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Accountancy teaching in Brazil: epistemology, pedagogy and professional knowledge

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Abstract

Objective: To identify the epistemological and pedagogical theories and the necessary knowledge for the profession that guide the profile of Accountancy teachers in Brazil.

Method: This is an applied, quantitative, exploratory and descriptive survey research. The data was collected through an online questionnaire and the results were analyzed using descriptive statistics. The sample consisted of 108 observations.

Results: The results indicate that the constructivist and active theories are implicit in teachers' learning, the pedagogical and epistemological models of the non-directive or a priori relational pedagogies or the relational epistemology as beliefs representing the teacher's attitude towards teaching-learning in the classroom; the four priority knowledge types in the area are knowledge of the subject taught (content), professional experience, curriculum and pedagogical knowledge.

Contributions: We hope to contribute to Accounting teaching and research through the reflections of Higher Education Institutions, teachers and students with a view to the advance of the accounting area concerning the professionalization of teaching.

Key words: Epistemology of teaching. Pedagogical models. Professional knowledge.

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1 Introduction

Research on Accounting teaching in Brazil needs advances to improve the teaching practice (Miranda, Casa Nova & Cornacchione Júnior, 2012). Knowing the teacher's profile, epistemological and pedagogical orientation and the necessary knowledge that guides the professional practice can support the development of teaching. In addition, according to Peleias, Silva, Segreti e Chirotto (2007), knowing the teacher's profile can offer information to the responsible agents at Brazilian Higher Education Institutions (HEI) to enhance the teaching practice and improve the quality of teaching.

Earlier studies on the profile of Accounting teachers in Brazil intended to understand aspects of their professional education (Nossa, 1999), teaching knowledge (Slomski, 2007; Slomski & Andrade Martins, 2008; Alencar & Araújo, 2011; Slomski, Lames, Megliorini & Lames, 2013; Frauches, 2015), teaching models (Mazzioni, 2013; Silva, Santos, Cordeiro Filho & Bruni, 2014), epistemological conceptions (Laffin, 2013), the professional the teacher is expected to prepare (Nogueira & Fari, 2007), the profile of the teachers who serve as reference points (Miranda, 2011) and their competences the students value (Nogueira, Casa Nova & Carvalho, 2012; Rezende & Leal, 2013; Vasconcelos, Cavalcante & Monte, 2013), com o intuito de desvendar a postura do professor em sala de aula e os conhecimentos que o definem enquanto profissional.

To advance the teaching knowledge in accounting, reflection is due on the pedagogical and epistemological models and competences needed for the profession (Miranda *et al*., 2012). Therefore, the question guiding this study is: **Which are the epistemological and pedagogical factors and the knowledge necessary for the profession that define the role of Accountancy teachers in Brazil?**

The general objective is to identify the factors related to epistemology, pedagogy and the knowledge needed for the profession in the profile of Accountancy teachers in Brazil. To achieve this goal, the study is divided in stages, as follows: literature review on implicit learning thories, epistemological and pedagogical models and knowledge needed for the teaching profession; elaboration of a data collection tool, sample selection and application of the tool to assess the respondents; and analysis of the results using descriptive statistics to characterize the teaching profile in accounting.

This study differs from earlier studies because it identifies the beliefs (epistemology) underlying the teaching action (pedagogy) that guide their professional practice, and the knowledge (competences) necessary for the teaching profession in Accounting teaching according to the teachers. The epistemological models are characterized from the perspective of implicit learning theories (Rodrigo, Rodríguez & Marrero, 1993), the pedagogical models (Becker, 1994) and the knowledge (or competences) needed for the teaching profession, according to Gauthier, Martineau, Desbiens, Malo and Simard (1998) and Tardif (2002).

The research is divided in five parts. After this introduction, the theoretical literature review is presented. In the third part, the procedures and methods used in the research are listed. In the fourth, the collected information is analyzed and research results are discussed. In the fifth, the conclusions are presented.

2 Theoretical Background

2.1 Studies on the profile of Accountancy teachers in Brazil

Recent studies on the profile of Accountancy teachers have advanced in the understanding of their background and professional trajectory (Nossa, 1999), the teaching knowledge underlying the teaching practice (Slomski, 2007; Slomski & Andrade Martins, 2008; Slomski *et al.,* 2013; Alencar & Araújo, 2011; Frauches, 2015), the factors characterizing the teachers' teaching model (Mazzioni, 2013; Silva *et al.,* 2014), such as the pedagogical practices and strategies used in the classroom, the technological resources, teaching methods, assessment and planning of the courses.

Other studies try to understand the teaching practice in Accounting through their epistemological concepts and influence on the teaching-learning process (Laffin, 2013), the profile of the professional the teachers is expected to prepare (Nogueira & Fari, 2007), the main reasons for choosing the teachers who serve as reference points for the students (Miranda, 2011), who incorporate relational attributes between student and teacher, besides the didactics and the competences of the teachers the students value (Nogueira *et al*., 2012) and which the teachers value (Rezende & Leal, 2013; Vasconcelos *et al*., 2013).

To advance the teaching profession in accounting, the epistemology, pedagogy and competences (or knowledge) needed for the profession needs to be identified and reflected on (Miranda *et al*., 2012). This study adds up to earlier research and aims to identify factors guiding the teaching practice based on implicit learning theories (Rodrigo *et al*., 1993), the pedagogical and epistemological models (Becker, 1994) and the experience-based knowledge regarding teaching (Gauthier *et al*., 1998; Tardif, 2002).

2.2 Implicit teacher learning theories

The implicit learning theories are individual personifications built on experiences gained in the social context (Nuñez, Ramalho & Uehara, 2009), that is, they synthesize knowledge and experiences that shape the teaching practice. The understanding of the theme can support the view of the teaching practice, based on the epistemological construction that guides it and on self-assessment (Nuñez *et al*., 2009).

In teaching, the theories are classified from the perspective of the pedagogy of teaching, built over time and reconstructed on the pedagogical knowledge base, transmitted through education and pedagogical practice (Cunha, 2001). These are separated into: traditional, technical, constructivist, active and critical (Rodrigo *et al.,* 1993).

The Traditional Theory is characterized by the disciplinary knowledge notion and by learning gained through the reception of information. It emphasizes the priorization of the contents and is centralized in the teacher's moral authority, who exerts his power over the student. The student is hardly active in the process; he is the destination of truths the teacher transmits. This model is related to a logocentric education (Nuñez *et al*., 2009).

Technical Theory is based on the epistemological premises of the Traditional Theory, complemented with ideas taken from cybernetics and systems theory. This theory emphasizes the instructional objectives. In this theory, the teaching process is considered as a technical procedure, in a structured manner, in search of efficiency through a goal-centered assessment. The objectives can also be expressed using taxonomies. The assessment of teaching is intended to determine to what extent the proposed goals are achieved (Nuñez *et al*., 2009).

The Constructivist Theory, on the opposite, supposes that education should adapt the student to the adult world; learning is appointed as a construction process of meanings by the students under the student's mediation (Nuñez *et al*., 2009). This theory argues that the student is responsible for constructing his knowledge and should determine when, how and what to learn, respecting his personal limits (Gregorio & Pereira, 2012).

The Active Theory argues that it is through practice that the student learns and adopts a practical understanding of knowledge under the teacher's advice. It priorizes learning through discovery. Based on a pragmatic posture, this theory considers activity as a fundamentally human characteristic. Thus, the subjects' curiosities and needs guide the search for hypotheses preceding their action (Nuñez *et al*., 2009).

As opposed to the above theories, the Critical Theory adopts a disciplinary and problematizing knowledge logic and highlights the socialization and the political-moral nature of teaching. According to this branch, man lives in a context, in a society and a historical time. Therefore, education is intended to prepare the students' critical awareness (Nuñez *et al*., 2009).

The Implicit Learning Theories are a group of implicit epistemological, ontological and conceptual premises that guide the subjects' predictions, judgements, interpretations, decisions, actions and expressions (Scheuer & Pozo, 2006). Their study focused on the teachers is intended to explain the latent structure that grants meaning to teaching as the teacher's mediation in the school curriculum.

The teachers' beliefs are conscious or unconsciously reflected in the pedagogical models of teaching, which represent the teacher's posture in the classroom towards the school teaching and learning process. That topic is explored in the next part.

2.3 Pedagogical models of school teaching and learning

The teacher's background and posture in the classroom can be represented using different pedagogical models to characterize the school teaching and learning process. Becker (1994) discusses these representations under the names directive pedagogy, non-directive pedagogy and relational pedagogy, each of which has an underlying epistemology that influences and guides the teachers' pedagogical practice.

In directive pedagogy, the teacher teaches and the student learns. The teacher believes that knowledge can be transmitted to the student. In other words, the epistemology behind the teaching action is that knowledge can be understood as form or structure - not just content - and that its transmission takes place through an explanation (Becker, 1994).

The epistemology of directive pedagogy is that of empirism. According to this, at birth, the individual is devoid of knowledge; (s)he can be considered a blank sheet or *tabula rasa*. In that sense, there is nothing in man's intellect that did not enter through the senses. The teacher believes that the student is a *tabula rasa* towards each new content in the curriculum or subject (Becker, 1994).

Therefore, for empirism, the student's knowledge and ability to know derives from the physical or social midst. The student learns if, and only if, the teacher teaches (Becker, 1994). Teaching and learning are not complementary; they are considered as the model of fixism, reproduction and repetition. The student should submit to the teacher's speech, remain silent, pay attention and repeat the writing, reading etc. as many times as needed, until the teacher's knowledge sticks in his mind (Becker, 1994).

In the non-directive pedagogy, the teacher is a facilitator of the student's learning. The student brings a knowledge into the classroom that he only needs to be aware, organize or enhance content, and the teacher should interfere as little as possible in the learning. The non-directive teacher believes that the student learns by himself and that, at most, he can facilitate the learning and arouse a knowledge that already exists in the student (Becker, 1994).

The epistemology of non-directive pedagogy is that of apriorism. The logic underlying this belief is that the human being is born with the knowledge already programmed in his genetic inheritance. A minimum stimulus for the sake of exercise is sufficient for the knowledge to develop in the individual. Hence, the interference of the midst should be reduced to the minimum (Becker, 1994).

Teachers instilled with an a priori epistemology waive interventions in the student's learning process, which is one of the core characteristics of teaching action. In terms of pedagogical relationship, the student determines the teacher's action or starvation. In this relationship, the teaching hub loses authority while that of learning becomes absolute. Consequently, the teacher is detached from his function, while the student is raised to a status he does not have; his non-learning is explained as an "inherited deficit" (Becker, 1994).

The relational pedagogy considers that learning takes place through mutual construction between student and teacher. The teacher considers that the student will only learn something if he acts and problemizes his action (Becker, 1994). Two conditions are necessary for some new knowledge to be constructed: that the student acts on the material the teacher makes available and that he reflects on the disturbances the assimilation of this material provokes, that is, that the student appropriates his actions on this material (Piaget, 1977).

The relational epistemology underlies the relational pedagogy. The teacher has constructed knowledge, mainly in the sense of formalized knowledge, and believes that his student is capable of learning always. This ability needs structure though, or a background condition of the whole learning experience, which indicates the student and the content's logical ability. The student needs to learn what the teacher has to teach - that will challenges the intentionality of his awareness (Freirer, 1979) or will provoke a disequilbrium (Piaget, 1977), which will require answers from the student in two complementary dimensions: content and structure.

According to Freire (1979), in the relational pedagogy, the teacher does not only teach, but also starts to learn; and the student, besides learning, starts to teach. In this relationship, teacher and students advance over time. Every day, the teacher will construct his teaching and enhance the dynamics of his learning process (Becker, 1994).

Finally, the teachers' epistemological conceptions influence how they visualize the teaching and learning process, which consequently influence their pedagogical practices in the classroom. Therefore, understanding the pedagogical and epistemological models underlying the teaching action can contribute to the reflection on the profile of being a teacher in accounting.

2.4 Knowledge needed in the teaching profession

It is fundamental to overcome the instrumental technical rationality that mediates the structuring of Accounting knowledge with a view to enhancing the meaning of classroom teaching (Laffin, 2013). Therefore, it is important to reflect on the role of accounting teachers, their professional background, teaching-learning concepts and the knowledge necessary for teaching that guides their classroom practices (Miranda *et al.*, 2012).

At the start of their teaching career, teachers bring along different experiences of what it is like to be a teacher, which permit distinguishing who were good professionals (Pimenta & Anastasiou, 2002). The teacher tends to see the university from the teacher's perspective and, over time, develops personal skills, such as improvisation, tricks, gestures, attitudes and styles that allow him/her to overcome the difficulties and develop a particular way of teaching (Tardiff, 2002).

In search of a better understanding about research on knowledge necessary for teaching, Puentes, Aquino and Quillici Neto (2009) categorized the studies in the area in three groups: knowledge necessary for teaching; learnings necessary for teaching; and competences necessary for teaching. According to the authors, researchers use different typologies, but without significant conceptual differences, as the professionalization of teaching consists of three elementary components: knowledge, know-how and knowing how to be, presented in the form of knowledge or competences (Puentes *et al.*, 2009).

Accounting research indicates common characteristics of outstanding teaching professionals: mastery of content and pedagogical practice (Celerino & Pereira, 2008; Catapan, Colauto & Sillas, 2012; Miranda *et al*., 2012; Vasconcelos *et al*., 2013), professional experience (Slomski, 2007; Dombrowski, Garner & Smith, 2010; Rezende & Leal, 2013) and relationship with students (Nogueira *et al*., 2012; Rezende & Leal, 2013).

The abovementioned studies highlight the relevance of professional knowledge in Accounting teaching. According to the literature in the area, this knowledge plays a paramount role in the knowledge construction but, if analyzed in isolation, it is not sufficient (Miranda *et al*., 2012). Resting vocational training on experience only means leaving each teacher in charge of discovering effective strategies for him/herself, at risk of exposing the students to the negative effects of attemptive teaching (Gauthier *et al.,* 1998).

Therefore, there is a lack of studies that explore the needs for a consistent pedagogical-didactical background in further depth, so as to assess the role the teaching institutions could play in teacher training (Miranda *et al*., 2012). In that sense, the incorporation of knowledge that allows the teacher to understand and cope with the reality, such as the beliefs and models underlying his education, can broaden the view on the experience-based knowledge needed for the accounting teaching profession.

3 Method

This is a quantitative, exploratory and descriptive survey research (Marconi & Lakatos, 2003). The data were collected through an online questionnaire for Accounting teachers from Brazilian Higher Education Institutions (HEI). A convenience sample was obtained. To find the sample, the list of accredited HEI offering Accountancy courses was searched on the website of the Brazilian Ministry of Education and Science (MEC) (Brasil, 2018) 1,817 traditional and 115 distance education courses were found. Fifty-four of these are extinct, while 1,763 are active at 1,570 HEI in the country.

Using the institution's abbreviation or name, an Internet search was undertaken, accessing the institutional website to find the teachers or the course coordinator's institutional e-mail. Teachers at institutions that published the teachers' e-mails received the invitation to take part in the research directly, asking them to answer the research and forward it to other Accountancy teachers on their contact list. For the institutions that only published the coordinator's e-mail, that person received the request to cooperate with the research by forwarding it to the teachers at his HEI. In total, 862 e-mails were sent and 108 answers to the questionnaire were received.

The questionnaire was organizzed in four dimensions, the first related to the teachers' general information; the second to the implicit learning theories, based on the studies by Rodrigo *et al.* (1993) and Nuñez et al. (2009); the third on pedagogical and epistemological teaching models, according to Becker's proposed logic (1994); and the fourth on the knowledge needed for teaching, in accordance with Gauthier *et al.* (1998) and Tardif (2002).

In the first section, the characteristics surveyed on the Brazilian accountancy teachers' profile were: the respondent's sex, region of the country, type of institution, degree, dedication to teaching, teaching experience, any other activity beyond teaching, pedagogical background and publication of articles in congress annals or journals.

The second part of the questionnaire consisted of 32 propositions (statements, identified as E1, E2... E*n*), characterizing each of the implicit learning theories (traditional, active, critical, technical and constructivist). For each theory, statements were presented on a Likert scale ranging from 1 tot 7, for the respondents to choose their level of agreement with the statement.

In the third part, considering the pedagogical teaching model, the teachers were asked how their perceived their daily work and the students' role, signaling one out of three alternative statements that best represented their educational concept and practice. Alternative A was related to directive pedagogy/empirism; B to non-directive/a priori pedagogy; and C to relational/constructivist pedagogy.

The fourth part contained seven knowledge types needed for the teaching profession, such as knowledge on the subject taught, curriculum, professional experience, pedagogical, personal (family, society, etc.), epistemological and information technology knowledge. The respondents were asked to assess and rank them according to their perception of the base underlying their teaching practice, with 1 indicating the knowledge that represents the main support for their teaching practice and 7 the least probable support. The questionnaire structure is displayed in Picture 1

Professional dimension.	Aspects studied	Questions/Statements	Authors
1. Socioprofessional data	Sex, region, type of institution, degree, dedication to teaching, teaching experience, other activity beyond teaching, pedagogical background, and publication of articles in congress annals/ journals.		
2. Implicit Learning Theories	Traditional Theory	E1, E4, E8, E19, E21, E24, E30, E31	Rodrigo *et al*. (1993) and Nuñez et al. (2009)
	Active Theory	E2, E11, E15, E25, E26, E32	
	Constructivist Theory	E7, E12, E13, E14, E17, E23	
	Technical Theory	E5, E6, E9, E16, E18	
	Critical Theory	E3, E10, E20, E22, E27, E28, E29	
3. Pedagogical and Epistemological Teaching Models	Directive Pedagogy/Empirism	Alternatives A, B or C. One answer allowed.	Becker (1994)
	Non Directive/A priori Pedagogy		
	Relational/Constructivist Pedagogy		
4. Knowledge needed in the Teaching profession in Accounting	Knowledge on the subject taught	Seven alternatives, to be ranked from 1 to 7 according to the degree of importance.	Gauthier *et al*. (1998) and Tardif (2002)
	Curriculum knowledge		
	Experience-based knowledge of the profession		
	Pedagogical models		
	Personal knowledge (family, society etc.)		
	Epistemological knowledge		
	Information technology knowledge		

Picture 1. Questionnaire Structure

Source: elaborated by the authors (2018).

Through the questionnaire, the beliefs (epistemology) could be identified through which the Accounting teachers construct, transmit and negotiate the meanings of learning in their professional practice (pedagogy) or education, reflecting their posture towards or practice of the profession in the classroom. For the data analysis, descriptive statistics was used to summarize the results found and establish a profile of the research sample. The results are presented in the following section.

4 Analysis and Discussion of the Results

The research sample included 108 Brazilian Accountancy teachers. Of this total, 60% are men and 40% women. Most respondents were concentrated in the South (40%), followed by the Southeast (21%), Central-West (18%), North (6%) and Northeast (6%), respectively. Fifty-nine percent work in the private and 41% in the public teaching network.

As regards the teachers' background, 53% hold a Master's degree, 31% a Doctoral degree and 17% a specialization degree. In total, 41% teach exclusively, 26% about 40 hours per week, 16% between 10 and 20 hours and 14% more than 20 hours per week. As to the teaching experience, 64% have between 7 and 25 years of experience, 20% between 4 and 6 years, 7% between 1 and 3 years and 7% between 26 and 35 years.

In addition, the respondents were asked if they engaged in another activity besides teaching; 54% do and 46% do not. In addition, 58% affirm a pedagogical background, while 42% do not. Concerning research, 87% of the teachers affirm that they have published articles, while 13% have not. The respondents' profile is presented in Table 1.

Table 1

Profile of the accounting teachers in the research.

Item	**Frequency (%)**	
Total faculty	108	100%
Sex		
Male	65	60%
Female	43	40%
Region-UF		
North	7	6%
Northeast	7	6%
Central-West	19	18%
Southeast	23	21%
South	51	47%
Type of Institution		
Public	44	41%
Private	64	59%
Degree		
Specialization	18	17%
Master's	57	53%
Doctoral	33	31%
Dedication to Teaching		
Wage-based (between 10 and 20 h.)	17	16%
Wage-based (more than 20 hours per week)	15	14%
40 hours per week	28	26%
Exclusive	44	41%
Teaching Experience		
1 to 3 years	8	7%
4 to 6 years	22	20%
7 to 25 years	69	64%
26 to 35 years	8	7%
Other activity beyond teaching?		
Yes	50	46%
No	58	54%
Pedagogical background?		
Yes	45	42%
No	63	58%
Publication of articles in congress annals/journals?		
Yes	94	87%
No	14	13%

Source: elaborated by the authors (2018).

To identify the respondent teachers' epistemological models, the response frequencies were processed and the individual and group average for each of the five theories (Traditional, Technical, Constructivist, Active and Critical) were calculated, as well as the group's mean standard deviation. Considering the average of the group's answers, the predominant implicit theories among the teachers are, in this order: Constructivist (5.39), Active (5.23), Technical (4.49), Critical (4.54) and Traditional (3.85).

It can be affirmed that, on average, the constructivist and active theories most strongly influence the epistemology of teaching in the research sample, in view of the highest group averages for these theories and the lowest variations in the level of disagreement among the respondents, as indicated by the group's average standard deviation (constructivist = 0.29; active = 0.72) In addition, the individual average of these groups' answers show a high agreement level in the answers, with scores superior to 4 on a scale from 1 to 7. These findings are in line with Nuñez *et al.* (2009). The answers are displayed in Table 2.

Table 2

Epistemological models of Accountancy teachers in Brazil.

Theory	Question	Response Frequency							Individual Average	Group Average	Standard Deviation Group Average
		1	2	3	4	5	6	7			
Constructivist Theory	Q7:	0	3	5	6	25	38	31	5.69	5.39	0.29
	Q12:	1	7	4	15	35	25	20	5.11		
	Q13:	2	5	6	21	32	25	17	5.03		
	Q14:	0	0	4	6	26	41	29	5.69		
	Q17:	3	4	4	12	31	32	22	5.30		
	Q23:	1	3	4	8	34	31	27	5.52		
Active Theory	Q2:	3	4	9	29	32	18	12	4.69	5.23	0.72
	Q11:	0	0	4	6	15	45	38	5.99		
	Q15:	6	8	8	19	27	22	11	4.31		
	Q25:	2	0	3	6	17	43	35	5.77		
	Q25:	0	2	5	7	21	32	41	5.84		
	Q32:	1	4	15	14	36	23	13	4.81		
Technical Theory	Q5:	1	3	4	15	32	32	20	5.29	4.49	1.15
	Q6:	5	11	8	14	35	16	12	4.28		
	Q9:	0	3	4	7	25	35	34	5.73		
	Q16:	4	5	14	20	36	21	5	4.42		
	Q18	13	20	18	18	17	4	1	2.73		
Critical Theory	Q3:	1	1	2	3	10	26	65	6.31	4.54	1.37
	Q10:	3	6	12	15	35	18	16	4.69		
	Q20	10	15	20	15	14	8	8	3.09		
	Q22:	8	7	15	9	27	13	78	3.64		
	Q27:	1	3	5	10	22	36	30	5.54		
	Q28:	2	3	4	8	16	40	34	5.65		
	Q29:	9	15	21	19	13	7	3	2.83		
Traditional Theory	Q1:	0	0	2	5	14	30	57	6.25	3.85	1.31
	Q4:	2	1	5	22	34	20	23	5.17		
	Q8:	7	22	21	28	12	8	4	3.35		
	Q19:	10	20	12	17	9	6	3	2.37		
	Q21:	9	7	20	20	20	18	5	3.76		
	Q24:	18	7	18	8	19	6	5	2.63		
	Q30:	11	8	21	25	16	8	3	3.14		
	Q31:	4	9	16	21	29	17	7	4.17		

Source: elaborated by the authors (2018).

The Constructivist Theory, with the highest group average among the respondents, departs from the premise that learning is a construction process of meanings by the students, mediated by the teacher (Nuñez *et al*., 2009). In that perspective, the student is responsible for constructing his knowledge and determines when, how and what to learn (Gregorio & Pereira, 2012). This theory contains traits of an a priori epistemology, as its belief rests on a logic in which it is the student who determines the teacher's action or not; the teaching hub tends to lose authority, while the learning hub becomes absolute.

The Active Theory, with the second highest group average, departs from an instrumental view of learning, arguing that it is through practice that the student learngs, and that the teacher's role is to facilitate the learning (Nuñez *et al*., 2009). This theory also contains epistemological traits of apriorism, as the teacher waives intervention in learning, teaching is lowered to the detriment of learning and the teacher is detached from his function - raising the student to a status he does not have (Becker, 1994).

Next, the teachers' epistemological and pedagogical models were assessed. The respondents were asked to indicate their opinion as to which alternative best represented the practical and educational concept of the teachers' daily work.

The first alternative was "(1) the teacher is the authority in the classroom, the knowledge is transmitted and the student is responsible for paying attention and learning the knowledge taught by the teacher" - referring to a directive/empiricist pedagogy; the second, "(2) the teacher is a facilitator and helps in the student's learning, the student brings a background knowledge structure and learns according to his interest" - representing a non-directive/a priori pedagogy; and the third alternative, "(3) the teacher produces the material he assumes to be meaningful for the student, different problematic aspects of the material are explored and the knowledge is constructed in the student's problemization, reflection and action, based on the past knowledge history" - equivalent to a relational/constructivist pedagogy.

On average, 52% of the respondents identified the non-directive/a priori pedagogy as the predominant model underlying their pedagogical practice, followed by the relational/constructivist pedagogy (44%) and the directive pedagogy (4%). The predominant result supports the idea of the implicit constructivist and active learning theories that the epistemological belief underlying the respondent teachers is a priori.

Table 3

Pedagogical models of Accountancy teachers in Brazil.

Items	Frequency	(%)
(1) Empirism/Directive pedagogy	4	4%
(2) A priori/non-directive pedagogy	56	52%
(3) Constructivist/Relational pedagogy	47	44%
Did not answer	1	1%
Total	108	100%

Source: elaborated by the authors (2018).

To assess the professional knowledge needed as an accounting teacher, the teachers were asked to organize and rank the knowledge suggested in the questionnaire in order of importance. According to the respondent students, the most important knowledge is (in order of frequency): knowledge of the subject taught, professional experience, curriculum knowledge, pedagogical knowledge, personal knowledge, epistemological knowledge and knowledge on information technology.

The priorization of the knowledge on the subject taught and professional experience is in line with the studies by Celerino e Pereira (2008), Catapan *et al.* (2012), Miranda *et al.* (2012), Vasconcelos *et al.* (2013), Slomski (2007), Marshall *et al.* (2010) and Rezende and Leal (2013). Nevertheless, it should be taken into account that the literature on professional knowledge suggests that, if they are analyzed in isolation, they cannot contribute to the knowledge construction. The results are displayed in Table 4.

Table 4
Perceived professional knowledge of Accountancy teachers in Brazil.

Items	Response Frequency						
	7th place	6th place	5th place	4th place	3rd place	2nd place	1st place
Knowledge on the subject taught	5	2	2	5	7	25	60
Professional experience	6	10	7	18	24	27	14
Curriculum knowledge	10	12	20	15	22	22	5
Pedagogical models	2	5	18	32	25	15	9
Personal knowledge	20	22	24	17	11	5	7
Epistemological knowledge	15	28	24	11	13	6	9
Information technology knowledge	48	27	11	8	4	6	2

Source: elaborated by the authors (2018).

In short, the following results were found in this research: according to the respondent teachers, the implicit learning theories guiding Brazilian Accountancy teachers' actions in the classroom are the constructivist and active theories; the most influential pedagogical/epistemological models are non-directive/a priori pedagogy and relational pedagogy/epistemology; the four necessary knowledge types that are considered the most important for the professionalization of accounting teachers are knowledge on the subject taught, professional experience, curriculum and pedagogical knowledge.

Some criticism can be levelled against the obtained results. The Constructivist Theory supposes that learning is a process in which the students construct meanings; the Active Theory complements this view by admitting that it is through practice that the student learns, and that the teacher's role is to facilitate the learning. In both, the belief is that the teacher's role is a mere facilitator or mediator of the student's learning process, reducing his role as an intervener in the teaching and learning process and transfering the responsibility of his role to the student.

The non-directive pedagogical model, based on a priori epistemology, which was found predominant in the study, sustains the above view as to role of learning facilitator. This model has an underlying belief though that the student brings into the classroom knowledge he already has and learns by himself and uses this argument to justify the deficient structures of the individuals who experience difficulties in the learning process. So, what would be the teacher's role in the context of this model?

On the other hand, the results regarding the sample's perception on the knowledge needed for the profession conflict with the pedagogical and epistemological models found. On average, the respondent teachers believe that knowledge related to the content, experience and curriculum is a priority, in that order, for their daily educational practice. They believe that the student is the main responsible for his learning though, and that the teacher should interfere as little as possible in this process, showing a paradox in their way of thinking.

The professional knowledge the teachers should value more in the classroom in the framework of a non-directive and a priori pedagogical model are the pedagogical, personal and epistemological knowledge, as the teacher's role in the classroom is to mediate or facilitate the students' learning, helping them to structure the knowledge route and to develop their socioemotional and cognitive skills.

Perhaps due to the teachers' profile, with greater experience in academic education (the large majority with Master's/Doctoral and research) and the length of their teaching experience, they envisage a crisis in the traditional teaching style and in the empirist epistemology that contains to exist at all teaching levels in the country; and that higher education should move towards greater autonomy and accountability of students for their learning, suggesting a role transfer between teacher and student.

What factors contribute to the perpetuation of the models? How can the professionalization of teaching be developed in view of the reality that was observed? These and other questions emerge in a context of reflection on Accounting teaching. These results suggest that the HEI, teachers, students and other stakeholders in higher Accountancy education in Brazil need to reassess the teachers' beliefs and pedagogical models in use in the classroom, as the same beliefs can act in the same sense or diverge from the students' thinking or from the offering HEI's strategic orientation with regard to the teaching-learning strategies and methods in force, with a view to supporting the creation of teacher professionalization mechanisms, considering the new reality of the accounting profession in the 21st century.

5 Conclusion

To complement the research on the Accountancy teacher profile in Brazil (Nossa, 1999; Nogueira & Fari, 2007; Slomski, 2007; Slomski & Andrade Martins, 2008; Slomski *et al.*, 2013; Alencar & Araújo, 2011; Miranda, 2011; Nogueira *et al.*, 2012; Mazzioni, 2013; Laffin, 2013; Rezende & Leal, 2013; Vasconcelos *et al.*, 2013; Silva et al., 2014; Frauches, 2015) this research aimed to identify the epistemology, pedagogy and knowledge needed for accountancy teaching.

To achieve this proposal, the study was divided in stages, such as the literature review on implicit learning theories (Rodrigo *et al.*, 1993) and on the pedagogical and epistemological models of teaching (Becker, 1994) and the experience-based knowledge regarding the teaching profession (Gauthier *et al.* 1998; Tardif, 2002); build a data collection tool to assess the teacher profile; select the sample and apply the tool: and, analyze the results using statistical tools and interpret the results.

In methodological terms, this is a quantitative, exploratory and descriptive survey research (Marconi & Lakatos, 2003). The data were collected through an on-line questionnaire, developed based on the literature review, focused on accounting faculty teaching at Brazilian Higher Education Institutions (HEI). In total, 862 e-mails were forwarded and 108 answers to the electronic questionnaire were received. A convenience sample was obtained.

The sample profile showed a predominance of men (60%), concentrated in the South of the country (40%), working in the private education network (59%), holding a Master's degree (53%), exclusively working as teachers (41%), with 7 to 25 years of teaching experience (64%), engaged in other activities beyond teaching (54%), having a background in pedagogy (58%) and contact with the research (87%).

In short, the following research results were obtained: according to the respondent teachers, the implicit learning theories guiding Brazilian Accountancy teachers' classroom action are the constructivist and active theories; the most influential pedagogical/epistemological models are non-directive/a priori pedagogy and relational pedagogy/epistemology; the four knowledge types that are considered the most important for teacher professionalization in accounting are knowledge of the subject taught (content), professional experience, curriculum knowledge and pedagogical knowledge.

The findings reveal beliefs that the teacher's role is but to facilitate the student's learning process, reducing his professional role and transfering the responsibility for learning to the student. Some criticism is levelled as to the obtained results, such as: What would be the teacher's role in the new context the presented pedagogical and epistemological models show? What factors contribute to the perpetuation of the models? How can the professionalization of teaching be developed in view of the reality that was observed?

These and other questions emerge in a context of reflection on Accounting teaching. Perhaps due to the teacher profile found in the sample, a crisis is shown in the traditional teaching style and in the empirist epistemology that continues to exist in all teaching spheres in the country. In addition, it is shown that higher education should move towards greater autonomy and accountability of students for their learning, suggesting a role transfer between teacher and student.

These results suggest that the HEI, teachers, students and other stakeholders in Brazilian higher education should review the current pedagogical and epistemological models, reassessing the current pedagogical beliefs and models of the teachers in the classroom to support the creation of teacher professionalization mechanisms in view of the new reality of the 21st-century accounting profession.

Among the study limitation, the sample selection criterion is highlighted, which was convenience-based, as well as the disbalanced number of respondents per region of the country, which does not permit generalization of the results. For the sake of future research, we suggest further reflection on the criticism raised and the search for those answers by means of other research methods, such as qualitative studies using focus groups, interviews, participatory research and observation to contribute to a better description of the Accountancy teacher profile in Brazil.

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