

### III

## Labour competence system: Analytical models

The labour competence system is made up of elements which constitute subsystems, with their own internal dynamics (self-referencing). This means that a definition of the labour competence system depends on the dimension of competence in question; training for competencies, certification of competencies, competence standards, or methodologies for identifying and constructing competencies.

Before analysing these subsystems of labour competence, it is worth asking how a concept is turning into a real system of meanings and beliefs today.

To answer this question we can make an analogy with the emergence of the quality concept in organizations. This concept has always existed as a parameter of the inherent properties of a product, and as such was integrated into the language of firms. At a given moment quality became central to the creation of competitive advantage in the market and started to become the basis for competitiveness-productivity strategies on a wide scale. With time it has turned into a real system of meanings and symbols, becoming a trigger for change within organizations.

Nowadays, under the concept of “total quality” we understand many different things, but at the same time there is a set of common symbols and meanings that create a new paradigm for action. This means that at a given moment the basic aspects are no longer under discussion and are accepted by the labour and business community; they are established in the language of business and they are here to stay (Mertens; Palomares, 1993).

The concept of total quality started relatively loose, with various interpretations and approaches, and in many cases, with a discussion which was much more far-reaching than the reality in firms. Nowadays, the movement has been structured with the appearance of ISO standards, awards for quality and the updating of standards.

The analogy also arises at the level of interpretation. In terms of quality there are schools of thought that argue strongly amongst themselves (for example Duran, Crosby). There are many models, and national differences arise because of idiosyncrasies, because of the nature of the country's social institutions, because interpretations in the union movement differ from those of management, and also because of the evolution of quality models.

The reasons for the present emergence of labour competence in terms of the "real world" of firms and the labour market have been presented in previous chapters. They derive from the logic of transforming the productive apparatus and the corresponding labour market.

This section deals with interpretations in general terms, and the following chapter looks at some of the institutional models that are in practical operation.

The interpretation of competence in this study is not in terms of definitions, which can be found in the literature that is already circulating worldwide and which will surely expand in the next few years. The present study discusses how the concept of competence can be understood in its different manifestations, permitting the orientation of future action related to labour competence.

A British specialist with practical experience in the implementation of competence schemes in firms comments that under the umbrella of competence there is a great divergence in approaches, definitions and applications. In his view, academics discuss the abstract definitions of competence, qualifications and tasks and pay little attention to developing a framework of practical interpretation. Firms need this framework because it is in the real world of production that terms are mixed and confused (Roberts, 1995-96). This occurs in the United Kingdom, which is a protagonist in the development and application of labour competence.

The points mentioned above suggest that there is a diversity of conceptual and academic interpretations, which have sometimes provoked a debate far removed from practical models for installing labour competence systems in firms. For example, some authors maintain that the important element is the classification, because this facilitates a practical and balanced system (Roberts, 1995-96). The objective of this study is not to enter into the details of the debate but to rescue those elements which are or can be important to the practical model which defines competencies.

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«It is argued that the focus of education and training based on competencies potentially constitutes a coherent framework for the learning and development of an ability. However, there are different ways to conceptualize the nature of a competence. If the appropriate one is not adopted or if the norms developed are not adequate, then not only will the given potential not be developed but, in the medium term the development structure of the skills will be affected.» (Gonczi, Athanasou, 1996)

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## 1. FROM QUALIFICATION TO COMPETENCE

By qualification we understand the knowledge and capacities, including models of behaviour and skills, which individuals acquire during socialization and education-training. It is a sort of “asset” which people have and which they use to carry out certain jobs (Alex, 1991). It can be defined as the “**potential capacity to carry out or realize tasks corresponding to an activity or job**”.

Competence, on the other hand, refers only to certain aspects of this store of knowledge and abilities: those which are necessary to arrive at certain required results in a given situation.<sup>6</sup> It is the “*real capacity to achieve an objective or result in a given context*”. “*The concept of competence refers to the real capacity of the individual to dominate the set of tasks that make up the concrete function. The technological and organizational changes, as well as the modernization of living conditions in work, oblige us to concentrate more on the possibilities of the individual and on his capacity to mobilize and develop these possibilities in concrete and evolving work situations, which takes us away from the classic job descriptions*” (Reis, 1994).

6 This definition does not consider *a priori* transferability or portability as a condition of the competence. There is a debate on whether transferability should be part of the definition or whether it should be considered as an attribute *a posteriori*. In the first case, the definition would be widened to “similar circumstances”.

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“The systematic use of a new concept which fulfils the requirements to substitute those which were used previously, gives a new direction to empirical research, feeds representations and justifies political measures. In our case, the concept of competence, already rich in ambiguities, is charged with new meaning, arouses curiosity, performs multiple functions and is generalized in diverse settings. It is imposing itself on investigations carried out in the areas of work and education as well as in discussions of involved parties, and inspires measures in the areas of work and training”

Source: Alaluf; Stroobants, 1994.

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Competence implies a new type of worker. With Taylorism the *homo economicus* predominated, that is, the worker guided by his interest in maximizing his salary. With the theory of human relations a type of *homo sociabilis* emerged, driven by a logic of feelings. Today the *homo competens* appears, whose behaviour is motivated by the enrichment of his list of competencies.

Source: Alaluf; Stroobants, 1994.

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To identify the *qualifications* required in a job or in the labour market, the method that used to be followed was occupational analysis, whose objective was to list all the tasks that made up an occupation. The inventory of tasks was the point of reference.

To identify the *competence* we start from the results and the desired objectives of the organization as a whole, from which the tasks are derived and hence the knowledge, abilities and skills. In this case the tasks are conceived as a *variable* medium between the result and the endowment of knowledge and abilities of the individual. To avoid interference and reductionism by defining the tasks first, a direct connection is sought between results and endowment of knowledge and abilities.

In an environment of continuous technical and organizational changes in firms, the tasks also change. On the other hand the objectives are generally less variable, although they tend to be more and more demanding. It makes more sense to use them as a point of reference for the knowledge and abilities required than to use the tasks.

Furthermore, in the face of superimposed and complex objectives, the multidirectional relationship between the task and the result disappears, opening up the possibility of a wider diversity of options for achieving a given result, due to the learning processes which forge the processes of change. “*To the degree that a greater importance is given, on the one hand to training in general and on the other hand to the evolving character of the demands of tasks and the mobility of jobs, the concept of competence tends to impose itself in the terminology to the detriment of qualifications, and the list of competencies competes with the educational degree*” (Alaluf; Stroobants, 1994).

## 2. OCCUPATIONAL CERTIFICATION

Occupational certification in Latin America and the Caribbean goes back to the year 1975, when Cinterfor-ILO, complying with the mandate of the XI Meeting of the Technical Commission, began a project on measuring and certifying the occupational qualifications acquired by workers through systematic training courses, through work experience or through a combination of the two (Cinterfor/ILO

documents).

The desirability of this project emerged for the following reasons, amongst others:

- Vocational training institutions, in response to population increase and growing technological development, were faced with the need to broaden and diversify their programmes, in order to satisfy the demand for labour and improve the quality of training for the different levels of occupational qualification.
- The educational reforms implemented in recent years by the majority of countries in the region tend to validate the experience acquired by workers throughout their working lives. This requires adequate assessment procedures to determine the knowledge and abilities of workers.
- National employment services do not always have relevant information on the occupational qualifications of the economically active population or good estimates on the qualitative and quantitative requirements of the labour market. This means that they are unable to formulate indicators relating to the supply and demand for qualified labour.
- Finally, it is useful to establish basic occupational profiles at subregional level, to serve as a reference for designing training programmes with a common basic content and systems of certification that would favour the free circulation of workers.

These considerations, in addition to the fact that the knowledge and skills which workers apply do not come only from attending training courses, but also, and fundamentally from the experience they have accumulated in their daily work, led Cinterfor from the beginning of the project to define occupational certification as “*a process with the tendency of formally acknowledging the occupational qualifications of the workers, independent of the way in which these qualifications were acquired*” (ibid.).

In this context it was considered that **occupational qualifications** constitute the set of abilities, technological and other knowledge directly related to the job, which are essential for its satisfactory performance. The appraisal of these qualifications is carried out through the application of **occupational tests**, which verify the technological and operational mastery of the worker. These tests are designed to represent a work situation and their assessment is carried out according to “mastery indicators” specifically established for each element of the process.

The process of occupational certification is comparable with the teaching-learning process, inasmuch as both must be based on a study of work in order to identify the qualitative demands of the labour

market. In this way they respond to the real, social and economic demands of the community, by preparing people who have the capacity to integrate in the productive activity. These demands would be the reference for instruments designed to measure occupational qualifications for certification purposes and for designing the training programmes that institutions offer. Similarly, the results of permanent assessment during training, and the diagnoses obtained from occupational tests, are established with an essential orientation to developing complementary training activities that lead to occupational mastery.

Therefore the process of occupational certification must be considered as a **training strategy** and not just as a statement of possession of certain labour competencies; much less should we expect a simple endorsement of some aspects of the worker's knowledge with respect to the demands of a job (Agudelo, 1993).

Consequently, a process of certification must be conceived with the aim of ensuring that workers reach the occupational mastery required. In itself this provides information corresponding to the qualitative demands of the job in order to guarantee the reliability and efficiency of the process in responding to the expectations and needs of workers and firms. Furthermore, as a result of its application, it will help to find institutional mechanisms which permit the competency standards established by the labour market to be correlated with the objectives and contents of the training programmes, at the same time as providing information to employment services for a more rational distribution of qualified labour (Barbagelata, 1979).

The Cinterfor certification process was made up of four stages, in which representatives of workers' and employers' organizations were expected to participate actively:

- Analyse the occupations which are the object of the certification.
- Identify the operational and technological skills which are considered "indispensable occupational requirements".
- Design occupational tests to evaluate the worker's technological and practical mastery of the required skills.
- Establish the occupational profile of the workers, by comparing their practical and technological knowledge with the job profile, in order to ascertain weaknesses. Where skills are inadequate they can be strengthened to achieve the level of competence needed for efficient job performance.

The methodology for measuring occupational qualifications and the certification procedures generated by the project have been applied in different countries of the region; in some with the specific objective

of certification and in others to control the quality of training processes. Some countries have laws which institutionalize and regulate occupational certification (Barbagelata, 1979; Aldana, 1996).

In the proposal there is a move towards the concept of competence, because it includes proven abilities as well as knowledge. There is also congruence in the emphasis on know-how and performance, as opposed to knowledge for its own sake (Gallart; Jacinto, 1995).

The difference between these concepts seems to be clear: it lies between demonstrated abilities and knowledge on one hand, and the results demanded from the worker on the other hand. That is, the qualification is framed in terms of job performance, in compliance with the knowledge and skill standards, whilst competence is framed in terms of the results which the worker must achieve: knowledge and skills which ensure a desired product. Whilst qualification refers to the post, competency refers to the person, who may occupy more than one job.

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#### OCCUPATIONAL CERTIFICATION IN BRAZIL AND IN SENAI

In 1990 a significant step was taken on the road to quality with the creation of the Brazilian Programme of Quality and Productivity (PBQP), which was a Federal Government initiative with the objective of *“supporting the Brazilian effort of modernization through the promotion of quality and productivity of goods and services produced in the country”* (Brasil - Ministerio de Trabajo, 1990).

The PBQP, which has the backing of various ministries, businesses and institutions, including the SENAI, has a programme on the training of human resources within which the National Programme of Qualification and Certification (CNQC) is inserted.

The SENAI supports the process of **occupational certification**, offering assistance to the Associação Brasileira de Manutenção (ABRAMAN), to the Associação Brasileira de Ensasis Não Destrutivos (ABENDE), and to the Fundação Brasileira de Tecnologia de Soldagem (FBTS) in the certification of personnel in different areas. The SENAI implements training and administers the certification tests, which are supervised by the members together with the Offices of Certification linked to the National Council of Qualification and Certification.

The SENAI currently has four Qualification Centres (CEQUAL) in operation, in Río de Janeiro and in Bahía, which cover mechanical maintenance, electrical maintenance and welding, and other qualification units are being set up in various regional departments.

Source: SENAI-DN, 1995.

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## THE SYSTEM OF OCCUPATIONAL CERTIFICATION - SENAI

In Brazil, with the opening to the international market, there was an increase in demand for high quality products and competence. The country began to lower import barriers and open its borders, which stimulated the exchange of qualified workers amongst the countries that form this market.

In this context, the SENAI considered it important and timely to implement a **System of Occupational Certification**, taking into consideration that there existed in the country an increasing number of businesses certified or in the process of certification in quality assurance systems, which would require certification of the competencies of their workers. The certification system which was proposed by the SENAI was conceived to cater to demand in this area, attempting to reconcile the interests of industry and the aspirations of workers, which should be oriented towards development of the country.

Considering that the quality of products and services depends fundamentally on the quality of workers, certification had to combine two functions:

- one, as part of a training system, in the sphere of permanent education, it had to allow open and flexible access to employed and unemployed workers interested in improving their competence;
- the other, directed to the immediate need for certifying workers with occupational experience, in order to satisfy the demands of firms, derived from the standards established by the international quality assurance systems.

Source: SENAI-DN, 1995.

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In an environment which is relatively static and not very complex in task content, the two concepts may coincide. This is not the case when the worker must know how to perform several jobs, when the tasks change and when the results depend on the interaction of different skills. What is required here is the ability to improve, where it is necessary to apply simultaneously different levels of knowledge combined with certain attitudes and social skills. Past experience demonstrates the capacity to improve. That is, *where the job does not necessarily correspond to the person and vice versa*.

Competence emphasizes three facets of ability: physical or manual; intellectual or mental; social or interpersonal. This does not mean that it ignores the body of knowledge required to develop these abilities but it does not place the emphasis there (Hamlin; Stewart, 1992a).

The difference lies in the concept of performance. During the 1960s performance was based on validating workers' qualifications, comparing them with the performance required in a job by means of prescribed tasks. That is, performance was limited to execution of the job, the task, as the last point of reference. Qualification defined in

## **OCCUPATIONAL CERTIFICATION IN COSTA RICA**

In October 1976 the institutionalization of occupational certification began with the creation of a specialized department in the National Institute of Learning (INA), whose principal objective is to administer the System of Occupational Certification throughout the country. In the first six years that the system was functioning, the INA, with the participation of workers and employers, updated work studies and designed occupational tests for 18 occupations pertaining to nine professional areas. During this period around 900 workers participated in the certification process. Based on the results of practical and technological tests, they received the necessary training to achieve the levels demanded by industry.

In 1983 the “Ley orgánica del INA No. 6868” was passed, which establishes (Article 3, paragraph d.) that in order to achieve its goals, the Institute has amongst its attributes:

“to develop a system to certify officially the level of knowledge and skill of the workers who take the tests in the areas that the Institute offers independent of the form in which this knowledge and skill has been acquired”

The Law provides that the tests should be voluntary, so that workers without a certificate will not be prevented from carrying out any activity for which certification of ability is not legally required.

It provides that the certificates will be free for workers and that whenever possible workers and employers will participate in the process of certification. Their representatives will be chosen from lists presented by trade organizations or by linking committees.

Source: INA, 1984.

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this way refers to know-how in the job, for example, the use of materials, operation of machinery and instruments. As mentioned previously, competence does not start with a pre-established task, but rather constantly redefines the task in terms of the desired results.

### **3. BEHAVIOURIST ANALYSIS AS A BASIS FOR LABOUR COMPETENCE**

According to the analyst Katherine Adams, education and training based on competencies originated in the United States in the 1920s, although the modern competence movement started towards the end of the 1960s and beginning of the 1970s. One of its pioneers was a professor of psychology at Harvard University, David McClelland, who argued that traditional academic exams do not guarantee either job performance or success in life and frequently discriminate against minorities, women and other vulnerable groups

in the job market. He maintained that it was necessary to search for other variables - competencies - which would have some predictive value, or at least be less unreliable (Adams, 1995/96).

Following this line of thought a project was carried out in the United States to identify the attributes of successful diplomats. Applying a sample based on a previously determined criterion of effectiveness, *interviews on behaviour at determined moments* were carried out. The interviewees were asked to identify important situations in their work that had to do with the objectives of their function, and to point out the positive or negative results. Later, they were asked to narrate these situations in detail and explain what they did at each moment (ibid.).

During the next decade, the 1970s and the beginning of the 1980s, similar studies were carried out especially with managers. In the 1980s Richard Boyatzis was given the task of analysing whether a *generic* model of management competence could be arrived at. He proposed an explicit definition of the concept of competence: "*the underlying characteristics of an individual which maintain a causal relationship with effective or superior performance in the job*". From this point of view, competencies can be motivation, personality traits, skills, aspects of self-image and social role, or a body of knowledge that an individual is using (ibid.).

Effective performance is a central element in competence and is in turn defined as the achievement of *specific results* with *specific actions*, in a given context of organizational policies, procedures and conditions. In this sense competence is, above all, an *ability* which reflects people's capacity and describes what they *can do* and not necessarily what they do, nor what they always do, independently of the situation or circumstances (ibid.).

Defined in this way, competencies are those characteristics which differentiate a superior performance from a mediocre or poor one. The characteristics which are needed to carry out the job, but which do not lead to superior performance were denoted "*minimum competencies*".

Characteristics or competencies have a certain hierarchy or order: motivation and personality work on a subconscious level; self-image and social role are at the conscious level, whilst abilities are at the behavioural level. Knowledge has a profound impact on each one of the competencies (ibid.).

In order to arrive at a generic model of competencies for effective performance by managers, those not specific to a special service or product were identified. The results were five clusters with 21 generic competencies, of which 7 are classified as minimum and 12 as effective competencies. With respect to predicting effective management, it was

concluded after carrying out a verification study that: “*approximately one-third of the variation in the performance of a manager can be explained by these generic competencies, another third is explained by competencies specific to the organization and the post, and the last third of the variation is due to situational factors*” (ibid.).

It is estimated that in 20 years more than one hundred researchers have produced a total of 286 generic models; two-thirds of these are North American, and the rest are spread over 20 countries. Each model had between three and six clusters with two to five competencies in each cluster, with three to six *behavioural indicators*, which show the competency in the post. From this total of models a comparative analysis was carried out and as a result a *dictionary* of behaviours for effective management was formed from 21 competencies, with 360 indicators (ibid.).

The great difference between this approach and the functional analysis which will be discussed next, is that behavioural analysis

**A GENERIC MODEL OF MANAGEMENT COMPETENCIES**  
by Richard Boyatzis

<b>Cluster:</b>	<b>Competencies:</b>
1. Goal- and action-management	Efficiency-orientation, proactivity, diagnostic use of concepts, concern with impact
2. Leadership	Self-confidence, use of oral presentations, conceptualization, logical thought (*)
3. Human resource management	Use of socialized power, managing group process, positive regard (*), accurate self-assessment (*)
4. Directing subordinates	Use of unilateral power (*), developing others (*), spontaneity (*)
5. Focus on others	Perceptual objectivity, self control, stamina and adaptability

(\*) Threshold competencies.

The final competency in the model is specialized knowledge (a threshold competency), which forms a category on its own.

Source: Adams, 1995-1996.

starts with the *people who do their job well according to the desired results*, defining the post in terms of the characteristics of these people. The emphasis is on *superior* performance and the competencies are the underlying characteristics which cause people to behave in this way.

On the other hand, a functional analysis - the basis for competency standards in the United Kingdom (NCVQ) - describes the job or the function, composed of competence elements with assessment criteria which indicate *minimum* required levels. The objective here is to construct minimum bases for the effects of certification.

Another difference is that in behaviourism we identify the personal characteristics which cause the desired actions, whilst in the functional analysis of NVQ the competence is something which a person must do or must be able to do. It is the description of an action, a conduct or a result that the competent person must be able to demonstrate (ibid.).

The disadvantages or criticisms of the behavioural model are, amongst others (ibid.):

a. The definition of competence is so wide that it can cover almost anything, without identifying the motivations, personalities, social roles, abilities and knowledge that competent people have in common.

b. The distinction between minimum competencies and effective competencies is not very clear and in fact is simply a question of degree.

c. The models are historical, this is to say, related to success in the past, and therefore less appropriate to organizations that undergo rapid change.

At the beginning of the 1990s a report was prepared in the United States on the changes that must be made in schools so that young people could be better prepared to meet the challenges of competitiveness and productivity. It also attempted to define how workers will have to be trained and re-qualified for the advanced posts of the future.

The report was prepared by the Secretary's Commission on Achieving Necessary Skills (SCANS), which is an association of the Departments of Education and Employment and the Office of Personnel Management. It was based on interviews and discussions with a wide group of key informants in the business world, unions, academic institutions and specialists in the area (ACT, 1993). They were asked to identify *the principal* abilities needed to obtain

### Cross-occupational competencies

#### Three fundamental competencies:

**Basic skills:** reading; writing; arithmetic and mathematics; oral expression and ability to listen.

**Analytical aptitudes:** think creatively; take decisions; solve problems; process and organize visual elements and other types of information; know how to learn and to reason.

**Personal qualities:** responsibility; self-esteem; sociability; personal management; integrity and honesty.

#### Five competencies:

**Resource management:** time; money; materials and distribution; personnel.

**Interpersonal relations:** participates as a member of a team; teaches others; serves clients/consumers; displays leadership; knows how to negotiate and work with diverse personalities.

**Information management:** searches for and evaluates information; organizes and maintains information systems; interprets and communicates information; uses computers to process information.

**Systematic comprehension:** understands complex speeches; understands systems; monitors and corrects performance; improves or designs systems.

**Technological mastery:** chooses technologies; applies technology to the task; maintains and repairs equipment.

Source: SCANS, 1992.

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employment. They defined two large families of abilities: *fundamental abilities* needed in all jobs as a minimum, and *competencies*, abilities that distinguish workers who achieve excellence.

These areas of defined abilities formed part of a new type of study of jobs and tasks. Fifty posts were analysed in five sectors of the economy and 200 workers were interviewed. The object of the study was to determine the abilities which comprised the list and to prioritize specified abilities in the job sample. The results describe how the classification of abilities is reflected in the job sample, which went from waiters to financial analysts, and how certain tasks can be classified by level of difficulty (ibid.).

However, the design and application of the study did not permit the detection of all essential abilities for each job. An existing taxonomy

of abilities was applied (the SCANS) and the jobs and required abilities were not defined. This factor plus the fact that a reduced number of jobs and workers were analysed means that the analysis was not definitive, given that time and resources did not permit a sample of occupations large enough to generalize for all jobs in the United States (ibid.).

The report recommended an empirical study of the framework of skills in order to give it a more solid base, before applying a system of assessment and administration of the identified skills. The National Job Analysis Study was designed to this end. In the face of constant change, cross-occupational skills become critical for the new workforce. The objective of the study is to identify skills common to all jobs, in particular those which are present in a high performance environment and which are necessary for business success.

For this, a quantitative analysis became essential in order to validate the taxonomy of occupations and jobs and also the definition of high performance establishments (ACT, 1995). The investigation was designed in two phases. The first was an initial determination of a set of key behaviours and an identification of the characteristics of high performance establishments. The second consisted of constructing an “anchor scale” of behaviours oriented towards high performance characteristics, using the results of the first phase as a base. The critical behaviours found in phase 1 will be put on a scale in terms of the complexity, knowledge, abilities and skills they require. In both phases,

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**Core competencies identified in 1,600 establishments (in order of importance)**

1. Listening to the concerns of clients/customers.
2. Responding to the concerns of clients/customers.
3. Ability to use computers to locate, process or communicate information.
4. Safeguarding information and valuables.
5. Scheduling work activities for oneself.
6. Providing information to people.
7. Determining the priority of work activities.
8. Working with people in other departments to accomplish work.
9. Judging the importance, quality and accuracy of information.
10. Coordinating own work activities with the activities of others.
11. Listening to instructions from or concerns of supervisors or co-workers and responding .

Source: ACT, 1995.

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the principal research tool is a large-scale survey of workers, comparing the results and behaviour with high performance establishments (ACT, 1995).

#### **4. FUNCTIONAL ANALYSIS AS A BASIS FOR LABOUR COMPETENCE**

The theory of functional analysis has its foundation in the functionalist school of sociology, applied as the basic philosophy of the system of labour competence in the United Kingdom. Functional analysis originated in various attempts to review and adapt the training systems in that country. A basic document produced in 1980 inspired the New Training Initiative, which in turn led to the national system of labour competencies (National Vocational Qualification, NVQ) and to the corresponding national council (NCVQ), around 1986. According to some analysts, the official acceptance of competence was the result of the work of consultants in the Employment Service Commission, a public agency (Hamlin; Stewart, 1992a). The components of functional analysis were developed as limitations in the original model were observed.

Functional analysis has been adopted as the methodological and technical foundation of the new theory of social systems. In this theory, functional analysis does not refer to the “system” itself, in the sense of a state which must be conserved, or an effect which must be produced, but serves to analyse the relationship between the system and the environment, that is to say, the *difference* between them (Luhmann, 1991).

It follows that the functions and objectives of the business must not be derived from its organization as a closed system, but in terms of its relationship with the environment. The business is not a state which can be conserved by making it “function” as a closed system, but only as a relationship with the environment, that is, with the market, technology, social and institutional relationships. Consequently, the function of each worker in the organization must be understood not only in terms of its relationship with the environment of the firm, but also in terms of a set of subsystems within the overall system of the firm, where each function is the environment of another.

Functional analysis begins from what exists as a contingency, as a probability, and relates it to different aspects of the problem, which in this case is the particular result expected of the firm. It attempts to make the problem intelligible so that it can be resolved one way or

another. The relationship between a problem or a desired result and the solution is not therefore understood in isolation; it also serves as a guide to investigate other possibilities, functional equivalencies (ibid.).

The explanatory value of the functional method depends on how the relationship between the problem and the possible solution is specified. The conditions which limit the range of possibilities indicate a causal relationship between the solution strategy and the results. At the same time, an understanding of causality arises from comparing different relationships between problem/result and solution. Ultimately, the functional method is a comparative method, and its introduction prompts people to consider other possibilities by reviewing what already exists. It goes beyond the simple reproduction of the firm as a system, determining an intention and a perspective for observation (ibid.).

Translating this to competencies, the different relationships between results and abilities, workers' knowledge and aptitudes are analysed and compared. We search for elements of abilities and knowledge relevant to solving the problem and carrying the system forward.

There are no absolute guarantees in terms of the correct method of proceeding in order to gain knowledge of labour competencies through functional analysis. However, the more diverse the circumstances which confirm the abilities and knowledge required of workers, the more value will the results of the analysis have with respect to knowledge of the *function*. Functionality, in spite of heterogeneity, is proof. *"According to an old and wise rule, truths only*

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### **Levels of national qualifications (NVQ):**

The framework of competencies/qualifications is made up of five levels which cover the most basic minimum up to professional standard.

The higher the level, the more evident the following characteristics:

- width and scope of competence;
- complexity and difficulty of competence;
- requirements for special skills;
- ability to carry out specialized activities;
- ability to transfer competencies from one work context to another;
- ability to organize and plan work, and
- ability to supervise others.

Source: NCVQ, 1991.

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*appear in context, whilst mistakes appear in isolation. When functional analysis manages to demonstrate connections, in spite of great heterogeneity and diversity of appearances, it can function as an indication of the truth”* (ibid.).

This introduction to the basic principles of functional analysis helps to place the functional methods followed with respect to labour competencies, and to trace their evolution.

Functional analysis in the British system of competencies (NVQ) starts from identifying the principal objectives of the organization and the occupational area. The next step is to answer the question: what must happen in order to achieve this objective? The answer identifies the function, that is to say, the relationship between a problem and a solution. This process is repeated until we arrive at the required detail. The systematic approximation ensures that we do not lose sight of the objectives of the activities. (NCVQ, 1991).

In order to avoid specifications which are too closely linked to the job, the task, the activities, the processes and abilities, and the role of the worker, the standards must be proposed in terms of the wider functions to which they refer. The NVQ proposes from the outset that at least four components or families of competencies emerge from an adequate analysis (ibid.):

- results of the tasks;
- management/organization of the tasks;
- management of unexpected situations;
- environment and work conditions.

With these *obligatory* elements that must appear, the NVQ provides the motivation for a new work organization on site.

The chief characteristic of the functional analysis proposed by the NVQ is that it describes *products, not processes*; the stress is on results, not how things are done (Transcend, 1995). Each work role is broken down into units and each unit into elements of competence, following the principle of describing the products at each level.

At first, the standard of competence was defined only on the basis of performance at the level of the element. This brought about the problem that it was open to different interpretations depending on the situations and conditions covered by the element (Jessup, 1991). To counter this problem, the element of competence was complemented by a *statement of range* which specifies the range of contexts and circumstances in which workers must demonstrate that they can achieve the performance criteria.

However, it seems that there were still differences between the interpretation and the assessment. Furthermore, the performance

criteria did not give sufficient elements to define the required training curricula. Therefore, other specifications were added to the standards: the knowledge and understanding which the worker must contribute to satisfy the requirements of an element (Wolf, 1994). Some aspects of the possible solution were incorporated in order to obtain the desired results.

Since the extracted knowledge allowed for very different interpretations, *lists of knowledge* were elaborated. The transparency of the assessment requirements was also questioned. Because of this, lists of “assessment specifications” were also added to the norms used by the assessment and certification bodies (ibid.).

The competence elements are grouped in units and these in turn form a competence *qualification*, known as NVQ. By the end of 1995

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In various publications concerning NVQ, the need to break down the competence standards into abilities, knowledge and principles, and to present a sequence, is discussed, but apparently the complexity of curriculum development was underestimated. It was expected that in the absence of a model, many possibilities would arise reflecting the different areas where the education and training was carried out, but this has not happened. Up to now the best way to describe it is as a system of assessment lacking a coherent curricula framework; in fact the competence standards constitute the curriculum (Gonczi; Athanasou, 1996).

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more than 800 active NVQs were registered and a million people were certified under a NVQ (NVQ-Monitor, 1995).

The most serious criticism of the methodology behind each NVQ is that it verifies *what has been achieved* but does not identify *how it was done* (Hamlin; Stewart, 1992b). In the same vein some Australian analysts criticize the NVQ approach, arguing that the underlying attributes of knowledge cannot be isolated from the actual work practices. Attributes such as knowing how to solve problems, knowing how to analyse, knowing how to recognize structural patterns, are very dependent on the context, and therefore attempts to teach them out of context would not make sense (Hager, 1995).

Furthermore, breaking down competence into units and these in turn into elements, which is the level at which standards are defined through performance criteria, means that the relationships between tasks cannot be considered and the possibility that they can be transformed together is ignored (the whole is equal to the sum of the parts) (Gonczi, Athanasou, 1996). *“Those who prefer this focus tend to*

consider that the curriculum has a direct relationship with the functions and specific tasks in the competence norms of the occupation. This focus has been adapted by many of the first British and Australian industries which developed competence norms" (ibid.).

These analysts criticize the NVQ model for making a partial application of the theory of functional analysis. The desired results are identified and documented (description of the problem) together with some facets of the solution (underlying knowledge), but without reference as to how these two moments find each other. In terms of the theory and of what has previously been pointed out: *"the explanatory value of the functional method and its results depends on how the relationship between the problem or objective and the possible solution is specified. That is, which conditions are indicated to limit the possibilities, which means that we are appealing to causality between solution strategy and results"*. Furthermore, *"functional analysis starts from what exists as a contingency, as a probability, and relates it to points of view of the problem, which in this case is a given result expected by the firm"*, and finally, *"truths only appear in context ... and are the connections between diverse contexts which validate the function"*.

In the functional analysis proposed by the NVQ, these aspects do not appear and the relationship between the different subsystems, that is, between the different types of ability, knowledge and attitudes-aptitudes, is not analysed. The complexity of the world of work, which was one of the reasons why interest in labour competencies arose, does not appear in the relationships between these subsystems.

The Australian analysts mentioned above propose a modified functional analysis, more in line with the theoretical dimensions expressed previously. They analyse competence as a holistic or integrated relationship, incorporating the complex combination of attributes (knowledge, attitudes, values and abilities) needed for performance in specific situations. *"It is holistic in the sense that it integrates and relates attributes and tasks, it permits that various intentional actions occur simultaneously and it takes into account the culture and context of the work place. This permits us to incorporate ethics and values as elements of competent performance (...) and the fact that it is possible to be competent in different ways"*. (Gonczi; Athanasou, 1996).

This perspective has some important consequences for the concept of standard which is derived from it (Hager, 1995):

a) Performance is directly observable, while competence is not and does not allow the performance to be inferred. This is why competence is defined as *the combination of underlying attributes of a successful performance*.

b) The standards of competence can be established at various levels, according to needs; for example, at the entrance level, experienced worker, specialist.

c) The attributes of the practitioner and demonstrated performance in key activities are the essential ingredients of this definition of competence. This means that the attributes alone do not constitute the competence, neither does the mere performance of a series of tasks. Rather, this notion of competence integrates the attributes with the performance. This integrated conception means that competence incorporates aspects of knowledge, ability and attitude applied in the context of real, carefully chosen tasks which represent an appropriate level of generality.

A methodology which approximates the integral focus of competencies is known as DACUM (*Developing a Curriculum*). Originally developed in Canada and popularized in the United States, especially by the University of Ohio, DACUM models are used to construct curricula for training programmes, to establish assessment criteria and to identify training needs (Wills, 1995). The methodology is highly participatory and is developed with workers and supervisors in small groups where they jointly identify the processes, tasks and jobs and put them in sequence.

The method begins by defining the principal functions and/or objectives, which are noted on sheets of paper on a blackboard. Then the group places them in order and identifies the tasks which the worker carries out in each broad function category. These tasks are then analysed in terms of knowledge and required ability and finally they are given a score for frequency and importance. The result is a list of tasks and activities for a specific function, which can be used to develop training contents which are closely linked to the function (ibid.).

The DACUM methodology is based on three basic suppositions (ibid.):

1. Expert workers can describe and define their work with much more precision than any other person.
2. An effective way to describe the function/job is the definition of task performance by the expert worker.
3. All the tasks/functions demand a certain level of knowledge, ability, tools and attitude for an adequate performance.

The objection of the “integralists” is that, even though DACUM identifies many discrete tasks, this does not happen with the functions of the jobs and the results/performance. The list of tasks on its own does not allow the holistic focus to be constructed and it is difficult to

contemplate elements of planning and management of the unexpected (Hager, 1995). It is a methodology which *“seems to be very useful for separating the different tasks of an occupational area, but not for establishing a link between them nor for relating the tasks and the attributes (knowledge and attitudes) on which they are based”* (Gonczi, Athanasou, 1996).

## 5. CONSTRUCTIVE ANALYSIS AS A BASIS FOR LABOUR COMPETENCE

A protagonist of this school of thought is Bertrand Schwartz, from France. The concept “constructivist” refers to *“(...) clarifying the mutual relationships and the existing actions between the groups and their environment, but also between work situations and training situations”* (Schwartz, 1995). This method makes no separation between building the competence and the standard on one hand and implementing a training strategy on the other. Competence depends not only on the market function but also on the workers, their objectives and capacities.

In contrast to the behaviourist focus, which takes the best workers and managers or high-performance enterprises as a reference, the concern of the constructivist methodology deliberately *includes* people of a lower educational level for the following reasons (ibid.):

**First.** Workers with a low level of education can only be placed in the labour market if their knowledge, experience, difficulties, disillusion and hopes can be heard, considered and respected. The constructivists reject the exclusion of less trained people, maintaining that they can be creative, autonomous and responsible. Related to this principle is the conviction that if you trust people and believe in them, if you give them the chance to learn on their own, almost anything is possible and they can learn a great deal, and rapidly.

**Second.** One of the foundations of effective training is the participation of trainees in defining the content of the course, i.e. in analysing the problem, so that the acquisition of knowledge is linked to its practical application. This is equally true of training for personal progress, developing the capacity to adapt constantly to everyday life, particularly to the evolution of working conditions. A strategy of alternating training is proposed with periods of theoretical training alternated with periods of practical training. This implies the participation of the world of work, which should collaborate in modifying limited tasks which are repeated at high speed, as such jobs

do not develop or motivate the worker. Furthermore, when a person learns, a new competence arises. Instead of defining *a priori* to which level of competence workers will have to be trained, the complexity of the work situation is integrated progressively. This will induce new training which, in turn, favours the enrichment of work situations, anticipating the possibility that training will influence the qualification/work organization relationship. *“It is worth noting that this method differs from traditional learning in which we know beforehand the final trade as well as the order in which the contents of the corresponding training will be delivered”* (ibid.).

To administer this dynamic and interactive process, a guide to analysis is proposed for supervisors and workers. The key questions of this guide are: What new things have workers done during the reference period? What did the supervisors do meanwhile and what were they not able to do because of lack of time? The guide has a double function of regulating actions and identifying ways to proceed. But it can only perform this role within a dynamic installed by the individual and collective involvement of the supervisors. However, this is not an easy process because at first they all live in fear of revealing their ignorance. When everyone realizes that they all share this fear, they can begin to work together.

**Third.** Individual training only makes sense within collective training: to satisfy individual needs it has to be given to all. Collective training means not only massive participation by trainees, but also considerable involvement of the work environment, from trainers to union organizations, from institutional delegates to families. We can observe a come-and-go phenomenon which explains the interaction: the environment influences training, which in turn influences the environment and becomes a determining factor in individual and collective life. The definition of competence must be proposed in this collective context, whenever possible, to achieve results.

**Fourth.** There must be an organization dedicated to defining competencies and related training in order to establish a participatory investigation. Tutors, executives, coordinators and workers must all participate in the selection of tasks. All the partners have their own concept of the job, as well as the training and its contents. They all have their own way of thinking, of analysing, and grasping situations. Permanent discussion is, therefore, indispensable for the coherence and progress of the investigation.

**Fifth.** It is important to break the short-circuits which are the product of the sequence: training first; responsibility and trust later. Making unqualified personnel responsible and offering them a real

To authorize a worker with little training to handle a complex and costly machine is a display of confidence. The young person realizes this and is proud. From there on, he takes advantage of the opportunity, and does everything possible to deserve this confidence. The more he is consulted about his tasks and his training needs, the more he is requested to contribute himself to his training. He plays a part in his own integration and his motivation to progress will be greater. The fact that he is being paid attention, that his participation in the investigation is being valued, that he occupies a position is, unquestionably, the main factor of exceptional progress and his involvement in change. Once the first steps have been taken the phenomenon of interaction is produced: the more the worker is integrated, the more recognition he will receive in his position and the more rapidly he will learn.

Source: Schwartz, 1995.

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role helps them take a great step forward. Workers can acquire relatively complex knowledge without really mastering basic knowledge. This is largely explained by the motivation which arises when somebody is given trust and responsibility. Once this complex knowledge is acquired the usefulness of the basic theory is better understood. The order in which workers acquire theoretical knowledge is not always that which instructors consider the most logical.

**Sixth.** The identification of competencies and work objectives begins by identifying and analysing the *dysfunction* particular to each organization, which is the cause of unnecessary costs or lost opportunities. When the competencies are being constructed, many censure existing human relations and bad communication and criticize the structure in which the dysfunction continues. *“All are conscious that the major element which must be modified in order to progress are the conditions and work relationships. Some say that it is a previous and necessary condition for training. Why train if work conditions, relationships with senior personnel and other services do not change?”* (ibid.). Contempt discourages and when people repeatedly receive a negative response they finally stop trying. This is the explanation of many people’s silence: they suffer because their knowledge is not taken into consideration, because their skills are not recognized. That is, competence cannot be isolated from the construction of a different organizational environment and from human relationships in the firm. Training and the definition of competencies, beginning with a study of the dysfunction, permits the generation of a motivating environment which is fundamental for learning because:

- it collectively helps workers in their analysis;
- they are really listened to;
- they can express themselves without fear of reprisals;

The list of learning objectives which workers defined in an automobile plant in France is made up of five categories:

1. *Basic culture*: oral expression; written expression; communication; logical and fundamental structures.
2. *Scientific knowledge*: mathematics; arithmetic; calculus; design.
3. *Organizational knowledge*: understand the prescribed organization and act on it.
4. *Technical knowledge*: use of instruments, tools, methods.
5. *Behavioural, relationship knowledge*: write a text with a group; organize a meeting.

Source: Schwartz, 1995.

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- it implies an open dialogue with senior management;
- it is possible to discuss, without this being systematically interpreted as a demand;
  - the work organization does not “check” them but encourages them and motivates them to ask questions;
  - they learn quickly because in reality they know more than they suppose.

**Seventh.** The definition of the competence and its standard occurs at the end of the alternating learning process and of the actions taken to counter dysfunction: it is a dialectic relationship between the collective training of workers and their effective participation, progressive and coordinated, in the modification of their tasks, their jobs and their interventions. In the case of an automobile firm in France, the workers and supervisors made up a list of learning objectives and identified how many workers mastered each one of the items developed (see box).

## 6. STANDARDS AND THE ASSESSMENT OF LABOUR COMPETENCE

The standard is the reference for evaluating what the worker is capable of doing. The competence generally includes various types of standard, which can be reproduced in different contexts (jobs; firms) and which conform to the norm. The norm is then a set of standards valid in different production environments.

Traditionally in training based on supply, the standard originated in the educational institution itself, which placed more emphasis on theory and knowledge than on practical application in the workplace.

In contrast, the competence standard starts out by putting knowledge and abilities into practice.

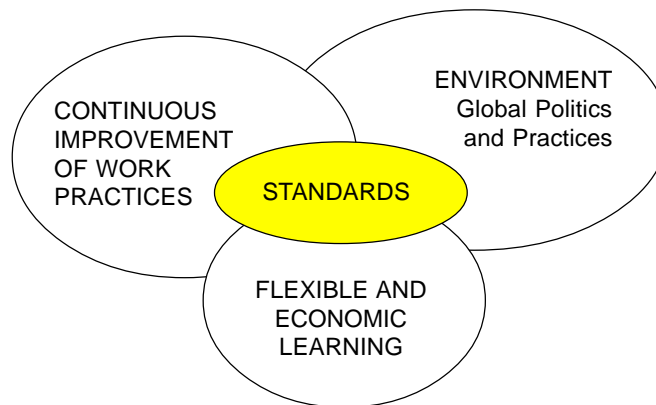
The standard constitutes the common training element needed for achievement of the firm's objectives. It does not pretend to be a sufficient condition; at most it aspires to be a necessary condition.

The definition of the standard and norm is the answer to the question "how good is good enough?". However, the term is used differently in the literature and in practice. The statements of standard are varied and include: *a) performance criteria* such as profit margins, production speed, mistakes, waste and others; *b) time definitions*, used frequently in training; *c) definitions of minimum standards and objectives* which are used for entrance levels and to obtain a certain level or type of recognition (Wills, 1995).

Their construction and definition depend on how the different contexts and situations are interpreted. The NVQ methodology in the United Kingdom proceeds in a different way from the behaviourist method practised more in the United States or the constructivist

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#### STRATEGIC ROLE OF STANDARDS



The production of competencies and appropriate motivations in the labour force is the most important challenge in the management of leading firms.

The pace at which a firm can respond to external changes, assimilate new technologies or take advantage of market opportunities, depends critically on *administrative* success in this area.

Source: Transcend, 1995.

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method which has been observed in France.

However the standard depends not only on the method, but also on the institutional framework in which it is introduced: a) national, sectoral or of the firm; b) national uniform and comprehensive basis (United Kingdom; Australia) or self-regulated by the market (United States); basis for an initial preparation, facilitating the transition from school to work (Germany, Denmark), or mobility of qualified workers (Japan, Canada) (ibid.).

Different types of norm with differentiated characteristics are derived from the three basic models of competence. The final product is a “hard” norm in the case of NVQ, because the criteria are direct results; a “soft” norm in the behaviourist method because it is an identification of attributes which ought to lead to superior performance; and a contextual one derived from the dysfunction of the firm.

*Assessment* is the complementary part of the norm and it refers to the evidence: it verifies whether the established specifications have been achieved or not. Assessment allows for comparison-discrimination between the groups, and measures the distance between individual performance and the norm. The forms of assessment range from daily activities to more complex statistical systems.

*“Although all forms of assessment refer to the use of evidence, each form may have a different purpose. It is the purpose of the assessment which*

DIFFERENCES BETWEEN NORMS ACCORDING TO THE TYPE OF COMPETENCE		
FUNCTIONALIST	BEHAVIOURIST	CONSTRUCTIVIST
Norms of production developed and agreed on by the industry.	Groups of competencies developed by investigation based on excellent performers.	Competencies developed by learning processes in the light of dysfunction and including the least competent population.
Norms based <b>on</b> results (reference to criterion).	Norms oriented <b>to</b> results (validated by criterion).	Norms constructed from the results of learning.
Norms of occupational competence (real production on the job).	Educational process (development of competence).	Alternating learning process in plant.
Fixed mark of competent production agreed on by sector.	Specifications of superior production defined by educational investigation.	Specifications defined by levels achieved in plant by workers.
Product: hard competencies.	Product: soft competencies.	Product: contextual competencies.

Source: Hetcher, 1992: Own creation.

will define the nature and the process of the assessment system “ (Hetcher, 1992). Assessment means gathering sufficient evidence that individuals can perform according to specified norms.

Assessment is a process which consists of a sequence of actions or events which are similar in all forms (ibid.):

- a. Define requirements or objectives of assessment.
- b. Gather evidence.
- c. Compare evidence with requirements or objectives.
- d. Form judgement based on this comparison.

In the traditional assessment which the educational system used to operate, the comparison of evidence with requirements or objectives is a *reference to the norm*, where an average achievement grade has been calculated beforehand, usually independent of the individual, and individual achievements are judged against this average, with performance awarded points according to the scale. In assessment by competencies, we are interested in comparison with the pre-established result, which is not the average of a group of individuals but which corresponds to the objectives of the organization. Consequently, it is an individualized assessment: the judgement does not compare one with another. Furthermore one must comply with all the norms, there is no system of compensation between those fulfilled and those not fulfilled and the only judgement is to have

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The NVQ norm for seamstresses, created by the Costume and Associated Products Industry Training Board (CAPITB, Great Britain) consists of five sets of competencies with their respective elements:

1. Create and maintain work relationships with third parties in a productive environment.
2. Contribute to a safe and hygienic environment.
3. Contribute to quality production.
4. Prepare and install sewing machines.
5. Operate the machine knowing how to sew seams.

The assessment process measures the competence of the operator in these five units. From the beginning, the assessor explains the assessment criteria to the operator and explains what is required and how long the assessment will take. The greater part of it is carried out by observing the operator in the workplace, with a weekly observation during ten weeks. The operator is also questioned to evaluate underlying knowledge in safety and hygiene and the names of the different parts of the sewing machine. When the candidate does not reach the standard, the evaluator explains why and what is lacking in order to achieve it.

Source: IDS, 1992.

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passed or not. This offers a foundation for a permanent learning process, which would lead to more development and assessment. We are not interested in evidence of how much the individual has learnt (knowledge), but in the real production which is achieved, that is to say, the knowing how to (ibid.).

In contrast to traditional ways of evaluating occupations, assessment based on competence must be carried out at the work site. Supervisors generally evaluate workers. Supervisors must therefore understand the principle of assessment based on competencies and be skilled in the use of different methods: to plan assessment in a context based on competitiveness does not mean establishing a test of abilities or organizing an exam. It is an iterative process: the plan is continuously revised and updated as individuals develop and achieve competence (ibid.).

The most frequently used ways of evaluating competencies are (ibid.):

- a. Observation of performance
- b. Ability tests
- c. Simulation exercises
- d. Execution of a project or task
- e. Oral questions
- f. Written examination
- g. Multiple choice questions

Various types of evidence are used in the assessment:

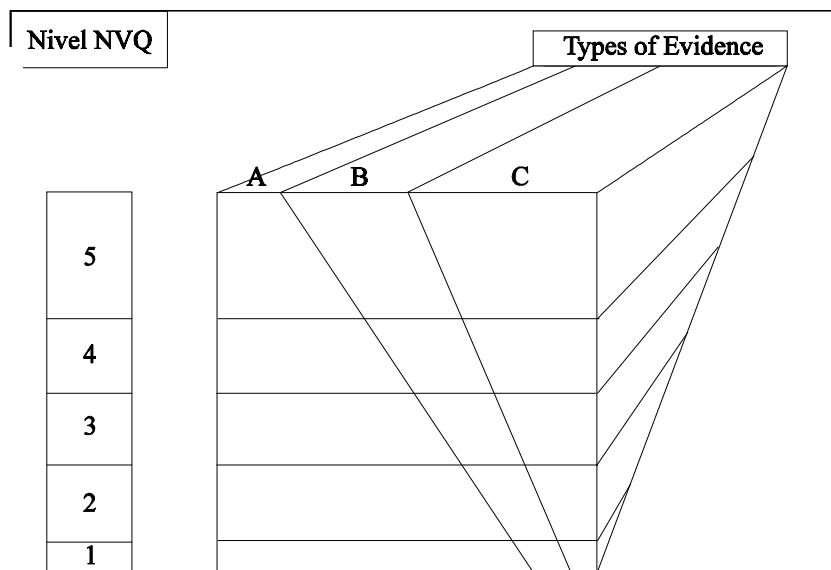
- a. Of performance
- b. Of knowledge
- c. Direct
- d. Indirect
- e. Of support
- f. Complementary
- g. Historical

The basic rules of assessment are: transparency, validity and reliability, whilst the evidence must be: valid, authentic, acceptable and sufficient (ibid.).

Three basic principles have been identified for carrying out an appropriate assessment of labour competencies (Hager, 1995):

1. It is imperative to select the methods directly related to and most relevant to the type of performance to be evaluated. That is, to choose from the following groups of methods: i) question techniques; ii) simulations; iii) skill tests; iv) direct observation; v) evidence of previous learning.

2. The narrower the base of evidence, the less will it be possible



A = Competence directly observed at the workplace  
B = Evidence inferred from completed activities  
C = Underlying knowledge, comprehension and ability demonstrated by simulations and testing.

Different types of evidence would be appropriate according to the NVQ level.

Source: Hamlin; Stewart, 1993.

to generalize the results to other tasks. It is recommended to use a mixture of methods which allows the competence to be inferred.

3. In order to cover various elements of competence, holistic or integrated assessment methods should be used wherever possible. This improves efficiency and validity and also reduces the cost of the assessment. Integration means the *combination* of knowledge, comprehension, problem solving, technical abilities, attitudes, and ethics in the assessment.

It has also been argued that the type of assessment varies according to the *level* of competence. For example, the British NVQ has five levels ranging from routine operations (level one) to the application of fundamental principles and complex techniques in contexts which are not predictable (level five). In NVQ assessments the evidence would move in parallel, from emphasis on direct

observation of performance in the workplace (level one) to evidence inferred from activities carried out and the demonstration of underlying knowledge, comprehension and abilities through simulations and tasks (Hamlin; Stewart, 1993).

There are critical views of the theory and practice of standards, norms and assessment processes. We will mention a few that refer to the British experience with NVQ.

The first question is whether the focus is primarily on *developing or evaluating the competencies, or on both*. Is this a means of increasing paper qualifications in order to compare qualifications internationally? Will this not lead to a new bureaucracy of competencies? (Hamlin; Stewart, 1992a). Commentators assert that the NVQ system is not suitable for a focus on the development of competencies, because: i) it generates too much information; ii) it is repetitive between levels; iii) the organization of the information is too mechanical; iv) there is no distinction between attributes, attitudes and abilities, which makes it difficult to identify what type of standard it is (ibid.).

Secondly, they do not agree with national standards. What is the role of the worker, manager or individual according to these standards? The logic of performance standards is that all workers/employees in a similar occupation will have to perform to the same standard. This leads to a society with organizations uniformly good or bad, performing to the same standards. This scenario begs many questions, including the nature of a competitive strategy based on the worker. If competencies are to be interpreted as minimum standards, then firms will try to increase and widen them according to their needs, so that there will be little difference from the existing qualifications (ibid.).

Thirdly, the NVQ proposal to carry out an *objective* assessment leads to two suppositions in practice. A subjective human being (a supervisor) is turned into an objective assessor with a minimum of training. This is an ingenuous proposal: human beings are and continue to be subjective; furthermore, this supposes that the objectives of the supervisor coincide with the national standards, and that they can be uniformly controlled and applied in firms. The proposal ignores the complex relationship between supervisors and workers; for both there is much at stake and many factors which influence the assessment. The second objection is that by extending the system, we do not solve the problem: for each candidate there is the assessor, then the person who evaluates and assesses the assessor and finally the person who validates and supervises this last person. With all of this,

subjectivity does not disappear, but multiplies (ibid.).

Fourthly, a system of assessment based on national standards requires a sophisticated administration in order to avoid errors. A system of this nature involves cost and a medium or large firm would have to create its own system “in house”, which would demand more personnel and therefore higher costs. The evaluators can be an additional cost factor. This, in turn, would generate more paper work and time invested in putting the system into practice. All this is justified if the benefits are greater than the costs, but at first glance the benefits would have to be substantial to justify the expense (ibid.).

Fifthly, we have the basic question of what causes performance. Is it: i) the individual’s ability; ii) the individual’s motivation; iii) the organization? Each of these factors consists of a set of elements and it is worth asking whether a definitive list could be drawn up to permit the achievement of a national norm (ibid.).

## **7. TRAINING FOR LABOUR COMPETENCE**

One of the principal objectives of labour competencies is to help overcome the inertia or obstacles which up to now have inhibited firms from introducing dynamic training systems. This is particularly important in Latin America, where research indicates that training continues to be limited. This is partly because of the problems that firms face when putting training programmes into practice. Sometimes they do not know how to direct training to meet the firm’s objectives, sometimes also because training programmes involve cost and because of the fear that they might affect the whole salary structure. We referred to these problems in the first chapter.

Experience appears to confirm that the introduction of competencies in firms has placed training on the agenda. Even the most critical analysts of the NVQ system in the United Kingdom recognize that competence standards have helped organizations give more importance and a clearer profile to training. *“All initiative that has the effect of promoting discussion and leading to a decision of educating and training in work organizations is useful”* (Hamlin; Stewart, 1993).

Probably the main characteristics of training through competencies is the practical orientation and the possibility of continuous integration into the productive life of the worker. Competence implies solving a problem or achieving a result, which converts the curriculum into an integral education, by combining general knowledge, professional knowledge and work experience in areas which traditionally were separated (Gonczi, Athanasou, 1996). The

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### **Principal characteristics of a training programme by competencies**

1. The competencies which students will have to achieve are carefully identified, verified by local and publicly recognised experts.
2. The assessment criteria are derived from the analysis of competencies, their conditions explicitly specified and publicly available.
3. Teaching is directed to the development of each competence and to an individual assessment for each competence.
4. The assessment takes into consideration the knowledge, the attitudes and the performance of the competence as a principal source of evidence.
5. The students' progress in the programme is at a pace which they determine and in accordance with the demonstrated competencies.
6. Instruction is individualized as far as possible.
7. Learning experiences are guided by frequent feedback.
8. Emphasis is placed on the achievement of concrete results.
9. The pace of the instruction is individual and not based on time.
10. Teaching is carried out with didactic materials which reflect real situations and work experiences.
11. The study material is modular, includes a variety of communication media, and is flexible in terms of obligatory and optional subjects.
12. The total programme is carefully planned and systematic assessment is applied continuously to improve the programme.
13. Frequent large group instruction must be avoided.
14. Teaching must be less directed to lecturing on topics and more to individual learning.
15. Facts, concepts, principles and other types of knowledge must be an integral part of the tasks and functions.
16. The participation of workers and unions in the training strategy is required, right from the identification of the competencies.

Source: Adapted from Harris et al., 1991.

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advantages of a curriculum based on problem solving are (ibid.):

- it takes into account how people learn;
- it concentrates on genuine activities when deep learning is required;
- it gives more importance to teaching how to learn than to assimilating knowledge;
- it has more validity than a focus based on disciplines;
- it is more flexible than other methods.

Teaching through problems combines well with alternating training, which moves back and forth between classroom and practice. This addresses the problem of updating trained workers. It also permits

a better response, as a firm, to workers' expectations in terms of salary based on achieved competencies.

Another characteristic is the possibility of individualized teaching and modular progress, which permit individuals to match their abilities to training needs. Testing is also more stimulating because the standard which must be achieved is not a secret but is known beforehand and this directs the learning effort.

The characteristics of training by competencies had been identified by researchers at the beginning of the 1980s. A recent investigation into the application of these characteristics in training programmes in Australia showed that putting the whole set of elements into practice is still limited. That is, even though some of the elements were found in training programmes to a lesser or greater degree, there were few cases where all the elements were explicitly present (Harris et al., 1991). This requires that the education and training supply be simultaneously transformed in order to respond to the competence standards which are emerging.

## **8. STANDARDS AS A REGULATING INSTRUMENT IN THE LABOUR MARKET**

The standard, especially at national level, would initially facilitate labour mobility and would generate clear information permitting a better functioning of the labour market, internally as well as externally.

However, as previously mentioned, this is only partially true because the standard is only an approximation to what an individual supposedly knows how to do. Regardless of this restriction we can put forward the argument that it is better to have some reference than none.

In terms of the internal labour market, it is an instrument which makes it possible to link training with other elements of human resource management such as the salary system, participation, promotion, as well as the improvement of work organization. However, in a country such as the United Kingdom competencies have still not been linked with the salary system and changes in organization and management (Roberts, 1995-96). Conferences on this topic were being promoted in business and administration circles in the United Kingdom by 1996, which indicates that competence is penetrating organizational management.

With regard to the external labour market of the firm, standards

can be converted into dynamic information about what production demands in *terms of know-how*, thus guiding the training system. Standards also provide information about what workers know how to do. However, for competence to be recognized and understood by firms, a certain common basis of understanding is required, made up of signs which organizations adopt as their own. The challenge is to generate a system of *effective signs and symbols*, which can be employed by organizations as new elements in human resource management.

Certain structural factors can help make this system effective. These might include a common frame of reference; a certain degree of uniformity in the concepts; clarity, agreements and transparency in procedures; participation of the social partners; research on results, problems and methods of application; and mechanisms for an exchange of experience between firms.

This would improve employability, provided that the standards refer to transferable competencies and that the standards themselves are updated periodically. However, as pointed out in the first chapter, even though this would improve the possibility of people finding work, it will not solve the unemployment and underemployment problem which is very common in the Latin American region. What is needed is the development of competencies linked to the informal sector, a task which must be undertaken in countries where this problem is most acute, such as in Latin America. This is a titanic task which must be linked with other efforts to develop the informal sector.

## **9. CERTIFICATION OF COMPETENCE STANDARDS**

The certification of competence standards is the last stage of the system of competencies. Not the final stage, but the end of the first “round” which repeats in time, because competencies have to be updated and because it is supposed that workers pass from one competence to another. In this sense, the certification of competence is an iterative process.

Certification has three basic moments. The first is accreditation of the competence, which means validating the construction of the competence and the elements which make it up, according to the definition adopted by the country or by the agency responsible for accreditation. The second is accreditation of the institutions capable of assessing candidates and awarding certificates. The third moment is the formal certification of the person who complies with the defined requirements of the competence.

The assessors are key people in a competence certification system. The selection criteria for assessors include the following:

- Experience in the occupational function.
- Experience in supervision/line management.
- Will to move the assessment forwards.

The last point is fundamental. If line managers are not willing to take on assessment, they will not do it properly and the credibility of the system will be threatened. It must be known why the supervisors are not willing: do they feel threatened by the new system now that their abilities or lack of them are to be exposed? Do they consider it as an extra workload?

A pilot programme can be tried to start with. Generally people feel less threatened and raise fewer obstacles when they see that a system really works and works well. The pilot project has to be planned carefully and everyone must know what is happening.

Source: Hetcher, 1992.

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The United Kingdom has developed a very complex and comprehensive system of certification. It begins with a tripartite body from the area or sector which chooses a nationally recognized certifying body. These two bodies develop the competence and submit it to the National Council. Once the competence is accredited, which takes a maximum of five years, it is promoted amongst training firms, colleges, and enterprise-based training centres, which operate as assessment centres. The latter are accredited by the certifying body to assess competencies. In turn they train a production manager and/or area supervisors in the competence and its form of assessment. All of this intimidates the worker who must develop a strategy to obtain a competence (Employment Department Group, 1994).

In the United Kingdom the certification organizations compete amongst themselves to offer different competencies and 135 were registered by the end of 1995 (NVQ Monitor, 1995). The certifying body must satisfy certain criteria in order to submit any certification to the National Council, including: a) quality of the assessment guides delivered to the centres; b) criteria for accrediting assessment centres, including evaluating procedures which must be observed (Transcend, 1995).

The certifying body must supervise the quality control of the assessment process. For this, it names external supervisors who are qualified as external examiners. Their function is to supervise the consistency of the assessment, carrying out samples of the assessment process, examining the registers, and visiting the assessment sites periodically. If the systems of quality control are totally operative, they

inform the certifying body about any difficulty which arises and submit certification recommendations to the management of the certifying body (Transcend, 1995; Hetcher, 1992).

Within the firm a supervisor or internal examiner is designated, generally a person who works in the firm at the next level of management. The internal examiner checks the assessment and makes sure that quality control procedures are maintained. The internal examiner, in turn, is supervised by the external supervisor. This internal examiner must be qualified to carry out the task (*ibid.*).

The cornerstone of the whole certification system is the assessor who is in direct contact with the candidate or individual employee. The assessments require a very wide range of abilities, including: a) the ability to evaluate performance through observation; b) the ability to evaluate diverse evidence (documents, testimonials, knowledge and comprehension, portfolios, etc.); c) demonstrated knowledge of the occupation concerned. The requirements for assessors are normally fixed by the certifying body and/or the standards committee. In the United Kingdom there are five sets of competencies for assessors and supervisors: i) evaluate the candidate's performance; ii) evaluate the candidate using different sources of evidence; iii) verify the assessment process internally; iv) verify the assessment process externally; v) advise and support candidates to identify previous achievements. The evaluators must have the first two skills (*ibid.*).

This signifies that the training of assessors is a prior and very important task within the certification system. In particular, the following aspects must be covered (Hetcher, 1992):

1. Principles of assessment based on competitiveness.
2. The difference from other forms of assessment.
3. Utilising competence standards.
4. Rules of evidence.
5. Methods of assessment.
6. Room for flexibility and creativity.
7. Roles of assessors and individuals.
8. The structure of the guarantee of quality in which the assessment system operates.
9. Benefits of the assessment system.

The assessors also need support for the follow up and it is useful to establish networks of assessors and opportunities for the assessors to get together and analyse concerns, difficulties and successes. The networks offer an opportunity for assessors to analyse and identify any common training need which may arise, and to discuss feedback, assessment methods, interpersonal abilities, etc. (*ibid.*).

This reference has been taken from the NVQ model of the United Kingdom, which is totally articulated. The other extreme is found in the United States model, which has no nationally recognized knowledge base and which reflects the essential factors of a group of similar occupations. In the majority of cases the statement is still valid: "clients must watch that they are not tricked". That is, we cannot suppose that a person with a certificate has passed a test of abilities and knowledge in a recognized programme (Wills, 1995).

Even though the NVQ model is at first glance very comprehensive and congruent, it has also been the object of criticism. It may be supposed that the judgement of the assessor, which is the base of the system of NVQ certification, is a secondary question because the assessment criteria are specified with such clarity and detail that it seems that everything must function automatically. However, workplaces vary widely and therefore, each assessment process is complex, incremental and, above all, requires judgement. If the function of the sectoral bodies is to define and make the standards explicit, in practice it does not seem that this was so. *"In many cases norms are being created and, even though in given contexts they can serve as an appropriate mechanism to improve the practice of the sector, there exists the risk that many firms do not recognize or accept what is offered as a sector competence norm"* (Wolf, 1994).

The same line of criticism asserts that the supposed objectivity has led to a bureaucratic approach, as was mentioned in the section on evaluating standards (Hamlin; Stewart, 1992a). Another point is the training of assessors. In NVQ practice an induction of one or two days is mentioned, which seems very little in view of the complexity of the themes to be confronted. In the case of a manufacturing firm, for example, supervisors received a one-day training as NVQ assessors and spent two and a half days visiting other plants. Based on this they received their certificates as assessors (IDS, 1992).