Pedagogical Transformation and Professor (Self)Training

Transformação Pedagógica e (Auto)Formação Docente

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ABSTRACT

The rapid transformations that are occurring in the contemporary world demand changes also within the educational environment. These, in turn, engender a new paradigm of university teaching. In this context, the transformations that most impact teaching result from the need to guide teaching by and for students' learning. But to what extent have we developed the pedagogical skills that are crucial to the teaching-learning process? And to what extent have we been able to create environments that foster student learning? In an effort to overcome impressionist perspectives, we conducted a data survey which included a questionnaire. We received 301 valid answers, and interpretation of the data helped identify our main challenges as undergraduate Business Administration professors. This paper progresses from the introduction to the description of methodological resources, followed by the description and interpretation of data – in an effort that made findings and signs of possible developments legitimate. The need for structural solutions within the formation and actualization process of professionals who perform in the new context of Higher Education was identified.

Keywords: New paradigm of university teaching, university teaching, Pedagogical formation, Business Administration professors.

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RESUMO

As rápidas transformações que ocorrem na contemporaneidade requerem mudanças no ambiente educacional. Estas, por sua vez, engendram um novo paradigma de docência universitária. Nesse contexto, as transformações que mais repercutem sobre a prática docente decorrem da exigência de orientar o ensino pela e para a aprendizagem dos estudantes. Mas até que ponto já desenvolvemos as competências pedagógicas requeridas pelo processo de ensino-aprendizagem? Em que medida temos sido capazes de criar ambientes que favoreçam

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RESUMO

a aprendizagem dos estudantes? No esforço de superarmos visões impressionistas realizamos um levantamento de dados com a aplicação de um questionário. Contamos com 301 respostas válidas e o exercício interpretativo dos dados ajudou a identificar nossos principais desafios enquanto docentes de cursos de graduação e tecnólogos em Administração. O texto evolui da introdução para a descrição dos recursos metodológicos, seguida da descrição e interpretação dos dados, exercício que legitimou os achados e a sinalização de desdobramentos possíveis. Foi identificada a necessidade de soluções estruturais no processo de formação e atualização dos Profissionais que atuam no novo contexto do Ensino Superior.

Palavras chave: Novo paradigma de docência universitária, Docência universitária, Formação pedagógica, Professores do curso de Administração.

Introduction

> "If we teach today's students as we taught yesterday's, we rob them of tomorrow."
> *John Dewey*

The rapid changes that are occurring in the contemporary world require changes in the educational environment; we have great opportunities to contribute to the formation of young people who will be active in the 22nd Century (HARARI, 2018). In the context of knowledge-intensive societies, the crystallization of past-oriented teaching practices seems detached from present and future challenges (SORDI, 2019). This implies structural transformations in Higher Education Institutions (HEIs) and they demand, for example, the redefinition of competencies that must be developed, curriculum redesign, inseparability between teaching and learning, redefinition of teaching and student responsibilities etc. Given the above, it is no exaggeration to say that we are moving towards a new paradigm of university teaching (ALMEIDA & PIMENTA, 2014).

In this context, teaching also requires significant transformations; possibly the one that most affects professors is the requirement to guide teaching according to and for student learning. The intensity with which we are affected by this transformation may vary, but if we intend to invest in higher teaching, we must make efforts to develop teaching skills. For a long time, Higher Education has welcomed

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professionals who work in higher education with academic training in a certain field of knowledge as a selection criterion. Depending on the field of knowledge, particularly in the field of applied social sciences, selection is based on the combination of academic background and professional experience. The maxim "who knows, automatically knows how to teach" is adopted (MASETTO, 2003, p.13), emphasizing the teaching of content, little aware of the challenges involved in promoting learning.

When we take into account that knowledge-intensive societies go hand in hand with learning-intensive societies, however, having "teaching skills" may be insufficient. But to what extent do we develop the pedagogical skills required by the teaching-learning process? To what extent have we been able to create learning environments? Does the completion of a master's degree and a doctorate guarantee the development of skills that bring teaching and learning closer? To what extent do we feel secure to promote the transformations required by teaching in contemporary times? We assume that there will never be full security, since the challenges implied in the teaching-learning process will lead us to permanently seek didactic-pedagogical resources that allow us to expand the conditions that favor students' learning. Possibly, awareness that teaching requires a multipurpose, multifunctional and intellectually sophisticated professional justifies Sordi (2019) in questioning the offer of activities that are exclusively oriented towards professors' instrumentalization for contemporary pedagogical action.

In this context, in what terms do we define the purposes of the data collection we carried out? In an effort to overcome impressionist visions, we want to contribute to the mapping of our pedagogical practices (where are we?); identify our main challenges (diagnosis); and allow them to point out our needs as undergraduate professors and business technologists. In this way, we hope to create a space for reasoned and purposeful reflection, so as to collectively come up with alternatives that help us better carry out university teaching, in tune with the new challenges that emerge in contemporary society.

The text on the screen derives from an interpretative data exercise resulting from a survey conducted by applying a questionnaire. We will contradict the prevailing architecture in academic papers, since we are going to write in first person plural, articulating the theoretical lenses and the exercise that will move between description, interpretation and purposeful reflection. Therefore, the text will evolve

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from this introduction to the description of the methodological resources that we used. Next, emphasis will be on the descriptive, interpretive and reflective exercise of data. Finally, we will gather the findings and signal possible developments, and share the literature consulted in the theoretical-methodological foundation.

Methodological Explanations

In the latest editions of Brazil's National Meeting of Undergraduate Business Administration Courses (*Encontro Nacional dos Cursos de Graduação em Administração*/EnANGRAD), the organizers expressed a growing concern: they wanted to enhance the event's agenda, since it has attracted an audience that is varied in many aspects – age, academic background, professional experience, time dedicated to higher education, city, home institution and responsibilities taken up within the Business Administration course – and this implies different demands and expectations. Participants' adherence to the proposed themes has been so expressive that there is no lack of effort to identify the main demands of the academic community (students, professors, educational technicians and academic managers) and to offer a varied menu of activities. It is in this context that the coordination of the Teaching, Research and Professor Training topic was stimulated to conduct a survey capable of generating data that, when interpreted, could identify the needs of materials and activities that collaborate with the pedagogical formation of professors who are part of the teaching community of undergraduate Business Administration courses and technologists.

Therefore, we conducted a data survey by creating and applying a questionnaire (FOWLER, 2011) that was presented to professors, particularly when linked to undergraduate Business courses and technologists, offered by HEIs from different regions in Brazil. From February to March 2019, the instrument was created and improved by ten professors with recognized experience in quantitative research (GÜTHER, 2003). Between April and May 2019, the SurveyMonkey platform access link was released by Brazil's National Association of Undergraduate Business Administration Courses (*Associação Nacional dos Cursos de Graduação em Administração*/ANGRAD). Simultaneously, the invitation was extended to the survey proposers' network. Combined, these actions helped us attain 301 valid answers.

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The collection instrument contains 14 questions, which move from questions referring to the respondent's profile (a), to perception of responsibilities that characterize teaching (b), to perception of the professor's pedagogical proficiency (c), to perception of the challenges involved in teaching (d), and perception of learning goals achieved by students (e). We concluded the questionnaire by requesting the learning goals of one of the subjects the respondent teaches. In theory, the way in which we establish goals reveals the size of the challenge implied in the proposal, and whether we consciously guide ourselves by teaching and/or learning.
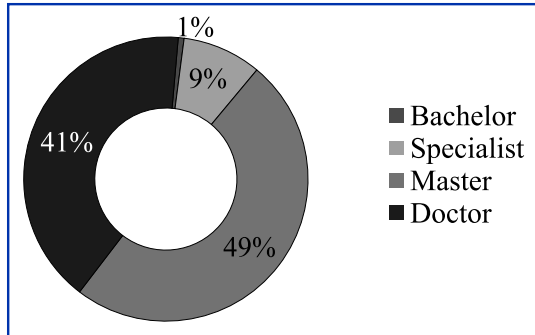
The data resulting from the questionnaire were submitted to an exercise that evolved from descriptive analysis to interpretation, ending with a purposeful reflection. We sought to establish correlations between certain responses in order to generate more robust results (MORAIS, 2010). We are aware of the limits of this type of survey, whether regarding the perception about what is asked, or regarding the varied induction margin that every questionnaire can generate (GÜTHER, 2003). In order to alleviate these limitations, the questionnaire was screened by ten professor-researchers who are experienced in this type of survey and, during the 30th EnAngrad, promoted a workshop to discuss results with stakeholders, qualify data, and refine propositive reflection.

Data Description and Interpretation

RESPONDENTS' PROFILES: THEIR ACADEMIC DEGREES AND THE COURSES THEY TEACH

Research experience allows us to ensure that the more we know the respondent's profile, the better answers can be understood. This explains the attention given to this aspect. Reflecting the external evaluation criteria to which undergraduate courses are submitted, the academic degree of the vast majority (90.3%) of respondents varies between master (49.3%) and doctor (41.0%) (Graph 1). These figures easily surpass Goal 13 of Brazil's National Education Plan (*Plano Nacional de Educação*/PNE), which deals with the academic degrees of professors linked to higher education – "to ensure that at least 75% of Higher Education professors are masters and 35%, doctors."

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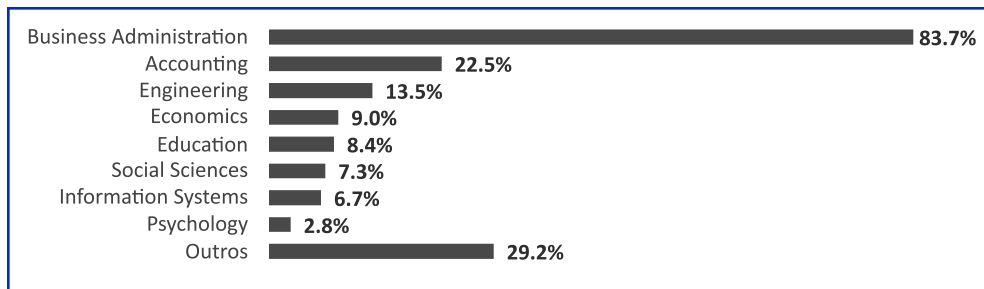**Graph 1** Most recent academic degree.

Source: Applied questionnaire, 2019.

Considering the figures referring to the degrees of Professors of Business Administration Courses discussed in the Data Analysis Workshop of Brazil's National Student Performance Examination (*Exame Nacional de Desempenho dos Estudantes*/ENADE), offered in EnAngrad, 2017 edition, we can see an evolution in the self-declaratory data corresponding to the minimum degree of master in Business Administration Courses – from 52.7% in 2009, to 65.6% in 2012, and 72.7% in 2015 – and of doctor – from 9.1% in 2009, to 21% in 2012, and to 25.3% in 2015 (LANGRAFE, BELTRÃO and BERNDT, 2017). Possibly, the degrees informed by respondents in our sample may help us understand the multiple activities that they state they carry out simultaneously, such as: member of the Structuring Teaching Center (*Núcleo Docente Estruturante*/NDE) (67.2%); course coordinator (48.1%); Final Course Paper (*Trabalho de Conclusão de Curso*/TCC) coordinator (23.4%); extension coordinator (20.9%); Supervised Internship coordinator (18.3%).

As expected, there is a predominance of professors who teach subjects offered in Business Administration courses (83.7%); next, Accounting courses (22.5%); Engineering courses (13.5%); Economics courses (8.4%); Social Sciences courses (7.3%); and Information System courses (6.7%). Other courses were also mentioned by about one third of respondents (29.2%), revealing the diversity of fields of activity, since, altogether, 43 courses were mentioned.

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Graph 2 Courses they teach (currently).

Business Administration — 83.7%
Accounting — 22.5%
Engineering — 13.5%
Economics — 9.0%
Education — 8.4%
Social Sciences — 7.3%
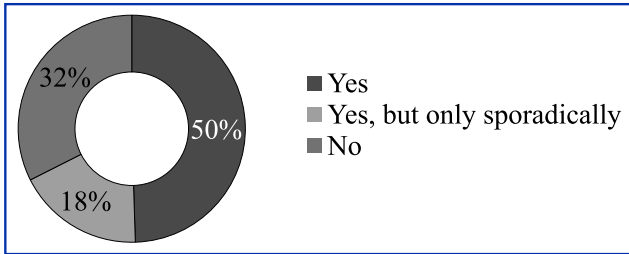Information Systems — 6.7%
Psychology — 2.8%
Outros — 29.2%

Source: Applied questionnaire, 2019.

RESPONDENTS' PROFILES: TEACHING COMBINED WITH OTHER PROFESSIONAL ACTIVITIES

Out of every ten respondents, seven (67.6%) carry out other professional activities besides teaching: half (49.5%) in a permanent way, and 18.1% sporadically. Among the professors in these two groups, 40.9% devote up to ten hours per week to these other activities, and 20.9% dedicate from 11 to 20 hours per week. It is also significant that almost four out of ten respondents (38.2%) claim to dedicate more than 20 hours per week to these other professional activities, with a prevalence of those with more than 30 hours per week (24.1%) (Graph 3). This is a significant workload and this leads to four questions: 1) in the group of respondents, do professional-professors or professor-professionals prevail, with what implications to currently required didactic-pedagogical transformations? 2) considering the weekly workload that most professors have, what is the time set aside for studies, particularly of teaching referring to relevant issues? 3) since learning-oriented teaching is time-consuming, both for planning, achieving, in-process learning assessment and feedback, how can this be balanced against so many simultaneous professional demands? 4) to what extent does this represent a brake on the demanding process of pedagogical transformation that is currently required?

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Graph 3 Carrying out non-teaching activities.

Legend:
- Yes — 50%
- Yes, but only sporadically — 18%
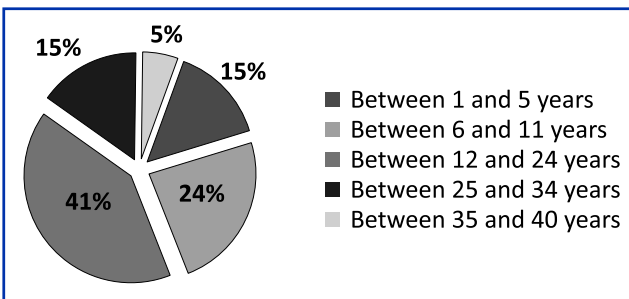- No — 32%

RESPONDENTS' PROFILES: TIME DEDICATED TO TEACHING AND INSTITUTIONAL TIES

In addition to an admirable academic background (90.3% are masters and/or doctors), the group states that they have accumulated significant experience in university teaching: about six out of ten have taught for more than 12 years; of these, 20.7% have been working for over 25 years as professors at this level. Another 40.8% have between 12 and 24 years' experience; two out of ten state, in turn, that they have up to 11 years' experience in university teaching (Graph 4). Academic background coupled with teaching experience helps explain the number of course coordinators (48.1%) and NDE representatives (67.2%), for example – these are roles that involve responsibilities inherent to structuring Business Administration courses.

Graph 4 Time dedicated to university teaching.

Legend:
- Between 1 and 5 years — 15%
- Between 6 and 11 years — 24%
- Between 12 and 24 years — 41%
- Between 25 and 34 years — 15%
- Between 35 and 40 years — 5%

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RESPONDENTS' PROFILES: STAGES OF TEACHING CAREER

Regardless of generation and gender, do we face the same stages along our teaching careers? Considering these stages, what is the image that we project of ourselves, as professors, in each one of them? With time and teaching experience, do we become more competent and secure? More happy and fulfilled? More prudent, conservative and skeptical? What are the worst and the best years of teaching? What are the factors that contribute to the end of the teaching career being marked by serenity, conflict and/or demobilization?

These questions deserve to be investigated, because known results partially reflect the context in which we live. We are overcoming a binary vision that separates time from study and work, we live more and more, and we will probably never retire. Thus, the curve that Huberman (2000) proposes in seeking to translate a professor's life cycle – entry, stabilization, diversification, serenity/detachment, divestment/preparation for retirement – must be updated. Consequently, when we created the collection instrument, we did not associate the end of the teaching itinerary with the end of the professional career. We believe that data on academic background and teaching experience can help us understand the image respondents form and project of themselves when taking into account their career as university professors.

Table 1 Teaching career and self-image.

… I am a professor who, although having found my own path, is aware that teaching requires a permanent process of (self)formation.	30%
… I am a **confident professor** who is aware of the **quality** of his own work, which is **recognized** by students and peers.	22%
… I am a professor who is **aware** of having done a good job, but who wants to get in-volved in new projects.	22%
… I am an **experienced** and committed professor who is willing to share what he knows, seeking good **opportunities** and recognition.	16%
… I am a professor with **little experience**, at the beginning of my career, who is **willing to explore experiences** which may offer the necessary foundations to a satisfactory teaching performance.	9%

Source: Applied questionnaire, 2019.

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We reaffirm that this is an exceptional group: while just over 60% consider themselves to be experienced, secure and aware that they are doing a good job, fewer than ten per cent (9.3%) are taking the first steps towards a professional teaching career. More than ¼ (30%) see themselves as professors who, despite having found their own paths, are aware that teaching requires a permanent process of (self)formation, as indeed does any other professional activity. It is noteworthy that 22.3% are aware that they have done a good job, but are aiming for new projects, challenges. This points to a group that does not recognize retirement as the end of a career, reaffirming what Harari argues (2018).

Even if the figures are encouraging, they raise questions. Corroborating what several authors have stated, Colet (2009), Soares and Cunha (2010) argue that the university professor builds his teaching identity from unstructured experiences – in exchanges with family members, in observing former professors, in their own self-taught experiences, as well as in exchanges with colleagues and in the reactions of students with whom they have the opportunity to work. This perception is reinforced by the data gathered, since 35.8% of respondents say they have achieved didactic-pedagogical proficiency exclusively in practice, 17.2% by participating in various short courses, lectures, workshops and workshops, 10.8% by participating in a class dedicated to subjects referring to higher education didactics, and 5.7% declared they were exclusively self-taught (only 30.4% claim to have invested in Education training courses).

Therefore, how were we able to develop the characteristics of a versatile, multifunctional, intellectually sophisticated professional (RUIZ et al., 2017)? If we transfer this data to any other occupation, to what extent would we rely on developing the skills required of an architect, or a nurse, perhaps an airplane pilot? To what extent would the naturalization of higher education be an obstacle to the consolidation of effectively learning-oriented teaching? To what extent does this contribute to the social devaluation of university professors? Doesn't it seem curious that professors are held responsible for the educational crisis and, at the same time, recognized as the main alternative to solve the resulting problems? (RUIZ et al., 2017).

The "taxi-driver professor" is practically non-existent the sample. Although 94.0% of professors work in undergraduate courses in Administration, considering the number of work ties they have, those associated with only one HEI prevail

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(78.7%) and few are linked to two (14.3%), three or more institutions (7.0%). This may help explain the high number of respondents who declare they carry out other professional activities, besides teaching (67.6%), regularly (49.5%) or sporadically (18.1%), dedicating to this an equally high workload: 40.9% up to 10 hours per week, 20.9% between 11 and 20 hours per week, 14.1% between 21 and 30 hours per week and 24.1% over 30 hours per week.

Graph 5 – Professors' professional ties.

Bar chart: 79%, 14%, 5%, 2%. Legend: Column 1.
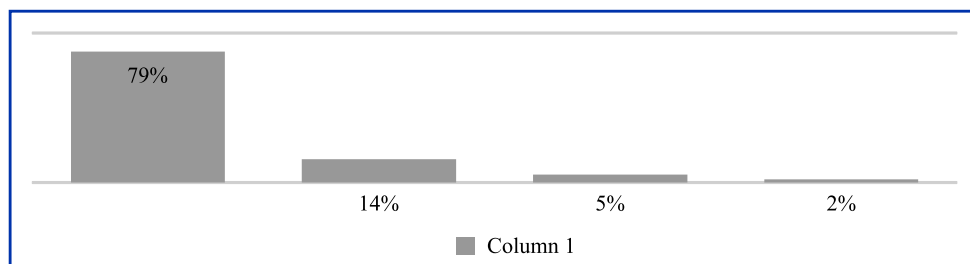
The growing number of professors with full or part-time dedication contracts is reinforced by the historical series prepared by Langrafe, Beltrão and Berndt (2017): 45.4% in 2009, 66% in 2012 and 73% in 2015. Data point to for some consolidation of business courses, but which deserve to be deepened since the technical subjects of the business course curriculum require professors with consistent academic-pedagogical training and practical experience.

RESPONDENTS' PROFILES: TEACHING AND MENTORING ACTIVITIES

The vast majority of participants teach in undergraduate courses (94.0%). Because they combine an admirable academic background, experience with professional activities in addition to teaching, a little over half (54%) work simultaneously in *lato sensu* graduate studies. A significantly smaller group (15.8%) say they teach in *stricto sensu* graduate programs – practically the same group that claim to be scientific journal editors (16.5%). However, more than half (66.3%) report devoting themselves to activities involving research and publication, a little less than half (45.4%) say they write up critiques on papers submitted to congresses and academic jour-

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nals, an almost equivalent number (44.3%) collaborates with the organization of academic meetings, and a smaller group (36.6%) are members of research groups registered in Brazil's National Council for Scientific and Technological Development (*Conselho Nacional de Desenvolvimento Científico e Tecnológico*/CNPq).

Regarding typical didactic-pedagogical activities, since they involve orientation skills, almost eight out of every ten professors say that they orient Undergraduate Course Conclusion Papers (TCCs), followed by those who orient Scientific Initiation projects (45.9%), Specialization TCCs/MBAs (42.4%) and Supervised Internship (35.5%). Given that only 16% report teaching in *stricto sensu* graduate programs, it seems curious that 18.3% say they will guide Dissertations! In addition, 26.6% said they had experience with tutoring activities. Considering that the vast majority teach in Business Administration courses (90.4%), it is not surprising that 20.0% state that they support consulting projects developed within Experimental Agencies, such as a Jr Company.

Graph 6 Mentoring activities.

Undergraduate TCC	76.2%
IC Projects	45.9%
Specialization TCCs (MBAs)	42.4%
Supervised Internship	35.5%
Mentoring	26.6%
Jr Company/Experimental Agencies	20.0%
Master's Dissertation	18.3%
Doctorate Thesis	6.9%
Other	11.7%
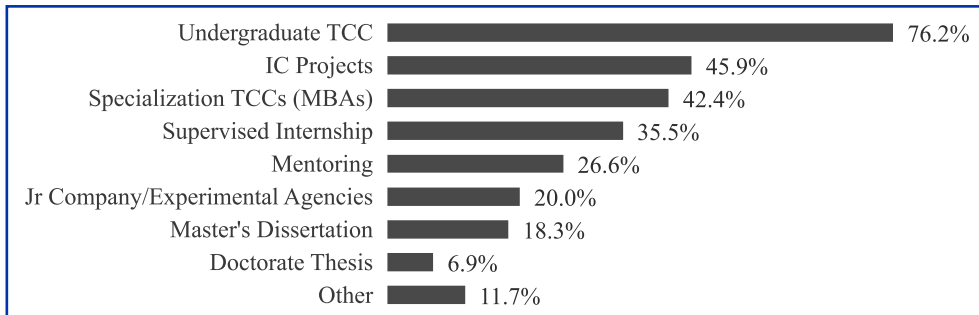
Source: Applied questionnaire, 2019.

Teaching has gained complexity; on the one hand we are increasingly aware that the learning environment, be it virtual, face-to-face or hybrid, functions as an ecosystem, a place of interdependence in which collaborative work is essential; on the other hand, we know that teaching presupposes conciliation between multiple activities, inside and outside the educational environment, and this has been pushed to the extreme with productivism. In addition to the growing challenges of teaching, research and publication is expected to be successful (participate in the internation-

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al network of researchers, be part of an inter-institutional research group; be supported by a research grant from a prestigious funding agency, develop and conduct research projects, guide young researchers; writing articles, submitting to congresses and journals, publishing in high-impact journals; writing opinions; organizing academic meetings, attending congresses; being (co)editor of scientific journals, participating in committees of all kinds, etc.); extension and service delivery (develop and carry out extension projects; evaluate and disseminate the pedagogical, social and economic results achieved); not to mention academic management (being a member of the Structuring Faculty, coordinating varied courses and programs – scientific initiation, supervised internship, course completion work, integrated work, extension program, etc.). The metaphor "multiuse professor" translates the hyperactivity to which this professional is subjected (ALCADIPANI, 2005).

RESPONDENTS' PROFILES: ACADEMIC MANAGEMENT ASSOCIATED WITH RESEARCH AND PUBLISHING

"In the current context of the professional world, [...] we can observe [...] the enthusiastic defense of polyvalence, understood as an attribute of the contemporary worker, adapted to diverse contexts and possessing multiple skills that allow him to act in different jobs, adding efficiency and increasing productivity" (RUIZ et al., 2017, p.1193). In the educational environment, this is no exception! Our select group of respondents seems to have developed multiple competencies that enable them to combine activities whose realization transits between teaching, research, extension and academic management. With regard to activities referring to academic management, 67.2% report being members of the NDE of the courses they teach and almost half (48.1%) are course coordinators. About a quarter (23.4%) coordinate CBT, followed by those who coordinate Extension programs (20.9%), Supervised Internship (18.3%) and Scientific Initiation Program (8.1%).

Regarding the other activities performed in the HEIs in which they work, almost seven out of ten professors say they dedicate themselves to research and publication (66.3%), followed by those who work with extension activities (49.5%), and those who write for papers submitted to congresses and/or scientific journals (45.4%), contribute to the organization of academic meetings (44.3%) and participate in research groups registered with CNPq (36.6%).

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Table 2 Development of research, extension and academic management activities

Research and publication	**66.3%**
Extension activities	**49.5%**
Writing for papers submitted to congresses and/or scientific journals	**45.4%**
Organization of academic meetings	**44.3%**
Research groups registered with CNPq	**36.6%**
Consultancy	**31.5%**
Course evaluation and HEI (INEP/MEC)	**18.7%**
Course evaluation and HEI (INEP/MEC)	**16.5%**

Source: Applied questionnaire, 2019.

How is it possible for a professional category to carry out this impressive diversity of activities simultaneously? How well can master degrees and doctorates develop such diverse, complex skills, demanding time and dedication?
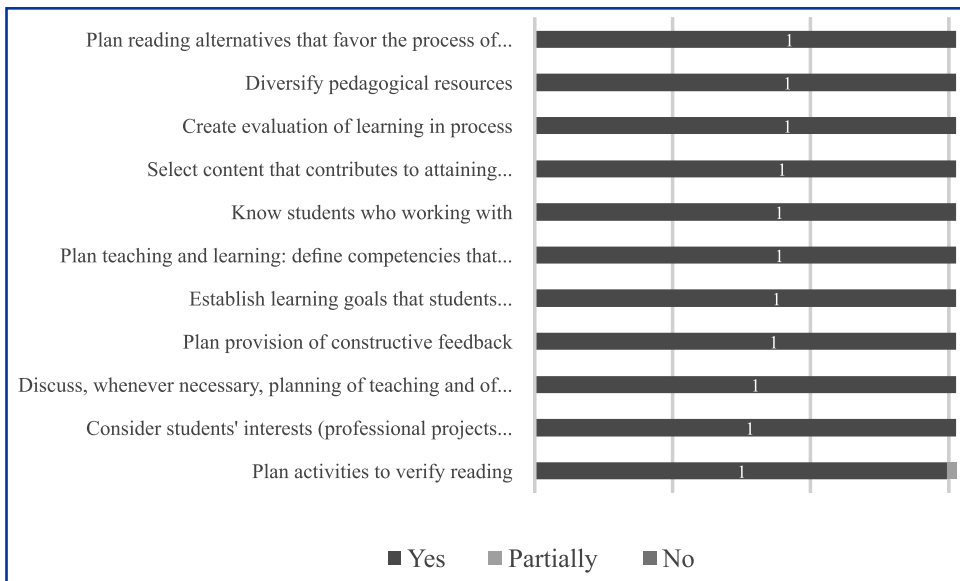
TYPICAL TEACHING RESPONSIBILITIES

When courses and HEIs are pressured to contribute to developing multiple competencies and to orient teaching to learning, teaching responsibilities have not only been expanded, but they have gained in complexity (SORDI, 2019). However, if we consider the national and international literature on the contribution of masters and doctorates to the formation of university professors, we realize that there is a consensus that it has been particularly modest. Few authors propose to establish a virtuous relationship between doctoral education and higher education, Nicole Rege Colet (2009) is no exception. Considering the increasing complexity of the work and the characteristics of the doctoral labor market, particularly among the countries of western Europe, the author identifies the existence of a movement in defense of curricular redesigns aiming at influencing the diversification of the doctoral students competencies in the attempt to form a multipurpose professional. Thus, it is expected to influence the increased possibilities of insertion of doctors in the world of work. It is in this context that the defense of the professionalization of professors gains space in some doctoral courses, particularly located in institutions in Belgium, Switzerland and France (COLET, 2009).

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PERCEPTION OF TEACHING RESPONSIBILITIES

Most professors consider that activities regarding planning and curatorship of reading references (92.0%), diversification of teaching resources (91.4%), and conceiving the learning assessment process (91.4%) are their responsibility. We observed that there is less consensus regarding the responsibilities associated with planning of reading verification activities (74.8%) (due to not knowing?), considering students' interests in the planning and development of the class (77.7%) (due to dis-agreeing?), discussing teaching-learning planning with students (79.7%) (but how to recognize them as subjects of their own learning?), and planning the provision of constructive feedback (86.4%) (how to provide opportunities of self-regulation to students?). It is noteworthy that, especially in the items referring to reading verification, feedback and planning discussion, there is a portion (up to 5.3%) that does not even consider these activities as their responsibility.

Figure 1 Perception of teaching responsibilities.
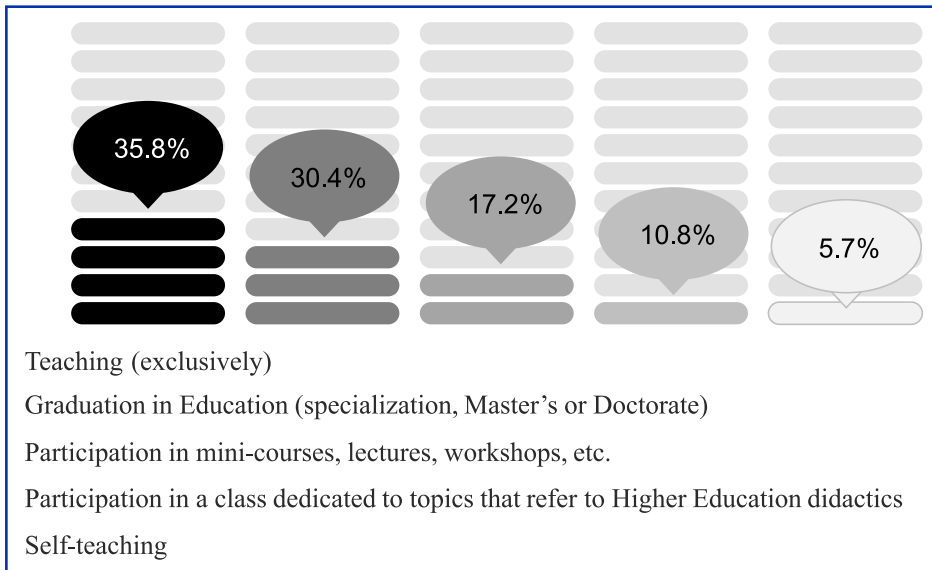

Source: Applied questionnaire, 2019.

Learning-oriented teaching assumes that the professor takes on multiple responsibilities, and the latter require different skills. For this reason, literature has

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used different concepts when referring to the professor: educator, tutor, mentor, mediator, advisor, facilitator, educational design, instructor, content curator, digital influencer, etc. (LIMA, SANTOS, TORINI, 2020).

PERCEPTIONS OF PEDAGOGICAL PROFICIENCY

When considering the complexity of the responsibilities of university professors, knowing that almost ¾ didactic-pedagogical training results exclusively from their teaching practices (35.8%), their participation in specific activities (short courses, lectures, and workshops) that require little time dedication (17.2%), their participation in a discipline that addresses issues referring to didactics in higher education (10.8%) and their self-teaching (5.7%), it is impossible to remain indifferent. At the same time, it seems intriguing that 100% are interested in issues referring to the teaching and learning process, but, simultaneously, 42 state that they have no interest in the results of this survey. Possibly the degrees of the vast majority – masters (49.3%) and doctors (41.0%) – confers relative tranquility among respondents, but would that suffice? At the moment, it seems not!

Figure 2 Didactic-pedagogical competencies result mainly from.

Teaching (exclusively)

Graduation in Education (specialization, Master's or Doctorate)

Participation in mini-courses, lectures, workshops, etc.

Participation in a class dedicated to topics that refer to Higher Education didactics

Self-teaching

Source: Applied questionnaire, 2019.

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Considering a list of didactic-pedagogical activities described in the applied questionnaire, those in which professors consider themselves more proficient are establishing learning goals (81.4%) and the competencies that the discipline will contribute to develop (78.1 %). However, it is notorious that the competencies that a course commits to developing are defined in the Pedagogical Project of the Course, possibly the professors do not have the autonomy to change them. Interestingly, verbs used to communicate learning goals are predominantly associated with teaching activities, only secondarily address learning challenges! Next, nearly three-quarters (74.1%) signal the ability to work with multidisciplinary approaches, and a slightly lower number (73.8%) to mobilize students for learning and to provide feedback (73.4%) – challenges that are notoriously demanding and difficult to overcome spontaneously.

On the other hand, in four activities only half of the respondents stated that they considered themselves proficient: to know and pedagogically explore data on student learning styles (49.5% and 51.8%, respectively), to explore reading verification tools (45.9%) and develop learning assessment protocols and rubrics (47.2%), that is, teaching activities that greatly contribute to student engagement (Table 3 shows the weighted average of grade frequencies (1 to 5), which could be interpreted as respondents' perception of their proficiency).

Table 3 Perceived level of pedagogical proficiency.

	Average grade	% Average
I know how to establish the learning goals the students will attain when taking the discipline	4.11	82.3%
I know how to define the competencies that the discipline I teach will help develop	4.08	81.7%
I know how to work with multidisciplinary approaches	4.02	80.5%
I know how to offer constructive feedback	3.94	78.7%
I know how to mobilize students for learning	3.93	78.7%
I know how to use methods, strategies and tools that favor the teaching oriented by learning process	3.90	78.0%

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I know how to use evaluation as a resource that favors learning	3.84	76.7%
I know how to plan teaching oriented to learning	3.82	76.4%
I know how to use technological resources that favor the teaching oriented by learning process	3.66	73.2%
I know how to explore databases that favor the teaching oriented by learning process	3.63	68.4%
I know how to pedagogically explore the data resulting from a questionnaire that reveal students' styles of learning	3.42	68.1%
I know tools, such as questionnaires, whose results reveal students' styles of learning	3.41	68.1%
I know how to use tools that allow me to verify students' dedication to activities requested before classes	3.40	68.0%
I know how to create learning evaluation protocols	3.40	67.9%

Source: Applied questionnaire, 2019.

Why are professors expected to be able to influence students' interest in studies? In access society, the production and circulation of data and information is intense. In this context, the relevance of higher education lies in helping students be able to transform data and information into knowledge. To the extent that some HEIs, courses and professors insist on working with knowledge stocks (valuing science as a product), the formative experience loses meaning, and students, exposed to numerous sources of data and information, fail to give relevance to experiences provided by the educational environment.

Although wealth of information generates poverty of attention (Herbert Simon), of all the inner functions that help to give meaning to the outside world, attention is the most important insofar as it allows us to recognize what is meaningful and relevant, and produce a kind of organized chaos (SWICKER, 2017). We move between the physical, the mental and the virtual space, the dispute for attention is present in all of them and people's time is a scarce, intensely disputed resource! The finite nature of time implies that in the world of "web attention" everything is in com-

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petition with everything. So, how to compete with varied, interesting and ephemeral possibilities? How to attract students' attention?

Several authors have contributed to the discussion of this issue and propose different solutions, although we identify some convergences: Philippe Perrenoud argues the importance of knowing the student to be able to establish a constructive pedagogical relationship with him; Frederick Irving Herzberg defends the value of working motivation, George Kuh ponders the relevance of promoting engagement, Alexander Astin justifies the centrality of engaging, Bernard Charlot argues for the power of mobilization, and Alain Coulon discusses the need to engage the student – authors and essays that are not to be missed!

PERCEPTION OF STUDENTS' LEARNING

Despite all the pedagogical challenges outlined above, almost seven out of 10 professors (67.8%) believe that by the end of one semester students have generally achieved up to 75% of the subject's learning goals (stresses (we are not referring to content). Another 26.7% are convinced that this range ranged from 25% to 50% of achievement of goals. The plots that believe students achieved 100% of the goals (3.3%) and those that think this percentage was below 25% (2.3%) are residual.

Table 4 Average outreach of learning goals.

	Respondents	%	Weighting
a) Below 25%	7	2.3%	12.5%
b) Between 25-50%	80	26.6%	37.5%
c) Up to 75%	204	67.8%	62.5%
d) 100%	10	3.3%	100.0%
Total	**301**	**100.0%**	**55.9%**

Source: Applied questionnaire, 2019.

These results raise certain questions: amid so many professional commitments, inside and outside the educational environment, to what extent is the learning assessment carried out procedurally? When performed, to what extent are you able to gather evidence that supports the extent to which students have achieved

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learning goals? Remembering that the third biggest challenge for respondents is to mobilize students for learning, are we actually engaging students in studies? Are we being able to formulate learning goals that match the competencies that the discipline we teach commit to collaborate to develop?

For decades, it has been notorious that the anchor of any Teaching and Learning Plan (*Plano de Ensino e Aprendizagem*/PEA) is the definition of the educational goals that justify the discipline. They determine the disciplinary content (menu), the choice of pedagogical resources adjusted to the learning challenges (method, strategies, techniques, tools), the construction of the learning assessment process (involving feedback), the definition of basic and complementary bibliography etc.

The taxonomy of educational (or learning) goals, proposed by Benjamin Bloom (1972), considered the existence of three domains: cognitive, affective and psychomotor. By deepening the first of these (the cognitive), the author established six levels of learning – knowledge, comprehension, application, analysis, synthesis, and evaluation – and when updated, these levels underwent two adjustments: they were expressed using verbs and creativity has replaced synthesis (FERRAZ; BELHOT, 2010). Since then, the educational goals derive from six verbs that move between lower-order and higher-order thinking, and thus refer to increasing levels of complexity.

This deserves to be taken into account when planning, conducting, and evaluating the outcomes of a discipline, module, and/or activity (such as a lesson), particularly when setting educational goals. Some questions can help us reflect on what we want to draw attention to: When defining the goals of a discipline, do we take into account teaching or learning? In defining learning goals, are we striving for higher or lower order thinking? What is the repercussion of this on the relevance of the course in general, the subject in particular, and the student's academic background?
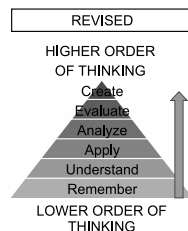
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Chart 1 Example: definition of educational (or learning) goals.

EXAMPLE 1

Discipline: **Production Planning and Control**
Module: **Predicted Sales**
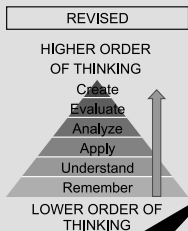At the end of the Predicted Sales Module, students should be able to
- **REMEMBER** the three prediction hypotheses and list the typical patterns of historical data behavior, reproducing them when carrying out theoretical exercises, involving the names of the prediction techniques that are most used in stationary processes, with trends and seasons.
- **UNDERSTAND** the differences between existing techniques, comparing each one of them with the different hypotheses and data standard.
- **CHOOSE** and **APPLY** one of the techniques, implementing a specific program or using an available app.
- **ANALYZE** the different error measurements, comparing them, attributing importance meanings and understanding in what circumstances each one is most adequate.
- EVALUATE the results obtained through the prediction technique, estimating the impact of accuracy and uncertainty associated with the whole process.

REVISED
HIGHER ORDER OF THINKING
Create
Evaluate
Analyze
Apply
Understand
Remember
LOWER ORDER OF THINKING

(*) We highlight that, for each goal, the verb gerund allows for clarifying "what" and "how" to evaluate, to what measure the goal was reached.

Chart 2 Example: educational goals – emphasis on teaching and emphasis on learning[1]

FOCUS ON TEACHING   **FOCUS ON LEARNING**

EXAMPLE 2

REVISED
HIGHER ORDER OF THINKING
Create
Evaluate
Analyze
Apply
Understand
Remember
LOWER ORDER OF THINKING

When goals are oriented by teaching, observe how hard it is to evaluate learning

FOCUS ON TEACHING

Topic: Organizational Culture

Contents: Types of culture; Mission, values and principles; Leader as an agent of transformation and leverage of organizational culture

Goals:
- To present main types of organizational culture to students;
- To explain how an organization's mission, values and principles can be identified and/or described
- To discuss the leader's role as an agent of transformation and leverage of organizational culture

FOCUS ON LEARNING

Academic competencies: to identify, understand, select, illustrate, describe, explain, create

Technical Skills: vision of business, focus on results, establishment of priorities, sustainability, change

Educational goals
To **identify** and **understand** concepts of organization culture, critically studying indicated literature
To **select** one of them using criteria to interpret the context of a certain organization, illustrating the exercise with real examples
To **identify** the of culture in the selected organization, describing the mission, respective values and principles
To **create** a plan of action capable of orienting the leader to work as an agent of transformation and leverage of organizational culture

1   The example in question results from joint work by professors Marcia Portazio and Manolita Correia Lima - Academic Development Week (Semana de Desenvolvimento Acadêmico), Feb./2018.

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For an initial classification of the verbs identified in the educational goals registered by respondents, taking as reference the most representative discipline of their teaching practice, a reference base of 127 verbs (some appearing in more than one order[2] of thinking) was used, distributed in the six domains mentioned cognitive factors (Table 5).

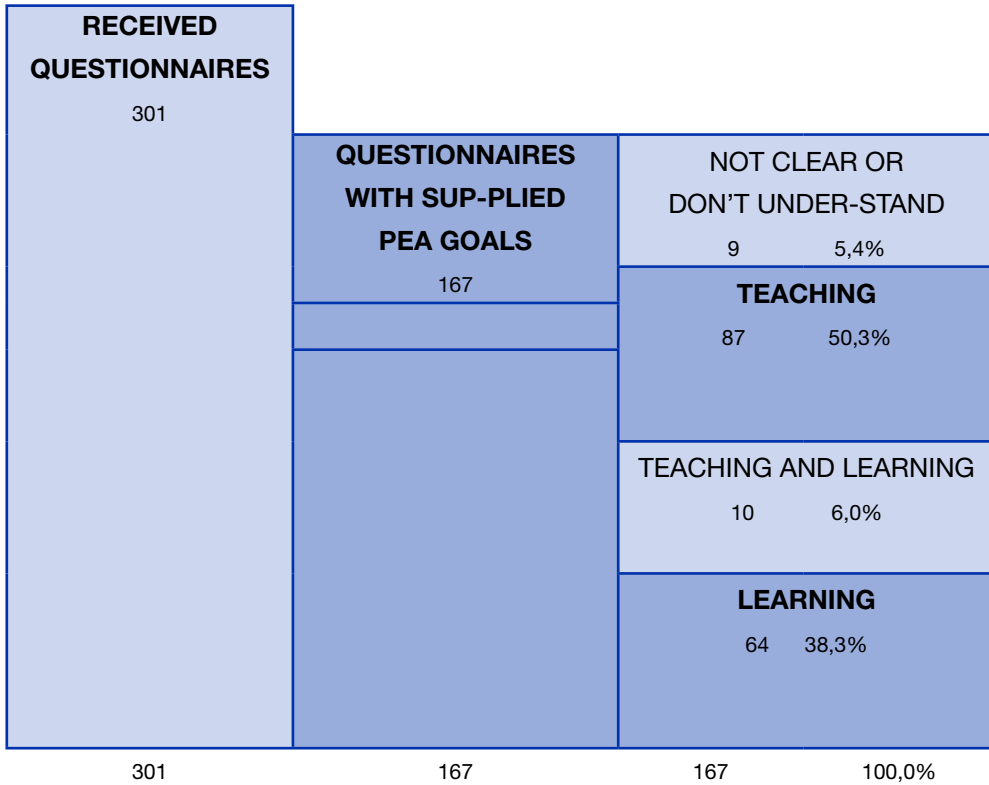**Table 5** Verb frequency by cognitive domain and order (referential base).

Order of thinking	Lower		Higher	
Cognitive domain	%	% Accum.	%	% Accum.
6 Create	15.0%	100.0%	26.0%	100.0%
5 Evaluate	10.2%	85.0%	19.7%	74.0%
4 Analyze	16.5%	74.8%	16.5%	54.3%
3 Apply	21.3%	58.3%	16.5%	37.8%
2 Understand	21.3%	37.0%	10.2%	21.3%
1 Remember	15.7%	15.7%	11.0%	11.0%
Base total	100.0%		100.0%	

Source: Applied questionnaire, 2019.

In light of what we recurrently name Bloom's Taxonomy, it is possible to state that the result of the analysis of educational goals informed by respondents confirms the prevalence of verbs that reinforce a teaching-oriented pedagogical culture, rather than verbs that reinforce commitment to learning. Figure 9 gathers data that consolidates the distribution of educational goals reported by respondents.

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2   For example: the verbs 'compare', used in dimensions Understand, Analyze and Evaluate, and 'distinguish', in dimensions Remember, Understand and Analyze.

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Figure 2 Educational goals classified according to teaching and/or learning bias.

RECEIVED QUESTIONNAIRES 301	QUESTIONNAIRES WITH SUP-PLIED PEA GOALS 167		
		NOT CLEAR OR DON'T UNDER-STAND	9	5,4%
		TEACHING 87	50,3%
		TEACHING AND LEARNING 10	6,0%
		LEARNING 64	38,3%
301	167	167	100,0%

Of the 301 valid questionnaires, only 167 respondents recorded the educational goals. Of these, while 38.3% (64) use verbs aligned with the learning challenge, 50.3% (84) preserve teaching-oriented goals. The others have double writing, sometimes emphasize teaching, sometimes emphasize learning (6.0%) or writing makes it difficult to understand the utterance (5.4%). Reading the 64 (38.3%) educational goals aligned with learning allowed the identification and classification of 335 verbs, of which only 256 could be associated with Bloom's educational goals taxonomy. This is equivalent to stating that 79 verbs[3] are not part of the adopted base.

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3   Due to the difficulty in measuring the degree of learning, many of these verbs do not have their recommended use in the elaboration of learning goals. As an example, the 79 verbs include: act, understand, express, strengthen, observe, experience.

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Table 6 Verbs identified by domain level (order of thinking)[4].

Order of thinking	Lower			Higher		
Cognitive domain	Freq.	%	Accum Inf. %	Freq.	%	Accum Sup. %
6 Create	15	5.9%	1000%	35	13.7%	100.0%
5 Evaluate	23	9.0%	94.1%	40	15.6%	86.3%
4 Analyzer	37	14.5%	85.2%	74	28.9%	70.7%
3 Apply	39	15.2%	70.7%	26	10.2%	41.8%
2 Understand	75	29.3%	55.5%	77	30.1%	31.6%
1 Remember	67	26.2%	26.2%	4	1.6%	1.6%
Base total	256	100.0%		256	100,0%	
Identified verbs	335					
Not identified	79					

Source: Questionário aplicado, 2019.

CHALLENGES ASSOCIATED WITH TEACHING[5]

Among the biggest challenges faced by respondents in their teaching practice (Table 5) is that they have time to devote to the study of pedagogical questions (69.5%), understandable perception when we consider the weekly workload signaled by most respondents. The second biggest challenge concerns working conditions as professors resent working with a large number of students per class (67.7%), followed by guiding teaching through learning[6] (66.6%), and working with very heterogeneous classes in repertoire (65.6%), possibly, for this reason, 2/3 report having difficulty mobilizing students for learning (66.5%).

On the other hand, according to professors, it is less challenging to provide feedback (54.8%), establish constructive dialogue with students (54.8%), adjust

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4   Because several verbs appear in more than one cognitive dimension, we opted for the analysis with distinct verb relations and allocations in two extreme tables.

5   Weighted average of self-rated grades by respondents versus their frequencies.

6   The challenge in orienting teaching by learning involves institutional elements that are often beyond a teacher's decision-making power and personal effort.

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content to the learning goals of the subject (54.4%), argue the relevance of the discipline (54.3%) and define the learning goals of the discipline (50.8%). Interestingly, they all contribute directly to student mobilization for learning!

In an essay by Vasconcellos and Sordi (2016), provocatively named *Training university professors: an (im)possible task?* (*Formar professores universitários: tarefa (im)possível?*), the authors point out that the result of a teaching action depends on adhesion by the other (the student), which, because of his or her uniqueness, can frustrate the professor, however careful he may be when planning, carrying out the planning, and evaluating learning.

Table 7 Perception of challenges.

Challenge	Average grade	% average
To have time to study pedagogical issues	3.48	69.5%
To work with a large number of students per class	3.39	67.7%
To orient teaching through learning	3.33	66.6%
To mobilize students for learning	3.33	66.5%
To work with extremely heterogeneous classes (in repertoire)	3.28	65.6%
To use varied pedagogical resources aiming to respect the profiles...	3.09	61.8%
To evaluate learning: to what extent have the learning goals were...	3.06	61.2%
To pedagogically explore resources derived from digital technologies	2.99	59.8%
To establish a constructive dialogue with course leaders	2.85	57.1%
To adapt learning goals to course load	2.81	56.3%
To offer constructive feedback	2.74	54.8%
To establish constructive dialogue with students	2.74	54.8%
To adapt content to the learning goals of the course	2.72	54.4%
To argue the relevance of the discipline to student education	2.71	54.3%
To define learning goals for the course	2.54	50.8%

Source: Applied questionnaire, 2019.

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Final Considerations

In the sample as a whole, professors have a good academic background, significant experience with higher education, face a demanding weekly work schedule as they combine multiple professional activities inside and outside the academic environment, which require multiple skills, time and a lot of dedication. All respondents signal interest in pedagogical questions, although part of them point out the limited time to devote to the theme as the main challenge faced, and one group declared disinterest in the results of this survey. As much as learning-oriented teaching represents a paradigmatic transformation, that only a portion of professors have a degree in education and many have little time to study the issue, they are proficient in the main activities involving teaching and learning. This justifies questioning the effective awareness of the level of complexity present among the various challenges involved in this paradigm shift.

The teaching-learning process presupposes the building up of pedagogical relations, so, to know the student, to build pedagogical relations based on trust, in order to adjust the way to work with him, gains centrality in the universe of a learning-oriented pedagogy. However, there is little evidence that we are indeed imbued with this purpose. Learning goals act as the anchor of the teaching-learning process. This is equivalent to stating that if we define these goals in a wrong way, there will be repercussions on the whole teaching-learning process. Considering the verbs used, among the 335 identified, two observations fit: learning goals prevail aligned with lower order of thinking (understanding, identifying, understanding, etc.) and teaching goals (presenting, enabling, providing, etc.) that little contribute to learning. More than that, they hinder the learning assessment process – how to evaluate "present" "enable" or "provide" if they are verbs aligned with teaching goals? – and student self-regulation. In-process assessment contributes to the teaching and learning management and self-regulation of students, important aspects when working with adults who require environments that promote the promotion of responsible autonomy. The data indicate that professors can partially recognize the challenges involved in this process and how much it contributes to teaching and learning. The challenge that refers to providing feedback is revealing.

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Although there is a growing understanding of the need for pedagogical training for a more adequate exercise of university teaching, "there is a certain lack of accountability of institutions and public policies towards a movement for the professionalization of higher education teaching" (CUNHA, 2018, p. 22). The public policy aimed at the pedagogical formation of university professors is notoriously timid[7] and institutional actions are very punctual, such as the planning week. Faced with this void, the market has occupied a space neglected by the state and most HEIs, creating scalable educational solutions of a predominantly instrumental nature. However, the process of pedagogical training of university professors' needs to be reconfigured in a broader, critical and rigorous manner, moving away from apparently simple, quick, adjusted models and prescriptions, disregarding the diversity of situations found in a continental and asymmetrical country such as Brazil.

The absence of a university professor pedagogical training policy, associated with the increasing complexity of teaching work, focuses on the need for the professor to create or strengthen alliances. In this context, the importance of the collective grows, of a community that together learns to teach and learn (SORDI, 2019). Several ongoing experiences signal the passage of an individual, solitary and isolated professor to a joint work, capable of respecting the diversity of pedagogical forms of organization, without neglecting the institutional culture. It is not without reason that initiatives involving integration and interaction – whether through networking, partnering or alliance-building, which as a whole converge into hubs or active platforms – are being multiplied. Thus, there is a movement to reinforce teaching professionality based on collaboration and cooperation (NÓVOA, 2018). In this sense it is possible to explore the potential of *experiential learning* (KOLB, 1984), *situated learning*, of collective work resulting from participation in communities of interest, *communities of practice* (WENGER, 1998), *working community*, *professional community*, or *reflective practice* (SCHON, 1992).

Last but not least, we must reaffirm what professor António Nóvoa wrote in an essay published a few months ago, suggestively called *The future of the university:*

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7   Article #66 of the Law of Guidelines and Bases of National Education (Lei de Diretrizes e Bases da Educação Nacional/LDB, 1996) provides that "the preparation (sic) for the exercise of higher teaching will be done at postgraduate level, mainly in master's programs and doctorates".

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the biggest risk is not taking risks (2019, p.61) (*O futuro da universidade: o maior risco é não arriscar*) – "the revitalization of pedagogy requires an identical intellectual investment. what is done in science and research requires the construction of new practices, the search for new ways of teaching, an effort to recover the lost enthusiasm of the educational gesture".

Finally, we share a general reflection: in order to increase the impact of Higher Education in Brazil and worldwide, we need Education Professionals who develop 21st Century skills. We often teach in the way we learn and, following this logic, to teach new skills we must have developed these skills within us. From this we can contribute to students' learning, whether in undergraduate courses, technologist or *stricto sensu*. Are we, our courses and programs, facing this challenge?

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