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# PROFESSIONAL COMPETENCES: A CLASSIFICATION OF INTERNATIONAL MODELS

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# Abstract

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This article develops the conceptual goals of professional competences as well the origin of competences and the evolution of the concept. Responses are given to common questions such as: “what are competences really?”, “what do they involve?”, and “why is their importance growing?” The results of this investigation are shown through five models of professional competences, related with their corresponding international certificate of competence. With each model of competence, a brief description its historical context is made in order to clearly establish the characteristics and principal findings. Finally, the models are analyzed and compared.

## 1. Introduction

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Firstly, the origin of competences will be developed. In this section the evolution of the concepts of competences will be presented, and an analysis of the term ‘competence,’ based on its Latin root, will follow. Secondly, the article will concentrate primarily on defining professional competences. Thirdly, the article will study and analyse the models of competences, according to the following outline: brief description of the historical context, the model of competences and characteristics, and finally a comparison and analysis of the five models of competences.

Finally we will present our conclusions. Although much has been written about the topic of competences, there is no existent concise definition of the term competence that utilizes a wide range of authors and thus parallel developments according to their school of thought. For example, the definition of competence based on the workplace utilizes a specific approach that focuses on labor, whereas the definition based on behaviour requires a psychological dimension that explores the internal motivation and strategic approaches of individuals.

## 2. Competence: origin, concept, and analysis of the term.

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R.H White is accredited with the introduction of the term competence, as developed in 1959 [26]. However, the development and growth of the term “competence” can be greatly attributed to David McClelland’s research in 1998, from which he produced the article “Testing for Competence Rather than Intelligence.” Consequently, this led to many consultation projects in various businesses and research, as led by McBear&Co. It wasn’t until the 1980s that the idea of competences began to spread worldwide [2].

Based on a bibliographic study, it can be maintained that competence is a concept that belongs to the category of “wicked words,” a term that is used to describe words that are difficult to define.



However, international scholars and institutions have created some definitions, each of which can be applied to specific contextual uses of the word. For example: “Competence is conceived to be a complete structure of necessary attributes for application in specific situations. (...) This permits us to incorporate the idea of ethics and values into the elements of competence performance, the importance being the context and the fact that it is possible to be competent in varying manners” [9]. “It is the ability to respond to demands and carry out tasks properly” [24]. “There are certain qualities, beliefs, characteristics, and skills that give an individual the potential to develop the behaviorisms that permit the individual to successfully complete his role in a particular organization” [16]. “Competence is a package of knowledge, attitude, skills and relevant experience, which is required to be successful in a particular job” [11].

The word “competence” [17], comes from the Latin word *competentia* and “competent” from the Latin word *competens*. These terms are defined as: (a) ‘to struggle against another’, (b) ‘to go hand in hand with someone or something’. In Spanish the verbs *competir* (to compete) and *competer* (to be responsible for) express the first and second definitions respectively [25]. The noun *competencia* (competence) can refer to both definitions, which can often lead to contextual mistakes. However, the adjective *competencia* (competence) refers only to the second definition (for the first case we can also say competitor). In Latin, the word *competens* can also mean ‘adequate for something’, ‘suited for something’, ‘something that goes with something else’ [14]. An analysis of language and contemporary speech can identify six major uses of the term [12]. We are confronted with a multi-faceted concept of the word, which can generate much confusion unless it is adequately evaluated in context. The word competence has transcultural nuances wherein the meanings of this word converge but diverge in its specific definition [12].

### 3. Professional Competences

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The evolution of the concept of professional competences has been developed in various stages, taking into account various historical contributions of the concept as well as an open, flexible, and trans-disciplinary perspective. Sergio Tobón [23] presented the seven stages in history that constructed the concept of competences: Greek philosophy; modern philosophy and sociology; changes in the work world; education for work; cognitive psychology; and finally industrial organizational psychology. From all of these stages and from the point of view of professional competences and skills, three of these stages are of particular interest: the stage of the global changes, the stage of job education and training, and the stage of industrial organizational psychology. Conversely, Andrew Gonczi and James Athanasou indicate that competences can be categorized in three groups: competences as a list of tasks, competences as a collection of attributes, and competences as a holistic or integrated relationship [9].

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## 4. Models of Professional Competences

**The competence model based on the workplace** makes the concept of competence the basis of the functional definition of a job. According to this approach, to adequately define the term “job”, the competences required to efficiently work that job must first be established. The origin of this model is the foundation of scientific management, as proposed by Taylor and Fayol [22], and within this perspective falls the British tradition and the subsequent development of the National Vocational Qualifications (NVQs) [20].

In the model of competences introduced, by the NVQs the necessary competences for the jobs are observed, and then a series of required standards for each competence is decided. Subsequently the work is evaluated according to these established parameters. After this observation is completed, the learning and acquisition of new skills is planned in order to aid the workforce in meeting the requirements of each job [20].

The model is a mechanism to create a tangible measurement of the relationship between the measured variables. By creating specific requirements, the measurements stay within the model and able to be predicted. The foundation of motivation and knowledge for the acquisition of competences is not explicit and clear. In the NVQ model, it is assumed that both motivation and knowledge are factors that are exogenous to the system of competences, but rather are determined by worker himself and the worker’s production [8]. The NVQ system expects that the certification obtained in basic levels of competence directives would be equivalent to a college degree, while higher levels would be equivalent to a post-graduate degree.

**The competence model based on behavioral** theory defines competence as an underlying aspect of an overall psychology that includes motives, skills, abilities, self-image, and knowledge. This theory is based on the pioneering works of David McClelland, who maintained that the process of the evaluation of competences should measure something that evolves with learning and daily practice [26]. He recognizes that there is a minimum level of competence required for a job [2]. Defining characteristics of competences is they are measurable, can be generalized, and are viewed as an underlying characteristic of job performance. Spencer & Spencer [21] describe competences as an iceberg in which ability and knowledge are the visible elements of competences, while self-image, personality traits, and motives are the deeper reasons that allow the first to float.

A representative model of the American school of thought was proposed by Boyatzis (1982), and broadens the psychological element of competences to include two external aspects: the reality of the job and the environment or culture of the organization. The SCANS report [18] is a study that was conducted in response to the weakening of the North American industry to the industry of Japanese. It concluded that the most efficient manner of learning skills is “within context.” The report indicates a foundation of three elements (basic competences) that can be categorized as



basic skills, rational skills, and personal qualities, and includes 16 more basic competences. It also shows there are five practical competences: resources, interpersonal skills, information, systems, and technology, and is composed of 20 more practical competences.

In this model, competences are conceived as abilities, and reflect that the individual has the capacity to do something, but doesn't necessarily do it. This approach is weighted in the conduct of the individuals in the completion of their tasks and observes the specific results in a pre-determined capacity [1].

**The competence model based on business strategy** defines competence as a reality that permits the efforts of the company to be directed by a determined route. As a result, it requires specific abilities from its participants. This model presented itself in the advent of the post-industrial age of knowledge, and frames the concept of core competences as the new strategic approach. The principal founders of this model are Gary Hamel and C.K. Prahalad [15]. The change of perspective from organizations based on function to organizations based on core competences influenced the evolution of the definition of the term "competence," thus making reference to the internal developments that organizations undertake as part of its competitive strategy.

The core competences are communication, participation, and a strong commitment to the work, and should be established by the organization [15]. This strategic definition of core competences generated a new scope for defining a competent worker and competency in general, as a link to corporate strategy.

In this model exists one principal reason for adopting this approach: to create a competitive advantage through the development of core competences. By changing the approach of human resource management, the worker becomes the necessary force in generating core competencies. The proposal is to increase the concept of management training: the learning of theory, learning in the workplace, and learning the acquisition of competencies. Career development is not vertical as it is proposed in the work place approach, but rather is formed as lateral development, allowing the utilization of knowledge and competences to best resolve problems by using an overall vision and approach.

**The competence model based on a cognitive and motivational** approach adds importance to the consideration of aspects such as reflection in the work place, internal motives, culture, values, and ethics when discussing competences and their development. The model is based on the studies of Nicolay Foss [8], who suggested that to completely understand learning, motivation must be studied. Foss highlights the importance of self-motivation as an integral condition for learning. In this study and other similar studies, the importance of finding a relationship between cognitive processes and the motivation of the person and the business must be considered.

This model is applied to teaching methods, however it can be studied by the influence it has had in other models of competences. Despite this approach, in International Seminars on Competency-Based Training, only three models are emphasized: Behaviorist, Functionalism, and Constructivism, while the field of formal education emphasizes the Cognitive and Constructivist approaches [10].

Competences are attributed to cognitive activity according to the concept of linguist N. Chomsky [6], who defined competences as “the capacity and readiness for action and interpretation.” On the other hand, competencies and their indicators may be identified through the taxonomy of N. Bloom [2], which he created in order to categorize knowledge. Colombia is one of various countries to apply this approach, and the approach has since become part of the current debate between the intelligentsia of that country. The fact that the analysis of human competences is marked only by knowledge and performance, and fails to account for personal resources and the environment to which the person works in, is considered to be the cardinal limitation of this approach.

**The competence model based on a holistic approach** defines competence as a result of a mix of underlying personal aspects, such as communication, self-development, creativity, conflict analysis and resolution. The characteristics indicate the most important goals for competences, which allows for the existence of cognitive, functional, behavioral, and ethical competences that together determine professional competences. The characteristics allow for comprehensive concepts about competency to vary. Delamare and Winterton [7] consider the starting point of the individual and then deepen into distinct levels. Schneckenberg and Wildt [19] maintain that the context and values are important parts of competency. Cheetham and Chievers [5] base their definition on the reflection of the worker, whereas Schon disregards the necessary assumptions for the development of a competency as knowledge, learning, and other goals for competencies. Cardona and Chinchilla [3] present a different vision of managerial competence, distinguishing three types of capacities: those who guide organizations through taking advantage opportunities that present themselves in the surroundings, those who work in harmony within the environment and generate a pleasant work environment, and those who self-manage.

In the model of competencies developed by Cheetham & Chivers [6], competence is defined as the result of a mix of underlying personal traits, such as communication, self-development, creativity, and conflict analysis and resolution, which outline the most important goals for competence. These in turn permit the existence of cognitive, functional, behavioral, and ethical competences, and together determine professional competence. Such self-reflection in the work place and the execution of tasks begins the process of competence generation, using reflection as the catalyst for the generation of competences.



Table 1. Comparison of Competence Models

Model of Competence Based on					
	Workplace	Behavioral Theory	Business Strategy	Cognitive Approach	Holistic Approach
<b>Characteristics</b>	Established based on the essential functions of the individual, which significantly contribute to the desired results. The function of the worker should be to understand himself in relation to his tasks and his other functions. In order to establish competences, he diverse relations in the organization and the results of the workers and their abilities, knowledge, and attitude must be compared. Performance standards are developed and set by the industry. Standards are based on results. It is conceived that abilities reflect the capacity of the individual. Sectors agree on set marks for competent performance.	Competences are conceived as abilities that reflect the capacity of the individual, and describe what it is necessary for him to do or no necessarily do. This approach primarily is defined by the conduct of the individual in his job performance and observes specific results from a pre-determined context. The groups of competences are developed through research that is based on excellent performers. Standards are orientated towards results. The specifications for a superior performance are defined by educational research.	Competence is a reality that allows the direction of efforts in the company to be a set path, and therefore requires certain abilities from its participants. It introduces the concept of core competence.	Competences are attributed to cognitive activity, which is defined as "capacity and readiness for action and interpretation." On the other hand, it identifies competences and their indicators based on the taxonomy of N. Bloom (used by Bloom for categorizing knowledge).	Competence is defined as the result of a blend of underlying personal attributes, such as communication, self-development, creativity, conflict analysis and resolution. The aspects form the superior goal competences, which permit the existence of cognitive, functional, behavioral, and ethical competences, which together determine professional competence. This is a reflection of the workplace itself and the execution of the task is the catalyst of the process of generating competences. The formation of a reflective and critical individual, significant and innovative learning through collaboration, the co-leadership of learning and teaching, and the development of fundamental competences that are transferable and transversal are fundamental to this approach.
<b>Field</b>	Labor	Labor/Educational	Labor	Educational	Labor/Educational
<b>Approach</b>	Empirical	Behavioral	Behavioral	Constructivist, Rationalist, Empirical	Gestalt, Systematic, Existentialist
<b>Related Organizations</b>	QCAD, Ofqual	NCEE-NCCA-ICE			
<b>Certification Systems</b>	NVQ-GCSE	SCANS-PMI			IPMA
<b>Limitations</b>	Analyzes the functions of the business and not the competences of the individuals. The objectives and functions of the business are formulated in terms related to the job: market, technology, social institutions and relations.	Predominately is based off of observation of the conduct of the individual when confronted with a task based on what the job description requires, rather than what he really does, without taking into account personal qualities.		Evaluates the competences only based on knowledge and performance, with accounting for the other personal resources and setting in which the work performs. This is the main limitation in this approach.	
<b>Initial Development</b>	United Kingdom	United States	Japan, USA	European and American school of thought	USA, Spain, Puerto Rico, United Kingdom

## Conclusions

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Presently, there is no agreement in academia to define the term competence. The main concepts are associated with fields that are developed by the philosophical approach to which they belong. However, in the aforementioned definitions of competences, certain characteristics can be distinguished:

- a) The components of professional competences are a composite of personal attributes (capacities, motives, personality traits, self-image, aptitudes, attitudes, values, personality, etc.) which complement and integrate themselves in conjunction with other elements that are related to contexts of work (knowledge, abilities, skills, values, behaviors, actions, experience, etc.).
- b) The use of professional competences and their context in jobs refers primarily to the efficiency, effectiveness, and successfulness through collaboration and problem solving in which the task was carried out. It also refers to the capacity to cope with changing professional contexts.
- c) The evolution and evaluation of competent professionals. Considering that competent professionals are formed in a changing context, it is reasonable to deem that they also need to evolve. The evaluation of competent professionals is a challenge that must be assumed, especially if the need for certification is expressed.

The work place based approach has shed much light on the concrete application of competences in labor practices. The recognition of the experience of the worker and formal recognition for these competences are positive elements that have driven this focus. However, this same approach is biased towards the organization, and overlooks the worker. In contrast, the behavioral approach theory highlights and the worker's role in innovation and generation of changes. This focus has slanted its opinion toward the internal psychology of the worker, but does not necessarily explain how these thoughts are oriented towards the organization and the process of including oneself in it. In both approaches it is evident that rationalism and empiricism are underlying ideologies. They seek to explain human behavior in the workplace within a closed, determined model.

The underlying empiricism in the model based on business strategy defines competence as an observable and quantifiable behavior (and the measure of this as scientific, objective, and neutral), and has permitted the measurement of competences based on a scale of one to five. Its recent development and application in various types of businesses within the system of competences has already been included in integrated information packets. It seems that managing people can be almost impersonal, using "concrete and objective" arguments in order to make decisions about the people within the organization. However, this model may be disregarding the most important elements of the individual: his interests and his virtues. Therefore, it is best suited to the scientific direction of Taylor, adding an additional component by stating that competence should be defined, measured, and re-evaluated after improving or learning new competence.



Similar to the aforementioned models, the cognitive-motivational models also do not explain how the individual learns within his job and how the organization is capable of generating the integration between worker and business. The manager seems to play an important role in the business.

The models utilizing a holistic approach to competences consider the complexity of the integration of knowledge, abilities, and skills. It acknowledges that the individual is permitting himself to have or not have a successful performance. It incorporates ethics, values, and reflective practices as elements of a successful performance. It is the least simplistic of the studied models and analyzes and contains essential elements that facilitate its direct application to professional competences.

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