Competences development from the perspective of college professors: study in social representations*

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Abstract

The purpose of this research is to identify the development of academic competences in college teaching from the professors' perspective, with the contribution of the theory of social representations. To collect information, the instrument called the Free Word Association Test, possessing a projective ethos, was applied to 154 college professors from three private institutions in Distrito Federal (BR). The prototypical analysis was a product of the *software* IRaMuteQ, which analyzed the words mentioned by professors when the inducing expression *develop competence's academic is…* was used. The central nucleus was composed of the following words: training, competence, reflection, fundamental, responsibility and development. On the other hand, in the contrasting elements the terms scientific, ethical, autonomy, focus, ability and planning emerged. These data point to the promotion of the learning process based on the active and interactive conception of the process, with the student as the protagonist. The data show the construction of knowledge, appropriation of different knowledges, mobilization of doing and the theoretical-practical articulation within a humanizing, ethical and aesthetic perspective. Still, it can be recognized that the development of competences is not restricted to the operative dimension, but involves the technological, methodological, didactic, relational and it is also linked to the sphere of work, in addition to the social, cultural and professional aspects being inseparable. It is a professional teaching project that assumes a vision of society in which the ethical process and the political, methodological, operational, technical dimension interpenetrate and are transversalized by the humanist perspective, so that commitment, responsibility and reflection are constant demands transformations in the world of work and social problems.

Keywords

Competences development – Social representations – Central Nucleus – College Teaching – Contrasting elements.

Educ. Pesqui., São Paulo, v. 46, e217461, 2020.

1

Introduction

Competence can be defined as a set of knowledges, qualities, competences and aptitudes that enable to the selection, positioning and decision-making, as well as the resolution of a situation or problem within the scope of work activity, integrating diverse knowledges (scientific, daily, technical, methodological, axiological) to develop it (TANGUY, 1997). Thus, an educational model emerges in which notions such as competence, *savoir-faire*, objectives, projects, evaluation and even the proposal for a pedagogical contract orbit within its radius. This model unveils the transition from a teaching process centered on disciplinary contents towards competences, identifiable in programmed pedagogical activities and teaching-learning situations.

Rios (2010) enriches the reflection by conceptualizing competence as a set of situations that are based on the technical, political, ethical, aesthetic and informational basis resulting from the work trajectory in a socio-cultural context, not being restricted to knowing how to do or the mere application of knowledge. They also involve cognitive actions to deal with the complexity of the world and the challenges that arise in daily life, from discussions about the employability, minorities, human rights and citizenship, the globalization and its impacts. In other words, it is ultimately a set of events that affect the universe. For this reason, competences must be placed in favor of the full exercise of citizenship, based on the mastery of communication, interactional, interdisciplinary, multidisciplinary and transdisciplinary knowledge. In this case, one of its characteristics is the updating of knowledges: scientific, technical and technological, *praxis*, interpersonal, etc.

In this case, education should promote the articulation of the teaching-learning process, involving analysis, synthesis, contradictions, counterpoints, generalizations, as well as a theoretical, practical, didactic, methodological framework based on and for social reality. This process is being updated because it is associated with the generation of new knowledge through the integration of knowledge, attitudes, competences and, on the other hand, education must adopt a citizen and humanist perspective, thus being recognized as a social practice.

For this purpose, the learning process should work with problem situations, case studies, simulations of the various pedagogical strategies to the interactivity and the teaching role in order to reflect the reality of the moment. It is linked to the selection of material, the relevance of what will be taught, the complete analysis of the reference phenomenon, in short, the meanings of what to teach, why to teach and how to teach. It should be added that the pedagogical process must be substantiated by the procedures and methods, highlighting the chosen didactics and the educational commitments assumed. Students must take an active role, and at the same time, the teacher must respect the individualities, rhythms and peculiarities of learning. In this sense, the contents are simply not enough for the student to learn by abilities.

Zabalza (2014) advocates that the didactic ecosystem must fundamentally endorse the analysis of the demands and needs to achieve the objectives, content lecture and the dynamic forms of evaluation. The author, however, points out that there is no specific

methodology for the mastery of competences, but rather strategies employed that emphasize diversity, not prioritizing only content, but attitudinal aspects such as know-be and procedures, such as know-how.

Medeiros (2016) grants the conception of competence an affective, cognitive and complex dialectical dimension, composed of knowledge, practices, ability, knowledge, attitudes and aptitudes that present themselves individually or collectively, using reflective, selective and new clothing processes to solve situations that emerge in life and work. This perspective is based on relational epistemology, understanding the multi-referentiality[3] as a substrate present in the direction of problem solving, in everyday situations and in the face of unpredictability and the impossibility of repeating the experience.

Silva and Nascimento (2014) contribute to the theme by indicating that there are transversal competences. Thus, they rescue the dimension of learning and creating, undoubtedly, resulting from the possibility of transposing a given context to a new one, calling for new articulations, implying the re-reading of the situation, reconfiguration of strategies and contextualized reconstruction of the knowledge to mobilize for action.

The other side of the coin, which is closely linked to competencies, are the abilities that are inseparable from the action, whether physical or mental, but require knowledge domain. In this way, they are related to know-how, to intervene and to act on objects and people. Thus, identifying variables, understanding phenomena, relating information, analyzing problem situations, synthesizing, judging, correlating and manipulating are examples of competences (MORETTO, 2004).

Oliveira and Lacerda (2007), based on Katz, identify and subdivide competences in: human, conceptual and technical. They emphasize that human ability reflects the ability of the professional to interact with others by entering the group and contributing to ensure its uniqueness and organicity to, effectively, deal with situations, problems and phenomena involving parameters such as communication, leadership and motivation, favoring teamwork/groups. The conceptual one is subsidized by the cognitive processes, establishing interrelationships between ideas, principles and concepts to carry out activities. In technical competence, understanding, effectiveness and proficiency in specific work activities stand out, crossed by the sphere of techniques, methods, instruments and instrumentals that constitute the specific functions of the professional.

Kuenzer (2000) warns that the concept of competence is the focus of controversies and dissent in the educational space. The author emphasizes that ambiguity; polysemy and multiple understanding of competence then generate antagonistic attitudes, while their denial is imbued by the ideological conceptions of certain positions, not recognizing it as an element of reality in the world of work. On the one hand, the discourse on the construct perceives it as a notion of accumulation allied to the neotechnicism, dressed in a new form of improvement and control, supported by the capitalist notion. There are those who adopt a *naive* stance, accepting the emancipatory perspective present in his proposal without producing a systemic

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3- Plural, heterogeneous and complex perspective, which aggregates several theoretical currents. This is a new epistemological perspective in the construction of knowledge about social phenomena, especially educational ones.

analysis between education, work and society. Finally, there is an aspect that accepts and incorporates in its educational paradigms without deepening the discussion.

In this sense, the researcher clarifies that the new configurations of the world and in work management, considering the rapid changes, generation of new fields of work activity, with qualified professionals, assumes that the competences come from scientific and technological knowledge, in addition to the socio-historical with different impacts and demands in the social and labor universe. This situation must be analyzed with reference to research that makes it possible to characterize the practices that it increases, while functioning as a conception of competence.

The characteristic polysemy of the *competence* construct and its transformation, originally from the world of work and its translation into the educational context, causes changes in practices, methodologies, didactics and pedagogical reflections, being a fertile ground for investigative proposals in the theory of social representations. This theory can offer subsidies for the understanding of the process of penetration of the notion of competences in educational paradigms and of the perception and appropriation by different groups of teachers, as it allows the identification of the symbolic character and the signifiers of a representation and its dialogical condition between common sense and the reified universe, its active and constructive aspect and the genesis of the object of study (JODELET, 2000; MOSCOVICI, 2012).

The theory of social representations as an epistemological, methodological, research and social intervention field is based on the principle that reality is continuously interpreted, reordered and inserted in the cognitive and social system of the groups and individuals that integrate them (ABRIC, 1994, 2001, 2003).

Importantly, Moscovici (2012) establishes the foundations of the theory of social representations with the pioneering study *La psychanalyse: son image et son public* (Psychoanalysis: its image and its public), published in 1961, immersing himself in research on how lay people from different backgrounds and the media of the time, in France, appropriated the knowledge pertinent to psychoanalysis, through common sense. For this reason, the great theory, as the studies of Moscovici (2012) are recognized, launches the framework of analysis that allows the investigation of the genesis, structure and processes of a social representation, without the intention of exhausting all its possibilities. Almeida (2005) reiterates that the great theory has a dimension aimed at proposing primordial concepts with general characteristics in order to give rise to specific studies that broaden the scope of the theory.

Moscovici (2012) states that all representation comes from the subjects' need to integrate the unfamiliar, the strange, the not understood in the familiar. When building these shared theories by making familiar what was previously strange, they will function as a sieve for reading the flow of information, designs, concepts and phenomena captured in the social world. The researcher points out that they are "almost tangible entities; they circulate, intersect and crystallize continuously through speech, gesture, meeting in the everyday universe" (MOSCOVICI, 2012, p. 39). He stresses that there is a "symbolic substance" that permeates its construction and the practice that is the product

of this elaboration, stating that it is not possible to achieve a separation between the external universe and the subject or group. The representations are not restricted to an unfolding, a mere repetition or reproduction of the object. It is a reconstitution, a retouch, a modification, which allows specific meanings in its context.

Social representations: contributions of the structural approach

One of the exponents of the Theory of Social Representations is Jean-Claude Abric, who proposed the Theory of the Central Nucleus. Abric (2001) states that the theory of the central nucleus is based on the hypothesis that all representation is structured orbiting around a core, which gives it organization and meaning. He adds the proposition that the central nucleus (CN) has two facets: the nature of the object represented and the interaction between the subject and that object, whereas that the absence of some of the elements would empty its meaning or would lead to a construction different from what was proposed. He warns that, despite the importance of the content, the meaning of social representation is given by the organization of that content. After all, similar contents can generate different representations (ABRIC, 2003), in this case, the democratic perspective in European countries and the same vision in those who live in a totalitarian regime are closely related to the practices and experiences of the groups.

Sá (2002) highlights the unique contribution of the structural approach to the analysis of social practice and the field of investigation in a more heuristic way. He resumes initially that his forming process took place in Abric's Doctoral Thesis intitled *Jeux, conflits et sociales représentations* (Play, Conflict and Social Representations), which opened the way to the experimental study of social representations, revealing its organization. In summary, the CN functions as a subset of a representation that includes one or more elements that are stable and resistant to change.

Regarding the role of the CN, Abric (1996) postulates that it is configured by the following standards: stability and inflexibility that ensure its structure, composed of rigid standards and rules that do not threaten the representation. Thus, the norms ensure the normative dimension and the functional rules. He recalls that Moscovici emphasizes that values are important components of this core unlike those that emerge from the periphery, because they are based on the *rules of life* instead of facts; therefore, they express the non-cognitive of a representation. Abric (2003) still increases the proposition to indicate that it is possible to notice the socioideological system as well as the history of the previous group.

Sá (2002), by recovering Abric's propositions on the Central Nucleus and the peripheral system, provides the first as a subset of elements that is coupled to the other complementary structural elements. As for the NC, two essential characteristics are established: the functional one, which reflects the subject›s actions in the face of the phenomenon, and the normative one, linked to the socio-affective, social or ideological aspects that demarcate the representation.

However, elements that are called peripherals emerge around this core, mainly because they increase the functioning of the representation system, crediting its concreteness. Wolter, Wachelke and Naiff (2016) added that the latter set may be deleted without affecting the perception of groups about a given representation. Due to their flexibility, it is admitted that the consensual condition is not *sine qua non* and they maintain little proximity to the material present in the central nucleus.

The peripheral elements are considered to be available psychological schemes with varied functions, one of them is prescriptive and the other one is descriptive, which make it possible to characterize the real, regardless of the central nucleus. The following references are part of its set: (a) integration of the subjects' experiences and stories; (b) group heterogeneity; (c) degree of flexibility and incorporation of contradictions; (d) evolutionary capacity and sensitivity to the immediate context; (e) it favors the adaptation to the lived reality and the differentiation of the CN material; and (f) shock troops that protect the CN from external threats (BINGONO, 2011). Sá (2002) advocates that the elements of the periphery also update the representation and contextualize the normative dimensions by generating flexibility, mobility and accepting the changes arising from the immediate context. Consequently, the functions of regulation and adaptation established by the immediate situations of the group and the function of the individual modulation that integrates the person's history with representation are observed. In the case of teaching, the changes that occurred in the teacher-student relationship are now visible under the aegis of bidirectionality; the student as the center of the process existing as its protagonist and, therefore, promoting didactics and interactive teaching methodologies.

In this sense, the purpose of this research is to identify the development of academic competences in college teaching in the professors' point of view. Therefore, the theory of social representations' contribution will be thoroughly used. It is worth mentioning that the present research was submitted to the Ethics and Research Committee of the Euro-American University Center (Unieuro), technical advice no. 083/2016.

Method

The studies of social representations combine, admittedly, a variety of instruments elaborated exclusively or not for the theory (SÁ, 2002; ALMEIDA, 2005; CAMARGO, 2005). They extend from questionnaires known (open and closed), interviews, boards, design, through ethnographic approach, associative techniques etc. (OLIVEIRA, 2005). In this paper, we will present part of the data from a survey that used a free word association questionnaire and an interview. Only free association data will be analyzed here.

Participants

154 questionnaires were applied, using the Free Word Association Test (FWAT), to teachers from three private college institutions in Distrito Federal, with two of them being located in Cidade do Gama and one in Plano Piloto. The profile of the professors encompasses gender, age group, academic background and teaching experience.

Table 1 – Professors' Profile

Gender	men	fem	U				
	75	77	2				
Age range	24-34	35-44	45-54	55-64	65>	U	
(years)	38	61	33	16	1	5	
University graduate	Bachelor degree	Teaching degree	technologist	Bach.-teach.	Bach.-tech.	Bach.-teach.-tech.	Ui
	86	20	4	35	3	1	5
Postgrad.*	Specialization	Masters degree	doctorate degree	post -doc			
	113	112	43	12			
Professional performance	bachelor degree	bac-lic	Bach.-teach	Teaching degree	Bach.-teach.-tech.	Technologist	Teach.-Tech.	U
	71	27	22	15	8	3	2	6

* Professors marked their graduate training from specialization to post-doctorate, the calculation being made for each category considering the total of teachers surveyed (N=154).
U: unidentified
Source: Elaboration of the authors.

The first table shows the distribution of teachers with reference to gender, age, graduation, post-graduation and professional performance (bachelor's, undergraduate and higher technology courses, as well as their combinations). A certain balance can be seen, with a predominance of female professors in the group, which indicates a change in gender in college teaching. Two people in the group did not identify themselves. It should be emphasized that male professors previously prevailed in college teaching, a situation that is contrary to the feminization present in basic education, especially in kindergarten, elementary school and high school.

Regarding the age group, there is a concentration of 39.6% in the range of 35 to 44 years, followed by the group of 24 to 34 years (24.7%), then those in the range of 45-54 years (21.4%) and, finally, those between 55-64 years old (10.4%). It is worth noting that five professors did not register their age and one participant is over 65 years old. It is, therefore, a young group of teachers working in higher education, contributing to professional training when it is characterized that a part fluctuates between 24 to 54 years.

The bachelor's degree ($n = 86$; 55.8%) is predominant among professor education at undergraduate level, followed by double education, bachelor's degree and teaching degree ($n = 35$; 22.7%), then teaching degree ($n = 20$; 13 %). Five professors did not identify themselves regarding higher education. It is interesting to understand and analyze the distribution of courses in the institutions in order to contextualize the training of teachers, for example, in the area of teaching studies (Modern Languages, Pedagogy, History

and Physical Education), Bachelor's Degree (Administration, Nursing, Advertising and Publicity, Physical Education, Information System, Accounting, Nutrition, Physiotherapy, Architecture and Psychology) and CST (Radiology and Human Resources). It should be emphasized that in the three institutions investigated there is a predominance of courses in the area of bachelor's degrees, followed by those of teaching and technologist.

Apparently, the distribution of professors follows the concentration of courses having as a reference a bachelor's degree, teaching degree and technologist and the combined degrees between them. The bachelor's degree is ahead with 71 professors, corresponding to 46.1% of the total, followed by bachelor's degree and teaching degree ($n = 27$; 17.5%), a number that indicates that the professors work in two distinct courses, for example, Law and Modern Languages, in the case of Portuguese Language , or Physical Education and Nursing, in the case of Biological Sciences and related areas. Then, there are the teaching courses ($n = 15$; 9.7%), technologist and the combination of a bachelor's degree, a teaching degree and a technologist.

An important fact to note is that there is currently a decline in teaching courses, which demonstrates the devaluation of the teaching career to work in basic education[4] (ARANHA; SOUZA, 2013; PIMENTA *et al.*, 2017) and, therefore, there is a reduction in the number of teachers working only in this area. Thus, the number of professors working in the bachelor's degree is significant, as well as teaching in more than one area in the undergraduate program. It is observed that 73.4% of professors have specialization, 72.72% of them possesses a master's degree, 27.9% of them holds a doctorate degree and 7.8% of them possesses postdoctoral internship. Investment in training to work in higher education has been a condition and search among teachers, especially regarding the career plan of professionals. It is known that for vertical progression, the salary variation is staggered considering the levels of training.

A part of the investigated professors has other educational experiences in the grades of basic education, which requires didactics and systematization of differentiated activities: Early Childhood Education ($n = 13$; 14.9%), Elementary Education ($n = 48$; 31.2 %), High School ($n = 58$; 37.7%), Youth and Adult Education ($n = 31$; 20.1%) and Special Education ($n = 2$; 7.8). Admittedly, this teaching experience can contribute to professional activity in college teaching, with regard to didactics, methodologies and theoretical-practical articulation, since, in order to work in basic education, the certification related to the teaching degree is mandatory.

When investigating the experience in college teaching, the average time is 8.97, with a median of 9.50 and standard deviation 6.76, when considered r a coefficient of variance of 75.36, which demonstrates a certain degree of dispersion in the configuration of the time of college teaching experience. The highlight is in the range of four to seven years ($n = 40$), followed by eight to eleven years ($n = 35$) and after zero to three years ($n = 32$), being the last group just started in the career, being in the probationary period. It is worth informing that six teachers did not inform their experience time.

4- Available at: http://ultimosegundo.ig.com.br/educacao/2017-11-08/cursos-de-licenciatura.html

Instrument

The projective instrument called the Free Word Association Test (FWAT) was used, which makes it possible to identify the semantic fields related to the objects of the social representations to be investigated. The instrument was applied as follows: the inducing expression *developing academic competences...* were presented and the participant was asked to write down the six words that came to mind when hearing such expression. Subsequently, he was advised to choose, among the six, the three words considered by him as the most important, indicating the order of importance. In the last step, it was requested for him to construct a sentence explaining the identified word as the most important. Finally, some questions were asked about the respondent's profile (gender, age, course in which he/she works, academic training and professional experience), already analyzed.

Procedure for data analysis

The software *IRaMuTeQ: Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*, developed by Pierre Ratinaud (2009), was used. It is a free and open source software, aimed at statistical work with textual corpus and on charts of individuals / words (SARRICA et al., 2016). The version used for the present investigation was 0.7 apha2.

Data analysis

Prototypical analysis (POLLI; WACHELKE, 2013; WACHELKE; WOLTER, 2011; WOLTER; WACHELKE, 2013) is one of the statistical mechanisms that allows the identification of the structure of a social representation, starting from free evocation, as proposed in the FWAT instrument. Vergès (1992 *apud* WACHELKE; WOLTER, 2011), when configuring the structure of the four-house chart, described two phases inherent to the process: (a) prototypical analysis, using the calculation of the frequencies and average order of evocation of words; and (b) formulation of categories that simultaneously evaluate frequencies, compositions and co-occurrences, using the inductive term.

Regarding the prototypical analysis, the frequency and order of importance demonstrate their value within a particular social group. Currently, it is one of the most widely used analysis strategies due to its practicality and the use of poorly structured data, used in basic research, especially with applied characteristics, in virtue of enabling diagnoses about professional themes in order to guide psychosocial interventions (WOLTER; WACHELKE, 2013).

Quadrants and their distribution

Regarding the configuration of the four quadrants, it operates in the following: in the first, the elements of the Central Zone (upper left) of a representation stand out, namely,

those most evoked and with a higher order of importance announced by respondents. The second (upper right), presents high frequency of evocation, but were not considered the most important by the participants; and the third (lower left) quadrant, as knows as the contrast zone, is composed of elements that were immediately evoked. However, they appear with a low order of importance.

In this direction, Abric (2003) states that although they are the first evoked, they can be configured in two ways: complement of the first periphery or the thought of a subgroup that could represent a different central nucleus. The second periphery (lower right), in the fourth quadrant, with less evocation and little importance attributed (MACHADO; ANICETO, 2010).

Figure 1 - Prototypical analysis

<=3,44 rangs 3,44>	
Central Zone	**First periphery**
Training 53-3.3 Ability 27-2.3 Reflection 26-2.9 Fundamental 25-2.5 Responsibility 24-2.9 Development 24-3.2	Knowledge 26-3.7 Stimulation 26-3.7 Teaching 18-3.5 Creativity 16-3.6 Understanding 16-4 Interaction 16-4.2
Contrast Elements	**Second Periphery**
Scientificity 7-3.4 Ethics 7-3.4 Autonomy 6-2.7 Concentration 5-1.8 Qualification 4-1.8 Planning 4-3	Constituting 7-4.4 Contributing 7-5.1 Respect 6.5.3 Effectiveness 6-5.2 Achievement 6-3.5 Collaboration 6-4

(left axis: <7,01 fréquences >=7,01)

Source: Elaboration of the authors.

Figure 1 shows the result of the free association technique. In the upper left quadrant the words: *training* , *ability* , *reflection*, *fundamental*, *responsibility and development* are highlighted, hence they are the possible components of the central nucleus; in the upper right: *knowledge*, *stimulation*, *teaching*, *creativity*, *understanding and interaction;* in the lower left, *scientificity*, *ethics*, *autonomy*, *concentration*, *qualification and planning*, aspects that reiterate the highlights of the central nucleus and the peripheral system; and in the lower right: *constituting*, *contributing*, *respecting*, *effectiveness*, *achievement and collaboration.*

Central zone: the representativeness of conceptions

Among the constituent words of the central zone, the following ones stand out: *training*, *ability*, *reflection*, *fundamental*, *responsibility and development*. With respect to training, the perspective includes not only the domain of content, such as the dynamics of

the practice, on the assumption that the professional is always dealing with new situations. Thus, training, in general, includes from everyday knowledge, scientific, practical, as well as the ability to work in groups and overcome the difficulties encountered, coupled with an ethical and aesthetic imperative in higher education. It is associated with a critical-reflexive and interventional posture in personal and work spaces and, especially, in the field of technology and the use of knowledge to promote social change and collectivity (SILVA; CABRAL NETO, 2015).

As a result, the design of training appears as wide and can indicate the entire trajectory of the course, where the learning processes are latent and manifest in the educational activities involving the educational ecosystem, as pointed out by Zabalza (2014). It can also be conceived as a continuous process independent from the undergraduate training, considering the perspective of continuing education, combined with professional development in service. The entire knowledge acquisition process may be implicit in the training coupled with the identification of competences and abilities considering the learning scenario and the specific spaces of professional activity. Particularly, with regard to the notion of lifelong learning, it considers the different contexts where the person is inserted, family, work, neighborhood, for example.

Another word evoked prominently was reflection, as the critical-reflexive dimension promotes pedagogical situations that encourage this dimension. It is still one of the competencies that permeates the profile of all professionals. Fundamental also obtained a significant frequency, indicating valuable aspects pertinent to the competence construct. It is implied that reflection is one of the pedagogical tasks assumed by the group of teachers, being an imperative for undergraduate training.

This condition is amplified when it is linked to the notion of responsibility, with several angles, showing, on the part of teachers, the one related to the training of professionals. It is also inserted the student's own responsibility towards his professional choice and his investment in his formative process, in a conscious, critical and socially engaged way.

The last word in the quadrant was development. Given its breadth, it addresses both the general concept of development (cognitive, affective, social, biological, cultural and professional), as well as the perception of continuity and changes, returning to the notion that learning and development are inherent at any age. It can be hypothesized that there is an interrelation between development and learning, portraying professional development also driven by the abilities.

Thus, by being involved in different activities related to University education, the student finds himself in complex interaction with teachers, colleagues, contents, social and emotional relationships that trigger cognitive, affective, social, cultural components and individual traits in interconnections with the different development contexts where he is inserted (internship, family, neighborhood, friends, for example).

In the central nucleus, it can be highlighted that teachers reiterate that training is a fundamental aspect for the development of academic abilities, understood as a continuous process and that implies critical reflection and responsibilities that involve both the teacher and the student. In short, a set of established educational practices

that are resistant to change. Such assertions are close to those pointed out by Le Boterf (2002), in which the dimensions of the person, educational background and professional experience are articulated. It also establishes the bidirectional perspective in the teacher-student relationship as an important dynamic for his development.

First and second periphery: orbiting the central nucleus

In the first periphery, the words *knowledge*, *stimulation*, *teaching*, *creativity*, *understanding* and *interaction* were significant. Knowledge is the basic artifact of the competences process, without it, there is no way to reflect, contrast, identify, characterize and, of course, establish complex relationships between daily, occasional situations and transform work and the subject. Stimulating can be understood from various perspectives, such as pedagogical activities that promote from the student's interaction with knowledge, practice, methodology, techniques, as well as the creative, critical, individual and collective side, proposing challenges at the cognitive levels, social, affective and recognition about the context of performance and possible transformations.

Still, the teacher can stimulate/motivate the student, in the sense of encouraging, valuing, revealing and pointing out the students' efforts towards a goal, guiding and enhancing their investments, through autonomy and self-confidence. Teaching is a specific activity of the teacher, which involves from pedagogical strategies, content selection and teaching and learning methodologies to interdisciplinarity, as its action is linked to the knowledge acquisition process. In particular, it brings new clothes to the problems that emerge in the academic and social spheres. It permeates the future work experience and opens new paths and directions to deal with the complexity of the modern world.

Understanding can be apprehended from various perspectives through cognitive bias, essential for reading, writing, interpreting and assimilating content and its use in different learning contexts and the domain of scientific knowledge. When it admits another aspect, it may be the movement that makes interpersonal relationships possible, by putting oneself in the other's place, of having empathy, solidarity and sensitivity to observe the world, being fundamental for the collective and social activity in the universe of work and school, family and friends, in a humanistic approach. It can correspond to both the action of the teacher and that of the student, in the pedagogical space and outside of it, in which both respect and value the role of each in the academic space and invest in the proposal for joint action aimed at training.

The interaction reports that teaching is a human specificity, in Freire's language, as it reveals mutual learning between teacher-student. The interaction subject-object of knowledge and subject presents the fundamental triad to the learning process, in order to behave its social dimension, for the transformation of the subject and society.

The elements of the second periphery orbit around *constituting*, *contributing*, *respect*, *effectiveness, achievement* and *collaboration*. When approaching the words, one can conclude that the notion of community and interaction pierce their meanings and establish a level of developing abilities in the professional field and academic design, by teachers, involving students. They are elements of the pedagogical action by the teacher,

articulating knowledge and practices (MEDEIROS, 2016). Effectiveness and fulfillment go back to the process of building, contributing and producing, a creative act of transforming content, knowledge and practices. It is about using and enjoying the capacities and facets of the situation that you face, depending on the interaction to solve problems and intervene, such as modifying procedures; above all, in its collective, temporal, unity perspective and towards cooperative work.

Again, the notion of collectivity and cooperative production emerges, translated into the word collaboration. Education is a collective act and a human action, a social product and it should be shared as a common good. Thus, the educational process involves two protagonists who alternate and complement each other in their roles and functions in the educational context: teacher and student. In addition to the privileged educational moment of exchanges, experiences and knowledge, age differences contribute to renewal and references to promote the assimilation of contents, senses and meanings in academic education. All educational action is the product of exchanges, with bidirectionality playing an essential role in the quality of the relationship and the teaching-learning process.

The periphery elements make it possible to understand the changes introduced and still represent actions and practices that can effectively contribute to the development of abilities that are not restricted to the cognitive realm, such as collaboration, achievement and creativity. The role of socioemotional aspects as important for competence is highlighted, as already emphasized by Medeiros (2016), in the affective dialectical dimension.

Contrast elements

In the grouping of elements of contrasts or contrast zone, the words *scientificity*, *ethics*, *autonomy*, *qualification* and *planning* are outlined. In general, intersections with cognitive action are identified and refer to the academic sphere. In this quadrant, the frequency of the elements, although low, is very significant, indicating processes of change or the existence of a subgroup. For this reason, teachers place the parameters identified above as a set of references for the development of abilities in college education.

Scientificity is a requirement of the critical-reflexive approach, with steps such as identifying problems, raising hypotheses, experimenting and theorizing about the results, a requirement of academic training, on the part of the student, however, depending on the selection of resources, materials and methodologies of the students-teachers. The organization of the contents and the proposals for activities should give the key that promote criticality and continuous reflection based on scientific knowledge, research and insertion in praxis.

Le Boterf (2002) reinforces that the formal education process, associated with professional and social experience are vectors that foster abilities. For this reason, ethics stands out and refers to situations that involve respect among professionals and a reference for the adoption of interpersonal relationships. On the other hand, autonomy is considered as another important factor. It is a premise of college education, a fundamental condition for scientific thinking, the production and self-management of knowledge associated with intervention processes in educational and work environments.

The word qualification can comprise multiple meanings. The first is related to the student's own training process at college, above all, the professional project, outline of his trajectory, the curriculum in action, in practice and the condition of becoming a professional. The second perspective may be the qualification of the teacher to develop abilities. Planning reflects the teacher's responsibility to organize content, articulate activities, propose methodologies and forms of assessment that enhance student learning, as discussed by Gadotti (1986). The challenge is also in charge of pedagogical projects, in order to ensure the integration between teaching, research and extension, without forgetting the different role of internships for professional practice.

The contrast zone depicts the variation of social representations between the groups that were involved in the research, without altering or causing structural changes in representation (ABRIC, 2003). It should be noted that the words indicated corroborate the scientific character and qualification as important elements for the development of abilities, however, reiterating that it is through planning that the teacher can be ethical and promote autonomy in the process.

It is observed that the teachers presented a range of words intertwined with the development of abilities, demonstrating that there is an interface between the teacher's role, academic-professional demands, individual and collective development and the curricular part. They are substantiated by several studies (MEDEIROS, 2016; RADAELLI, 2016), in the dimensions that foster competence involving cognition, affects, interactions, in addition to the interfaces with the social, cultural and professional aspects.

In short, Marinho-Araújo and Almeida (2016) corroborate the previously reasoned discussion indicating that there is a close relationship between the development of professional identity and the development of competences in higher education. They affirm that these interrelationships cannot only be subsidized by the contents, methodologies and practice to provide interventions in the social and labor scope, however, it implies a project of social, ethical and social transformation engagement.

Considerations, reflections and challenges

The demands of academic and professional training in the Brazilian and worldwide context have focused on competence as one of the important factors for professional development. It is important to highlight that also in the sphere of work and interpersonal relations; the notion of competence has been established, becoming a source of discussion and research. The consolidation of their employment in the educational field is based on two main documents: the *Lei de Diretrizes e Bases da Educação Nacional* (LDB 9394/96) that meets all levels and modalities of education and the *Diretrizes Curriculares Nacionais* (DCN), specific to the undergraduate courses, which also propose in their writings the specific abilities for each course and what is expected for the graduate (NUNES; PATRUS; DANTAS, 2015).

Therefore, discussions about competence are part of the educational universe as in the sphere of work, even though there are several positions and concerns about which paradigms and ideologies permeate its conception. From pedagogy by competence,

teaching by competences, training by competences and development of competences, what is explicit is the change of focus of the contents for the student, for life and the complications of its political, economic, technological, ethical, aesthetic dimensions and human that affect the relationships between people, groups and society. This polysemy peculiar to the conception of competences is also expressed in the speeches of higher education teachers, being a rich field for the study of social representations.

Regarding social representations, it is visible in the speeches of teachers identified in their teaching practices, fostering the learning process grounded in active and interactive process design, taking the student as the protagonist. This conception can be seen, above all, with regard to multi-referentiality, which involves the construction of knowledge, the appropriation of different knowledge, the mobilization of doing and also the theoretical-practical articulation.

The words that emerged in the central zone, training, ability, reflection, fundamental, responsibility and development reflect the multiplicity of factors that make up the notion of competence. In this case, training, in its complexity, involves methodological rigor, passing through the condition of mobilizing and applying knowledge, in a context that demands several domains: technical, technological and the knowledge to be implemented in training, not being the responsibility of only the teacher, but involving the student's autonomy.

The contrast zone reiterates the words already highlighted in the central nucleus such as scientificity, autonomy and qualification, which are important for the development of abilities. However, in the peripheral system emerged creativity, understanding, respect and interaction that are related to humanization, as well as the recognition of insertion in the social environment. In fact, they are identified and evaluated as fundamental elements to the teaching-learning process and also in the professional academic environment, which portrays the updating of paradigms related to competences.

It is essential to recognize the role of the teacher and his practice for the development of competences, which are explained in the words highlighted in the prototypical analysis. It is not a matter of restricting only to the cognitive dimension, but to the networks involved, such as redoing and the demands of the professional academic context. Finally, teaching by abilities requires knowledge, knowledge and connection with the immediate, global context and the search for creative strategies to deal with unexpected situations, conflicts and problems in the human universe. It is essential that teachers are aware of the challenges to overcome the dichotomies of education and work, theory and practice, individual and collective, manual and intellectual, affective and intellectual, professional and personal, technical and training, based on transformative education and with ethical principles, permeated by critical and reflective attitudes. Above all, counting on the various supports, such as from the colleges, of policies directed to higher education, Ministry of Education among other groups related to education.

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