

Acercamiento epistemológico a los problemas del diseño curricular por competencia

Epistemological approach to competence curricular design problems

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Resumen: Se hace un estudio teórico de los componentes del concepto de competencia para reflexionar sobre su formación. Para ello se utilizaron métodos del nivel teórico entre los que se encuentran el análisis y la síntesis, la inducción-deducción, los cuales permitieron concretar a partir del análisis documental como método empírico la propuesta de elementos a tener en cuenta en el diseño curricular por competencia. Se proponen, además, los modos de acción, los valores profesionales, y las competencias profesionales de cinco carreras que se cursan en el Ecuador.

Palabras claves: Competencias; Competencias profesionales; Diseño curricular; Actuación profesional.

Abstract: A theoretical study is made of the components of the concept of competence to reflect on their training. For this, methods of the theoretical level were used, among which are the analysis and synthesis, the induction-deduction, which allowed to specify from the documentary analysis as an empirical method the proposal of elements to be taken into account in the curricular design by competence. In addition, the modes of action, professional values, and professional competencies of five careers in Ecuador are proposed.

Keywords: Competence; Professional competence; Curricular design; Professional performance.

Introduction

In each historical period, education has marked objectives corresponding to the needs of each period, modeled in the curricular designs that are manifested in the performance of each professional. Currently most of the professional performance is limited with social correspondence; therefore, we need to address a curricular design by competence from higher education training. For this, the contributions in competition of D'Angelo (2000), (2005) are taken into consideration; González (2002); Tobón (2006a), Rodríguez (2007); Colunga, García and Blanco (2008); Zorob and Portuondo (2008); Díaz (2009); Valdés (2009); Miranda (2009); Portuondo (2011), where it is denoted that epistemologically there are several

problems in relation to competences, which negatively affects the scientific nature of the curricular design. Competency-based training has a number of important advantages for higher education. Among other aspects, it can be pointed out that the use of this approach allows a better expression of the competencies graduates have when they graduate, which facilitates the transition process that takes place between the end of studies and the incorporation to the labor exercise. This is how job placement at the end of a career is made more expeditious because both employers and the graduates themselves have more information about what the latter are able to do or what they can do with quality and efficiency, being the institution that guarantees this.

Competency-based training reveals the inadequacies of the faculty that is subject to performance, and in several universities there are teachers who have never ventured into production or services. It is not enough the theoretical evaluation, it is necessary to show evidences of performance, that neither is a photo of people working, is the impact that they cause in the teaching activities.

Another conflict is found in the design of the curriculum that has in its content the formation of specific competences (professionals, and of subjects or discipline), and generic or transversal competences. What has happened is that they have increased in number, their training being very constrained, and if we add the meager times available in the curricula for the work activity, it can be understood that the possibility of performance in the curriculum is impossible, especially if it is taken into account that the concept of competence is not a mere task, function or behavior.

All the foregoing has led us to consider the need to propose elements that must be present in the curricular design by competition, which influences that the design of the curriculum is established from the profession and not based on specific theoretical contents.

Development

At the end of the 20th century, professional training in Latin America could not continue without providing results of impact, the effects of economic crises and the little funding available to governments for higher education were added and created a series of shortcomings that they sharply lowered the quality of this.

Already at the end of the last century, the economic, environmental and political crises originated by the developed countries worsened the precarious and unsustainable economic situation of the developing countries that only managed to solve the lack of financial resources at the cost of continuing to decrease

the budget for health, social security and education, which considerably increased the contradiction caused by neoliberal globalization.

In a contradictory way, this caused that, on the one hand, professionals capable of developing science and increasing the productivity of work were needed and, on the other hand, training did not guarantee the development of creativity and the cognitive independence of the graduates. All this contributed to further decrease the quality of higher education.

The aforementioned situation was resolved by means of accreditations that were aimed at administrative matters, while the training process remained equally deficient. This evidenced the need for a training where students achieve a know-how suitable for the professional world, that is, an efficient performance. So it was necessary to appeal to a concept introduced by Noam Chomsky in the 1950s, that of competition.

However, later this term has been used without any epistemological basis, purely in an etymological sense, and so emerge the terms of ideological competition with Verón 1967-1970, communicative competence with Hymes 1971-1974, encyclopedic competence in 1981, discursive competence in 1982, poetic competence in 1998, semantics in 1998, pragmatics in 1998, and hermeneutics in 2000. And in the field of education: didactic, epistemic, methodological, research competence, among others, in 2000.

On the other hand, due to migrations that sought an escape to the situation described above, it was necessary to create a system to standardize the technical professions from one country to another, and thus qualify technical skills associated with a salary. The term adopted by technological education for homologation was also the term of competence, which caused its original meaning to be lost (Portuondo, Verdecia and Díaz, 2009).

The concept of competence that was introduced in higher education was contradictory in itself since the two dissimilar meanings - the utilitarian and the capacity in action - remained uncritically in unity from the epistemological point of view as the basis of the concept, which led to the non-affordability of it, and this led to the emergence of endless interpretations of the concept.

Epistemologically there are several problems in relation to the competences that affect the scientificity of the curricular design. The first one is given in its structure, some authors reduce it to knowledge, skills, or abilities, without or implying values, and there is also the mixture of some of them as can be seen in the

examples of competence given by the Tuning reports from Europe in 2003 and from Latin America in 2008.

In this sense there is a large number of specialists who emphasize that the competences are structured by these content elements, which we can notice in the definitions of Ouellet (2000), Tobón (2003, 2006a, 2006b), Miranda, (2009), among others. However, it is not indicated how competences will be formed, which shows how dissimilar in time and space there is to assimilate a knowledge, or form a skill, or reinforce a value. In this way the curricular design is left undefined.

Another group of authors specify that the competition has a complex structure of attributes that serve for performance, among them D'Angelo (2000, 2005), González (2002 and 2011), Tobón (2006a and 2006b), Rodríguez (2007), Colunga, García and Blanco (2008), Zorob and Portuondo (2008), Díaz (2009), Valdés (2009), however, some do not specify within their definitions the need for competences to be formed in performance, generating the false conception about separating the formation of performance (Miranda, 2009). In this regard, Portuondo (2011) explains that:

(...) The model of training by competence cannot be analytical empirical in which the sum of the parts is the whole, the separation of the formation of performance, apart from leaving the productive activity a responsibility that does not correspond, is only possible if the training is part of the whole and that all integrated is in performance, where there is nothing isolated, or knowledge, skills, or values, there is only work, but in the hands of training and not as a product of the training or professional experience, which I do not deny that competences are formed with the latter, but at an inordinately long period of time. (p.14)

If it is accepted that the formation of competence must be developed through performance, then such training must be endogenous to the university curriculum. However, the academicism with which the curricula are designed has reduced the time of the work activity, which is evidenced by the meager number of hours that the curricula show worldwide (Portuondo, 2011).

Consequently, if the number of hours devoted to job training is small, only a small number of competences can be formed throughout the curriculum. However, perhaps due to a confusion of the terms competence and abilities, different authors intend to develop competences in different subjects, which is against time for the formation of professional competences that are definitely those that are questioned in training and which are decisive in the solution of social needs. In this way, there are performance activities that have nothing to do with professional performance.

In the scientific literature, competences are classified as generic or transversal competences, and specific competences. The specific competences are the professional competences, because they are those specific to a given profession, while the generic competences are competences inherent to the professional, so they are the same regardless of the profession.

Proof of this is what was stated in the TUNING-Latin America report in 2008, in which 30 generic competencies are required. On the other hand, in this same report 20 specific competences for the Business Administration career are defined, which should have been declared as professional competences. However, if you intend to develop 50 skills in a career, with a time of labor activity invaluable, in addition to the skills that aim to develop specific subjects, the impossibility of achieving such an aspiration from a curriculum design would be evident.

Tobón (2010), in order to remedy these insufficiencies, proposes the development of training projects that, in some cases, move away from reality and appear modeled, but the most significant thing is that in a context where teachers do not make or update Class plans, and where the design of a research project is difficult, is unlikely to outline a training project with the required quality.

In addition, it has identified ten essential actions carried out by teachers with the greatest impact on the training of competences:

1. Ensure that students have clarity of the goals to be achieved in the formation of mathematical competences, with clarity of the expected learning. For this, the teacher must identify the curricular standards and act with relevance.
2. Ensure that students have relevant context problems to apply processes of identification, interpretation, argumentation, resolution and testing.
3. Ensure that students are trained from previous knowledge. Based on the previous knowledge it is necessary to connect the new learning.
4. Ensure that students perform activities relevant to the learning expected in the mathematical competences, articulating the competences of the other subjects.
5. Ensure that students are in a process of continuous improvement in accordance with the expected learning. For this it is important that they dialogue in pairs or groups, and with themselves, before, during and after the application activities. This way they will be able to recognize their mistakes and improve.

6. Ensure that students have the opportunity to work on their ethical project of life and strengthen their attitudes so that they have the necessary disposition toward the formation and application of competences.
7. Ensure that the evaluation is a continuous process of assessment of the achievements and aspects to be improved, with identification of the levels of proficiency that students reach in the process, applying self-evaluation, peer assessment, hetero-evaluation, socio-evaluation and meta-evaluation
8. Ensure that students carry out collaborative and team work activities so that they complement each other's skills, attitudes and knowledge, and support each other mutually.
9. Ensure that students have the best possible scenarios for training with tools, equipment, materials and bibliography that help develop the skills that are intended as goals. The classroom environment should be warm, comfortable, trustworthy and respectful.
10. Ensure that communication between teachers and principals, between teachers, families and students, and between the students themselves is clear, cordial and respectful. Tobón (2010, s. P)

It is necessary to identify the specific competences to be formed, and to conduct the curriculum so that all the subjects contribute to it. It is important to establish that within the competence is creativity, so it is considered that a person who is competent is creative, which manifests itself in a reflective and creative performance.

For its effects, the conception of competence given by González (2002), Valdese (2009), D'Ángelo (2010), and Verdecia (2010) is denoted, which, from the point of view of psychology, place it in the personality system.

In this regard, Valdés (2009) specifies that:

(...) The competences constitute a psychological configuration that, through self-regulation, integrates motivational and cognitive formations of the personality in orientation and execution with quality of activity and communication in the face of contradictions of the reality that the subject values as significant, with the goal of contributing to sustainable personal and social development. (p.7)

We agree with Valdés that within the concept is the significant of the problems to be addressed by the subject; otherwise the active character of the personality would be lost. However, it is necessary to ask

ourselves to what extent what is significant includes action commitment, so we need them to be meaningful and mobilizing, with which performance is guaranteed by regulating their actions.

As González (2011) correctly points out: "Quality in professional training depends not only on the knowledge and skills developed in the university curriculum, but also on the interests and values that regulate their professional performance" (s p).

Therefore, only when the values constitute reasons for the subject's performance they do become true regulators of their behavior. That is why it is necessary to present the elements that, in our opinion, motivate the students before their profession and must be taken into account for the curricular design based on competences. These are:

1. Start from a small group of specific competences (professionals).
2. Reaffirm the profession in the students (motivation).
3. Form from problems of the profession (to ensure the development of creativity and cognitive independence).

These elements express the need to start from the profession, which is assumed as a legalized activity through a school system, which forms and develops competences in man aimed at satisfying specific needs of social development, related to an object and its environment (objects and subjects) (Portuondo, 2011).

The profession acts directly on the object of the profession, for Álvarez (1999), it includes both the modes of action to solve the problems, that is, the way in which the graduate solves the problems, as the object of work that is that in where those problems manifest themselves. These two aspects are dialectically interrelated and mutually conditioned since on the basis of what the graduate works with, the type of activity he develops is determined and vice versa.

The essence of the mode of action of the professional is in the application of the general methods of the profession, and the form is the organization that is externally visualized in reality and the general qualities that qualify the professional's behavior in practice.

Thus, Felix (2010) considers the modes of action as methods that make up the essence of the professional process in the solution of specific professional problems, in other words, what the professional does that differentiates him from another professional; and the forms of action to the form that the process of the professional acquires in the reality, that is to say, what all the professionals who belong to a professional

area (engineers or graduates) do. So both are constructed as a dialectical pair between the content and the form of professional processes, and are synthesized in the mode of action of the professional.

Por ello es importante incluir un concepto más: cualidades en la acción (valores profesionales), que son los rasgos generales que se manifiestan en la conducta de un profesional específico (Portuondo, 2011).

The modes of action, to be considered the specific methods of a profession in conjunction with the qualities of action can become professional skills. These appear in table 1.

PROFESION	ACTION MODE	PROFESSIONAL VALUES	PROFESSIONAL COMPETENCE
Agricultural engineer	Conserve, recover and optimize agricultural land	Responsibility, commitment, honesty, ecophilia	Conserve, recover and optimize agricultural land with responsibility and honesty, seeking to reduce erosion, pollution and degradation, preserving Ecuadorian land to sustain and raise quality agricultural production
Agroindustrial Engineer	Produce technologies for the production of food of agricultural and bio-aquatic origin	Responsibility commitment, ecophilia, honesty	Produce technologies for the efficient production of agricultural foods that do not threaten the health of Ecuadorians, ensuring that prices are affordable to the population and that they do not affect the environment
Business manager	Manage the human resources of an organization.	Responsibility, assertiveness, leadership, commitment, humility, authority	Manage human resources with leadership, assertiveness and empathy in order to increase organizational quality and contribute to the development of Ecuador
Architect	Project urbanizations	Responsibility, creativity, reliability, honesty, ecophilia	Project efficient urbanizations and in balance with the environment and culture for the realization of social relations of production and associated

			with good living that reflect the cultural identity of Ecuadorian.
Degree in tourism	Manage natural, scenic and cultural resources to develop tourism activities or services.	Responsibility, creativity, reliability, ecophilia	Manage with responsibility and creativity natural, scenic and cultural resources with activities or tourism services aimed at achieving sustainable human development in Ecuador.

Table 1. Professional competences
Source: self-elaboration

A study carried out by Felix (2010) culminated in the design of the Electrical Engineering degree, in which seven modes of action were specified. Portuondo (2011) finds four modes of action in the Chemical Engineering career.

This allows us to affirm that the number of modes of action of a career is between four and eight specific competences, this shows that professional competences are expressed through the forms of action and not the modes of action, which can be observed in some curricular designs which include professional competences such as: design, repair, maintenance, etc., which in themselves are forms of action, since these activities are carried out by all engineers. This increases the number of professional competences in an excessive way, which complicates training.

Conclusions

Competences education has become so popular that those who work for it have forgotten the deficiencies that still exist in the theory of curricular design, such as the short time available for work in current curricula that make endogenous performance impossible for the curriculum. Therefore, to apply the curricular design for competences, it is necessary to take into account the training time of the competences and the elements that motivate the profession.

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