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APPLICATION AND INSTITUTIONAL
LEARNING PATHWAYS:
ProMES AND SELF-TRAINING AND ASSESSMENT
GUIDES BY COMPETENCIES

In Latin America, during the 1995-2002 period and in the framework of ILO technical co-operation, specially through Cinterfor, the ProMES and Self-training and Assessment Guides (STAG) models were submitted to various social actors: employers' organisations, trade unions, labour ministries and technical/vocational training institutions.

The idea was not to clone a model that had been designed for other contexts, but rather to adapt its methodological outline for consistent and coherent application. This is the outcome of that effort and of the endogenous training capacity of each organisation, coordinated with institutional learning processes.

Institutional learning occurs at two levels. The first one is learning by the technical/vocational training institution itself, and the second one, learning by the organisation or enterprise. Both processes are not separate in time and contents but interact through reflection on concrete experiences, which makes the methodological proposal dynamic. It proceeds according to the learning generated and the needs that emerge along the way. Neither training institutions nor organisations are expected to take the proposal literally, but to adapt it to their own requirements, capacities and possibilities.

Apart from similar initiatives in several other nations of the region, by the year 2000 the proposal had found significant response in Mexico and the Dominican Republic. Initial applications have been recently made in Cuba but this paper concentrates on experiences in the first two countries.

In both countries the proposal was systematically received by enterprises and technical/vocational training (TVET) institutions. They started by a process of adaptation and improvement. At annual meetings of the leading players, experts of the institutions involved and Cinterfor/ILO, experiences have been systematically analysed and evaluated. Those meetings offered an opportunity for exchanging successful practices, exploring new avenues and became an instrument for guiding and promoting institutional learning according to the models put forward.

a. ProMES in Mexico

Application of ProMES started in 1995 in a medium-sized sugar mill in the State of Jalisco. In the beginning it had the support of the Overall Quality and Modernisation programme (Spanish acronym CIMO), of the Labour and Social Security Secretariat (STyPS), and the ILO. On the basis of that experience, the model was subsequently applied in other sectors and branches of the economy, like small rural producers, *maquila* export plants, service stations (gas stations). However, it was in sugar mills that application was more systematic and generated a significant process of institutional and organisational learning.

Context

When application of ProMES began at the “Bellavista” sugar mill in 1995, the Mexican macro-economic context was characterised by a deep economic crisis in the midst of an accelerated process of trade opening and State deregulation that had started more than a decade before. The more dynamic sectors had been modernised technologically and organisationally to face the structural reforms (Mertens, 1997). But many others reacted more slowly and lagged behind in adapting to the new circumstances. The sugar industry was one of those, probably the most slow-moving among manufacturing industries.¹⁵

This backwardness was reflected in low sugar yields and energy generation in the plants, bad and uneven quality of the sugar, underemployed personnel and high operational costs by international standards. The picture was further complicated in subsequent years, and excess production was nearly 20% a year. To this was added a drop in the international price of sugar, and the replacement of cane sugar by corn fructose in the confectionery and light beverages indus-

¹⁵ As compared to the Brazilian sugar industry, it lags approximately 30 years behind, according to a Brazilian expert.

tries. In 2002, the extent of that substitution in the region was of 10 to 15% of the national market early (Mertens; Wilde, 2001).

The situation was also reflected at social level. The typical profile of workers was low degree of schooling (an average of four to five years of elementary education), advanced age (average, 45 years or more), many years' seniority in the plant, and occasional attendance of a training course (many workers had never done so). Working conditions were far from decent: high accident rates, scarce use of personal safety implements, non-existent signs, proliferation of unsafe and unhealthy situations. Labour relations consisted of the confrontation of enterprise and trade union, in the frame of a rigid Contract-Law plagued with ineffectual details; bargaining centred on the interests of owners/managers and union leaders, while those of workers and the enterprise itself were relegated or totally disregarded.

The corporate culture was one of survival, with a minimum of investments and no prospects of competitiveness in the medium term. The union culture was how to take the greatest possible advantage of any changes in the established work routine, paying no heed to the survival limitations of the enterprise in the market. Both management and the trade union acted on the assumption that at any signs of liquidity or solvency problems, the Government would provide the necessary support. They were justified by the social significance of sugar mills in terms of industrial employment generation in rural areas, where labour and income options were scarce. Under this circumstances, mills had become overcrowded in previous years, when they were in the hands of the State (Ibidem).

With this structural picture in the industry and in the middle of the 1995 macro-economic crisis, a national consensus was apparent in labour circles (entrepreneurs, trade unions, labour secretariat) that the economic situation called for new employment policies. But there was also agreement that medium and long term policies should not be left aside, and aimed at training personnel in the new competencies that technological and organisational changes demanded.

As a strategy for keeping and generating jobs in the face of trade opening and State deregulation, a steady improvement of productivity and an equitable distribution of benefits among the actors involved in production were suggested.

The ILO shared this view, with the proviso that improved productivity should be a necessary but not sufficient condition for generating jobs of the required quality. With the advent of the concept of "decent work" in the late 'nineties that attitude was stressed further. Only productivity improvements would be acceptable stemming from, and leading to working conditions considered to be decent or dignified the world over.

This is clearly expressed in a text about decent work as an objective for economic and social development, that in analysing the systemic nature of the concept and specifically referring to productivity (and the oft suggested false dichotomy between productivity and the quality of work) maintains: “there is proof that progress in rights, in safety, working conditions and social dialogue frequently has a positive effect on employment and productivity, providing that institutional conditions are favourable”.¹⁶

One of the challenges in this context is developing training instruments for employed (“active”) personnel in line with technological and market requirements, thus contributing to improved productivity and working conditions, especially for vulnerable groups in these new circumstances. Sugar mill workers with the characteristics described above, living in rural areas with few alternative employment options, were considered a vulnerable group.

Whenever employment was affected by the productivity strategy adopted, or just by market adjustments, we could fall back on the occupational retraining programmes offered by the Labour Secretariat, that consisted of training scholarships or grants for laid off workers. In this way we had planned – at least in theory – a strategy to counter a possible “technological unemployment”.

With this sugar industry background, a pilot experience with the ProMES model was decided on for a refinery, within the framework of the technical cooperation between the ILO and the STyPS, through the latter’s CIMO programme. This was done at the request of the human resources’ director of the corporation to which the refinery belonged, that had solicited support to design and apply a programme for the effective training of its personnel.

The main concern was to change the work culture, so that workers, middle managers and management might join efforts in one direction, i.e. the ongoing improvement of production processes and working conditions.

The existing work culture was characterised by a great diversity of perceptions and actions, few shared meanings, uncertainty of the personnel and a practice of reacting to events. In daily life this was reflected in a low level of commitment by workers to the company’s objectives. They expected to be told what to do and to be supervised; they seldom undertook tasks outside their job description. They lacked a sense of the hygiene and cleanliness required by a food industry, or of the care they should take of themselves, the facilities and tools.

¹⁶ Rodgers, Gerry: “*Training, productivity and decent work*” (*Decent work as a goal for the global economy*). Montevideo, Cinterfor/ILO, n.153, 2002.

The project of promoting a new work culture in sugar mills was based on the assumption that efforts and resources devoted to technical/vocational training are of little avail unless the work culture is changed. The key question was: how to change the work culture? Before starting with ProMES the enterprise had offered some courses on human relations at work, and positive attitudes regarding communication and teamwork. They had not had the expected impact, largely because what was taught in the classroom had not been followed up later. As opposed to technical competencies, social abilities require unlearning previous habits and beliefs, which needs systematic follow-up.

Changing the work culture means trying to change values embedded in a consistent and integrated network of beliefs and understandings that tend to maintain the *status quo* (Schoenberger, 1997). Consequently, it is not a rapid or straightforward process, as it meets several types of resistance. Managing a change in the work culture breaking away from customary pathways, implies identifying and surmounting areas of resistance. This was an important task in managing the all-inclusive learning model. The difficulty is achieving a lasting change of attitude when conviction by knowledge or direct enforcement (by sanction or punishment) is not enough. "If there is no true persuasion or change of attitudes

PROJECT FOR A NEW WORK CULTURE IN SUGAR MILLS

- Active personnel involvement; promotion of shared meanings;
- Ongoing personnel training by occupational competencies;
- Creating favourable environment for learning and generating contextualised knowledge; socialising it in the organisation;
- Broadening and enriching workers' functions;
- Inclination towards flexibility and self-management of learning;
- Support of hygiene, safety and food health policies;
- Ongoing improvement, with mutual commitments between workers and the enterprise;
- High performance, self-managed teamwork.

and values, lasting, long-term behaviour can hardly be achieved. (...) the forms of influencing attitudes and values have to do with participation schemes. The problem is that such schemes are slower to implant, although they may ensure better long-term results” (Ronco; Lladé, 2000).

The image of the new work culture we sought was not quite clear. What was clear was that the existing culture had become an obstacle, a hitch for turning the sugar mill into a learning organisation capable of facing the challenges of current conditions. Revamping the situation for successfully meeting market demands and the workers’ needs for development and welfare, would be the general picture of the new culture we visualised.

Its components were developed according to changing strategies and realities. Insofar as possible, our objective was to promote the active involvement of the everyday operations personnel, with the commitment of implementing improvements and the backing of the enterprise. The first and perhaps most important step towards change, was getting workers listened to by management and the other way round, getting them to listen to the suggestions of directors and middle managers. From there we were able to build mutual commitments to support learning in the direction of constant improvement. That was the proposal of the ProMES model.

Application pathways

Application began in 1996 at the “Bellavista” sugar mill that in the crop season employs some three hundred people, that go down to two hundred in the period of repairs. The plant dates back from the early nineteen hundreds and has undergone technological changes through decisions devoid of medium or long-term planning. They have responded to partial needs, by area or sub-area, without any master plan.

In the years preceding the ProMES experiment, investments of approximately US\$ 6 million had been made in the mill, mainly to increase processing capacity. They had had problems with the learning curve of the new equipment, mainly due to bad communications between management and the operatives. In view of increasing overproduction and a decline in market prices of sugar there was a threat of having to close down the mill unless it managed to improve operational costs in the short term. The abatement of idle periods (that accounted for nearly 20% of sugar-making time) was one of the immediate objectives for brining down costs. ProMES was supposed to contribute to that objective.

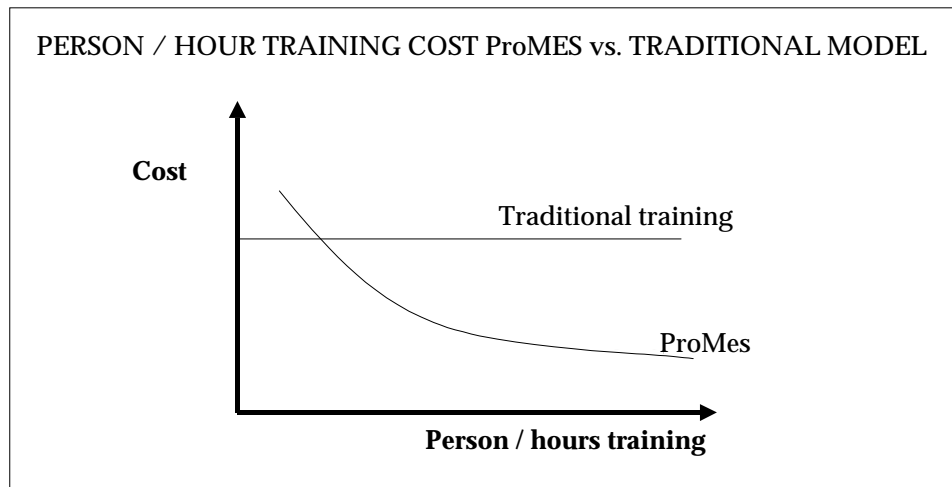
Another goal of ProMES was to reduce the accident rate. In 1995, thirty seven persons had been injured. The use of personal safety implements (helmets, shoes, goggles) was practically nil.

A factor influencing accidentality was the high degree of absenteeism caused by personnel turnover among different areas and the engagement of inexperienced workers.

As this was the first time for the enterprise and for the external CIMO and ILO consultants, we opted for a controlled application strategy, beginning by one shift in the mills area. The model was tried out during the 5 or 6 months of crop time and the evaluation was positive. Initially, the presence of the external consultants at the mill was constant, which enabled us to fine-tune the model and adapt it to the needs of the enterprise.

The following season the model was extended to all three shifts in the mills area, and in subsequent years to all areas, including field work. In general there was no reluctance of workers to take part, despite the fact that feedback meetings were held outside working hours. The only department that objected was mechanical maintenance. Mechanics knew that operation of the mill depended on them to a large extent. There was a struggle for power and leadership between mechanics –forged in practice and knowledgeable about equipment– and technicians in executive positions. To this were added internal differences that hindered adoption of the ProMES model. Maintenance was the last department to accept it.

ProMES PROGRESS	
Quantitative progress	Universe:
1995: 1 Shift 1 Area Bellavista Mill	(approx.: 35 persons)
1999: All Areas Bellavista Mill	(approx.: 245 persons)
2001: All Areas 4 Mills	(approx.: 1500 persons)
2002: All Areas 5 Mills; Beginning 1 Mill	(approx.: 1900 persons)
Accelerated learning introduction:	Beginning: 4 years to reach all areas
	Current: ½ to 1 year to reach all areas



Insofar as the model met managerial and corporate expectations, resources for its support were allocated: a classroom, a computer and overhead projector, social amenities and prizes at the end of the cycle; meals at feedback boards and, above all, payment for the coordinator's time. By 2002 it was reckoned that direct application costs of the model (including prizes but not the time devoted by the coordinator and managers to the process) during the crop season were around US\$ 15 thousand (less than 0.01% of gross sales). Taking an average of eight feedback board meetings with 80% attendance, the cost per person/hour would be about 4 dollars, which means an investment of 64 dollars per person during the 5 to 6 months of the season.

Costs are higher during start-up owing to investments in equipment and facilities and external counselling. As organisations take over the methodology, person/hour costs diminish. As opposed to traditional training in which person/hour costs remain constant when the number of participants increases, in ProMES costs go down when more persons join in. This is due to the scale economy effect of process standardisation. While traditional training is envisaged as a "product" (service) expressed in cost per person and per hour, ProMES training is a process with an initial cost that goes down in time and as more people are included. This makes it a viable proposal for ongoing training and learning at enterprises, from a costs point of view.

It is also viable from the point of view of results. Evaluation after the first year of application at the "Bellavista" mill showed positive results of a tangible and intangible kind. Among the tangible ones was a reduction of idle time attrib-

utable to operational errors by workers, fewer accidents and improved sanitary facilities. The intangibles were more and better communications between middle managers and workers, greater personnel co-operation and more proposals for improvement, enhanced labour atmosphere and ideas and explanations shared between operatives and middle managers.

Results became consolidated as the model was applied in different areas and departments of the plant which, together with its low costs, induced the human resources' management of the corporation to extend the "Bellavista" experience to the other three sugar mills it owned.

The underlying theories to be proved in this stage of institutional learning were basically two. The first one was that the ProMES model was suitable for, and could be adapted to the various occupational contexts of the sugar industry. The second one was that the learning accumulated in the first experience (whose tangible parts were formats – documentation and data processing – and procedures – schedule of feedback meetings, invitations, closing meetings, awards criteria) could be transferred to the other sugar mills to speed up the learning process (accelerated learning).

Both assumptions were confirmed. In spite of differences in occupational culture among the four refineries ("Bellavista" and the other three mills), the model could be adapted to the particular situation of each one. This shows that it is a valid proposal for this industry, characterised by a large number of structural obstacles to a continuous training strategy.

ProMES PROGRESS

Qualitative progress

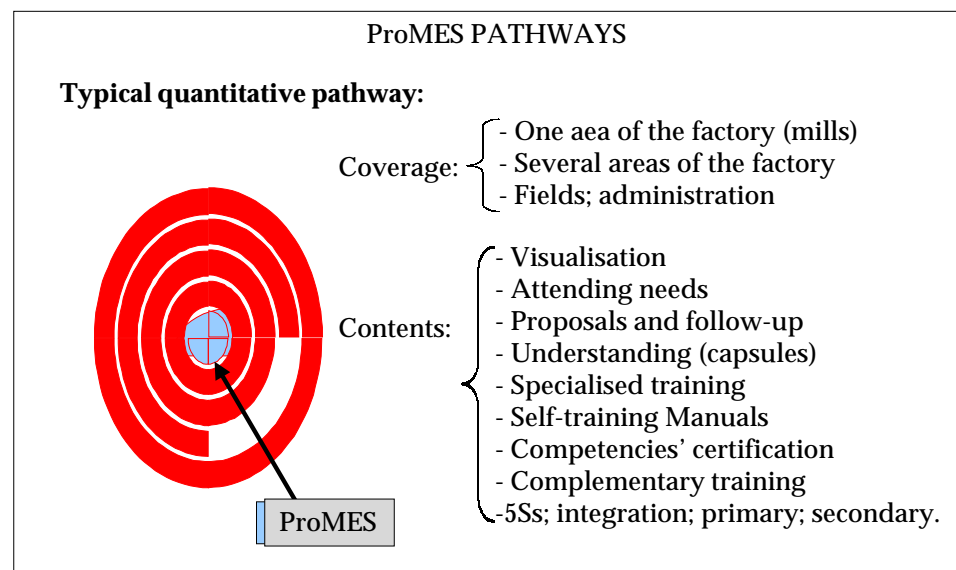
- Procedures and formats:
 - Plant, field, admin.
 - Registration formats
 - Data processing
 - Awards criteria
 - Symbols: triptych, T-shirt, get-together
- Definition of coordination functions
- Constant update of indicators according to strategic objectives:
 - Volume; Costs; Quality; Haccp; ISO
 - Working conditions

Learning: Developing a robust model

The second hypothesis tried to establish how far application of the model could be accelerated, on the basis of the technical inputs from the first experience. In the first case it took four years to reach all areas; we managed to shorten that period to one year and a half. Attempts to shorten it further failed. Technical know-how (“typical application pathway”) derived from a successful experience (“Bellavista”) helped to bring down application time to one third. However, that seems to be the limit, for in each new instance the model needs to be adapted to the particular organisational culture to have effects upon it. It is a unique and complex process transforming inter-personal relations, and cannot therefore be implemented mechanically. It is time consuming due not only to cognitive difficulties but to social and cultural problems.

We verified that it was possible to accelerate application. Nevertheless, it was not quite clear whether this covered the whole pathway or just part of it, enough to proceed without petering out. This happened because firm anchoring of the model in the organisational culture could hardly be speeded up. The technical side of the process was liable to apparent acceleration, in the sense that the pathway was laid out. But that did not guarantee or speed up organisational or individual learning processes.

At the same time, it was shown that the model adapted easily to the new demands of the surrounding environment (marketplace, technologies, policies) that emerged in the six years of ProMES application. Increased processing capac-



ity, that had for years been the industry's central concern ceased to be the main criterion for the success of sugar mills. Cost and quality were added, and especially compliance with Good Manufacturing Practices, one of the components of the international HACCP standard of food safety. ProMES proved very useful for implementation of the ISO 9000 and HACCP quality systems. Such systems require the ongoing participation and training of operational personnel, that under ProMES is carried out "naturally".

Further proof of adaptability was furnished by coordination of the model with other training programmes, like the 5Ss (technique of Japanese origin for keeping workplaces orderly and clean by means of five processes, all of them beginning with the letter "S"), specialised training and evaluation by competencies. In this broader spectrum ProMES remains the anchor programme, ensuring that other initiatives keep constantly in line with its objectives.

This has shown that the ProMES model not only retains its validity in different contexts, but also along time. It proved its soundness and relevance by acclimatising to changes in the environment that resulted in new strategic objectives for organisations. It showed its firmness in surviving political / institutional changes. In 2001, when the four sugar mills where ProMES was being applied were expropriated and became State property, the process was not discontinued.

In the subsequent expansion stage (2001-2002), the hypotheses to be proved referred to the model's sustainability and effectiveness. The TVET institutions involved (as well as the Labour Secretariat, STyPS) had withdrawn their support a couple of years earlier. As from 2001 the Conocer and also the ILO considered that the project should be self-sustaining. By mid-2002 everything indicated that the mills themselves were defraying the costs implied by operation of the model, including the contracting of external consultants to follow up and extend training proposals.

The second hypothesis referred not only to expanding the accelerated learning generated in the three sugar mills in the previous stage, but also whether organisations valued the results of it. In other words, showing that there was a positive and effective cost/benefit relation. This could be demonstrated directly through measurements and calculations, or indirectly, by considering external counselling on a commercial basis.

The latter was in effect done as from 2002, when the TVET institutions and the ILO discontinued their subsidies. The ILO did not altogether pull out of the project, but considered that its role should now be the promotion of meta-learning, i.e. knowledge of how institutions and organisations learn.

RESULTS OF THE ProMES/OCCUPATIONAL COMPETENCIES MODEL
IN "ALIANZA POPULAR"

1. Greater communication and mutual trust between Workers and Supervisors
2. Cleaner and safer working areas
3. Improved labour relations
4. Greater awareness and participation by workers in the use of social protection equipment
5. Greater awareness of workers about the hygiene of products
6. Greater participation by workers in achieving area objectives
7. Greater responsibility of supervisors in accident prevention
8. Greater attention by upper managers to solving workers' problems
9. Increased personnel training (equipment operation, maintenance and safety)

The new sugar mills joining that year in application of the ProMES model showed not only that acceleration techniques were valid, but could be implemented with fewer resources than in the first multiplier experience. In that first case, constant external counselling was required for half a year (some 900 hours) to promote and document processes. In the second, multiplier phase external counselling went down to 80 hours in the first six months. That seems to be the threshold of external advice that organisations like sugar refineries need in the start-up stage.

Four key stages were identified in the application of ProMES, each one with its respective critical aspects (see synoptic Table). They are necessary though not sufficient requirements for the successful completion of each stage.

It is difficult to keep the model optimally in line with the organisation's policies, and to obtain active personnel participation all the time and throughout all phases of implementation. Experience has shown that application has ups and downs. It is quite "natural" that after start-up and through initial momentum, a peak in participation should be reached as well as coincidence with the organisation's strategy. However, when the novelty has worn out, it is not unusual to see a decline. There is a risk of falling into an unproductive routine at feedback meetings.

ProMES PATHWAYS

Typical qualitative pathway:

Key stages

Critical aspects

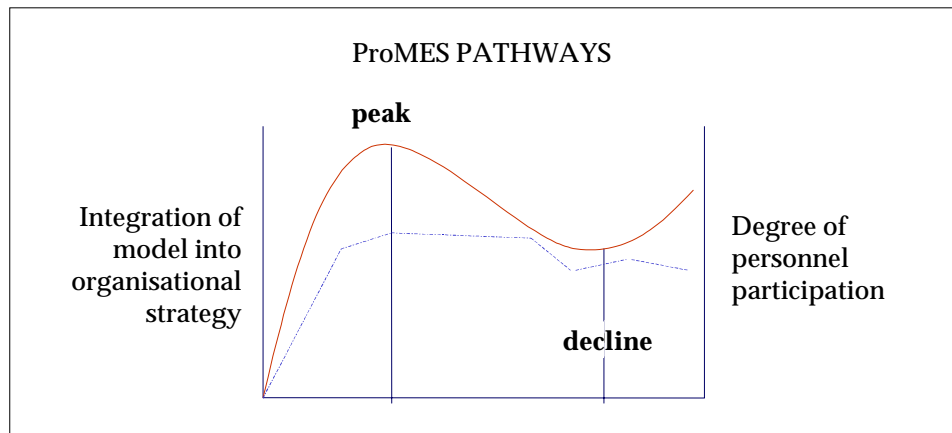
- | | |
|-----------------|---|
| • Start-up | <i>Securing the support of actors and defining Coordination</i> |
| • Consolidation | <i>Coaching Coordination, defining formats, routines</i> |
| • Development | <i>Improving formats, routines and group dynamics</i> |
| • Renewal | <i>Periodically adopting new indicators; deepening training; extending to other tools</i> |

The upkeep of the ProMES model depends on a capacity for going deeper into things, extending them and renewing them. The model must avoid becoming an instrument of the *status quo*, a valueless routine.

There is a moment when it comes up against the *counterculture* that intends to reclaim lost ground. The model may then be caught up in the mesh of the culture of the past and its related interests, in the midst of a constant struggle for the organisation's identity. There are permanent questionings about why change what is being done "if it was always done like that". Doubts and criticisms crop up, some more justified than others. In the case of sugar mills such criticism did not necessarily embody a different view of modernity but just a wish to return to past practices. The result of this struggle and cultural contraposition is not always favourable for ProMES schemes, but is decisive in establishing the course of change to be followed by the organisational culture.

It may also happen that the department or the whole plant goes into a crisis that has nothing to do with the model. If the phenomenon is not remedied in time, the model can be threatened by imminent collapse.

It has been estimated that the longer and deeper the fall, the greater the effort needed to recover the group dynamics of the scheme. When telltale symptoms become apparent in a model, as a result of exhaustion, counterculture or external crisis, it will be necessary to reinforce interventions by the coordinator and external counsellors. Action beyond direct application of the ProMES model



is sometimes required to re-establish normal operational conditions. For instance, re-structuring working areas, reappointing persons or reallocating functions, or simply waiting for the market to resume its normal course.

Not all problems can be foreseen because some are unconnected with the model. Others, however, are intrinsic in the ProMES application pathway and good management can forestall them. For example, the wearing out of feedback boards because they do not tackle subjects in sufficient depth, or fail to establish a link between the workers' tacit knowledge and the coded knowledge of technicians or managers; non-adherence to commitments and reverting to the old work culture; management's conviction that problems must not be analysed with the workers, or inversely, the workers' persuasion that taking part in ProMES is equivalent to "selling out" to the bosses.

ProMES PROBLEMS / LIMITATIONS

Superficial learning

- Not going deep enough into subjects
- Running out of subjects
- Failing to blend coded and uncoded knowledge
- Becoming repetitive (not making progress...)
- Losing significance
- Failing to develop specialisations
- Reverting to the "old" work culture

In the Mexican experiment, institutional learning in connection with ProMES centred on a group of consultants depending on the ILO, the sugar mills involved and initially the CIMO programme. This programme never incorporated the ProMES methodology into its counselling offer, for it confined itself to the role of intermediary between small and medium enterprises with training needs and local consultants. It was not supposed to generate and apply training methodologies (Mertens, 2001). In addition, no programme has yet been developed for training trainers in the ProMES method, apart from the scheme's coordinators and the human resources' managers of the respective sugar mills.

b. Self-training and assessment guides by competencies in Mexico

Design of a training model by competencies using a self-study and assessment guide began at the "Bellavista" sugar mill in 1998, as a complement of the ProMES model. It had the institutional support of Conocer, CIMO, and the ILO, that shared counselling costs with the mill. The experience was one of the cases backed by Conocer to show that the occupational competencies' model was functional for managing human resources in organisations, in order to face new market demands and rapid technological and organisational changes.

Later on enterprises from other branches (electronics, commerce, garment industry) engaged in similar experiences. Nonetheless, the greatest progress in recent years has been made in a leading food company in Mexico and other Latin American countries. The experiences of the sugar mills, the food company and the garment industry are analysed below.

Sugar mills

The self-training/assessment guides were initially designed at the "Bellavista" mill. The low schooling of workers, their lack of reading habits and the proven ineffectiveness of schoolroom training, called for an accessible and significant instrument for delivering job-related knowledge to them.

We first developed a profile of key competencies and a description of performances and knowledge required. To that end we applied the SCID format to a group of supervisors and managers. Workers were not involved in this process. In the absence of operational manuals and to avoid further confusion, we opted for starting by standardising operational criteria among middle and upper managers.

Owing to the non-existence of manuals, the initial versions of competency standards were used as such, describing operations step by step. This was subsequently corrected by using broader descriptors of performances and knowledge.

Competencies' profiles and standards were very useful for drafting the manual. They enabled us to maintain consistency through the process and acted as checklists for sequence and control purposes.

Our initial strategy was to develop a modular manual based on the key competencies of the mills area. As we proceeded through the seven modules (for as many key competencies) it became evident that only one of them should be specific to each area, namely, operating and watching over the production equipment. The contents of the other modules were applicable to all areas: maintaining equipment, lubricating parts, reading measurement parameters, working under safety standards, working by objectives, contributing to teamwork.

Each guide includes self-assessment, a technical explanation and an instrument for assessing knowledge and performance. Besides being a training tool, it is an assessment instrument. This turns it into a record for certification purposes. Everything is thus bundled together in a single instrument, which makes it easier for the enterprise and the workers.

After finishing the guides, we proceeded to draft a procedures manual of the process of training and assessing by competencies. That was the main requirement for the enterprise to be accredited as assessment centre by the national certifying body authorised to certify personnel according to the national technical standard for sugar making.

As the enterprise standard did not have the same architecture as the national standard we had to draw up a table of performance and knowledge equivalencies. We pointed out that the enterprise standard covered and sometimes exceeded the requirements of the national standard. The certifying body accepted our argument. This showed that national technical standards could be interpreted with flexibility without detracting from their basic contents.

Having been granted accreditation as assessment centre, we started the evaluation and certification process by area supervisors and superintendents. The aim was to familiarise them with both experiences: evaluating and being evaluated, and training them in the methodology. Fifteen supervisors and superintendents were certified in the first stage. The second stage was applying the method to the workers. That process was interrupted when, for financial reasons, a group of twenty-nine sugar mills, the "Bellavista" among them, were taken over by the

government. Interest in the evaluation and certification experiment waned, as the management was no longer under the pressure of the former corporate owners.

The “Bellavista” experience was transferred to another sugar mill, the “Alianza Popular”, that was also accredited as evaluation centre. On this occasion the guides were adapted to an *ad hoc* format for use at ProMES feedback boards and give them wider scope. The “San Gabriel” plant used the guides in a similar way, although this third sugar mill was not accredited as evaluation centre.

For a number of reasons –among them lack of leadership and support by upper managers, and lack of incentives for workers to get certified, as their jobs are assured all the same– use of the guides has met with difficulties, as well as the consequent certification procedures. However, this does not mean that the project has been abandoned. Market demands for compliance with ISO quality models and HACCP food safety standards require proof of personnel competencies. This opens up a possibility for application of the guides and certification of workers in the short term.

Clothes making enterprises

Our experience in the garment industry started with the link of a TVET centre with an enterprise. Their objective was to train and evaluate workers in “quality management in the assembly of garments”. This was a specific need the enterprise had to compete in the export market.

The proposal emphasised developing a guide rapidly, so we drafted it in a month’s time. We used the SCID model of systematic curriculum development to collect all the information required for a self-contained guide. On the basis of digital technology (digital photographs) we managed in a short period (six working days – four weeks in practice due to interruptions for other activities -) to devise a guide focusing on a critical aspect for the enterprise, i.e. quality management.

In two sessions of 4 hours each we applied the SCID format to two of the company’s garment assembly supervisors. It is important to describe the steps followed through this stage to understand the process for application in other contexts.

The first step was a tour of the facilities to get an idea of the different areas, flow of productive process and the products themselves.

A second step was a brief analysis of the strengths and weaknesses of the organisation. The enterprise director, the person in charge of quality and two supervisors of the garment assembly area were present in this exercise. Quality management in the productive process was pinpointed as the main weakness –as well as an opportunity area– in the productive process.

The third step was identification of the critical points of quality management of the process directly influenced by the operational manpower. The seven critical points, or processes identified were in connection with client satisfaction and these seven sub-competencies make up the key competency of the enterprise, called *quality management in the assembly of garments*.

The fourth step was application of the SCID format to the two supervisors, which consisted of systematically compiling information on the expected performance standard, the equipment utilised for reaching that standard, the related knowledge, the safety aspects to be observed, the decisions workers had to make to attain the standard, typical errors to be avoided, the communication and attitudes required. In the case of attitudes, sometimes they are difficult to establish. Nevertheless, it is clearer to determine what must not be evinced, or is to be avoided. This fourth step is fundamental in the experience, because training and assessment actions are derived from it.

The format was designed with a view to focusing on critical points, going deeper into them and with a concept of work going beyond the performance of a prescribed task and including unforeseen events, decisions, mistakes and attitudes. For that reason it is important to ensure that respondents (in this instance the two women supervisors) are qualified and concentrated on the items in the format. The involvement of an external expert at this stage proved to be very useful for interpreting the process.

The fifth step consisted of taking digital photos of the production process, of each one of the aspects indicated in the SCID format for the preceding step. Here it is important that the qualified respondents –the two supervisors in this case– point out the details of what is to be photographed to serve as reference in the training. Once information had been compiled according to the SCID format, we began preparation of the self-training guide. We should underline that the success of the compiling stage depends to a great extent on the *rate and flexibility* of the process. It is essential that the qualified respondents should not get overtired, since that affects the quality of the information obtained.

The self-training guide consists of three parts. Each one of the guide's sections –self-diagnosis, explanation and assessment– is based on the information gathered in the SCID format. Their structure is similar to that of the format, which

facilitates matters. Close correlation must be kept between the three parts. In the explanation section trainees will find the necessary information to complete their self-diagnosis. In the assessment part, they will clearly see the form and contents of the assessments, in line with the self-diagnosis and explanation.

This stage is laborious and it consumed most of the time devoted to the experience. It requires human resources and a sufficiently powerful computerised equipment to process the information based on digital photos. We recommend preparing guides that can be easily adapted for direct use and electronic visual presentation.

After completing the first version of the guide, we proceeded to validate it, which is essential for ensuring quality and relevance. Validation is implemented in two moments. Initial validation is done by a group of “experts”, in this case the two supervisors. The second validation is by a group of workers that try the guide out.

The guide was reviewed and corrected in 4 hours’ time by the same two supervisors and a technician from the training institute. A portable computer and a projector provided vital technological support for this task (*data show*).

Corrections were made while the guide was being projected on a screen, and the first version was finalised. The technology stepped up the procedure and once again prevented the boredom of tiredness of the group of “experts”.

The subsequent stage was application of the guides by pilot groups of five women workers in each department. The two supervisors acted as instructors and evaluators. To make the process more fluent we decided that the workers would cover only the more general part of client satisfaction and the cluster of operations involved. We did not implement certification by national standards.

In this instance we showed that the whole process of producing a training-assessment guide could be abbreviated to two or three weeks. That gave rise to the concept of “*express guides*” that was later used in garment enterprises of the Dominican Republic and northern Mexico.

The guide was used in the garment industry in northern Mexico because they needed a training instrument for managing quality at the source, i.e. during actual production.

The market context was one of uncertainty. Market conditions had become increasingly stringent: price reduction (between 20 and 30%), and greater demands for quality. As compared to the year before, employment had shrunk by

more than 50% (at the moment of drafting the guide, about one thousand persons were working in two factories). The guide was going to be used both by employed workers and newly engaged recruits. The scheme had the support of the STyPS / ILO Project “More and better jobs for women”.

Start-up comprised two key stages. The first one was explaining the goals, characteristics and scope of the proposal to the management, and securing their approval and participation. The second one was to incorporate the proposal into the functions of a group of persons in the enterprise, with clear-cut responsibilities and the backing of upper management.

In connection with the first stage, we invited managers and directors of the company (fifteen persons) to an introductory meeting. We submitted to them the proposal for a training and evaluation manual on quality management and working conditions, based on previous experiences. It coincided with the enterprise's need to raise its quality levels (its final percentage of rejects in internal quality inspections was of 2.5 to 4%) and bring down manufacturing costs, by reassigning tasks of responsibility to men and women operatives. We agreed to work jointly (enterprise and project) in drafting a training and evaluation manual on quality management and enhancement of working conditions. This was in line with the code of ethics of the company and the social and legal standards that the client (in this case a prestigious make of clothing) required of its suppliers.

COMPETENCIES

General

- Client satisfaction
- Working under safety standards
- Contributing to the care and preservation of equipment
- Maintaining order and cleanliness
- Effective communication
- An attitude of collaboration and teamwork
- Caring for your hygiene and health
- Helping to promote equal opportunities for men and women

Specific

- Joining upper piece correctly
- Attaching hip pocket correctly
- Attaching rear pieces correctly
- Attaching inner leg pieces correctly
- Preparing waistband correctly
- Backstitching front pocket

Regarding the second start-up stage, we identified aspects that were critical for quality. Two meetings of 4 hours each were held with persons involved in quality management at different levels: quality manager, operations manager, process engineering, maintenance, supervisors and men and women workers. With this technical group we began by establishing in which operations the company had greater problems to meet the quality standards required by the client. Our universe was the trousers' assembly department. Six clusters of operations were identified as critical.

We applied the SCID format to each one of those operations. Analysing the first cluster we found several competencies of a generic type (communication, attitudes, cleanliness and order), which made the exercise more time consuming. Besides, general competencies were given wider scope, including equality of women and men. More rapid progress was made in subsequent sessions, for we focused only on specific competencies.

On the basis of the information gathered in the SCID format (most of it tacit knowledge of expert personnel, converted at feedback boards into coded knowledge, more easily grasped by the organisation) we proceeded to take digital photographs in the area and work stations. The photos and the information were the main inputs of the training and evaluation guides.

A fundamental aspect at this stage is establishing within the enterprise who will be in charge of coordinating the preparation and application of the manual. The responsibility was assigned to the human resources' area, due to its leadership in training initiatives. The manager of human resources (HR) was appointed general coordinator, while the training manager was made responsible for the drafting. They were both given the necessary equipment for the job (last generation computers).

Paradoxically, in the two enterprises of the garment industry the speed with which the guides were developed was not matched by their application. Management took a long time to decide implementing the process. In the second plant application was delayed by a change of management. Consequently, it is not enough for external experts to collaborate in preparing the instruments. They must also follow up their application, which consumes more energy and time than the actual preparation. In addition, resources are required and in this case they had not been provided for, so the enterprises had to partially and irresolutely continue under their own steam.

Food company

The company introduced management by occupational competencies in the logistics area through a project co-financed by Conocer. The purpose of Conocer in this undertaking was to produce demonstrative cases that might serve as an example for other enterprises. When the project came to an end late in 2001, we had succeeded in getting the enterprise to incorporate management by competencies into its organisational and personnel strategies. As from 2002, it is financing one hundred per cent of competencies' projects in several areas.

As opposed to the case of the garment industry, the design pathway of the model was long. The company had a high degree of systematisation and documentation of processes, which had yielded good results. Changing the system or introducing a new one required a sound proposal. However, that was not enough. Even a sound proposal was likely to meet with resistance among lovers of the existing scheme. We took the long pathway (three years) not only for technical reasons and/or the depth we wanted for the instrument, but to win over sufficient support and involvement from the various managers and directors whose areas would be affected by the proposal.

As the competencies' concept and methodology settled down in the organisation, the time it took to prepare instruments – profile, self-training and knowledge evaluation guide, performance formats and product evidence – was reduced considerably (by six months to one year).

The process started in the heavy transportation area. The objective was to devise a continuous learning instrument for operators to keep updated in their competency. They all had previous training as drivers of heavy-duty vehicles but through the years they lost precision in certain habits and key routines, like for instance regular checkups before, during and after trips. The instrument was intended to provide ongoing training for drivers in critical aspects for the efficient and safe handling of their vehicles. The expected results were lower operational costs and accident rates. In the medium term the process would help operators to get certification and qualify for international drivers' licenses.

A technical group of expert transport operators, supervisors and mechanics developed in the first place an enterprise competency standards with the Conocer format. These standards were subsequently corrected and validated by representatives of other companies and by the communications authorities, before becoming national technical competency standards issued by the Conocer.

The same technical group collaborated in establishing a baseline for the guide. A format was applied with critical routine aspects: unforeseen events, informa-

tion inquiries and decision-making, specific safety, communication and attitudinal elements. After ten days of reflection and analysis we had enough information and practical material for preparing a draft version of the manual. Apart from generating inputs, those ten days constituted a training event for the personnel taking part. They also provided learning for the organisation, as several proposals for improving processes came out of them.

The manual modules cover the competencies' profile or standards. Two modules are technical (transport review and efficient & safe driving), another one refers to administrative management and communication (links with other areas), and the last one is social and personal (integral health). They reflect an overall view of competencies in which performance is the result of a number of organisational and personal factors.

The draft was revised by the enterprise's specialised technical staff. This took too long, and the time assigned by the specialist to work with the manual was limited. Besides, specialists changed several times. All this showed that the organisation did not yet have a clear idea of the scope and meaning of the project.

An interesting thing at this stage was that as in the other cases described earlier, upper and middle managers did not entirely agree about operational procedures and criteria. Opinions differed about the performance and knowledge required. At this point, a uniformity of criteria was reached among the directive staff involved with the project.

As a complement to the printed manual, an interactive compact disk (CD) was issued. The aim was to reinforce cognitive learning without adding more hours of classroom training. The disk also serves for evaluating knowledge more economically as trainees are asked to complete the CD, that is designed in such a way that no progress can be made without having digested the preceding topics. When candidates have finalised, this is automatically recorded in a database. The supervisor or instructor can then rapidly detect who has finished the task well, and who requires further help.

Making the CD also took its time, partly because the layout had to be designed. We had no experience in designing a CD by competencies. The two months initially set aside for the task ran into ten, for several reasons, which included technical programming hitches, problems in the enterprise computer system and changes in the design of the CD itself.

We were not quite sure about the reactions to the CD of very senior workers, with low levels of schooling and little or no experience in the use of computers. In

the pilot runs we saw that those people required initial assistance, but then became quite enthusiastic.

The next instrument was performance evaluation by observation and concrete results (fuel consumption, accident rate, care of the vehicle, etc.) Competency levels were introduced here: entrance level (driving in the company yard), driving in town and on the highway.

The sum total of the three instruments (the manual, the CD and performance assessment) are the basis for constant learning in this area of the organisation. For the learning to be an effectively ongoing and continuous process, we introduced a dynamics of yearly cycles. The cycle starts with an initial assessment. On the basis of its results, drivers and evaluators (supervisors) jointly work out a training plan. Workers have to provide evidence on agreed items before the final assessment of the cycle. If their score is sufficient, they qualify for the respective certification. Nevertheless, in the following cycle they resume the assessment and learning process and have to produce fresh evidence to qualify for further certification.

This scheme intends to keep up the learning dynamics within the organisation, together with other mechanisms like the specialisation courses offered by suppliers of equipment and engines. Certification is done through an internal verification in the working area and an “internal-external” checkout by the corporate owners.

We did not opt for external certification by a certifying body accredited with the Conocer, although internally we very closely followed Conocer assessment-certification guidelines. Perhaps a fear of the excessive red-tape and bureaucratic complications entailed by external certification, and extra costs with no visible added value advantages were the main reasons for opting for internal, company certification. Workers were not affected, because if they changed over to another organisation their certificates were backed by the company’s prestige in the transport business. Nonetheless, it is quite likely that external certification may be adopted in the future in connection with standardised drivers’ licenses and permits, particularly in connection with traffic into the USA.

After the design stage of instruments in accordance with the organisation’s operation, culture and systems, there was a very important question mark: how did we incorporate the more than one thousand existing transport workers into the process? The only answer was by training facilitators and evaluators. For that purpose we developed a trainers’ training programme by competencies. It consists of a guide of performance-related knowledge for facilitators-evaluators. The guide includes a training and assessment procedures manual, and the competen-

cies' profile of internal evaluators and verifiers. Two groups of twenty-five trainers (that included area managers, supervisors and expert operatives) met during three days each to work with the guide and the transport workers' training and evaluation instruments (manual, CD and performance evaluation). Once participants had shown their capacity to train and evaluate transport workers, they prepared a personal evidence file and were qualified for the facilitator-evaluator certificates issued by the company.

With this we expect to extend application of the model to all the organisation, keeping the quality of the process. The proposal for training, evaluating and certifying trainers is in line with directives followed by the Conocer. The only difference with the Conocer trainers' training model is adaptation to the situation, needs and language of the organisation.

As a result of this experience the company decided to extend training by competencies to other areas, like sales and manufacturing, but it did not opt for the same detailed methodology. Although the method has a great deal in common with functional analysis and Dacum/SCID, the different areas were given leeway to adapt it to their respective needs and culture (Mertens, 2000). What was established as a common model for all the enterprises were the stages of the process: profile; training manual and assessment of related knowledge; performance assessment instruments; guide of training, assessment, verification and certification procedures; training and assessment of facilitators, evaluators and verifiers; application, evaluation and improvement of the model.

Progress and application problems of self-training and assessment guides

In the 1997-2002 five-year period, quantitative progress has been recorded in the application of the self-training and evaluation guides' methodology. Although in no case did application extend to all the population envisaged by the proposal, by mid-2002 the projected universe of operational personnel and supervisors involved in the process was over twenty-five thousand persons.

Learning was accomplished in the design of profiles and training and assessment manuals, shortening the time required from three years to one or even half a year. However, learning still to be achieved is accelerated application in the projected universe. Qualitative progress paves the ground for quantitative development. The model's proposal was bolstered by the progress of its basic components.

SELF-TRAINING / ASSESSMENT PROGRESS

Quantitative progress	Projected universe:
2000: Sugar Mill (1)	(approx. 200 persons)
2001: Sugar Mills (3)	(approx. 745 persons)
2001: Garment industry (1)	(approx. 65 persons)
2002: Garment industry (2)	(approx. 1000 persons)
2002: Food industry (3)	(approx. 2500 persons)

Accelerated
Learning
Introduction:

Beginning: 3 years to design profiles, manuals

Currently: ½ to 1 year for profile, manual.

The model's conceptual and methodological framework has been adapted to the needs of organisations. Its views and strategies can easily adjust to their specific requirements.

Self-training / assessment has proved to be a flexible process under either formal or informal conditions, which organisations have accepted with interest. The proposal is in line with the latest versions of ISO quality standards and is a

SELF-TRAINING / ASSESSMENT PROGRESS

Qualitative progress:

- Conceptual and methodological development
- Procedures and formats:
 - Profile
 - Performance assessment instrument
 - Knowledge assessment instrument; CD
 - Procedures manual
 - Trainers' training manual
- Acceptance Self-assessment; links with ISO and FTAA
- Definition of process and functions
- Adaptation to specific needs of organisations

Learning: Developing robust model

forerunner of homologation of certain qualifications in the frame of the Free Trade Agreement of the Americas (FTAA) that will have strategic importance in the medium term for some sectors (*eg.* transportation and foodstuffs).

There are examples of the formats and basic procedures that have been tried out (profile, training and performance and knowledge assessment, process procedures, trainers' training). By defining the process and respective functions of the personnel involved, an adaptation can be offered to organisations according to their needs, without jeopardising consistency or unnecessarily lengthening the process. The model can be mass produced and tailored to each organisation.

Despite progress made, there is still a number of problems to solve for the proposal to be viable for organisations and an unobjectionable instrument for improving productivity and working conditions.

The main problems encountered (which are in turn areas of opportunity for institutional learning) are the following:

1. The pathway to reach workers is long. As time goes by, enthusiasm wanes in the organisation and the proposal's priority may be eroded by other projects and emerging needs.
2. A just balance has to be struck between perfection and pragmatism in the design of instruments and application process. There is a risk of excessive desk work in search of the perfection of each stage, instead of visualising the

SELF-TRAINING/ASSESSMENT PROBLEMS

- Lengthy pathway: cost, loss of enthusiasm
- Perfectionism vs. pragmatism
- Understanding the methodology; differences with traditional training
- Contradictions among workers about coding
- Attitudes of contempt towards tacit knowledge
- Resistance of middle managers to change in their functions; new responsibilities, transfer of other duties
- Reproduction costs
- Change of work and control systems
- Systemic interrelation with other HR areas: selection, remuneration, promotion
- Difficulty and resistance of operational personnel to the proposal

proposal as a process of constant adaptation and improvement. This also implies a danger, i.e. going into a process of constant and aimless change. It is therefore essential to have a mechanism for checking up modifications as they are introduced.

3. The methodology breaks away from traditional training schemes. Understanding the change of training paradigm is not a straightforward process in the mind of the organisation's directors and managers. There is always the risk of reverting to traditional ways when implementation difficulties crop up, or when problems appear in other areas like the marketplace, financing or labour relations. In such circumstances, vision of the project may be lost in favour of the easy solution, i.e. giving up on it.
4. Development of the profile and training manuals, structure and implicit curriculum is not based on the theoretical logics of process engineering but on practice, on productive realities. A large part of it consists of coding the good practices used by workers, which are not always evident. The opposite to this is equally important: what deviates from established policies and procedures. The risk here is in two directions. The first one is that the technical personnel may not duly appreciate the importance of good tacit practices, and should impose the logics of theory. The second one is that the wrong routines and practices should be coded. Therefore, the challenge is to understand the tension between these two extremes and strike the right balance between them.
5. The model implies new functions for middle and upper managers. They are usually reluctant to accept them, because they see them as an additional burden and not an opportunity to exert their leadership and meet the goals that have been ascribed to them. The danger is that they may be the first to discourage workers from co-operating with the model, belittling its importance and stressing that there are more immediate and pressing needs. This is also related to another cause for resistance, namely a change in the work system and in the exercise of power and control. The model will make evident capabilities (or the lack thereof) in the managing staff, which will arouse their resistance or support of it. The challenge is to identify this situation early on in the process, to facilitate introduction of the model and avoid wasting energy in a search for solutions that may not be relevant.
6. There is also resistance among workers, particularly when there are promotion and selection systems favouring job seniority over capabilities, or when employees are near retirement age and see no advantage in investing time or energy in application of the model. They may also fear the loss of a leader-

ship that is not based on capabilities but on interests. The risk is that such individuals may dissuade their companions or even handle the proposal politically, arguing that it is a disguised reallocation of functions that must be opposed. The challenge here is twofold: on the one hand, we have to re-value occupational qualification and let the personnel know it. On the other hand, we must not give in to the temptation of modifying the essential contents of functions without prior agreement with the parties involved.

7. The moment when the training by competencies model should be connected with other sub-systems in human resources management is a key decision for the sustainability of the introduction process. Pretending to link up all the sub-systems of HR management (especially compensations) with the competencies model from the very beginning, entails the possibility of getting lost in the intricacies of each sub-system, and slowing down introduction of the model by imminent danger of losing control of the process. All the same, we must keep in mind that in the middle term points of contact will have to be found between the various HR management sub-systems and competencies' management, in order to achieve the desired impact and convey consistent signs to the organisation and its personnel.
8. The cost of the process is a factor that must be handled in accordance with the organisation's possibilities and policies. The reproduction of training guides is an expense that not all organisations are prepared to accept, or in a position to defray. The process may come to a halt for that reason. There are many ways of handling costs. Backing by high management is essential, but so is flexibility of design to find more economic alternatives with a minimum loss of quality in the training process.

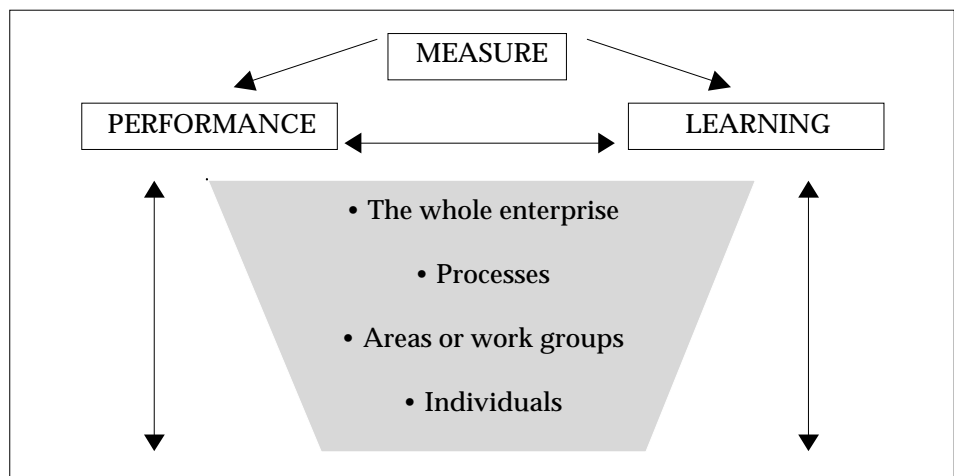
The problems and challenges outlined above continue to be pending, but they provide an idea of the competencies required for successfully managing and putting in place the proposed model.

Institutional learning in the cases that have been described was confined to those in charge and the internal and external consultants involved, some of them connected with the ILO. Originally, there was a functional link with Mexican TVET institutes, especially the Conocer, the CIMO programme and some state training bodies. Those organisations underwent significant changes when the new political administration took over in 2001. In order not to waste previous efforts, we decided to proceed with cases already under way and subsequently renew our connection with projects, programmes and organisations of the national technical/vocational education and training system (TVET).

From another point of view, the fact that cases originally supported by the Conocer and CIMO have continued, is an indication of the institutional learning that has been achieved. One of the objectives in assisting these enterprises was to generate significant demonstrative cases that might encourage others to follow the example. That was achieved, helping to strengthen the institutionality of occupational competencies as a system of signs and symbols among the social actors. That interpretation meant leaving aside the view that automatically associates institutional learning with established public bodies. What we are suggesting here is an institutional view nearer to the concept of culture, with the joint participation of public and private institutions and civil society through individual and collective leaderships. The risk of such an interpretation lies in the difficulty of fully gauging its scope and overseeing its evolution, which may turn it into a virtual rather than a real thing, based on hardly justifiable explanations if there are no clear, unobjectionable indicators.

**c. ProMES in the Dominican Republic:
an integral view of productivity**

In 1997, the National Technical/Vocational Training Institute (Spanish acronym: Infotep) of the Dominican Republic started application of an integral instrument for measuring and improving productivity, one of whose four main components was ProMES. The other three components referred to the economic/financial, productive and individual performance of the organisation in question.



The integral view is based on the following assumption: unless performance is measured as an input / product relation on the various strategic planes of the organisation, efforts made to improve any one indicator may be lost or counter-productive.

The main problem is not measuring and generating indicators, but understanding the position of each indicator in relation to the final results expected in the pursuit of objectives.

Having established the four strategic levels or planes on which organisations learn, measurements on each one of them provide information that has to become new understanding, which is in turn the basis for productivity. The diagnosis that gave rise to this overall methodological proposal was that most small and medium-sized Dominican enterprises lacked enough consistent information on those four planes. In such circumstances, the proposal of the ProMES methodology of measuring the performance of working areas or groups would be limited unless supplemented by adequate measurement of other processes and of the enterprise as a whole.

However, it is not just a question of generating information. The challenge is turning it into understanding, and that understanding into fresh shared knowledge and productivity increments. The first step is measuring; the second one, turning the information obtained into an input for learning.

...knowledge is acquired through learning, and learning only occurs when there is understanding, and when new information leads to new understanding...

The following is a brief description of the instrument's four components:

Integral Instrument for Productivity Measurement and Enhancement

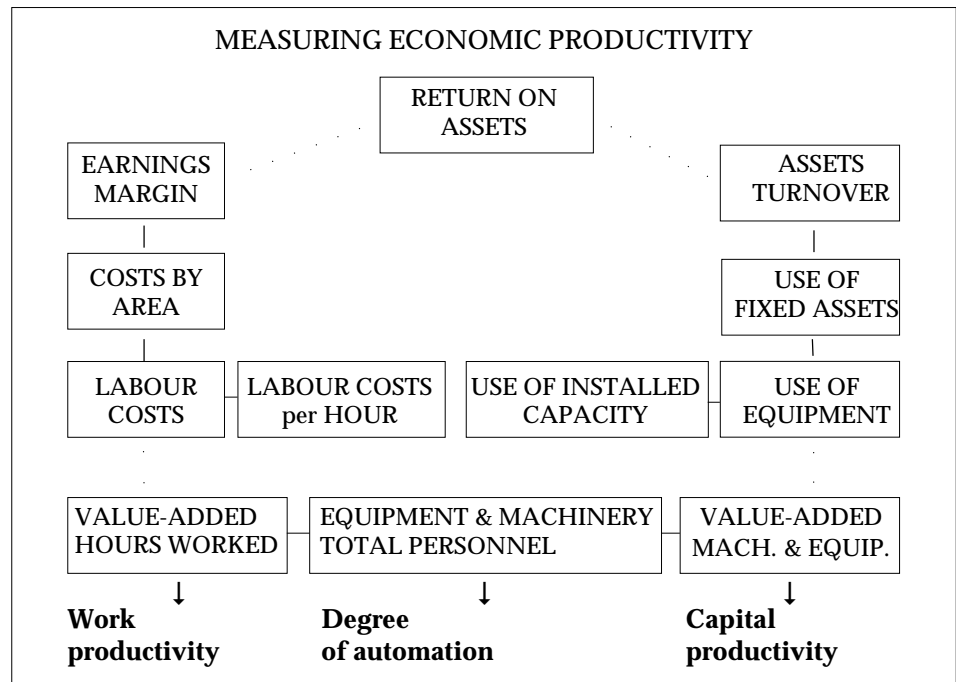
a. Overall economic performance

By means of this instrument the organisation can draw up a permanent productivity diagnosis of its main processes and areas, and of its contribution to general productivity, which helps it to make decisions and follow up strategic plans. Indicators are expressed as an inputs / results ratio (both in monetary and physical terms) and go from the general to the specific along two lines: efficiency in the use of variable inputs (materials, manpower), and efficiency in the use of assets (machinery, equipment, facilities). They are represented on a map that

shows their position with respect to each other and in the general picture. The instrument enables us to establish links among indicators and appreciate the economic evolution of the organisation.

An example of how establishing links between indicators helps in decision-making is the comparative intensiveness in the use of machinery and labour. An increase in manpower productivity through the introduction of new equipment does not necessarily raise the productivity of assets. It is important for the organisation to know how both indicators have behaved and how they have contributed to total productivity, defined as the return on assets (relation between operational benefits and operational assets).

This instrument will help us to visualise, control and guide the decision-making process, although it will not tell us exactly what to do. It will show us where the problems are and where progress has been made. It relates processes and physical decisions (production hours, number of persons engaged, amount of inputs used) to monetary variables (costs, benefits). It is a bridge between the sphere of work and that of finances.



It consists of about 30 indicators that each organisation can add to or reduce according to its needs, providing that the instrument's consistency is not impaired. The present instrument is an adaptation of the original model designed by Canadian consultant G. Rivest. That model was used in a Canadian programme that compared different enterprises in the same branch of activity to develop a benchmark for each indicator, as a way of encouraging organisational learning in the companies involved (Thor, 1993).

b. Performance of the productive process

The instrument for measuring the performance of the productive process is a number of indicators (21) expressing partial efficiencies in physical terms (hours, quantity, quality, response time). Its purpose is evaluating and promoting concrete learning in accordance with the organisation's strategic objectives. It is an instrument mainly utilised by upper and middle management to promote the strategic project of the organisation in relation to engineering, systems and human resources management.

These indicators are part of a broader self-diagnostic instrument used by directors, managers and middle managers. It traces out the organisation's competitiveness and productivity curves that enables directive staff to share results and standardise criteria regarding strategies and objectives.

The instrument is self-administered and answered by a nominal scale (yes; no) or a an ordinal scale (unimportant; scarcely important; important; very important). No exact figures are required, only approximations, which implies loss of accuracy but greater flexibility and less resistance of respondents to answer. It

MEASURING PRODUCTIVITY/PROCESS

Self-diagnostic instrument of Competitiveness
and Productivity pathways

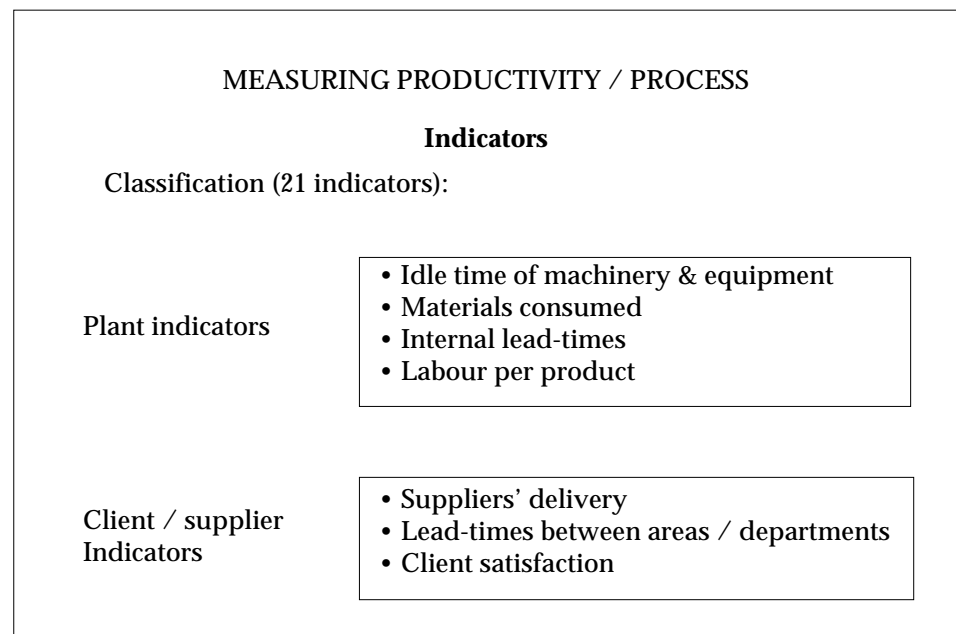
Sections:

- Competitive profile
- Productivity indicators
- Productivity objectives and problems
- Innovation initiatives
- Problems in Human Resources Management

was designed in the framework of the project “Technological Change and the Labour Market” jointly sponsored by the ILO and the Canadian International Development Agency (CIDA) and tried out in more than five hundred enterprises in Latin America in the 90s’. It was devised on the basis of an international research project on best practices in the organisation and management of human resources in the manufacturing sector. However, many of its sections- specially the one about diagnosing problems in the management of human resources and working conditions- are not exclusively applicable to the manufacturing sector or to a given period in time. This makes the instrument valid in a diversity of contexts, particularly when it is used flexibly and in accordance with the realities of each organisation.

The evolution of employment quality is also dealt with in the section on problems in human resources management. It envisages about 16 categories with several elements each.

With this instrument’s results, the consultant, technical management and middle managers carry out an analysis of strengths and weaknesses. The following step is to draw up a plan for the improvement and management of human resources.



The measurement of process productivity must:

- contemplate cost, quality, design, flexibility and service to the client;
- adapt to varying circumstances;
- shift indicators when they wear out, or when new market demands appear;
- keep strict parameters or goals;
- emphasise aspects that make a difference for the enterprise on the market.

Employment quality is measured through:

- training delivered
- enriched tasks
- workers' participation
- workers' autonomy
- direct communication to workers
- attitude of superiors toward workers
- system of remuneration by performance
- incorporation to social security
- balance of physical and mental workloads
- safe working conditions
- control of noxious impact on environment
- equal opportunities for women
- no child labour
- job stability
- personnel turnover
- free association

c. Performance of working groups (ProMES)

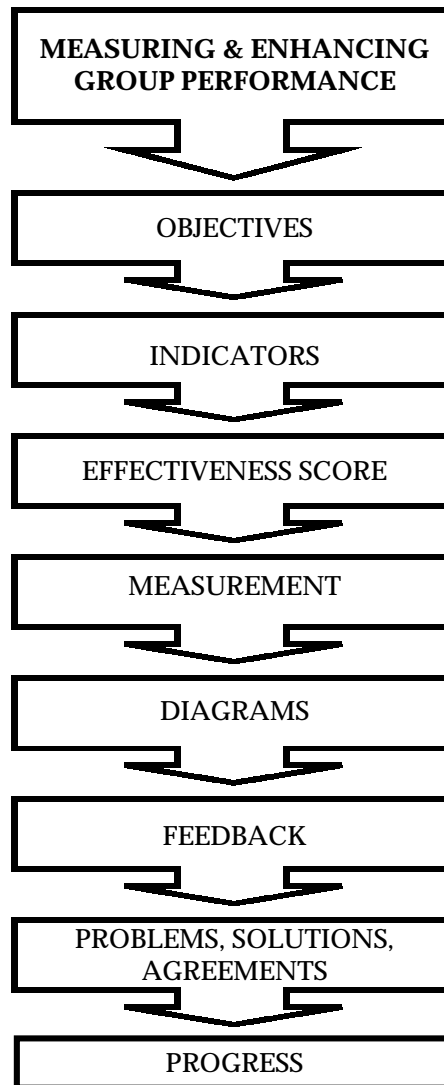
Opposed to the instruments for measuring economic performance and process, the indicators to be measured through ProMES in working groups are not predetermined. They are jointly developed by management, middle managers and workers on the basis of everyday realities in work performance (Infotep, 2001).

...group performance indicators are an instrument for changing personnel attitudes toward co-operation and informal learning, for solving problems in the work area. It rests on effective communication based on consensus regarding enterprise objectives, performances to be measured, values to be ascribed and follow-up to be adopted...

Before putting ProMES in place, a workshop is held to visualise problems, solutions and the most obvious dysfunctions. Such aspects need prior attention in order to make systematic progress in the enhancement of work processes and conditions.

The indicators of efficiency and quality of the process are measured through effectiveness scores, as well as social aspects like safety, order and cleanliness. Organisational and individual learning come together quite naturally at feedback meetings, without going too deeply. This is learning about coordination and matching criteria on how to perform jobs. On this platform of common understanding – that is constantly evolving – more specific aspects can be considered in depth.

“Many of the problems that come up at these meetings have to do with lack of logistic support (allocation of resources, repair of machinery, procurement of tools, equipment, etc.). Other problems have to do with the lack of skills and abilities of some employees or workers. Training then emerges as a solution. The first specific training activities result from the needs detected by the groups themselves” (Infotep, 2001). It is advisable to materialise training needs and contents through competency profiles or standards, in order to ensure the consistency of training plans. That is the purpose of the fourth instrument.



d. Individual performance based on competencies

Individual performance indicators by competencies are even less predetermined than in ProMES, and are jointly built by management, middle managers and a group of expert operatives.

...individual performance indicators reflect the person's occupational competencies. They are the result not just of technical abilities and knowledge but also of communication, personal inclination to the job, and the handling of emotions. The reference for measurement is not the work-post but the role...

The methodology that we followed for building performance indicators is Amod (based on Dacum). This methodology generates a curricular model in which the performances to be demonstrated are ordered by degree of complexity, speciality and depth. This order is not based on a cognitive sequence but on the learning and teaching practices that have worked best in the organisation.

The result is a competencies map organised in modules as defined by the aforementioned technical group. The advantage of this methodology is speed and the participation of different hierarchical levels in the process. The map can be built in one week and workers' self-assessment proceeds immediately after. This is the first step in subject-structured informal training. The second step is the comparison of results of self-assessment with those of an assessment by a supervisor, technician, expert operative or instructor. Construction of an agreement between worker and evaluator on the performance shown *vis-à-vis* the organisation's explicit or implicit standards, is the way in which a learning plan is established minimising differences.

After the plan has been implemented, a certification process may take place in which Infotep validates the competencies acquired by workers at enterprise level. "Infotep acts as facilitator and the enterprise as leading player, as the competency standards pertain to the enterprise and respond to its characteristics and

MEASURING INDIVIDUAL PERFORMANCE BY COMPETENCIES

Building steps:

- Enterprise competencies, objectives and strategies
- Area competencies and objectives
- Critical capacities to be taught to area personnel
- Structuring competencies by clusters
- Ordering competencies by degree of complexity and difficulty
- Self-assessment / assesment (5 point scale)
- Certification and registration of certificates by Infotep

interests (...) certification of competencies is formalised through the issuance of certificates in the name of workers, specifying the competencies they master, with the signature of the enterprise certifying committee” (Infotep, 2001).

Certification by Competencies Process and Methodology for Enhancing Productivity

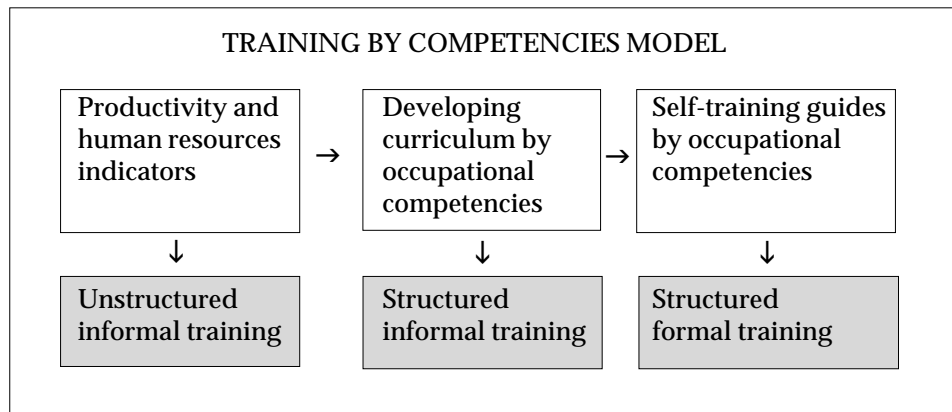
Unstructured informal training occurs in the follow-up of human resources performance indicators. At meetings, workers learn according to the problems they have encountered during the reference period analysed by the indicators. Subjects are not structured, and the knowledge code transferred and/or developed is not formalised.

Amod delivers *structured informal* training. Workers’ capacities are developed at the workplace, following the pathway of competencies to be acquired as established on the Amod map. The method encourages workers to engage in a learning dynamic by constantly doing an exercise of self-assessment and assessment by their supervisors or instructors, according to the guidelines laid down by a group of experts on the basis of real working practices and conditions.

The complement of the Amod map are self-training guides, that represent *structured formal* training. Their use requires minimal explanations to workers in the classroom and their evaluation follow-up is formal. Learning codes in the guides are coded and formalised.

To be consistent with a training proposal by competencies and by demand, the training strategy is based on a *file of evidences* that individual candidates have to keep according to the competencies required by their job. This calls for minimal procedures to be followed in the process of assessment and verification of occupational competencies. Assessment by occupational competencies differs from traditional assessment at least in the following aspects: a) it is transparent and based on a given performance standard; b) candidates are the centre of the assessment; it is they, not the evaluators, that keep evidence files for accrediting competencies; c) there is third party referral to ensure the quality and reliability of the assessment process; d) candidates keep and maintain evidence files, not evaluators or verifiers. In this scheme Infotep plays the role of external verifier and is in charge of certifying the enterprise’s occupational competency.

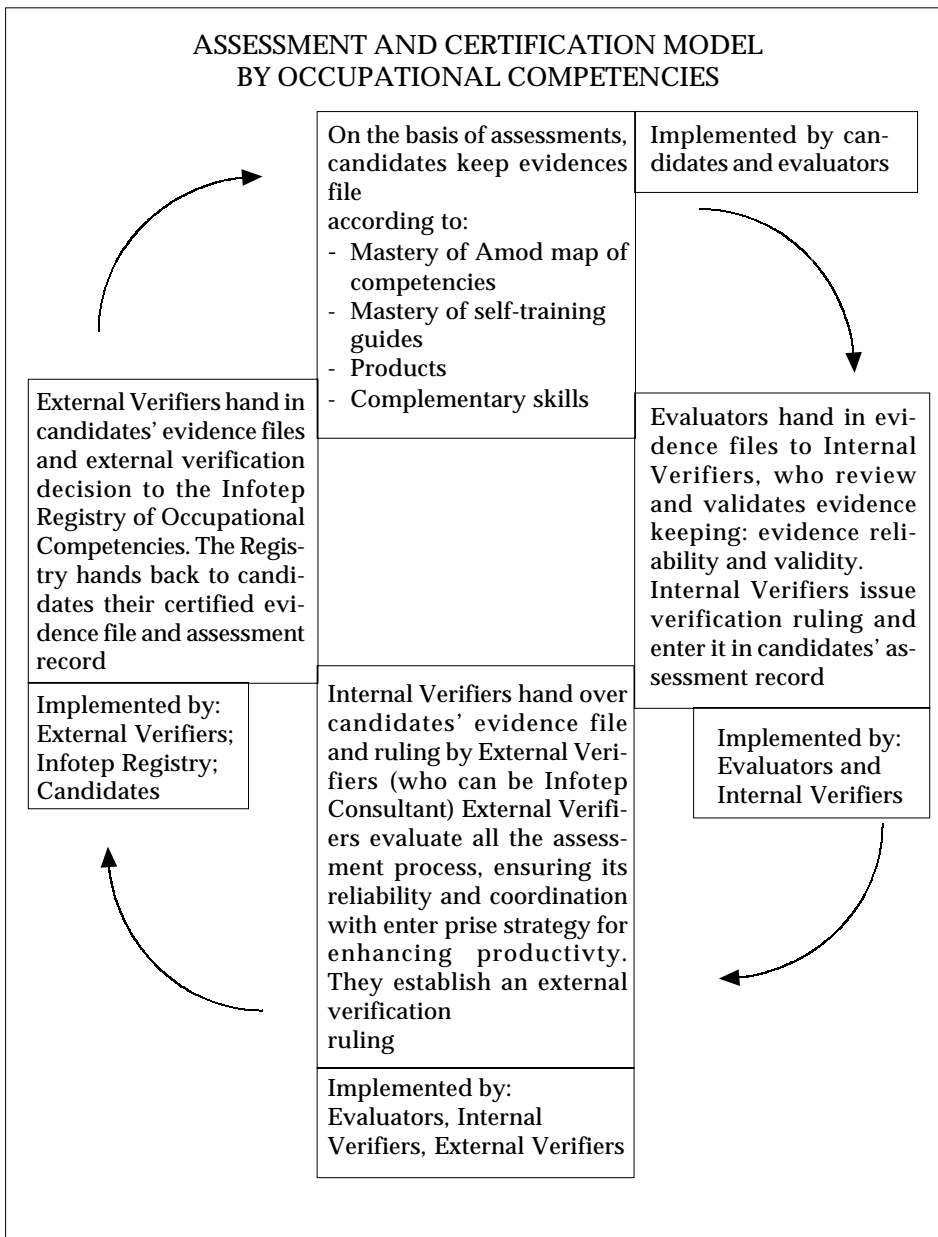
The assessment and certification practice based on the Amod map, followed by Infotep, is very similar to the one depicted in the diagram. The diagram is a formalised description of the process (procedure).



Institutional Application and Learning Pathway

Infotep developed an overall instrument for measuring and enhancing productivity in 1997, in a context wherein the Dominican economy was undergoing a process of trade opening and domestic market deregulation. External circumstances were favourable, with the world economy in full growth and particularly that of the USA: the main trading partner of the Dominican Republic. Despite the fact that the national economy was growing at high rates (5 to 8%) an important structural change was being foreseen, in which Dominican companies would have to adapt to world standards of efficiency, quality and client satisfaction. As in other Latin American countries, few enterprises were prepared for that change and many of them – specially small and medium sized ones – were far from the systems of production, labour and human resources management required to meet new market demands.

Aware of that forthcoming structural change, Infotep considered that its role as main training institution in the country could not be confined to offering initial training to young people joining the labour market and specialisation courses to personnel employed in enterprises. Without leaving aside that line of programming, Infotep envisaged a fundamental proposal for business management, seen as a centre for continuous training requiring new guidelines that could not be generated through the institution's traditional instruments. "...management philosophies, techniques and tools need to be developed enabling enterprises to compete successfully. One answer has been the methodology for enhancing productivity, at a moment when higher levels of efficiency and effectiveness of resources, quality of products and services, client satisfaction and corporate image



–among other aspects-, are essential for gauging the success of companies. In order to help enhancing competitiveness, Infotep has been applying strategies for measuring and raising productivity since the late ‘nineties.” (Infotep, 2001a).

Infotep has a consultant area comprised of some forty professionals distributed in its four regional offices. They cover different specialisations: accounting, administration, sociology, psychology, engineering, law, pedagogy. Their functions aim at the following: a. matching Infotep’s training offer with the demand of enterprises; b. managing dual training and teachers/technicians’ training; c. counselling enterprises on the creation of their own training centres; d. counselling associations that offer training services to enterprises.

Application of the instruments started in May 1997 by coaching the group of consultants in the methodology. The initial proposal was that teams of two consultants each, preferably of complementary specialisations, should carry out pilot experiences in enterprises interested in using the methodology. Every consultant had been assigned at least two experiences in the first stage.

By October, eight enterprises had joined the programme and their experiences were reported at the national productivity conference annually organised by Infotep. This gave rise to new requests from other companies. In order to respond and ensure the firm commitment of their management, the institute opted for the following *rapprochement* mechanism: in the first place, an awareness workshop, followed by a coaching workshop for those in charge of the methodology in the respective enterprises. After these two stages, counselling began *in situ*. Following this plan, some fifty enterprises had been included by mid-2000 and seventy-five in 2001.

A printed manual and an interactive self-study CD were issued for mass dissemination of the methodology. A web page was also created on the Infotep *Internet* site and distance aid was provided.

We may conclude that institutional learning occurred, insofar as time for application of the methodology in enterprises was shortened. Progress was also made in qualitative terms, not only regarding better understanding of the methodology by consultants and the critical aspects of the Dominican context, but in their flexible handling of it. In the beginning they considered that they had to follow all four components. However, two fundamental problems arose in connection with that interpretation: consultants stressed the component with which, by their profession, they were more familiar, and companies did not always accept the development of all four components, especially for economic reasons. In fact, the first problem was particularly serious, as consultants sometimes dealt with instrument components without sufficient knowledge of the topic.

In view of such difficulties, Infotep opted for a more flexible approach, explaining to enterprises the four components and their significance in productivity enhancement strategies. According to the needs of each company, they decided which component to apply and owing to the characteristics of the institution, the tendency was towards components based on workers' group or individual performance.

In time, a problem of organisation and allocation of duties became apparent in the counselling function. Men and women consultants were expected to do so many things, that they could hardly do them all correctly. Besides, some consultants failed to become fully identified with the instruments. Infotep then decided to organise enterprise counselling by specialisations and one them was application of the methodology. Therefore, in all regional offices there are experts in the subject, whose main job is to promote the methodology among companies. By mid-2002, the institute had some 14 methodology specialists at headquarters and in regional offices.

Impact

Quantitative impact

In 2001, Infotep carried out a study of the impact the methodology had had so far both on employers and workers (Infotep, 2001a). We include below some results of the study, together with field observations during the period of application of the methodology.

By mid-2001, the universe of enterprises undergoing some stage of application was 75, with a total employed population of about 10,000. Out of the 75 companies, half were in the initial coaching stage and 29 were already applying the method. By mid-2002, 744 persons had been certified by competencies at enterprise level, by means of the Amod methodology.

Two comments can be made about the application universe. Firstly, the companies belonged to the manufacturing, commerce and services sectors and were large, small and medium-sized. This shows the universal relevance of the methodology, which is no doubt one of its strong points.

The second comment is about intensive or systematic application. In most cases, contact with the methodology has been intermittent, with high and low peaks in measurement and feedback. Few enterprises have incorporated it systematically into their medium term strategy. They seem to have great difficulty

in getting over a long-standing, inherited culture of doing business on the spur of the moment, taking advantage of opportunities. Enterprises also seem prey to uncertainty as a result of constant changes in their environment, which prevents them from taking a medium term view.

In most cases, despite temporary application, relevant impacts have occurred and not just momentarily but regarding the process itself. We may wonder if, like Infotep, what we intend is to generate an initial impact motivating enterprises to continue with the methodology, or to achieve a sustained effect in time. The latter is difficult but necessary to verify the hypothesis that the methodology can be sustained in time and continue generating impacts. It has been observed that continuity is not automatic, even in successful cases of application. This has to do with the fact that the methodology involves a change in organisational and managerial culture.

Whenever an unforeseen market event occurs (i.e. a personnel change or a new technology) there is a strong temptation to revert to old paradigms. As we saw with the sugar mills in Mexico, the old culture has an enormous capacity to engulf whatever tries to emerge as a new work culture, oriented toward organisational learning and involving all workers. This does not imply denial of all possibilities of change in that direction, but means that change will not be a straightforward process. There will be an ebb and flow and a variety of approximations for adapting the organisation's work culture to the new contents.

The methodology for measuring and enhancing productivity should be taken as a first step in the development of a system of occupational competencies in the enterprise. The final result of the pilot experience should not be confined to contributing to an individual case of productivity strategy, but to developing a curriculum based on competencies that, through Infotep, may become public property for guiding personnel training in Dominican enterprises, and reorienting the curricula of the occupational workshops managed by the Institution.

In that perspective, rather than a large number of cases, a sufficient level of quality is required to ensure that the curricula derived from the experience may be significant for other enterprises in the same branch. Although cases continue to be individual, a methodology aiming at the development of key competencies can be extrapolated to much broader universes, specially due to the depth case experiences may achieve and to the fact that competencies only apply at the workplace.

Source: ILO/Infotep mission. (Mertens, 1998)

To summarise, the Institution (Infotep) has a methodological proposal that has been tested and has yielded results which give credibility to its messages to the community of workers and employers. Its arguments are no mere allegations. Concrete facts support them, which helps to create an atmosphere promoting the importance of learning in organisations. It all goes to prove that organisational learning, as well as individual participative learning, can be adapted to the context of the Dominican Republic giving good results. It further shows that local enterprises can apply the methodology without needing to qualify as “first world companies”. Moreover, at the yearly productivity conferences and other meetings with entrepreneurs that Infotep organises, this “meta-message” has been present underlying reports on application of the methodology, though its effects on the community are difficult to evaluate. Nevertheless, the methodology has become a reference for enterprises wishing to use instruments for improving productivity through human resources. This does not necessarily mean that they will resort to it, but it will serve as a benchmark for any other method they may apply. Consequently, Infotep is offering a public domain instrument that contributes to the organisational learning and productivity of Dominican enterprises.

Qualitative impacts

Qualitative impacts refer to intangible aspects that are difficult to measure but have great importance for the organisation and the actors involved, such as inter-personal relations, work environment, communication. They also refer to the actors’ perceptions of impacts which is the subjective part of the process and has been considered essential for learning as it is the driving force that moves personnel.

Although it is preferable for perceptions to be backed by real data, their “objective” value lies in that -in minimal time and with few resources- they convey a picture of the methodology’s impacts, through the interpretation of those that have implemented it.

The Infotep study showed interesting results regarding the perceptions of actors (employers, managers, workers) about the impact of the methodology.

Nearly all of them (88.5%) judged it to be beneficial or very beneficial, specially because it enabled them to diagnose the enterprise’s situation and look for solutions to the problems identified. Some people also argued that it contributed directly to enhancing productivity which others saw it as beneficial for effectively training personnel (Infotep, 2001a).

Two conclusions emerge from the perceptions voiced by entrepreneurs/managers:

The first one is the confirmation that the mere fact of measuring sets off a drive toward improvement. When this happens at the level of upper management, a consolidated impact may be generated, which occurred in the companies that applied economic and process measuring instruments. 75% of them reported improvement in those indicators that have direct effect on consolidated financial results.

The second conclusion is that the methodology influenced productivity, particularly the quality of products and processes, through a different attitude of employees regarding work and the organisation. Just knowing the reasons for decisions, routines, priorities, and feeling the support of upper management, seem to release a converging energy among workers that has a direct effect on the quality and efficiency of processes.

This conclusion stems from the main answers in connection with enhanced quality of products and processes and greater workers' participation in problem solving. The linkup seems obvious, but in the Latin American cultural context that is not necessarily the case in organisations. It requires a "cultural" learning process by managers, middle managers and workers alike (for whom appropriate learning instruments and systems are lacking) capable of imparting training and changing mental attitudes *in situ*. The study shows that the Infotep methodology is a concrete and valid proposal meeting this need in organisations of the Dominican Republic and probably of other countries in the region.

Significant benefits mentioned by some employers as the result of applying the methodology:

- *workers are better organised and have learned to recognise priorities and to communicate for doing their work correctly*
- *we recognised that a change of mindset was required in all the personnel, including administrative workers. The motivation and involvement of employees in enterprise activities has improved*
- *losses by waste and/or rejects in the production process have diminished; personnel management has improved*

In the workers' perspective, the methodology improved the quality of employment in several respects. On the basis of a sample of 59 workers, the Infotep study showed that workers had benefited in the following aspects (ibidem):

- a) training of operational personnel and understanding of the job (knowledge of how to perform tasks);

In the six visited enterprises the reactions of interviewed managers and workers to the methodology was very positive. Financial-economic indicators encouraged enterprises to orient their administrative practices in a strategic direction for building indicators and analysing them. In several of them administrative services had been very inadequate. The methodology made them realise that they had to remedy that.

In the case of P., the management commented that financial indicators had helped them to "...be more precise regarding the enterprise's key indicators for strategic planning purposes. They were now better able to decide on initiatives for enhancing productivity". At K., an enterprise that made building blocks, they had never calculated benefits on assets, or unit costs, as they had never had reference costs for an important raw material, the sand that came from a quarry exploited by the same company. After counselling, they were for the first time working out costs and benefits.

Process management indicators helped enterprises to identify weaknesses in their productive process, such as the need to reduce waste (P), delivery time (RD), reprocessing and loss of time in start-up of new machine (K), idle time for maintenance (CF), inadequate operation of equipment cooling system (HN), inventory of processes and jobs redone in paint area (M). As a result of a (self) diagnosis the respective managements took measures for correction/action and improved the indicators in question.

Developing a cluster of human resources indicators had greater impact owing to the highly participative methods used in the process: visualisation to detect improvement needs and opportunities, and ProMES. They are both based on the opinions and viewpoints of workers / employees, which is not something usual in the Dominican society. The main problems identified (and solved) were lack of personnel cooperation with the enterprise's objectives in general, lack of personnel involvement and shortfalls in order and cleanliness (M).

ILO/Infotep mission report (Mertens, 1997).

- b) safety conditions at the enterprise;
- c) workers' involvement in work planning, performance and evaluation;
- d) revaluing work posts and feeling useful;
- e) communication and inter-personal relations with co-workers and management;
- f) individual and group performance;
- g) compensation.

Respondents mentioned other benefits connected with work performance, such as greater ease of execution, motivation for being more efficient and doing better, greater clarity about objectives and weaknesses of the enterprise, and involvement enabling workers to organise their work process and improving their performance.

The validity of the methodology is tested by adding together the perceptions of employers and workers. For instance, they may feel that certain aspects could be improved, specially during the introductory period. They think that the process is sluggish and there is risk of getting stuck in the initial stage and never proceeding to full application. Qualitatively, greater stress should be laid on how to organise work teams and improve communication among them.

For the workers, the shortcomings or gaps in the process may be: a. lack of recognition by management when they do their work well; b. management pays attention to customers, but not to workers; c. not all personnel members are trained in the methodology; d. the training period is too short, it lacks continuity and is ill adapted to the workers' level of schooling (Ibidem).

Counselling remains incomplete: it does not go beyond the launching of the methodology and is seldom followed up, precisely at the moment when the model is taking hold in the organisation and becoming a new work routine.

Example: the workshop for assessing and upgrading human resources is held, indicators and their respective values are identified, but attendance to feedback meetings of workers and middle managers drops off, and the process loses momentum.

Source: ILO/Infotep mission report (Mertens, 1999).

We should now lay down the foundation for a multiplier strategy. It must be based on the conceptualisation and definition of what we are trying to multiply: the entire methodology or its underlying principles? (participation, open-ended training, efficiency and decent work).

The institutional decision needs to be taken as to whether Infotep must be in charge of the multiplier process, or it may include third parties, like private consultants and non-governmental organisations.

Another question is whether the methodology is sufficiently “packaged” and self-contained to be taken up by others without difficulty and applied without the direct support of an Infotep consultant.

Additionally, there is the need to keep the methodology updated with new developments at national and international level, like the Balanced Scoreboard proposal for measuring and improving productivity, and the self-study guides that are being developed with Infotep in the Free Zone of the Dominican Republic.

Source: ILO/Infotep mission report (Mertens, 2001).

Institutional learning: pending agenda

There are fundamentally three challenges facing application of the methodology in forthcoming years. Firstly, the design and deployment of an expansion strategy. Secondly, devising sustainable implementation mechanisms. Thirdly, providing feedback to other Infotep services, specially in the development of curricula for the vocational training workshops that the Institution delivers directly or indirectly.

Regarding the first challenge, it is obvious that Infotep will be unable to reach too many enterprises. To do so, it would have to formulate a strategy involving other partners in the process, with Infotep acting as trainer of internal and external consultants of the enterprises adopting the methodology. It would have to design and/or adapt self-training material for a wider universe of companies. This could be supplemented by promotional and prize-giving activities, like quality awards.

The second challenge is probably more complex. How can we account for the fact that both enterprises and workers should praise the advantages of the

methodology, but fail to give it continuity? It would seem that the effort required to sustain it in time –in particular the discipline for systematic measuring and feedback– is not easily incorporated into the existing work and management culture. The same happens with quality systems, but ISO 9000, for instance, is backed by an external auditing system recognised by markets that upholds it in time. Straightforward but significant mechanisms would have to be designed for the methodology to take root in the market and be reflected in the consolidated results of enterprises. Such a mechanism was found for self-training and evaluation guides in the garment industry, as shown below.

A number of critical aspects that must be taken into account when applying the method, and are also terms of reference for a multiplier strategy, were identified at a follow-up seminar with Infotep consultants¹⁷ held in October 2001.

Critical aspects in application of the methodology

- Following up induction workshops offered to entrepreneurs.
- *Coordinating the methodology with the specific needs and strategy of the enterprise, preventing contradictions. An initial diagnosis of the situation is recommended and joint establishment of the project envisaged, focalising objectives and areas addressed.*
- Whenever possible, using financial indicators to obtain an economic picture of the enterprise; ensuring information transparency in this respect and overcoming possible resistances.
- Ensuring and maintaining the support of upper managers and/or informal leaders within the organisation. Keeping management constantly posted on progress made in the application.
- Identifying factors of resistance to the changes in work culture that application of ProMES may imply and working on them, specially the possible reluctance of middle managers to accept additional tasks and/or their wish to conceal a lack of leadership or knowledge.
- Preventing some persons and/or groups from taking over the methodology to wield power within the organisation.
- The complexity of the model should be in keeping with the context and needs of the organisation, especially the measuring capacity of indicators.
- Outlining the competencies' profile of project coordinators on the basis of two main functions: 1. managing ProMES logistics and data processing; 2. keeping up relations with social actors. The competencies required are:

¹⁷ The seminar was also attended by representatives of enterprises from Mexico and Cuba, where the ProMES and Occupational Competency methodology is being applied.

- Promoting confidence
- Empathy with workers
- Gift of speech
- Knowing how to motivate
- Concentrating on essentials
- Meeting goals
- Orderliness
- Leadership
- Conveying concepts and knowledge
- Acting with common sense
- *Handling computer programmes, especially Excel and Powerpoint*
- Handling problem identification and problem solving techniques (eg. Demming)
- Familiarity with principles of total quality management.
- Appointing assistant for putting model in place, managing model logistics and keeping in contact with key actors (managers, department heads, trade union, workers)
- Formulating a training policy.
- Designing a system for obtaining information and following up commitments.
- *Coaching leaders/facilitators to conduct feedback meetings.*
- Estimating impacts of methodology application by means of a scale, eg.
 - Initial and/or progress score
 - Partial and/or periodical score (for a given period)
 - Consistent, wide and constant score
- Making sure that most workers understand the methodology, concepts and parameters used for measuring.
- Timely development of an incentives programme in connection with ProMES results (monetary and non-monetary incentives).
- Maintaining and adapting the methodology in case of unforeseen events, (restructuring operations, market readjustments). In such circumstances, enterprises often give up on the methodology and revert to their former (usually authoritarian) work culture.

As for the third challenge, feedback with the curricular design of technical training workshops, self-training guides and Amod competencies' maps are the "natural" instruments to start reviewing and updating the training workshops and services offered by external collaborating centres. For that purpose, a linkup and follow-up body and culture would have to be developed between both Infotep services.

d. Self-training and Assessment Guides in the Dominican Republic

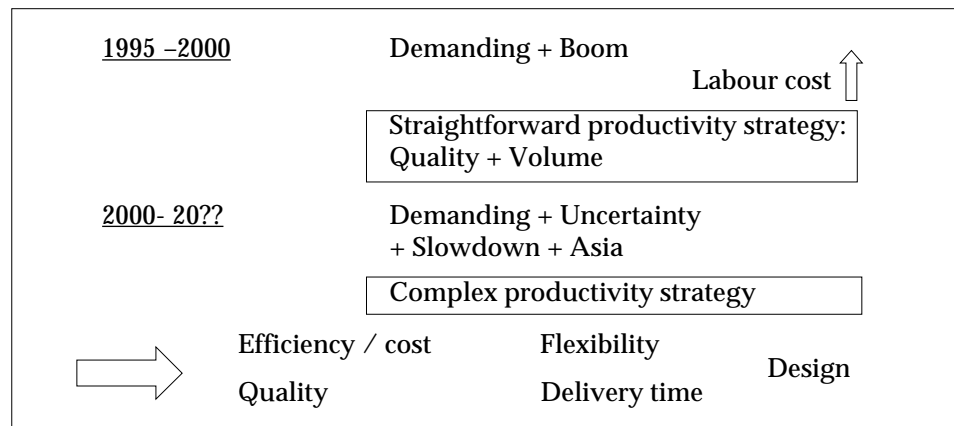
Application of the Self-training and Assessment Guides began in 2001 in the garment sector at the Santiago free trade zone. Some enterprises of the free zone had previously used the Infotep integral methodology for measuring and enhancing productivity, specially its individual performance (Amod) components. The guides are yet another component (the fifth one) of the integral methodology.

The guides proposal was attractive for the free zone enterprises as it encoded the critical knowledge that had to be shared by their personnel to meet market requirements in connection with costs and quality. It was also attractive because it was an understandable, specific proposal that could easily be implemented by workers with low schooling levels. Additionally, it seemed familiar as it was nearer to the traditional training based on guides or manuals.

Context

Two important aspects should be stressed regarding the context of application of the guides. The first one is institutional. The second one is the development of the Dominican clothes-making industry in the world economy.

Institutionally, one characteristic of the Santiago free zone is that it has a committee of enterprise representatives that manages training funds for employed personnel through an agreement with Infotep. This gives them autonomy in decision-making, close contact with concrete training needs and direct follow-up of



actions undertaken. Infotep and the committee decided to do a pilot run with the guides in some of the enterprises.

The committee helped the experience to move forwards in two ways. On the one hand, it was empowered to allocate funds to a project with a prestigious institution like Infotep, without going through endless bureaucratic steps. On the other hand, control by the committee and feedback of strategy results into it, led to a plan based on deliverables (products), which obliged consultants to focus their attention on activities.

Another decisive factor has been the positioning of garment enterprises in the overall world economy. The Caribbean basin, Central America and Mexico enjoyed a boom in the garment industry during the 'nineties. They exported mainly to the US market, that was undergoing a period of sustained and high growth. Favoured by low manpower costs, tax advantages and proximity, their strategy was to produce large volumes of the same articles. Assembly work was organised in modules, and quality assured by the presence of inspectors and auditors along production lines.

After 2000, the strategy wore out for several reasons. Labour costs (and generally country costs) had been going up in previous years for macroeconomic causes (stable currencies, greater inflation than in the USA). In addition, the world economy (and in particular that of the USA) went into a period of recession, resulting not only from diminishing demand, but from a downward trend in prices (costs) and delivery times. In times of recession, bringing down prices is the first reaction of companies to make up for the dwindling demand and purchasing power of consumers. For the sake of abating costs, retail chains begin to reduce their inventories but also try make the most of selling opportunities, which forces supplying enterprises to shorten times of delivery.

The predominance of suppliers from South East Asia (China in particular) is constantly increasing. Faced with rising costs, large buying concerns have shifted bulk production to countries where manpower is cheaper than in the Caribbean Basin and the North of Mexico. Here they are now placing special, smaller orders to meet market opportunities that have not been foreseen, or that imply greater risks in sales planning.

The new situation of the garment industry of the Caribbean Basin and North of Mexico in the world economy is moving towards a more complex productivity strategy. At the same time, quality standards are increasingly higher, designs and styles more complicated than in the past, prices (and therefore costs) lower, production flexibility greater and delivery times shorter (for example, 24 days of lead-time for an order including cutting in Florida (USA), assembly in the Do-

minican Republic and delivery to the USA retailer). This requires a new organisation of work and, above all, better communication, guidance and training of the operatives.

In this context, the proposal of self-training and assesment guides for quality management in the assembly of garments, was well received by the entrepreneurial community of the Santiago free zone. The attractive aspects of the proposal are as follows: a. quality management is focalised on the source, in the man or woman operative; b. guides can be rapidly adapted to the context of each enterprise; c. the learning process is continuous; d. general and specific learning needs can be easily visualised in a coloured chart, which makes it possible to place workers strategically along production lines; e. training costs are low, except for reproduction of the guides; f. use of the guides promotes coordination among workers, supervisors, quality, maintenance and managers.

In response to the complexities of market demands, we did not opt for an exhaustive enumeration and description of all possible performances expected of workers. This would result in an equally complex instrument, difficult to apply and excessively time consuming.

We dealt with complexity at two different levels. Firstly, by making workers understand who were the end consumers of the product, to what lifestyle the assembled garment corresponded, how users satisfied their needs with the garment, which were the critical aspects that consumers underscored. The second level was the need for a comfortable and dignified work environment, self-esteem and personal care to respond to flexibility, style changes, quality, prompt delivery, etc. without a description of all the steps required to achieve them. This occurs gradually through the creation and exchange of tacit knowledge that takes place in a favourable learning context.

The guides have a generic competencies section that covers these aspects and offers a holistic view of specific and operational skills. Generic competencies are a foundation for workers to make decisions and feel confident in taking responsibility for them.

Regarding specific competencies, we managed complexity through focalisation and selection. Instead of analysing and specifying all operations and work posts we selected the five or six most important sub-processes. We applied to each of them a checklist of questions or indications considered to be critical in meeting market requirements, and avoided atomisation into a multiplicity of expected performances.

COMPETENCIES	
Generic	<ul style="list-style-type: none"> - Client satisfaction - Working under safety standards - Keeping order & cleanliness - Looking after personal and occupational hygiene & health
Specific	<ul style="list-style-type: none"> - Making rear piece correctly - Making front piece correctly - Making side fastenings correctly - Setting waistband correctly - Doing hems correctly

The list consists of the following questions, whose answers are incorporated *providing that* they represent something specific for the above mentioned competencies. They were devised along the lines of the SCID model:

- a. What is critical for the quality of the operation in normal circumstances?
- b. What type of decision do you have to make?
- c. What information do you have to look up?
- d. What problems do you have to solve?
- e. What do you have to do in unforeseen situations?
- f. What safety aspects do you take into account?
- g. What attitudes must you show?
- h. What communication do you have to establish?
- i. What quality aspects do you have to consider?
- j. What are the typical errors to be avoided?
- k. What must you do to maintain equipment/facilities?

The training model underlying self-training assessment guides

The training by competencies model in quality management used by operational personnel of enterprises in the Santiago Free Trade Area is based on the following premises:

- The main reference for training are the performances and related knowledge identified in a diagnosis of the problems and strengths of the productive process, quality in particular. The diagnosis is based on knowledge stem-

ming from the experiences and strategic criteria of the best operatives and supervisors, the quality and operations managers and the general management of the enterprises.

- Training is linked to productivity through the following mechanisms:
 - i. Encoding good practices, explaining tacit know-how and combining it with available explicit knowledge. Disseminating such knowledge among workers and ensuring that it is implemented. This will promote organisational learning and thus contribute to enhancing productivity.
 - ii. Involving operational personnel in the enterprise's objectives, channelling the human energy of the organisation into a common, shared direction.
 - iii. Systematically following up personnel training plans, connecting them with problems and opportunities for improving productivity.
 - iv. Modifying the supervisory function, specially the role of supervisors, turning them into facilitators and managers of organisational learning.
 - v. Encouraging and following up proposals and suggestions by personnel regarding the production process and the organisation of work.
 - vi. Monitoring productivity indicators in the respective areas or departments and relating them to the training required.
- Assessment of performance and related knowledge is the basis for training. Training is guided by constant self-assessment and the evaluation of critical aspects of quality management in relation to the tasks of workers.
- Training is not an isolated or discrete event but a ongoing process, managed and measured through periodic assessments of the application of competencies that are considered to have a key or critical value. An annual cycle of at least three evaluations is recommended, establishing individual plans of training activities that each worker must complete before the following assesment. Certification of the workers' competencies may be renewed after every cycle, for example, for the years 2002, 2003, 2004, etc.
- The training and assessment instrument is flexible and can be adapted to the context of each enterprise, its current productivity and competitiveness. Nonetheless, the use of a common structure is recommended for different companies of the same economic subsector so as to create a "scale economy" but with individual adjustments (similar to what is known as "mass customisation", i.e. collective compliance with the requirements of customers). This makes it possible to develop a speedy response (*express learning*) with *ad hoc* contents according to the needs of each company.

- Reference is made to good practices, but also to common errors that need to be avoided. Not only technical subjects are discussed but also matters relative to communication, attitudes and emotions, that a socially responsible enterprise is supposed to look after. Presentation of the material is fundamentally graphic, with the support of digital photos of work areas and details of the various operations. Teaching involves exercises and instructions through which workers assimilate knowledge by answering questions and doing assignments based on the technical information included in the manuals themselves.
- Training has a self-directive or self-learning component that consists of active participation of students (workers) in the process. This allows for personalised progress in learning, ascribing responsibility for it to each individual. The enterprise must provide the wherewithal (materials, premises, time schedule, support personnel). This does not preclude use of the classroom, but turns it into a meeting place for the different groups of operatives to share their knowledge, with the assistance of supervisors and programme coordinators. Traditional instructors are not used. A space for analysis and reflection is promoted between workers, supervisors and some experts (in quality management, for instance). Performance evaluation occurs at the workplace and is one more stage of on-the-job training. It is the most important component of the training process as it represents its materialisation into the productive process.
- Learning is effective and of low cost because it focuses training on those competencies and persons that fall short of expected performance standards, instead of extending it to all workers and covering all competencies identified.
- The role of TVET institutes in supporting training at enterprises is no longer just supplying courses. They become consultants on the design and delivery of training as an integral part of the respective organisations' strategic management. This enables institutions to act as observatories of the new competencies that emerge in the productive realm, and translate them into curricula for the initial or basic training courses they offer.

Application and Institutional Learning Pathways

Start-up was slightly different from that of the integral methodology for measuring and enhancing productivity. Instead of holding a training workshop for facilitators, we began with a coaching scheme. Two enterprises were chosen to take part in the project: a large and modern concern (approximately 7 thousand persons), and a medium, less modern company (approximately 500 persons). The guides were gradually developed with them. Reflection meetings on the steps being taken were held from time to time with the Infotep experts of the North Regional Office who were in charge of the project. In those opportunities, doubts were clarified and the methodology was fine-tuned.

At the enterprises, the project was submitted to executive managers who were asked to appoint an internal coordinator to manage it within the organisation. Two meetings were held at each enterprise with expert line personnel, supervisors, quality managers and plant managers, in order to adapt the guides to the needs and specifications of each plant.

The two women coordinators were coached to draw up the guides along the lines of the basic model adopted. In ten days' time they had made enough progress to continue unaided for another three weeks, completing the guides with no further external coaching and making them available for a trial run.

The pathway outlined from then on was as follows: starting a pilot experience with a module of some 30-35 persons, evaluating it and then extending the model to other modules. We reckoned that in six months' time about six modules could be incorporated in each enterprise. However, reality proved otherwise.

The fact of having the guides ready and very enthusiastic coordinators does not mean that enterprises can automatically launch and multiply the process of application. They think it is all very nice and like having a manual tailored to their needs but an outside stimulus is required to trigger and maintain the application process.

Such was the case of the two enterprises in our pilot experience. They had their guides ready for several months but, for a number of reasons, lacked the initiative to use them. Practical introduction of the guides required further follow-up and coaching. This consisted of three follow-up and feedback sessions in each enterprise, to secure the support and involvement of directors and managers.

The result was an alignment of all processes connected with application of the methodology (objectives of the enterprise and objectives of the guide), clarification of the view underlying the guide, the commitment of managers to the

project and the setting of short and medium term goals (one month and four months, respectively).

Despite the progress made by follow-up and coaching, diagnosis was not very encouraging in either of the two cases. Managers and middle managers were willing enough, but the project was competing for time and attention with many other issues stemming from the structural transformation of the market, for which these companies had not yet found an answer.

The situation was paradoxical. On the one hand, the guides met the needs of the enterprises for managing quality at the source and keeping their personnel focused on their objectives. On the other hand, changes of context demanded new work procedures and management styles that the enterprises were learning along the road. Faced with uncertainty, their usual reaction was to fall back on old practices of personnel management, because “firstly, we must redesign processes”.

DIAGNOSIS: WEAKNESSES, ENTERPRISE 1

- **Strategic positioning of project:**

There was confusion as to whether personnel strategy should be to bring down costs through wages, by reducing dependence on specialised workers (eg. waistband makers), or to reduce labour costs through an enhancement of personnel productivity. If a wage reduction strategy was adopted, interest in application of the guides was likely to decline.

- **Leadership in project management:**

Involvement of the company’s directors in the project has been scarce, including the general manager of the factory. Support of the executive management is still unclear.

There are no common criteria among upper and middle managers about the strategy to be followed or the command structure. This hinders implementation of the project, specially the need of resources for it.

- **Resources for the Project:**

Financial support is scarce. It took months to reproduce the guides, which delayed start-up. Workers have not been given time in their schedule to analyse the guides collectively, and the coordinator has been assigned a multiplicity of other tasks.

Under such circumstances, the goodwill of managers is not enough to start off a process of continuous learning. In a context of uncertainty such as the one being experienced by the Dominican garment industry, a sufficiently strong external incentive or pressure is required for middle and upper managers to become really committed to the process.

The operational personnel has shown a good deal of interest and enthusiasm in “working” the guides. But this vanishes rapidly if there is no follow-up or commitment by management.

In the subsequent four months, application of the methodology came up against some difficulties and decisions that, seen from outside the enterprises, seem quite irrational.

At Enterprise 1 there was a major managerial reshuffle, among other things because a new shareholder joined the company and went on the board of directors. Various middle managers were demoted, including the coordinator of the guide. Nevertheless, the guide was applied in one module and quality and efficiency results went up steadily during four weeks. Instead of going on with that module and starting with a new one, they broke up the team that had been work-

DIAGNOSIS: WEAKNESSES, ENTERPRISE 2

- **Strategic positioning of project:**

The module that started with the guide was assigned a complicated garment to manufacture, which caused a lot of rework and loss of time. Other modules have to change styles constantly, which impairs efficiency as there is no clear strategy for organising work with the flexibility the market demands. The guides run the risk of losing priority in view of the many contingencies of the process.

- **Leadership in project management:**

Management of the project is in the hands of a single person. Although this person has the backing of the management, support of Infotep technicians is required for leadership purposes.

- **Resources for the project:**

The premises are inadequate for personnel meetings. Workers do not have where to put their belongings, including the guides, and many keep them in their workplaces for lack of personal lockers

ing on the guide and redistributed its members among other areas that were in trouble. This was not a well thought out action in line with a strategy, but a reaction to the moment of desperation the company is undergoing in its search for answers to new market demands.

It was not easy to uphold application of the guide in the midst of such a storm of changes. We developed a new strategy with the management, with a commitment to reinstate application in two modules simultaneously.

Enterprise 2 also underwent a turmoil of changes in management and supervision, perhaps worse than that of Enterprise 1. Here the advantage was that the project coordinator (another woman) remained, so that the continuity of learning was not lost. However, the module where application had started went into crisis as the quality and efficiency goals were not achieved. The organisation is also frantically trying to find flexibility of production, faced with a diversity of designs and styles with varying degrees of complexity. Lack of planning, communication and coordination are evident.

The use of the guides could contribute to more fluent communication between operational and directive personnel and better work coordination. But here again, it was easier to relapse into old habits of contradictory orders without clarifying explanations, which resulted in rework, bad quality and low efficiency.

An agreement was reached with the new management for resuming application of the guide. Infotep will have to follow up this decision. A learning process has already taken place with the guides; the test will be whether it can survive in adverse conditions.

The experiences with these two enterprises led the Infotep team of consultants to some conclusions. For instance, application of the guides in a context of change and dysfunctional situations previously requires a shared diagnosis among all those involved about what is being pursued and what obstacles have to be overcome for making progress. They considered that ProMES was a suitable instrument for this, for it involved workers and created a favourable environment to proceed with application of the guide.

This period of reflection and learning coincided with a request from a casual wear trader for application of the guide in the eleven small and medium-size *maquila* enterprises with which they had subcontracts. They had seen the guide at Enterprise 2 (one of their eleven subcontractors) where it was first tried out. Infotep and the trader agreed that application of the guide should be part of the system of scores that they ascribed to subcontractors for awarding them contracts.

The challenge for Infotep was to show that it was possible to start by the accelerated stage of application of the methodology. Instead of following up two enterprises, now there were eleven, and besides the guides, ProMES would also be used.

Consequently, follow-up included the eleven enterprises dependent on the trader, who had contracts with the large chains of self-service retailers in the USA.

Main lessons learned in the first stage of application of training and evaluation guides:

- the guides' design is aimed at self-directed group or individual learning;
- group work with the guides enables workers to share experiences and knowledge, promoting learning among personnel doing the same job;
- a pilot experience should be consolidated initially, extending it to other areas once it has proved to be functional;
- the more hierarchical levels are involved in the process, the greater will be the support and impact of the guides;
- the project management structure (enterprise coordinator, consultant assigned to the case, project coordinator and external consultant) balance and consolidate the process;
- simultaneous application in two companies of different organisational level enables us to compare practical improvements and learn from respective advances;
- workers' certification after three evaluations can lead to a longer training process, and also means a temporary halt for the personnel involved;
- application of the guides brings out a new profile for supervisors, a resource enterprises need very much nowadays but are generally unable to generate;
- new competencies are detected in enterprises during the process of application. The consultant department, in its capacity of observatory, must communicate them to the Institution's technical training division;
- productivity can only be directly correlated with training action by simultaneously acting on other factors, like technology.

Advances made during four months of application of the guide were remarkable. The new trading agreement and consistent work by the consultants – who came together as a true team-, led to the following results in the initial application of the enlarged methodology:

Quantitative progress:

The scheme started by applying the productivity measurement system (ProMES) in one or two modules at each enterprise. The self-assessment/assessment “express guide” in quality management was adapted to the context of each company. The stage of application of the guides with the personnel of modules already utilising ProMES is about to begin. The universe of workers employed in the enterprises participating in the pilot run is about 8,000.

Qualitative progress:

During the period March-July 2002, qualitative progress in use of the methodology involved:

- Uniformity of criteria among consultants in charge of introducing the methodology. Their work was focalised through the involvement and leadership of the management. Teamwork by motivated personnel in pursuit of objectives laid out.
- The team of consultants mastered the ProMES and “express guides” methodologies. Proof of this is that they extended them to nine enterprises and adapted the guide in three weeks. This fulfilled the objective of developing a training

Plan for including other enterprises of the Santiago Free Zone that work as subcontractors to main trader:

- starting the pilot stage in each enterprise by applying ProMES in one module;
- at the same time, adapting the self-training and evaluation guides to each enterprise and using them in combination with ProMES in the same module;
- implementing the second stage, i.e. partial extension of ProMES and guides to other modules;
- certification of the personnel involved towards the end of 2002.

instrument for the enterprises in a short time, which was aided by the fact that they all belonged to the same sub-branch of the garment industry.

- Application of the productivity measurement (ProMES) methodology immediately before the guides was beneficial. It made it possible to identify the main dysfunctions in the area, creating a favourable environment for the structured learning with the guides to have its expected impact.
- The decision of extending the pilot experience to nine enterprises instead of concentrating on the two initial ones was correct. Those two companies underwent managerial restructuring processes, which delayed advance in application of the methodology. In the meantime, the team of consultants got ahead with the other enterprises of the garment industry that supplied the same trader.
- It was also right to deal with companies working for the same wholesaler; this was an element that pressured them into accepting the methodology. It also enabled them to standardise efficiency criteria and exchange good practices. It further sustained incorporation of small and medium enterprises of the Free Zone into the world economy.
- The guides had good acceptance. Enterprises like to have a tangible instrument, a product, even though they may not apply it afterwards.
- The methodology promoted the image and credibility of Infotep consultant services among enterprises. Demand for counselling on use of the methodology has exceeded by far Infotep's capacity. The technical / professional merits of Infotep consultants are acknowledged in entrepreneurial circles.
- Several companies where the methodology is being applied also take part in another Infotep programme called "la escuelita" (the little school). Enterprises provide space and machinery to train inexperienced persons with an instructor paid by the Infotep Free Zone Project. An initial step for integrating productivity and occupational competencies' methodology with Infotep vocational training system is to link up the "escuelita" with the introduction of methodology (at ProMES feedback meetings, during application of the guides).

Areas of opportunity identified for further extending application were as follows:

- Providing further training in basic computer skills for consultants for application of the methodology;
- Ensuring that enterprises process and record graphically ProMES results by modules and by indicators. Such graphs should be made visible to opera-

tives in work areas (for instance with showcases);

- Including in ProMES the social indicators used by the enterprise (absenteeism, order and cleanliness, safety and accidents);
- Linking up ProMES with the 5Ss methodology;
- Establishing and applying a standard follow-up format for commitments that may arise at feedback boards;
- Introducing costs analysis into the methodology to guide decision making. Use of a *Balanced Scorecard* may help to visualise and follow up the enterprise's strategy;
- Updating consultants on new trends in technology and organisation of the clothes-making industry at international level. Suggestions: registering with specialised Internet websites and holding internal seminars with specialised personnel of the Santiago industry (for example, asking a leading enterprise or business person to give their views on work organisation in the branch);
- Making someone in the enterprise responsible for the methodology, so that the Infotep consultants do not have to act as executing agents;
- Promoting motivational activities among employees: get-togethers, promotional material (leaflets, T-shirts, caps, banners); half-yearly awards (raffles, bonuses);
- Drafting a trainers/evaluators' guide by competencies for supervisors, expert workers and external consultants, in order to have a multiplier effect within and without the enterprise. Infotep will act as trainers' trainer, a process that includes certification of trainers/evaluators and verifiers;
- Providing training, documentation and experiences for trainers in pedagogic techniques facilitating application of the guides and giving depth to ProMES feedback boards;
- Training consultants, internal coordinators and facilitators (trainers/evaluators) in problem-solving techniques and analysis;
- Establishing a standard format to document cases (If there are difficulties in documentation, a format may help to structure it);
- Establishing with enterprises that internal coordinators of the methodology should submit periodical executive reports on application progress, also with a standard format if they wish. This helps enterprises to keep control of the process, reporting advances and obstacles to directors for decision making;
- Feeding back results (guides, indicators, follow-up commitments) to Infotep workshop instructors and collaborating centres;
- Making the project visible by means of video recordings of experiences, show-cases of instruments utilised, website;

- Defining homologation criteria for the report on application of the methodology, in accordance with administrative formats used by Infotep (course-hours, number of persons trained, certified hours vs. performance);
- Providing special follow-up to cases that started with the methodology and are currently being restructured;
- Systematically involving the wholesale trader into the process, to coordinate their productivity and quality strategies with the methodology, secure their material support and induce them to put pressure on their *maquila* subcontracting enterprises for commitment to the methodology. They can help specially in the reproduction of the guides, in persuading enterprises to provide meeting places, in supplying promotion material (eg. a poster on critical quality points).

Progress was made not only in the application process. Concrete improvements also took place within the enterprises, specially in those that had advanced further in the use of the methodology at the cut-off date.

This experience has been localised in the North Regional Office of Infotep. It has not yet expanded to other regional offices. A third stage will have to be designed, extending application to enterprises where the external consultants will not be the same that started using the guides. The idea is that Infotep should devise and offer a training “course” based on competencies for facilitators of the methodology. It would be based on a self-training and evaluation manual for guide facilitation, comprising knowledge and performances. This guarantees that the certification of facilitators by Infotep goes through a process of real application of the guide, hand in hand with the expansion of the proposal.

QUALITY AND PRODUCTIVITY OBJECTIVES

- Bringing faults % in modules down from 20% to 2% at end of Project
- $\text{Faults \%} = \text{Vol. Faults} / \text{Vol. Sample}$
- Stabilising daily production in 1,000 trousers, and raising minimum production to 1,100 trousers a day by end of Project
- Current situation: we are 8% down, as compared with 15% or 20% in other modules

High Grade

RESULTS

- Standardising quality concepts
- Integrating workers into teams
- Awareness of importance of feedback
- Incentives for taking initiatives (knowing operations cluster)
- Using guide as manual for training new workers and retraining old ones
- Higher motivation
- Facilitating work of supervisors and quality controllers

High Grade

