, E.- **El financiamiento del gasto público en formación profesional.** Montevideo, Cinterfor, 1978. (Estudios y monografías, 31).

--. **Los incentivos tributarios para la formación profesional en América Latina: las experiencias en Argentina, Brasil, Chile.** Montevideo, Cinterfor, 1984. 63p. (Estudios y monografías, 65).

Metcalf, D.- **The economics of vocational training: past evidence and future considerations.** Washington, Banco Mundial, 1985. 150p.

México. Secretaría de Educación Pública y Secretaría del Trabajo y Previsión Social. Comité Técnico de Planificación de Recursos Humanos. **Necesidades de Educación, capacitación y adiestramiento de los sectores marginados, urbano y rural.**. México, 1982. 2v.

Psacharopoulos, G.- **La educación como inversión.** Bogotá, SENA, 1983. 21h.

Psacharopoulos, G.; Tan, Jee-Peng y Jiménez, E.- **Financing education in developing countries: an exploration for policy options.** Washington, World Bank, s.f. 42p.

Silva, A.I. Gandra e.- **Os acordos SENAI/Empresas: um incentivo a formaçao profissional.** Rio de Janeiro, SENAI, 1985. 118p. (Albano Franco, 2).

Tibi, C. (ed.).- **Costo y financiamiento de la educación en América Latina: informe del taller del IIPE.** Paris, IIPE, 1987. 249p.

--. **Le financement de la formation professionnelle et technique en Colombie: l'expérience du SENA.** Paris, UNESCO, 1975. 97p.

Zymelman, M.- **Programas de formación profesional: su evaluación económica.** Madrid, Tecnos, 1978. 151p.

III. BIBLIOGRAPHY BY COUNTRIES

Argentina

Argentina. CONET. **Formación profesional: aspectos cuantitativos 1986.** Buenos Aires, 1988. 264p.

--. **Inspección General de Asistencia Educativa.** Convenios. Buenos Aires, 1988. s.p.

--. **Memoria 1988.** Buenos Aires, 1989.

Argentina. CONET. **Plan de desarrollo del CONET.** Buenos Aires, 1988.
--. **Programación 1988.** Buenos Aires, 1988.
Argentina. Ministerio de Trabajo. **Análisis de la adecuación entre los requerimientos de recursos humanos.** Buenos Aires, 1981. 29p.
Argentina. Ministerio de Trabajo/OIT. **Análisis de la adecuación entre los requerimientos de recursos humanos del sistema productivo y la oferta del sistema educativo.** Buenos Aires, Ministerio de Trabajo/OIT, 1981.
Gallart, M.A.- **Educación, empleo y trabajo en la industria de la construcción de Buenos Aires: un estudio de la capacidad de sustitución de la educación formal por aprendizaje en el trabajo.** Paris, UNESCO, 1986. 166p.
--. **La racionalidad educativa y la racionalidad productiva: las escuelas técnicas y el mundo del trabajo.** Buenos Aires, CENEP, 1985. 170p.
--. **El rol de la educación técnica en Argentina.** Buenos Aires, 1987. 31h.
Gallart, M.A. y otros.- **Estrategias de supervivencia en un mercado cíclico: la inserción ocupacional de los técnicos de nivel medio en la industria de la construcción de Buenos Aires.** Buenos Aires, CIE, 1984. 362p.
Llomovate, S.- **Educación media y trabajo en Argentina.** Buenos Aires, FLACSO, 1987. 71p.
Motta, D.R.- **CONET: desarrollo de sus actividades.** Buenos Aires, 1988.
Riquelme, G.- **Argentina: formación y capacitación en empresas: estudios de casos.** Buenos Aires, s.e., 1985. 160p. anexos.
--. **Medidas para promover el entrenamiento en las empresas: el caso argentino.** Buenos Aires, s.e., 1985. 26h.
Weinberg, P.D.- **Empleo y capacitación de jóvenes en Argentina.** Buenos Aires, s.e., 1985. 51h. anexo.
--. **La enseñanza técnica industrial en la Argentina, 1936-1965.** Buenos Aires, Instituto Torcuato di Tella, Centro de Investigaciones Económicas, 1967. 123p.
Wiñar, D.- **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: Argentina.** Santiago de Chile, UNESCO/OREALC, 1978. 40p.
--. **La formación profesional en la Argentina.** Montevideo, Cinterfor, 1988. 66p.

Brazil

Adant, P.- **Formación para la gestión de los pequeños y medianos empresarios agrícolas.** Boletín Cinterfor, Montevideo, n.70, jul.-ago. 1980. p.27-48.
Andrade, A. Cabral de.- **Articulación de los sistemas escolar y extraescolar de enseñanza técnica y profesional: Brasil.** Santiago de Chile, UNESCO/OREALC, 1980. 20p.
Banco Mundial. **Staff appraisal report: Brazil, skills formation project.** Washington, 1987. 4v.
Barradas, A.M. de Silva; Caruso, L.A. Cruz y Araujo, D. Moreira de.- **SENAI: desafíos.** Rio de Janeiro, SENAI, 1987. 47p. (Monografías, 2).
Bologna, I.- **Formation professionnelle dans l'industrie.** Rio de Janeiro, SENAI, s.f. 101p.
--. Reflexiones de un pionero sobre la vida del SENAI. **Boletín Cinterfor,** Montevideo, n. 78, abr.-jun. 1982. p. 3-6.
Bornhausen, J.- Políticas y estrategias para el desarrollo de la enseñanza de segundo grado en Brasil. **Boletín Cinterfor,** n. 99, jul.-set. 1987. p.73-79.
Brasil. Ministerio do Trabalho. Secretaria de Mão-de-Obra.- **Informe do Brasil.** Brasilia, 1984. 25h.
--. **Plano de ação 1988.** Brasília, 1987. 183p.
Brasil. SENAC. **Ação do SENAC: 1982-84.** Rio de Janeiro, 1981.
--. **Economic policy and planning for vocational education in Brazil.** Rio de Janeiro, 1984. 49p. Documento presentado al Seminar on Economic Policy and Planning for Vocational Education in Brazil, Boston, 1984.
Brasil. SENAC. **A formação profissional do jovem no SENAC.** Rio de Janeiro, 1985. 53h. anexos.
--. **Formacão profissional para comércio e serviços.** Rio de Janeiro, 1987. 85p.
--. **V PNAS: plano nacional de ação do SENAC: 1988/1990.** Rio de Janeiro, 1987. 23p.
--. **Vocational training at SENAC.** Rio de Janeiro, 1986. 29p.
Brasil. SENAC. Administração Regional do Rio de Janeiro. **Relatório SENAC.** Rio de Janeiro, 1987.
--. **Sinopse.** Rio de Janeiro, 1987.

Brasil. SENAC. Departamento Nacional. **Relatórios SENAC 1986, 1987.** Rio de Janeiro, 1987, 1988.
Brasil. SENAI. **Como gerir o SENAI no momento atual de crise.** Rio de Janeiro, 1983. 23p.
--. **Diretrizes gerais do sistema SENAI.** Rio de Janeiro, 1985. 20p.
--. **Formação profissional dos jovens: a aprendizagem desenvolvida no SENAI.** Rio de Janeiro, 1985. s.p.
--. **Plano de ação 1988.** Rio de Janeiro, 1988. 65p.
--. **Por que acabar com o que está dando certo há 45 anos?: SENAI o maior sistema de ensino da América Latina.** Rio de Janeiro, 1987. 27p.
--. **Projeto de desenvolvimento de recursos humanos das áreas de pesquisa e planejamento do Sistema SENAI em 1989.** Brasilia, 1988. s.p.
--. **SENAI: ontem, hoje, amanha.** Rio de Janeiro, 1988. s.p.
--. **Sistema de cooperação SENAI-Empresas para a formação profissional.** São Paulo, 1988. 35p.
Brasil. SENAI. Departamentos Regionales. **Relatórios 1986, 1987, 1988.**
Brasil. SENAR. **Estratégias da formação profissional rural.** Brasília, 1988. 22h.
--. **Plano diretor 1982-1984.** Brasília, 1982. 35p.
--. **Plano operativo 1986, 1987.** Brasília, 1986, 1987.
--. **Relatórios 1985, 1986, 1987.**
Cooperación técnica internacional: un enfoque sobre las acciones del SENAI. **Boletín Cinterfor,** Montevideo, n. 101, p. 109-124.
Depresbiteris, L.- Evaluación del aprendizaje en la formación profesional: una práctica pedagógica. **Boletín Cinterfor,** Montevideo, n. 107, abr.-jun. 1989. p. 57-84.
Fontes, A. Silveira.- **Ação integrada na administração da formação profissional.** Rio de Janeiro, SENAI, 1988. 18p.
--. **Contribuição da indústria e do empresariado do Brasil no campo da formação profissional.** Rio de Janeiro, 1988. 47p.
Franco, L.A. Carvalho.- **O ensino técnico industrial federal: das escolas de aprendizes artifices às atuais escolas técnicas federais.** São Paulo, CENAFOR, 1985. 59p.
Inserción en el mercado de trabajo de los torneros mecánicos formados por el SENAI de São Paulo. **Boletín Cinterfor,** Montevideo, n. 75, jul.-set. 1981.
Kalil, N.L.- **SENAI/SENAC: sua origem e participaçao na vida brasileira.** Brasília, Ministério do Trabalho, 1987. 17h.
--. **Política nacional de formação profissional: novos desafíos.** Brasília, Ministério do Trabalho, 1987. 30p.
Kuenzer, A.Z.- **Educação e trabalho no Brasil: o estado da questão.** Brasília, Instituto Nacional de Estudos e Pesquisas Educacionais, 1987. 125p.
Lombardi, M.R.- Correo directo: una experiencia de su uso en investigaciones tipo follow up en el área de la formación profesional. **Boletín Cinterfor,** Montevideo, n. 99, jul.-set. 1987. p. 61-72.
Lopes, S.- **Uma saga da criatividade brasileira** Rio de Janeiro, SENAI, 1982. 217p.
Nascimento, O. Vieira do.- **O ensino industrial no Brasil: 75 anos do ensino técnico ao ensino superior.** Rio de Janeiro, SENAI, 1986. 60p. (Monografías, 1).
Lukomski, M.- **Alternativas para la capacitación de trabajadores industriales calificados en São Paulo.** Montevideo, Cinterfor, 1978. 89p. (Estudios y monografías, 36).
Macedo, M.- Los riesgos de deterioro de la capacidad productiva de nuestra fuerza de trabajo. **Boletín Cinterfor,** Montevideo, n. 87, jul.-set. 1984. p. 3-13.
Novaes, P.- Algunos aspectos de la evolución del SENAI en cuarenta años de actividades. **Boletín Cinterfor,** Montevideo, n. 80, oct.-dic. 1982. p. 3-28.
I PAIS: Primer plan de acción integrado del SENAI. **Boletín Cinterfor,** Montevideo, n. 68, mar.-abr. 1980. p. 3-38.
Palissy, E. de Barros.- La crisis del aprendizaje. **Boletín Cinterfor, Montevideo, n. 69, may.-jun. 1980.** p. 3-12.
Pastore, J. y Assis, M. de.- **Resultados de una evaluación de la formación profesional en la industria de São Paulo.** Montevideo, Cinterfor, 1980. 70p. (Estudios y monografías, 45).
Piletti, N.- **La profesionalización obligatoria en la enseñanza de segundo grado en el Brasil.** Montevideo, Cinterfor, 1984. 162p. (Estudios y monografías, 66).
Política Nacional de Formación de Mano de Obra de Brasil. **Boletín Cinterfor,** Montevideo, n. 70, jul.-ago. 1980. p.3-8.

Régnier, E.M.- El SENAC: repaso histórico y perspectiva para la década de los ochenta. **Boletín Cinterfor,** Montevideo, n. 81, ene.-mar. 1983. p. 25-38.
Reunião SENAI/EMPRESAS, 23, Brasília, 1985. Relatório. Rio de Janeiro, SENAI, 1985. 199p.
Reunião SENAI/EMPRESAS, 24, Rio de Janeiro, 1986. Relatório. Rio de Janeiro, SENAI, 1986. 129p.
Schachter, G.; ed.- **Vocational education in Brazil: aspects of economic policy and planning.** Boston, Northeastern University, 1985. 145p.
Sistema SENAI-empresas. **Boletín Cinterfor,** Montevideo, n. 101, 1987. p. 33-43.
Tolle, P.E.- **Educação profissional para a realidade brasileira.** São Paulo, SENAI, 1983. 13p.
--. **Gestao da formação profissional.** São Paulo, SENAI, 1985. 22p.
--. El SENAI: educación y capacitación para el desarrollo industrial. **Boletín Cinterfor,** Montevideo, n. 97, ene.-mar. 1987. p.27-32.

Colombia

Agudelo Mejía, S.- **La formación profesional en Colombia: el caso del SENA.** Montevideo, Cinterfor, 1986. 96p. (Diagnósticos).
Barco, V.- **Plan de economía social.** Bogotá, 1987.
Caillods, F. y Briones, G.- **Educación, formación profesional y empleo: el sector industrial en Colombia.** Paris, UNESCO, 1981. 184p.
Colombia. SENA.- **Colombia: fuerza de trabajo y políticas de capacitación y empleo para los jóvenes.** Bogotá, 1985. 96h.
--. **Educación, formación profesional y empleo.** Bogotá, 1984. 519p.
--. **Formación profesional en una economía en crisis: el caso colombiano.** Bogotá, 1986. 44h. anexos.
--. **Información sobre el Programa de Asistencia Integral a la Pequeña y Mediana Industria Manufacturera.** Bogotá, 1986. s.p.
--. **Informe de actividades 1987.** Bogotá, 1988.
--. **Plan de acción SENA para 1985.** Bogotá, s.f.
--. **Plan 84, Plan 86.** Bogotá, 1984, 1986.
--. **El SENA hoy.** Bogotá, 1987. 39h. anexo.
--. **El SENA en cifras.** Bogotá, 1984.
--. **El SENA en cifras: 1982-1986.** Bogotá, 1986.
--. **El SENA en cifras: 1983-1987. Programación 1988.** Bogotá, 1988.
--. **El SENA hoy: objetivos, estructura, y funcionamiento.** Bogotá, s.f. 35p.
--. **Sistema de planeación de recursos humanos.** Bogotá, 1982. 320p.
--. **20 años del SENA en Colombia 1957-1977.** Bogotá, 1978. 259p.
Franco de Machado, C.- **Estudio de cambios e innovaciones en la educación técnica y de formación profesional en América Latina y el Caribe: Colombia.** Santiago de Chile. UNESCO/OREALC, 1979. 80p.
Gaitan Durán, E.- La nueva acción del SENA. **Boletín Cinterfor,** Montevideo, n. 53, set.-oct. 1977. p. 5-14.
Galeano Ramírez, A.- SENA 1980: mejoramiento de la calidad y apertura al medio económico y social. **Boletín Cinterfor,** Montevideo, n. 67, ene.-feb. 1980. p. 3-18.
Gómez, V.M.- **Educación y empleo en Colombia: implicaciones para la educación técnica y la formación profesional.** Buenos Aires, CENEP/CIID, 1987. 32h.
--. **La formación para el trabajo en Colombia: análisis y opciones de política sobre las modalidades de formación técnica y tecnológica.** Bogotá, Departamento Nacional de Planeación, 1988. 36h.
--. **La planeación de la oferta de formación en Colombia: el sistema de planeación de recursos humanos del SENA y propuesta de modelo de planeación de recursos humanos.** Bogotá, SENA, 1986. 19h.
Gómez, H. y Libreros, E.- Formación profesional y mercados de trabajo. En: SENA. **Educación, formación profesional y empleo.** Bogotá, 1984.
Jiménez, E. y Kugler, D.- **Does SENA matter: some preliminary results.** Washington, World Bank, 1985.

Kugler, B.; Reyes, A. y Gómez M.I. de.- **Educación y mercado de trabajo urbano en Colombia: una comparación entre sectores moderno y no moderno.** Bogotá, Corporación Centro Regional de Población, 1979. 61p.

Parra Sandoval, R.- **La política social en Colombia: 1975-1986.** Bogotá, 1987. 52p.

Psacharopoulos, G. y Zabalza, A.- **The destination and early career performance of secondary school graduates in Colombia: findings from the 1978 cohort.** Washington, World Bank, 1984. (World Bank Staff Working Papers, 653).

Puryear, J.- **Estudio comparativo de la formación profesional en Colombia: el Servicio Nacional de Aprendizaje.** Montevideo, Cinterfor, 1977. 136p. (Estudios y monografías, 25).

--. **Vocational Training and Earnings in Colombia: Does a SENA Effect Exist?** Comparative Education Review, v. 23, n. 2, jun. 1979. p.283-292.

Reyes, A. y Gómez M.I. de.- **El papel de las posibilidades de la educación técnica: el caso de Colombia.** Bogotá, Corporación Centro Regional de Población, 1979. 67p.

Costa Rica

Costa Rica. INA.- **Aspectos generales de la formación profesional en el INA.** San José de Costa Rica, 1984. 42p.

--. **Diagnóstico sobre la actividad del INA.** San José de Costa Rica, 1987. 267h.

--. **Formación profesional en el INA: lineamientos para los próximos años.** San José de Costa Rica, 1986. 39p.

--. **INA en cifras: 1965-1984.** San José de Costa Rica, 1985. (n. 15).

--. **Memoria anual 1987.** San José de Costa Rica, 1988.

--. **Plan de desarrollo del INA: PLANDINA, 1982-1985.** San José de Costa Rica, 1981.

Chang, L.- **Costa Rica: empleo y capacitación de la juventud** San José de Costa Rica, INA, 1985. 116p.

--. **Formación profesional en Costa Rica: INA 1965-1985.** San José de Costa Rica, 1986. 185p.

--. **Instrumentos de gestión en el Instituto Nacional de Aprendizaje.** San José de Costa Rica, INA, 1986. 17p.

Jiménez Veiga, D.- **El papel de las instituciones de formación profesional en coyuntura de crisis: el caso de Costa Rica.** San José de Costa Rica, INA, 1982. 22h.

Sánchez de Blanco, L.- La planificación en el INA de Costa Rica. **Boletín Cinterfor,** Montevideo, n. 108, jul.-set. 1989. p.69-74.

Solano Rojas, W.E.- **L'Institut National d'Apprentissage et les politiques nationales et internationales de FP: mystères et réalités.** Genève, Université, 1988. 629p.

Trejos, F.- **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: Costa Rica.** Santiago de Chile, UNESCO/OREALC, 1979. 67p.

Chile

Campo, G. del.- **Formación y capacitación de la juventud.** Santiago de Chile, s.e., 1987. s.p.

Corporación de Capacitación de la Construcción. **Memoria y balance general, XI: 1987.** Santiago de Chile, 1988. 15p. anexo.

Corvalán, O.- **El aprendizaje en la industria: evaluación de una experiencia chilena.** Montevideo, Cinterfor, 1980. 191p. (Estudios y monografías, 54).

--. **Empleo y capacitación de jóvenes en Chile.** Santiago de Chile, s.e., 1985. 64h. (mimeo).

--. **The transfer of Chilean technical vocational schools to the private sector and municipalities.** Santiago de Chile, 1987. (mimeo). 25h.

Cox, C.- **Chilean education in 1985: institutional profile.** Santiago de Chile, CIDE, 1986. 129p.

Chile. INACAP. **Análisis de la acción de INACAP en el campo de la formación de técnicos superiores y profesionales.** Santiago de Chile, 1983. 51h.

--. **Análisis y perspectivas de la capacitación ocupacional.** Santiago de Chile, 1983. 14p.

--. **Formación profesional de técnicos de INACAP.** Santiago de Chile, 1984.

--. **Formación profesional y desarrollo económico.** Santiago de Chile, 1987. 44h.

Chile. INACAP. **Memoria y balance 1986, 1987.**
--. **Los organismos técnicos intermedios "OTIRES" como respuesta a las necesidades de capacitación de la pequeña y mediana industria y artesanado "PMIA" en Chile.** Santiago de Chile, 1981. 20p.
Chile. Ministerio del Interior. Secretaría Nacional del Empleo. **Instructivo del Programa integral de capacitación juvenil.** Santiago de Chile, 1987. 13h.
--. **Plan piloto de adiestramiento para jóvenes desocupados de las comunas de La Pintana, San Ramón, La Granja, Pudohuel, Lo Prado, y Cerro Navia.** Santiago de Chile, 1987. 73h.
--. **Programa de empleo en Chile: circunstancias, orientación y experiencias.** Santiago de Chile, 1987. 28h.
--. **Programa integral juvenil de capacitación: adiestramiento y recreación.** Santiago de Chile, 1989. 60h. anexos.
Chile. SENCE. **La capacitación ocupacional en Chile.** Santiago de Chile, 1988.
--. **Estadísticas sobre las acciones de capacitación ocupacional efectuadas para las empresas acogidas al Sistema Nacional de Capacitación durante 1984.** Santiago de Chile, 1985.
Fuentes, R.F.- **La capacitación a través de los organismos técnicos intermedios OTIR.** Santiago de Chile, Corporación de Capacitación de la Construcción, 1983. 12h.
Gili Ventura, M.; Rotondo G., M.R. y Squella L., I.- **La administración de la capacitación ocupacional en la empresa.** Santiago de Chile, Universidad Católica, 1982. 92p.
Illanes Holch, M.- **La formación profesional en Chile.** Montevideo, Cinterfor, 1986. 86p. (Diagnósticos).
Magendzo, A. y Barra, N.- **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: Chile.** Santiago de Chile, UNESCO/ OREALC, 1978. 86p.

Ecuador

Ecuador. SECAP. **Diagnóstico interno SECAP.** Quito, 1985. 115p.
--. **Informe de labores 1987.** Quito, 1988.
--. **Informe estadístico del primer trimestre sobre las acciones de formación profesional: 1989.** Quito, 1989.
--. **Informe estadístico sobre formación profesional: síntesis 1988.** Quito, 1989.
--. **Memoria 1979-1984.** Quito, 1985.
--. **Plan de desarrollo del SECAP 1986/1988: Dirección Nacional y síntesis de los programas y proyectos de las Direcciones Regionales.** Quito, 1986. 333h.
--. **Plan nacional de capacitación popular.** Quito, 1988.
--. **Planteamientos y políticas para el desarrollo del SECAP.** Quito, 1989. 22p.
Martínez Espinosa, J.- **La formación profesional en Ecuador.** Montevideo, Cinterfor, 1986. 120p. (Diagnósticos).

Mexico

Barbagelata, H.H.- **La legislación mexicana sobre capacitación y adiestramiento desde la perspectiva del derecho latinoamericano.** México, UCECA. Dirección de Capacitación y Adiestramiento, 1981. 81p.
Buen Lozano, N. de.- **El nuevo derecho mexicano sobre capacitación, adiestramiento y promoción.** Montevideo, Cinterfor, 1979. 42p. (DOCREF).
Cinterfor. **Planeamiento y programas del Instituto de Capacitación de la Industria Azucarera de México.** Montevideo, 1975. 36p. (Estudios y monografías, 15).
Comisión Mixta de la Industria Textil del Algodón, México. **Capacitación en la industria textil: una investigación acerca de sus posibilidades.** México, 1980. 62p.
Colin Núñez, C.- Obligaciones de los empresarios mexicanos en cuanto a capacitación y adiestramiento. **Boletín Cinterfor,** n. 66, nov.-dic. 1979. p.37-44.
Conferencia Nacional sobre Reformas a la Ley Federal del Trabajo en Materia de Capacitación y Adiestramiento y Seguridad e Higiene en el Trabajo, México, 1978. **Memoria.** México, Instituto de Educación Obrera, 1978. 228p.

Gómez Campo, V.M.- **Educación técnica y formación profesional extraescolar en México: evolución histórica y tendencias.** México, Fundación Javier Barros Sierra, 1981. 112p. anexos.

--. **Reflexiones sobre el Sistema Nacional de Capacitación y Adiestramiento de México.** México, OIT, 1982. 44p.

Gómez, V.M.; Hermet, G. y Munguía, J.- **Relaciones entre educación técnica y formación profesional: análisis comparativo internacional.** México, Fundación Javier Barros Sierra, 1981.

--. **Tendencias de la educación técnica y la formación profesional extra-escolar en México.** Educación, México, v. 3, n. 40, abr.-jun. 1982. p. 199-270.

González, N. e Ybarra, A.- **La participación de las organizaciones de trabajadores en la formación profesional: el caso de México.** Montevideo, Cinterfor, 1985.

INET.- **Necesidades de capacitación en la industria de la transformación.** México, STyPS, 1978. 198p. (Cuadernos INET, 5).

Martínez Alvarez, J.- Acciones oficiales en materia de capacitación y adiestramiento emprendidas por el gobierno federal de 1970 y 1977. **Revista mexicana del trabajo,** México, v. 8, n. 4, oct.-dic. 1979. p. 35-42.

--. El enfoque de sistemas aplicados a la organización de la formación profesional en México. **Pedagogía para el adiestramiento,** México, v. 10, n. 40, jul.-set. 1980, p. 27.

--. Procedimientos tradicionales y nuevas opciones en los programas de capacitación **Revista mexicana del trabajo,** México, v. 8, n. 3, jul.-set. 1979. p.62-70.

México: creación de la Dirección General de Capacitación y Productividad. **Boletín Cinterfor,** Montevideo, n. 81, ene.-mar. 1983. p. 89-90.

México. ICIC. **El sistema general de capacitación para la industria de la construcción: desafíos, definiciones y avances.** México, 1987. 50p. anexos.

México. Poder Ejecutivo Federal.- **Programa Nacional de Capacitación y Productividad 1984-1988.** México, Secretaría del Trabajo y Previsión Social, 1984. 199p. il.

México. Secretaría de Educación Pública y Secretaría del Trabajo y Previsión Social. Comité Técnico de Planificación de Recursos Humanos. **Proyecto para la planificación de recursos humanos: informe final.** Méxic, 1982. 2v.

--. **Revisión del Sistema Nacional de Capacitación y Adiestramiento: resumen.** México, 1982. 31p.

Mora, Y. de la.- **Actitudes de los sectores empresarial, sindical y obrero frente a la formación profesional.** México, INET, 1978. 128p. (Cuadernos INET, 4).

Muñoz Izquierdo, C. y Rodríguez, P.G.- ¿Enseñanza técnica: un canal de movilidad social para los trabajadores?: una evaluaciaón de los efectos internos y externos de la enseñanza técnica de nivel medio superior, que se imparte en la zona metropolitana de México, D.F. **Revista latinoamericana de estudios educativos,** México, v. 10, n. 3, tercer trimestre, 1980. p. 1-27.

Murayama Quesada, D.- Capacitación y formación profesional para el trabajo. **Pedagogía para el adiestramiento,** México, v. 4, n. 14, ene.-mar. 1974. p. 27-36.

Palomino de Escandón, M.A.- Políticas y programas de capacitación en México. **Boletín Cinterfor,** Montevideo, n. 86, abr.-jun. 1984. p. 39-48.

--. Situación actual y perspectivas de las acciones de capacitación y productividad de la pequeña y mediana empresa, de México. **Boletín Cinterfor, Montevideo,** n. 102, ene.-mar. 1988. p. 13-25.

Richero de Pérez, A.- **Bibliografía sobre capacitación y adiestramiento en México: selectiva y comentada 1970-1982.** México, Secretaría del Trabajo y Previsión Social, 1982. 126p.

Romero, R. y Carreón, J.- La capacitación para el trabajo en el Sistema Nacional de Formación Profesional de México. **Boletín Cinterfor,** Montevideo, n. 56, mar.-abr. 1978. p. 55-64.

Salinas, A.- El adiestramiento obrero en el desarrollo industrial de México. **Pedagogía para el adiestramiento,** México, v. 1, n. 1, oct. 1970. p. 40-51.

Los siete desafíos estratégicos para la capacitación en la industria de la construcción en México. **Boletín Cinterfor,** Montevideo, n. 99, jul.-set. 1987. p. 81-94.

Vidart Novo, G.- **Bases conceptuales sobre el papel de la formación profesional en la industria de la transformación.** México, Secretaría del Trabajo y Previsión Social, 1983. 109h.

--. **Bases para el diseño de políticas de capacitación y adiestramiento en la pequeña industria mexicana.** México, Secretaría del Trabajo y Previsión Social, 1982. 120p.

--. **Capacitación y adiestramiento en el proceso de trabajo.** México, UCECA/INET, 1978. 712p.

Vidart Novo, G.- **Efectos de la capacitación y adiestramiento sobre la productividad del trabajo.** Montevideo, Cinterfor, 1984. 13p.
--. **El sistema educativo nacional y la formación de recursos humanos para el aparato productivo mexicano.** México, Secretaría del Trabajo y Previsión Social, 1982. 45p. il. anexo.
Vielle, J.P.- Educación no formal, capacitación para el trabajo e innovación tecnológica en el medio rural. **Comercio exterior,** México, v. 27, n. 12, dic. 1977. p. 1527-1531.
Ybarra Almada, A.E.- **Diagnóstico de la formación profesional en México.** México, 1986. 2v. anexos.
Ybarra Almada, A.E. y Martínez Alvarez, F. de J.- **Medidas para promover la capacitación en la empresa: el caso de México.** México, s.e., 1985. 29h. anexos.
Zúñiga Molina, L. y otros.- **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: México.** Santiago de Chile, UNESCO/ OREALC, 1980. 93p.

Peru

Banco Mundial. **A vocational training project requested to the World Bank by SENCICO.** Washington, 1982. p.v.
Beramendi Chavez, D.- **Educación secundaria diversificada: prioridades de las especialidades técnicas.** Lima, Ministerio de Educación, 1984. 148p.
Cox, J.L.- **Programa Nacional de Capacitación Gerencial y Tecnológica.** Lima, SENATI, 1988. 17h.
Fajardo, R.- Futuro y proyecciones del SENATI. **Boletín Cinterfor,** Montevideo, n. 98, abr.-jun. 1987. p. 39-48.
--. **Mecanismos de apoyo tecnológico para la pequeña empresa industrial.** Lima, Fundación Friedrich Ebert, 1988. 40p.
Jornadas técnicas de formación profesional, 3, Lima, 1984. Documentos presentados. Lima, Ministerio de Trabajo y Promoción Social, 1984. p.v.
Maslankowski, W.- La formación profesional en el contexto de la Reforma Educativa peruana. **Boletín Cinterfor,** Montevideo, n. 71, set.-oct. 1980. p.11-22.
Moock, P. y Bellew, R.- **Vocational and technical education in Peru.** Washington, Banco Mundial, 1988. 33p.
Perú. Ministerio de Educación. Dirección de Capacitación Profesional. **El desarrollo de la educación ocupacional en centros educativos.** Lima, 1984. 63p.
Perú. Ministerio de Educación. Dirección General de Educación Superior. **Programa básico de desarrollo de la educación superior tecnológica.** Lima, 1987. 42h. anexo.
Perú. Ministerio de Trabajo y Promoción Social.- **El empleo en el Perú: efecto de la aplicación de políticas y programas.** Lima, 1986. 22p. anexos.
--. **Instituciones públicas de formación profesional en el Perú.** Lima, 1983. 310p.
Perú. Ministerio de Trabajo y Promoción Social. Dirección General de Formación Profesional. **Algunos aspectos de la formación profesional.** Lima, 1984. s.p.
Perú. SENATI. **Lineamientos de política institucional.** Lima, 1988. 5h.
--. **Memoria 1987.** Lima, 1988.
--. **Opinión del empresario industrial sobre el SENATI.** Lima, 1988. 65p.
--. **Plan de desarrollo del SENATI 1985-1990.** Lima, 1985.
--. **Políticas generales de desarrollo del SENATI, 1987.** Lima, 1987. 4h.
--. **Realizaciones y proyecciones de la formación profesional en el Perú: labor del SENATI, 1961-1986.** Lima, 1987. 91h.
Perú. SENCICO. **Boletín estadístico del SENCICO: primer semestre 1984.** Lima, 1984.
--. **Desarrollo del aprendizaje modalidad dual (ag. 84-may. 88): documento estadístico.** Lima, 1988.
--. **Estudio de regionalización del SENCICO.** Lima, 1985. s.p. anexos. cuadros.
--. **Memoria anual 1984-1985.**
--. **El SENCICO y la capacitación de los trabajadores de la construcción civil.** Lima, 1983. s.p.
Perú. SENATI. **Compendio estadístico 1961-1986.** Lima, 1986.

Spittler I.,W.- Los primeros veinticinco años. **Boletín Cinterfor,** Montevideo, n. 98, abr.-jun. 1987. p. 5-11.

Verástegui, L. y Robles, J.- **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: Perú.** Santiago de Chile, UNESCO/ OREALC, 1987. 98 p. anexos.

Dominican Republic

Agudelo Mejía, S.- **La formación profesional en República Dominicana.** Montevideo, Cinterfor, 1986. 56p. (Diagnósticos).

Díaz Fernández, O.- **Administración de la formación profesional.** Santo Domingo, INFOTEP, 1985. 72h.

--. **INFOTEP: camino de acercamiento y asistencia a la empresa privada y a los trabajadores.** Santo Domingo, INFOTEP, 1984.

OIT. **Informe socio-laboral de la República Dominicana.** México, 1986. 323p.

--. **República Dominicana: conclusiones y recomendaciones del Proyecto.** Ginebra, 1985. 63h.

República Dominicana. INFOTEP. **Estudio de impacto de la capacitación desarrollada por INFOTEP.** Santo Domingo, s.f. 39h. anexo.

--. **Funcionamiento general del INFOTEP de la República Dominicana.** Santo Domingo, 1983. 28h.

--. **Plan Nacional de Formación Profesional del INFOTEP 1983-1987.** Santo Domingo, 1982. 152p.

--. **Plan 1988.** Santo Domingo, 1988.

--. **Plan operativo 1987.** Santo Domingo, 1986.

--. **Propuesta para la elaboración de un Plan de Desarrollo de INFOTEP (PLANINFO) 1983-1987.** Santo Domingo, 1982. 11p.

Uruguay

Amoroso, R.- La microempresa en el Uruguay. **Boletín Cinterfor,** Montevideo, n. 83, jul.-set. 1983. p.77-88.

Banco Mundial. **Uruguay staff appraisal report on vocational training and technological development project.** Washington, 1978. 70p.

BID. **Informe de misión de orientación I para el proyecto de educación técnica media y capacitación laboral.** 1988. p.v.

CIEP. **Estudio de cambios e innovaciones en la educación técnica y la formación profesional en América Latina y el Caribe: Uruguay.** Santiago de Chile, UNESCO/OREALC, 1979. 81p.

FESUR. **Juventud, empleo y capacitación profesional en el Uruguay: balance y perspectivas.** Montevideo, 1987. 180p.

Lasida, J.- **Análisis del CECAP.** Montevideo, s.e., 1988. s.p. (mimeo).

Rodríguez, E.; Ruétalo, J. y Da Silveira, P.- **Juventud, empleo y capacitación profesional: elementos para el estudio del caso uruguayo.** Montevideo, Foro Juvenil, 1985. 97p.

Uruguay. UTU. **Evolución de la formación profesional en el Uruguay.** Montevideo, 1978. 37h.

--. **Historia de la Universidad del Trabajo del Uruguay.** Montevideo, 1967. 326p.

--. **Investigación sobre las causas de deserción y el destino de los egresados de los cursos de formación profesional de la Escuela Técnica de Bella Unión.** Montevideo, 1987. 75h.

--. **UTU 100 años 1878-1978.** (Exposición conmemorativa del centenario). Montevideo, 1978. p.v.

Uruguay. UTU. Departamento de estadísticas. **Informaciones estadísticas de la educación.** Montevideo, 1988. s.p.

Venezuela

Agudelo Mejía, S.- **La formación profesional en Venezuela.** Montevideo, Cinterfor, 1986. 60p. (Diagnósticos).

Casas, J.C.- **Cinco años de gerencia eficaz: INCE 1979-1983.** Caracas, 1984. 172p.

García, H.- **Formación profesional: el caso de Venezuela.** Montevideo, FESUR, 1986. 88h.

Gómez Jiménez, A.- **La participación de las organizaciones de trabajadores en la formación profesional: el caso de Venezuela.** Montevideo, Cinterfor, 1985. 26p. Proyecto 2.4.1.
Parra, H.- El INCE en la formación de los recursos humanos para la Venezuela de hoy. **Boletín Cinterfor,** Montevideo, n. 55, ene.-feb. 1978. p.-315.
Pérez Román, A.- Formación profesional a nivel superior: una experiencia venezolana. **Boletín Cinterfor,** Montevideo, n.60, nov.-dic. 1978. p.25-32.
Salcedo Thielen, D.- **Situación del empleo y la capacitación de los jóvenes en Venezuela.** Caracas, s.e., 1985. 185p.
Venezuela. INCE. **Memoria 1987.**
--. **Programa Nacional de Becas Salario.** Caracas, 1986. 15h.

IV. LEGISLATION

La organización de las IFP se asienta sobre el marco político y legal que respalda toda la acción institucional. Las leyes y decretos que aquí aparecen corresponden a los países abarcados por el presente estudio. Para la legislación correspondiente se consultaron:

General

Barbagelata, H.H.- **Digesto legislativo de la formación profesional en América Latina y el Caribe.** Montevideo, Cinterfor, 1981. 6v.

Argentina

Argentina. Leyes, etc.- **Ley 22.317 del 31.10.80: Régimen de crédito fiscal destinado en la cancelación de obligaciones impositivas para quienes sostengan cursos de educación técnica.**
--. **Proyecto de ley sobre "Impuesto para la educación y capacitación técnico profesional".**

Brazil

Brasil. Leyes, etc.- **Incentivos fiscais para a formação profissional nas empresas: lei n. 6297 de 15 de dezembro de 1975; decreto n. 77563 de 20 de abril de 1976; decreto n. 86652 de 26 de novembro de 1981; resolução CFMO n. 007 de 26 de novembro de 1981; manual de orientação; formularios.** Rio de Janeiro, Ministério do Trabalho/SENAI. 1982. 41p. anexos.
Brasil. SENAI. **Coletânea de leis SENAI.** Rio de Janeiro, 1967.
--. **Resumo da legislação: arrecadação.** Rio de Janeiro, 1984.
Simoes, L.- **Pesquisa sobre os efeitos da lei 6297.** Brasília, Ministério do Trabalho, 1981. s.p. (Documento de trabalho, 19).
--. **Pesquisa sobre os efeitos da lei 6297.** Brasília, Ministério do Trabalho, 1981. 54h. anexo. (Documento de trabalho, 20).

Colombia

Colombia. Leyes, etc.- **Ley 55 de junio 18 de 1985.** Bogotá, 1985.
Colombia. Ministerio de Trabajo y Seguridad Social.- **Resolución 01035 de 29 de marzo de 1988 (por medio de la cual se hacen algunas modificaciones y actualizaciones en los oficios motivo de contrato de aprendizaje y se toman otras decisiones al respecto).** Bogotá, 1988.
Colombia. SENA. **Legislación sobre el SENA, el subsidio familiar y el contrato de aprendizaje.** Bogotá, 1989.
Ortiz Amaya, B.- **Características de las normas pertinentes de la Ley 55 de 1985.** Bogotá, 1987.

Costa Rica

Costa Rica. INA. **Leyes, reglamentos, estructura**. San José de Costa Rica, 1989.

Costa Rica. Leyes, etc. **Ley de creación del Instituto Nacional de Aprendizaje: no. 3.506 de 21.05.65.** San José de Costa Rica, INA, 1971.

--. **Ley orgánica del Instituto Nacional de Aprendizaje: no. 6868.** San José de Costa Rica, INA, 1983.

--. **Reglamento a la Ley Orgánica del Instituto Nacional de Aprendizaje: no. 15.135. - TSS.** San José de Costa Rica, INA, 1984.

Chile

Chile. Leyes, etc.- **Decreto 1.413 que reglamenta artículo 4o. del Decreto Ley no. 3476 de 1980, sobre educación fundamental de capacitación técnico profesional de 24 de noviembre de 1983.** Santiago de Chile, 1983.

--. **Decreto 1.414 que reglamenta artículo 4o. del Decreto Ley no. 3.476 de 1980, sobre enseñanza práctica de cualquier rama de la educación de 23 de noviembre de 1983.** Santiago de Chile, 1983.

--. **Decreto que modifica los Decretos Supremos de Educación no. 1.413 y 1.414 de 1983, que reglamentan el artículo 4o. del Decreto Ley no. 3.475 de 1980.** Santiago de Chile, 1985.

--. **Decreto Ley 1.446 de 1976: Estatuto de capacitación y empleo. Informativo de instituciones de capacitación ocupacional.** Santiago de Chile, v.1, n. 1, 1988.

Chile. Ministerio de Educación Pública. **Institutos profesionales.** Santiago de Chile, 1981.

Chile. SENCE. **La capacitación ocupacional en Chile: Decreto Ley no. 1.446 de 1976.** Santiago de Chile, 1986. 19h.

--. **Estatuto y reglamento de capacitación y empleo: Decreto Ley no. 1.446 de 1976; Decreto Supremo no. 42 de 1986.** Santiago de Chile, 1986.

Ecuador

Ecuador. Leyes,etc.- **Ley 2.928 de 19 de octubre de 1978 del Servicio Ecuatoriano de Capacitación Profesional: SECAP.**

--. **Reglamento orgánico funcional del SECAP de 25 de junio de 1986.**

Mexico

México. Secretaría del Trabajo y Previsión Social. **Disposiciones legales y administrativas referentes a la capacitación y el adiestramiento.** México, STPS, 1981. 46p.

Ponce Meléndez, P.- Compendio de las reformas a la Constitución y a la Ley Federal del Trabajo en materia de capacitación y adiestramiento, 1978. **Boletín Cinterfor,** Montevideo, n. 67, ene.-feb. 1980. p.45-65.

Peru

Perú. Leyes, etc.- **Decreto Ley no. 147 de 1980. Aprobación de la ley de Organización y Funciones del SENCICO. Lima, 1980.**

--. **Decreto Ley no. 21.067 de 7 de enero de 1975. Ley de creación del SENCICO.** Lima, 1975.

--. **Decreto Ley no. 21.673 de 26 de octubre de 1976. Ley Orgánica para inicio de actividades.** Lima, 1976.

--. **Decreto Supremo no. 033 de junio de 1981. Aprobación de los estatutos del SENCICO.** Lima, 1980.

--. **Decreto Supremo no. 40-84-ED de 19 de setiembre de 1984.** Lima, 1984.

--. **Ley General de Educación no. 23.384 de 18 de mayo de 1982.** Lima, 1982.

Dominican Republic

República Dominicana. INFOTEP. **Ley no. 116.** Santo Domingo, 1980.

Uruguay

Uruguay. Leyes, etc.- **Decreto del Poder Ejecutivo de 31 de diciembre de 1987 sobre incentivo a la capacitación.**
--. **Ley de educación no. 15.739 de 28 de marzo de 1985.** Montevideo, 1986.
--. **Ley de 9 de setiembre de 1942 que crea la Universidad del Trabajo del Uruguay.**

Venezuela

Venezuela. Leyes, etc.- **Ley del INCE de 28.VII.1959, modificada parcialmente por la ley de 19.XII.1969.** Texto consolidado de 8.I.1970.

V. PERIODICAL AND SERIALS

Las siguientes son las publicaciones periódicas y seriadas consultadas de las cuales se han extraído numerosas referencias de artículos de base para este Estudio.

Anuario de estadísticas del trabajo 1987. Ginebra, OIT, 1987.
Anuario estadístico de América Latina y el Caribe. Santiago de Chile, CEPAL, 1986.
Anuario estadístico de la formación profesional en América Latina, 1976 - Serie completa hasta 1987. (Cinterfor) Montevideo.
Anuario estadístico 1987. Paris, UNESCO, 1988.
BIS. Boletim informativo do SENAR (SENAR) Brasília.
Boletim técnico (SENAC) Rio de Janeiro.
Boletín Cinterfor (Cinterfor) Montevideo.
Cadernos de pesquisa (Fundação Carlos Chagas) São Paulo.
Capacitación y empleo (SENCE) Santiago de Chile.
El Capacitador (SECAP) Quito.
Catálogo de publicaciones didácticas latinoamericanas de formación profesional: suplemento. Cinterfor. Montevideo, 1981. 127p.
Catálogo de publicaciones latinoamericanas sobre formación profesional: 1967-1968. Cinterfor. Montevideo, 1969. 170p.
Catálogo de publicaciones latinoamericanas sobre formación profesional: 1970-1971. Cinterfor. Montevideo, 1972. 67p.
Catálogo de publicaciones latinoamericanas sobre formación profesional: 1977-1984. Cinterfor. Montevideo, 1986. 2v.
Catálogo latinoamericano de material didáctico audiovisual de formación profesional. Cinterfor. Montevideo, 1987. 164p.
Centros Multinacionales de Educación Técnica y Formación Profesional (OEA/CONET) Buenos Aires.
Comparative Educational Review (The University of Chicago Press) Chicago.
Comunicação SENAI (SENAI) São Paulo.
O Contato (SENAI) Rio de Janeiro.
Correio do SENAC (SENAC) Rio de Janeiro.
El cotidiano. Revista de la realidad mexicana actual (Universidad Autónoma Metropolitana) México.
Cuadro comparativo de las instituciones de formación profesional de América Latina. Serie completa. Cinterfor. Montevideo.

Diário do Comércio. São Paulo.
Educação (MEC) Brasilia.
Enlace (SENA) Bogotá.
Estudio económico de América Latina y el Caribe 1985. Santiago de Chile, CEPAL, 1987. 672p.
Fichas descriptivas de las instituciones de formación profesional. Serie completa. Cinterfor. Montevideo.
Formación profesional al día (INA) San José de Costa Rica.
FP - Revista Cinterfor (Cinterfor) Montevideo.
Gazeta do Povo Curitiba.
Hoja informativa (CONET) Buenos Aires.
INA Noticias (INA) San José de Costa Rica.
Indústria e produtividade (CNI) Rio de Janeiro.
Informativo SENAC (SENAC) Rio de Janeiro.
Informativo SENAI (SENAI) Goiania.
Informe anual 1988. Washington, BID, 1989. 162p.
INCE Noticias (INCE) Caracas.
El INFOTEP (INFOTEP) Santo Domingo.
INTECAP informa (INTECAP) Guatemala.
El movimiento obrero ante la reconversión productiva (CTM) México.
Notes économiques rapides (OIT) Ginebra.
Oficina (SENAI) Rio de Janeiro.
Painel (SENAC) Rio de Janeiro.
Pedagogía para el adiestramiento (ARMO) México.
Pensamiento iberoamericano.
Pequenas empresas, grandes negócios, São Paulo.
Perspectivas (UNESCO) Paris.
Revista brasileira de estudos pedagógicos (INPE) Brasil.
Revista de la CEPAL. CEPAL. Santiago de Chile.
Revista INACAP. INACAP. Santiago de Chile.
Revista Internacional del Trabajo (OIT) Ginebra.
Revista Latinoamericana de Estudios Educativos (Centro de Estudios Educativos, A.C.) México.
Revista Mexicana de la Construcción (CNIC) México.
SENAI em ação (SENAI) Rio de Janeiro.
SENAI informa (SENAI) Rio Grande do Sul.
SENATI: recursos humanos y desarrollo industrial (SENATI) Lima.
Serie bibliográfica (Cinterfor) Montevideo.
Trabajo (Centro de Análisis del Trabajo) México.
Transformação (Ministério do Trabalho/Secretaria de Mao-de-Obra) Brasilia.

PRELIMINARY NOTES AND PARTIAL PAPERS PREPARED IN THE FRAMEWORK OF THE REGIONAL STUDY*

Agudelo, S.- **Aportes metodológicos de la FP.** (apuntes en borrador)

Assis, M. de.- **Nuevos roles de las IFP en el desarrollo de la tecnología y la productividad.** (borrador)

Casanova, G.- **Notas sobre el enfoque arquitectónico de los centros de formación.** (apuntes en borrador)

Chang, L.- **Instituciones de formación profesional de América Latina: innovaciones técnico-operativas.** (borrador)

Guibert, A. de Paula.- **Aspectos técnico-pedagógicos da FP.** (apuntes en portugués)

Ducci, M.A.- **Estudio regional sobre formación profesional en América Latina. Sinopsis.** (Informe provisional en español e inglés).

Ducci, M.A.- **Estudio regional sobre formación profesional en América Latina.** (Informe global preliminar en español e inglés)

Ducci, M.A.- **Tradición e innovación en la formación profesional en América Latina. Avance de resultados de un estudio regional.** (Documento de síntesis publicado por Cinterfor en español e inglés)

Martínez, E.- **Evaluación de los programas de formación profesional: un estado del arte en América Latina.** (Documento editado en español e inglés, aún no publicado)

--. **Gestión financiera de las IFP.** (borrador)

--. **Planificación y gestión de la FP.** (borrador)

Pigni, L.- **Informaciones estadísticas de las IFP** (tabulaciones en borrador)

--. **Informaciones socioeconómicas y educativas de los países de América Latina.** (tabulaciones en borrador)

Ramírez, J.- **Informe sobre las experiencias de las IFP de América Latina en la atención a grupos o sectores de población en desventaja.** (borrador)

Rojas, F.- **Financiamiento de la FP en América Latina.** (apuntes en borrador)

Weinberg, P.D.- **Apuntes sobre formación profesional y educación.** (borrador)

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* Unless express mention, these papers are drafts, not corrected nor edited and, therefore, not available until its eventual publication by CINTERFOR.

ANNEXES

Annex 1

SYNOPTIC TABLE OF VOCATIONAL TRAINING INSTITUTIONS (VTIs) IN LATIN AMERICAN COUNTRIES

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Argentina	CONET (1959)	Decentralised public organisation within the jurisdiction of the Ministry of Education and Justice	*National Council:* - President of CONET - 3 representatives of technical teachers - 1 representative of Ministry of Labour and S. Security - 1 representantive of Teaching Professionals Assoc. - 2 representatives of employers'associations - 1 representative of CGT (labour union organisations)	- State budget appropriation (within the budget of the Ministry of Education) - (Fiscal credit to enterprises)	- (Governing) - Implementing	X	X	X
Bolivia	INFOCAL (1988) (1)	Autonomous public organisation administered by entrepreneurs under the tuition of the Min. of Labour and Labour Development	*National Council:* - Minister of Labour and Labour Development - 2 representatives of Ministry of Labour and L. Devel. - 2 representatives of CEPB (employers' association) - 2 representatives of COB (labour union organis.) - Executive Director of INFOCAL (without a right to vote)	- 1 % on payroll, paid by all enterprises (2) - (Sale of services)	- Implementing	X	X	X
Brazil	SENAC (1946)	Private institution administered by CNC (National Federation of Commerce) (entrepreneurial body)	*National Council:* - President of CNC - 1 representative Ministry of Education and Culture - 1 representative Ministry of Labour and Social Security - 1 representative of INPS (National Institute of Social Security - 1 representative of the National Federation of Commerce Workers - 1 representative of every National Federation - 1 representative of every SENAC Regional Council - National Director of SENAC	- 1 % on payroll, paid by commercial enterprises - (Fiscal incentives to enterprises)	- Implementing			X
Brazil	SENAI (1942)	Private institution administered by CNI (National Federation of Industries) (entrepreneurial body)	*National Council:* - President of CNI - 1 representative Ministry of Education and Culture - 1 representative Ministry of Labour and Social Security - 1 representative of the transportation, communications and fishery sector - 1 representative of every SENAI Regional Council - National Director of SENAI	- 1 % on payroll, paid by industrial, transportation, communications and fishing enterprises - Additional 0,5 % on payroll, paid by enterprises employing more than 500 workers - (Fiscal incentives to enterprises)	- Implementing		X	

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Brazil	SENAR (1976) (3)	Autonomous public organisation subordinate to the Ministry of Labour and Social Security	*Conuncil:* - National Director of SENAC - 2 representatives Ministry of Labour and Social Security - 2 representatives Ministry of Agriculture - 2 representatives Planning Division of the Presidency of the Republic - 1 representative Ministry of Education and Culture - 1 representative of the Ministry of the Interior - 1 representative of CNA (National Federation of Agriculture) - 1 representative of CONTAG (National Federation of Rural Workers)	- Budget appropriation (within the budget of the Ministry of Labour) - Resources of FND (National Development Fund)	- Implementing	X		
Colombia	SENA (1957)	Autonomous public organisation attached to the Ministry of Labour and Social Security	*National Executive Council:* - Minister of Labour and Social Security - Minister of National Education - Minister of Agriculture - Chief of the Department of National Planning - 1 representative of the Episcopal Conference - 1 represent. of ANDI (National Assoc. Manufacturers) - 1 represent. FENALCO (National Fed.Businessmen) - 1 represent. SAC (Association of Colombian Farmers) - 1 represent. ACOPI (Colombian Popular Association of Manufacturers)) - 1 representative of labour union organisations - 1 representative of rural workers	- 2 % on payroll, paid by private and state enterprises - 0,5 % on payroll, paid by public entities	- (Governing) - Implementing	X	X	X
Costa Rica	INA (1965)	Autonomous public organisation linked with the Presidency of the Republic	*Executive Board:* - Executive President of INA - Minister of Labour and Social Security - Minister of Public Education - 3 representatives of employers' associations - 3 representatives of labour union organisations	- 2% on payroll, paid by private enterprises employing 5 or more workers - 0.5 % on payroll, paid by agricultural enterprises employing 10 or more workers - 2 % on payroll of State institutions and enterprises - 1 % national revenue from income tax (with a maximum of C 20.000)	- (Governing) - Implementing	X	X	X

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Cuba	CETSS (1961)	Body of the Ministry of Labour	- President of CETSS	- National budget appropriation	- Monitoring - Evaluating	X	X	X
Chile	INACAP (1966)	Private institution under the administration of CNPC (National Federation of Commerce and Production) (entrepreneurial body)	*Executive Council:* - President of CNPC - Vice President of CORFO (Corporation of Production Promotion) - representatives of CNPC - representatives of CORFO - 1 representative of SERCOTEC (Technical Cooperation Service) - 1 representative Ministry of Public Education	- (Fiscal incentives to enterprises) - (Sale of services)	- Implementing	X	X	X
Chile	SENCE (1976)	Decentralised public organisation linked with the Ministry of Labour and Social Security	- National Director (appointed by the President of the Republic)	- State budget appropriation (within the budget of the Ministry of Labour)	- Governing - Monitoring	X	X	X
Dominican Republic	INFOTEP (1980)	Autonomous public organisation linked with the Department of Labour	*Board of Directors:* - Secretary of Labour - Secretary of Education - Director of the Armed Forces Vocational Schools - 3 representatives of employers' associations - 3 representatives of labour union organisations	- 1 % on payroll, paid by public and private enterprises - 0.5 % on profits and bonuses received by workers of public and private enterprises - State budget appropriation	- Governing - Implementing	X	X	X
Ecuador	SECAP (1966)	Autonomous public organisation attached to the Ministry of Labour and Human Resources	*Board of Directors:* - Minister of Labour and Human Resources - Minister of Public Education - Minister of Industries, Commerce, Integration and Fisheries - General Manager of CENDES - President of the National Development Council - 2 representatives of employers' associations - 2 representatives of labour union organisations - Executive Director of SECAP (without a right to vote)	- 0.5 % on payroll, paid by public and private enterprises - State budget appropriation	- Implementing	X	X	X

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
El Salvador	INSAFORP (4)	Public organisation linked with the Ministry of Labour and Social Security	- Executive Director (appointed by the Minister of Labour and Social Security)	- State budget appropriation (within the budget of the Ministry of Labour)	- Implementing	X	X	X
Guatemala	INTECAP (1972)	Decentralised public organisation linked with the Ministry of Labour and Social Security	*Executive Board:* - Minister of Labour and Social Security - Minister of Economy - Secretary of National Council of Economic Planning - 6 representatives of employers' associations - 3 representatives of labour union organisations - Manager of INTECAP (without a right to vote) - Assistant Manager of INTECAP (without a right to vote)	- 1 % on payroll, paid by public and private enterprises - State budget appropriation	- Implementing	X	X	X
Haiti	INFP (1973)	Public organisation linked with the Department of National Education	*Governing Board:* - 1 rep. Department of National Education - 1 rep. Department of Commerce and Industry - 1 rep. Department of Finance and Economic Affairs - 1 rep. Department of Social Affairs - 1 rep. Department of Agriculture - 1 rep. of the Secretariat of CONADEP (National Development Council) - 3 representatives of employers' associations - 3 representatives of labour union organisations	- 1 % on payroll, paid by private enterprises (training rate) (5) - State budget appropriation, within the budget of the Ministry of National Education	- Coordinating - Implementing	X	X	X
Honduras	INFOP (1972)	Autonomous public organisation linked with the Department of Labour and Welfare	*Executive Council:* - Secretary of Labour and Welfare - Secretary of Public Education - Secretary of Economy - Secretary of Economic Planning - 2 representatives of COHEP (employers' associations) - 2 representatives of CTH (labour union organisations) - Executive Director of INFOP (without a right to vote)	- 1 % on payroll, paid by private enterprises employing more than 5 workers - 0.5 % on payroll, paid by the State - 1 % on payroll of autonomous and semi-autonomous public institutions	- Implementing	X	X	X

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Mexico	DGCP (1978)	Body of the Department of Labour and Social Security (STyPS)	- Director General of Training and Productivity (appointed by Udersecretary "B" of ST y PS)	- State budget appropriation (within the budget of the Department of Labour)	- Governing - Promoting - Monitoring	X	X	X
Mexico	ICIA (1975)	Private institution administered by the National Chamber of the Sugar Industry and by the Sugar Industry Labour Union	***Combined National Committee:*** - Director General of the National Commission of the Sugar Industry - 1 rep. Department of Energy, Mines and Industry - 1 representative of STyPS - 1 rep. of IMSS (Mexican Institute of Social Security) - 3 rep. of the Sugar Industry Labour Union - 2 rep. of the sugar industry employers - Director General of ICIA	- Contributions of sugar mills equivalent to a fixed proportion of production volumes (1 cent and 25/oo per kg. of sugar produced)	- Implementing	X	X	
Mexico	ICIC (1978)	Private institution administered by CNIC (National Chamber of the Construction Industry)	***Executive Council:*** - President of CNIC - Representatives of CNIC - 1 representative of STyPS - 1 representative Department of Public Education - 1 representative of the Department of Communications and Transportation - 1 representative of the Construction Labour Union - Director of ICIC	- Contributions of construction enterprises equivalent to 2 ‰ (two per thousand) of the value of any contract work	- Implementing		X	
México	CATEX (1979)	Private institution independent of CNIT (National Chamber of the Textile Industry)	***Executive Council:*** - 1 representative of CNIT - 1 representative of STyPS - 1 representative of textile workers	- (Sale of services)	- Implementing		X	
Nicaragua	SINACAP (1986) (6)	Public organisation under the Ministry of Labour	***Executive Council:*** - Minister of Labour - Representatives of employers' associations - Representatives of labour union organisations - Representatives of the public sector	- 2 % on payroll, paid by public and private enterprises	- Governing - Implementing	X	X	X

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Panama	INAFORP (1983)	Autonomous public organisation linked with the Ministry of Labour and Welfare	*National Commission:* - Minister of Labour and Welfare - 1 representative of the Ministry of Planning and Economic Policy - 1 representative of the Ministry of Education - 1 representative Ministry of Commerce and Industry - 3 representatives of employers' associations - 3 representatives of labour union organisations - 3 representatives of independent craftsmen - 3 agricultural producers	- 15 % of the State Education Fund - State budget appropriation	- Implementing	X	X	X
Paraguay	SNPP (1971)	Autonomous public organisation linked with the Ministry of Justice and Labour	*Executive Council:* - 1 representative Ministry of Justice and Labour - 1 representative Ministry of Education - 1 representative Ministry of Industry and Commerce - 1 represent. Ministry of Agriculture and Livestock - 1 represent. Technical Secretariat of Planning - 1 representative of employers' associations - 2 representatives of labour union organisations	- 1 % on payroll, paid by private enterprises - State budget appropriation	- Implementing	X	X	X
Peru	SENATI (1961)	Autonomous public organisation linked with the Ministry of Industry, Commerce and Integration	*National Council:* - 1 represent. Min. Industry, Commerce & Integration - 1 representative of the Ministry of Labour - 1 representative of the Ministry of Education - 5 rep. of SNI (National Society of Industries) - 1 rep. of APEMIPE (Association of Small and Medium Industries - 1 rep. FEDECAM (Feder. Chambers Commerce) - 2 rep. of SENATI workers	- 1,5 % on payroll, paid by manufacturing enterprises of CIIU (recently extended to enterprises with manufacturing-related activities)	- Implementing		X	
Peru	SENCICO (1977)	Deecentralised public organisation of the Ministry of Housing and Construction	*National Executive Council:* - 1 representative Ministry of Housing - 1 representative Ministry of Labour - 1 representative Ministry of Education - 1 representative Peruvian Chamber of Construction - 1 representative Federation of Construction Workers - 1 representative of universities	- Contributions of private construction enterprises equivalent to 5 o/oo (five per thousand) of the value of contract works	- Implementing		X	

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE 1ary.	2ary.	3ary.
Perú	DGFP (1980)	Body of the Ministry of Labour and Social Development	- Director General (appointed by the Minister of Labour)	- State budget appropriation (within the budget of the Ministry of Labour)	- Policy-making - Promoting - Evaluating - Implementing	X	X	X
Uruguay	UTU (1942)	Autonomous institution linked with the Ministry of Education and Culture	***Board of Vocational Education:*** - 3 members appointed by CODICEN (Central Executive Board of National Education)	- State budget appropriation (within the budget of the Ministry of Education)	- Implementing	X	X	X
Uruguay	COCAP (1978)	Autonomous public organisation linked with the Ministry of Education and Culture	***Honorary Council:*** - Rector of the National Board of Education - 1 representative University of the Republic - 1 representative Ministry of Labour & Social Security - 1 representative Ministry of Agriculture & Fisheries - 1 representative Ministry of Industry & Energy - 1 representative of UTU - 2 representatives Chamber of Industries - 2 representatives of rural entities - 1 representative Office of Planning and Budget	- Contributions of private enterprises equivalent to 5 o/oo (five per thousand) of the value of declared exports	- Implementing	X	X	X
Venezuela	INCE (1959)	Autonomous public organisation attached to the Ministry of Education	***National Governing Board:*** - President of INCE - 1 representative Ministry of Education - 1 representative Ministry of Labour - 1 representative Ministry of Development - 1 representative of rural organisations - 1 representative of CTV (labour union organisations) - 1 representative of the Agricultural Chamber - 1 representative of the Chamber of Commerce - 1 representative of the Chamber of Manufacturers - 1 representative of the Federation of Teachers	- 2 % on payroll, paid by enterprises employing more than 5 workers - 0.5 % of profits paid to workers and employees - "Substitute" payment "for apprenticeship" (alternative to the salaries of the legal quota of apprentices the enterprises are obliged to employ) - State budget appropriation equivalent to 20 % of the annual amount of aforementioned contributions	- Governing - Implementing	X	X	X

COUNTRY	INSTITUTION (DATE OF CREATION)	LEGAL NATURE AND PARENT ORGANISATION	GOVERNING BODY AND COMPOSITION (a)	CURRENT LEGAL BASIS OF FINANCING (b)	RANGE OF FUNCTIONS (c)	SECTORAL COVERAGE		
						1ary.	2ary.	3ary.
Venezuela	INCE Construcción (1981)	Civil association of private law linked with INCE and the Venezuelan Chamber of Construction	*Executive Council:* - President of INCE - Representatives of INCE - Representatives of the construction sector (with majority in the Council)	- Contributions of INCE up to 60 % of the sums collected from construction enterprises - Contributions of the Chamber of Construction	- Implementing		X	
Venezuela	INCE Turismo (1976)	Civil association of private law linked with INCE and the Venezuelan Tourism Corporation	*Executive Council:* - President of INCE - Representatives of INCE - Representatives of the tourism sector (with majority in the Council)	- Contributions of INCE up to 60 % of the sums collected from enterprises of the toursim sector - Contributions of the Tourism Corporation	- Implementing			X
Venezuela	INCE Textil (1970)	Civil association of private law linked with INCE and the Venezuelan Textile Association	*Executive Council:* - President of INCE - Representatives of INCE - Representatives of the textile sector (with majority in the Council)	- Contributions of INCE up to 60 % of the sums collected from enterprises of the textile sector	- Implementing		X	
Venezuela	INAGRO (1979)	Civil association of private law linked with INCE and the Ministry of Agriculture and Cattle Breeding	*Executive Council:* - President of INCE - 1 rep. Ministry of Agriculture and Cattle Breeding - 1 rep. Agricultural Credit Institute - 1 rep. National Agricultural Institute - 1 rep. Federation of Agricultural Producers - 1 rep. National Federation of Stockbreeders - 1 rep. Venezuelan Rural Federation - 1 rep. Venezuelan Federation of Rural Workers	- Contributions of INCE up to 60 % of the total budget of INAGRO, which es complemented with: - 20 % from the Ministry of Agriculture - 10 % of the National Agricultural Institute - 10 % from the Agricultural Credit Institute	- Implementing	X		

(a) The member of the goberning body first indicated is the presiding member.

(b) Corresponds to main financial support sources on a legal basis. Other main income sources - of which the VTIs make intensive use - have been indicated in brackets, although they do not constitute a fixed basis of financing (fiscal incentives to enterprises, sale of services).

(c) Although they are the respective VTIs' responsibility from the formal point of view, function indicated in brackets are not fully exercised at present.

(1) Replaces the old FOMO (National Manpower Training Service) created in 1974; its transfer to the private sector is under study.

(2) At present, contributions of enterprises are voluntary.

(3) Starting 1988, by temporary constitutional provision, its admistration has been assigned to the National Federation of Agriculture, which will affect its legal nature, the composition of its governing body and the legal basis of financing; all these aspects have not been defined up to the present.

(4) The law of creation of INSAFORP has not been passed yet. Presently it operates under DGFPE (General Directorate of Vocational Training and Employment) of the Ministry of Labour and Social Security.

(5) Starting February 1989, the training rate was reduced to 2 %. Its specific use was eliminated, and was earmarked directly for the public treasury.

(6) SINACAP was temporarily transferred to the Ministry of Education as a General Directorate. In 1990, it was reinstated within the Ministry of Laour, its legal from, financial basis and Governi Body being under the process of re-composition and re-definition.

ACRONYMS USED

ALALC	Asociación Latinoamericana de Libre Comercio
APA	Aprendizaje por Acción
ASIVA	Asociación de Industriales de Valparaíso (Chile)
ASTIN	Asistencia Técnica a la Industria (SENA)
CAI	Curso de Aprendizaje Industrial, para formación de menores entre 14 y 18 años de edad (Industrial Apprenticeship Course, for training minors from 14 to 18 years of age)
CAPACA	Capacitación para la Participación Campesina (SENA)
CATEX	Centro de Capacitación y Adiestramiento Textil (Mexico)
CBC	Colecciones Básicas Cinterfor
CEBRAE	Centro Brasileiro de Apoio à Pequena e Media Empresa
CECAP	Centro de Capacitación y Producción (Uruguay)
CECAPE	Centro de Capacitación Profesional Extraordinaria (Peru)
CEDEP	Centro de Desarrollo de Personal (SENAI)
CENAFOR	Centro Nacional de Aperfeiçoamento de Pessoal para a Formaçao Profissional (Brazil)
CENFOTUR	Centro de Formación en Turismo (Peru)
CEO	Centros de Educación Ocupacional
CEP	Curso de Especialización Profesional, para adultos con experiencia (Vocational Specialisation Course, for adults with experience)
CEPE	Corporación Estatal Petrolera Ecuatoriana
CETIQT	Centro de Tecnología da Industria Química e Textil (SENAI)
CFMO	Conselho Federal da Mao de Obra (Brazil)
CIER	Proyecto de Capacitación Individual a la Empresa Rural
CINTERFOR	Centro Interamericano de Investigación y Documentación sobre Formación Profesional
CIPACU	Capacitación para la Participación Comunitaria Urbana (SENA)
CNAOP	Consejo Nacional de Aprendizaje y Orientación Profesional (Argentina)
CNC	Confederaçao Nacional do Comercio (Brazil)
CNI	Confederaçao Nacional da Industria (Brazil)
COB	Capacitación Ocupacional Básica (INACAP)
COCAP	Consejo de Capacitación Profesional (Uruguay)
CODESSER	Corporación de Desarrollo Social del Sector Rural (Chile)
COLCIENCIAS	Fondo Colombiano de Investigaciones Científicas y Proyectos Especiales
CONCRID	Concurso Nacional de Creatividad para Docentes (SENAI)

CONET	Consejo Nacional de Educación Técnica (Argentina)
CONPES	Consejo Nacional de Planificación Económica y Social (Colombia)
CORFO	Corporación de Fomento de la Producción (Chile)
CQP-I	Curso de Calificación Profesional, a nivel de primer grado (Occupational Qualification Course, at first level)
CQP-IV	Curso de Calificación Profesional, para formación de técnicos a nivel de segundo grado (Occupational Qualification Course, for training technicians at second level)
CTM	Confederación de Trabajadores de México
DAMPI	Departamento de Asistencia a la Pequeña y Mediana Industria (CNI/Brazil)
DGFP	Dirección General de Formación Profesional (Peru)
DGPA	Dirección General de Productividad y Adiestramiento/ Secretaría de Trabajo y Previsión Social (Mexico)
DRI	Desarrollo Rural Integrado (Colombia)
EAP	Economic Active Population
ECLAC	Economic Commission for Latin America and the Caribbean
EMA	Educación Media de Adultos (INACAP/Chile)
FAD	Formación Abierta y a Distancia (SENA)
FEDEMETAL	Federación Metalúrgica Colombiana
FIC	Fondo de la Industria de la Construcción (SENA/Colombia)
FOMO	Servicio Nacional de Formación de Mano de Obra (Bolivia)
GNP	Gross National Product
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit (Germany)
HP	Curso de Habilitación Profesional, para formación de técnicos, a nivel de segundo grado (Occupational Qualifying Course, for training technicians at second level)
IBRD	International Bank for Reconstruction and Development
ICA	Instituto Colombiano Agropecuario
ICFES	Instituto Colombiano para el Fomento de la Educación Superior
ICIA	Instituto de Capacitación de la Industria Azucarera (Mexico)
ICIC	Instituto de Capacitación de la Industria de la Construcción (Mexico)
IDAMPEI	Instituto de Apoyo a la Mediana y Pequeña Empresa Industrial (SENATI)
IDB	Inter-American Development Bank
IDRC	International Development Research Centre (Canada)
IFARHU	Instituto de la Formación y el Aprovechamiento de los Recursos Humanos (Panama)
ILO	International Labour Organisation
IMSS	Instituto Mexicano de Seguridad Social
INA	Instituto Nacional de Aprendizaje, Costa Rica

INACAP	Instituto Profesional y Centro de Formación Técnica (Chile) ex Instituto Nacional de Capacitación Profesional
INAFORP	Instituto Nacional de Formación Profesional (Panama)
INAGRO	Instituto Nacional de Capacitación Agrícola (Venezuela)
INAPET	Instituto Nacional de Adiestramiento Petrolero y Petroquímico (Venezuela)
INCATEX	Instituto Nacional de Capacitación Textil (Venezuela)
INCCA	Instituto Nacional de Capacitación Campesina (Ecuador)
INCE	Instituto Nacional de Cooperación Educativa (Venezuela)
INCORA	Instituto Colombiano de Reforma Agraria
INDAP	Instituto de Desarrollo Agropecuario (Chile)
INEM	Institutos Nacionales de Enseñanza Media Diversificada (Colombia)
INFOCAL	Instituto Nacional de Formación y Capacitación Laboral (Bolivia)
INFOP	Instituto Nacional de Formación Profesional (Honduras)
INFOTEP	Instituto Nacional de Formación Técnico Profesional (Dominican Republic)
INMETRO	Instituto Nacional de Metrología (SENAI)
INTECAP	Instituto Técnico de Capacitación y Productividad (Guatemala)
NES	Núcleos Especializados Sectoriales (CONET)
NGO(s)	Non-governmental organisation(s)
OMS	Occupational Methodical Series
OTE	Organismo Técnico de Ejecución (Chile)
OTIR	Organismo Técnico Intermedio (Chile)
PAAR	Plan de Acción de Administración Regional (SENAC)
PER	Programa de Formación para el Desarrollo de la Pequeña Empresa Rural (CINTERFOR)
PHO	Programa de Habilitación Ocupacional (INCE)
PIPMO	Programa de Iniciación Profesional del Menor Ocupado (Brazil)
PPP	Promoción Profesional Popular (SENA)
PPPR	Promoción Profesional Popular Rural (SENA)
PPPU	Promoción Profesional Popular Urbana (SENA)
PROASER	Programa de Asesoría al Sector Rural (INA)
PRODEMP	Programa de Desarrollo Empresarial (SENAC)
SADME	Sistema Automatizado de Administración Escolar (SENAC)
SAPES	Sistema de acompanhamento profissional dos egressos do SENAI
SAT	Setor de Apoio Tecnológico as Indústrias (SENAI)
SECAP	Servicio Ecuatoriano de Capacitación Profesional
SEI	Secretaría Especial de Informática (Brazil)
SENA	Servicio Nacional de Aprendizaje (Colombia)
SENAC	Servicio Nacional de Aprendizaje Comercial (Brazil)
SENAEM	Secretaría Nacional del Empleo (Chile)

SENAI	Servicio Nacional de Aprendizaje Industrial (Brazil)
SENALDE	Servicio Nacional de Empleo (Colombia)
SENAR	Servicio Nacional de Formación Profesional Rural (Brazil)
SENATI	Servicio Nacional de Adiestramiento en Trabajo Industrial (Peru)
SENCE	Servicio Nacional de Capacitación y Empleo (Chile)
SENCICO	Servicio Nacional de Capacitación para la Industria de la Construcción (Peru)
SIGINA	Sistema de Información Gerencial (INA)
SIMME	Sistema Multiplicador de Microempresarios (Guatemala)
SIRFO	Sistema Regional de Información y Documentación sobre Formación Profesional (CINTERFOR)
SME	Rural and medium-sized enterprise
SNPP	Sistema Nacional de Promoción Profesional (Paraguay)
SOFOFA	Sociedad de Fomento Fabril (Chile)
STPS	Secretaría del Trabajo y Previsión Social (Mexico)
TWI	Training within industry
UCECA	Unidad Coordinadora de Empleo, Capacitación y Adiestramiento/STPS (Mexico)
UIS	Urban Informal Sector
UNA	Universidad Nacional Abierta de Venezuela
UNAM	Universidad Nacional Abierta de México
UNED	Universidad Nacional de Educación a Distancia de Costa Rica
UNEPROM	Unidad Ejecutora del Programa Nacional de Micro-empresas (SECAP)
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNIDO	United Nations Industrial Development Organisation
UNIFORT	Unidad móvil de formación y entrenamiento (SENAC)
UTU	Consejo de Educación Técnico-Profesional, Universidad del Trabajo del Uruguay
VT	Vocational training
VTI(s)	Vocational Training Institution(s)

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