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Debates and reflection: pedagogical activities that encourage the comprehensive learning process of the accounting concept *

Debates y reflexión: actividades pedagógicas que dinamizan el proceso de aprendizaje comprensivo del concepto contabilidad

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Abstract

The aim pursued by this document is to analyze the pedagogical influence that debate and reflection activities have on the comprehensive learning process of the accounting concept, in the students of the accounting theory seminar subject of the public accounting program of

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the Universidad del Valle Palmira headquarters. The methodology followed in the research is exploratory and descriptive, its approach is mixed and relies on deductive, analytical and synthetic methods, as well as content and discourse analysis techniques. The study population includes the group of students enrolled in the Accounting Theory Seminar during the second semester of 2015. It is concluded that the activities of public debate, collective construction and reflection activities, enhance, on the one hand, the process of comprehensive learning of the students that allow to apprehend the conceptual bases that cross and strengthen the knowledge of accounting, and, on the other hand, make it possible to redimension the ways in which the students position their knowledge and reconfigure their mental structures.

Key words: Accounting; accounting theory; comprehensive learning; concepts; debate; pedagogy; reflection.

Resumen

El objetivo que persigue este artículo es analizar la influencia pedagógica que tienen las actividades de debate y de reflexión en el proceso de aprendizaje comprensivo del concepto contabilidad, en los(as) estudiantes de la asignatura seminario de teoría contable del programa de contaduría pública de la Universidad del Valle sede Palmira. La metodología seguida en la investigación es de tipo exploratoria y descriptiva, su enfoque es mixto y se apoya en los métodos deductivo, analítico y sintético, así como en las técnicas del análisis del contenido y del discurso. La población de estudio abarca al grupo de estudiantes matriculados en el Seminario de teoría contable durante el segundo semestre del 2015. Se concluye que, las actividades de debate público, de construcción colectiva y las actividades de reflexión, potencian, por un lado, el proceso de aprendizaje comprensivo de los(as) estudiantes que permiten aprehender las bases conceptuales que atraviesan y robustecen los conocimientos de la contabilidad, y, por otra parte, posibilitan el redimensionar las formas en las cuales los(as) estudiantes posicionan su saber y reconfiguran sus estructuras mentales.

Palabras clave: Aprendizaje comprensivo; conceptos; contabilidad, debate, pedagogía; reflexión; teoría contable.

Resumo

O objetivo deste artigo é analisar a influência pedagógica das atividades de debate e reflexão no processo de aprendizagem abrangente do conceito de contabilidade, nos estudantes do seminário de teoria contábil do programa de contabilidade pública da Universidade do Valle, campus de Palmira. A metodologia utilizada na pesquisa é do tipo exploratória e descritiva, com uma abordagem mista que se baseia nos métodos dedutivo, analítico e sintético, bem como nas técnicas de análise de conteúdo e discurso. A população estudada abrange o grupo de estudantes matriculados no seminário de teoria contábil durante o segundo semestre de 2015. Conclui-se que as atividades de debate público, construção coletiva e reflexão potencializam, por um lado, o processo de aprendizagem abrangente dos estudantes, permitindo a compreensão das bases conceituais que permeiam e fortalecem o conhecimento

contábil, e, por outro lado, possibilitam a reconfiguração das formas pelas quais os estudantes posicionam seu saber e reconfiguram suas estruturas mentais.

Palavras-chave: Aprendizagem abrangente; conceitos; contabilidade; debate; pedagogia; reflexão; teoria contábil.

Résumé

L'objectif de cet article est d'analyser l'influence pédagogique des activités de débat et de réflexion dans le processus d'apprentissage complet du concept de comptabilité chez les étudiants du séminaire de théorie comptable du programme de comptabilité publique de l'Université du Valle, campus de Palmira. La méthodologie de recherche utilisée est de nature exploratoire et descriptive, avec une approche mixte qui s'appuie sur les méthodes déductive, analytique et synthétique, ainsi que sur les techniques d'analyse de contenu et de discours. La population étudiée comprend le groupe d'étudiants inscrits au séminaire de théorie comptable au cours du deuxième semestre de 2015. Les conclusions indiquent que les activités de débat public, de construction collective et de réflexion renforcent d'une part le processus d'apprentissage complet des étudiants en leur permettant de saisir les bases conceptuelles qui soutiennent et renforcent les connaissances en comptabilité, et d'autre part, elles permettent de redimensionner les façons dont les étudiants positionnent leur savoir et reconfigurent leurs structures mentales.

Mots clés: Apprentissage complet ; concepts ; comptabilité ; débat ; pédagogie ; réflexion ; théorie comptable.

Introduction

The extensive academic production regarding the nature of knowledge or the epistemological status of Accounting demonstrates that it is a topic that has occupied a significant place in the academic and university context nationally and internationally. However, it has not led to the expected results seen in other fields of knowledge, such as formal and natural sciences, compared to the humanities and social sciences (Popper, 2008) (Bunge, 2004) (Mardones and Ursua, 1994) (Palma and Pardo, 2012) (Briones, 1996). This disparity has hindered the establishment of a sufficiently strong delimitation capable of bringing together a large number of researchers from the same academic and/or scientific community (Kuhn, 1981).

Due to the extensive horizon of epistemological possibilities that are not exhausted in this brief review of Spanish-language literature on Accounting but can be traced in at least some authors (Araujo Ensuncho, 2007) (Arreghini, 2011) (Walter & León, 2011) (Peña, Maldonado, Viloria, & Casal, 2010) (García Casella, 2005) (García Duque, 2004) (Geba,

2004) (Hincapié, 2017) (Maldonado Veloza, 2011) (Martínez Pino, 2004) (Martínez Pino, 2007) (Mattessich, 1964) (Nava, Ramírez Elías, Mendez Flores & Sánchez Osorio, 2007) (Tascón Fernández, 1997) (Viloria, 2001) (Whitley, 2011) (Wirth, 2001) (Zeff, 1985), it is evident that the crux of the philosophical, ontological, epistemological, and semantic matter is suspended in time. It appears that its reflection and discussion have been overshadowed, either by the profession's own concerns or those imposed on it, such as systems and information production and reporting models in specific formats and/or languages, financialization of the economy, or data mining, among others. Alternatively, the epistemological matter may have been diluted in favor of topics closer to the bridges being woven between accounting and other fields of knowledge. In these cases, accounting seems to have been relegated to a secondary position or simply treated as an ancillary issue.

With the aim of reviving, albeit on a small scale, the discussion on the epistemological status of Accounting and recreating the essence of the academic debate on this matter, this paper approaches it from a pedagogical and conceptual perspective—perspectives that have not been explored in the academic or scientific literature in this field. The guiding thesis for the pedagogical and conceptual direction of the activities presented in this document is as follows: the nature of accounting knowledge depends on the definition of Accounting (García Casella, 2012).

It is considered that courses on accounting theory (Grajales Quintero & Cuevas Mejía, 2010) (Ospina Zapata, 2012) provide the appropriate curricular space to undertake these types of intellectual and pedagogical efforts. These courses imply that in the planning of the educational process for students, there is a concern or at least an explicit interest in certain educational projects of university programs in Colombia (Rojas Rojas & Ospina Zapata, 2011) for future public accounting professionals to acquire the cognitive and epistemological foundations necessary to provide a well-founded basis for the practices that have given meaning to accounting knowledge (Cardona Arteaga, 2001) or to engage in these academic dynamics (León Paime, 2008) with the aim of pursuing further postgraduate training or a career as researchers in the field of higher education or specialized research centers.

In the case of the Universidad del Valle, the conceptual issue is not a minor concern. In the educational project of the public accounting program (Academic Program Committee of Public Accounting, 2011), a fundamental difference is identified between conceiving Accounting with or without an initial capital letter. In the former case, "the word Accounting with a capital letter C indicates that it refers to the term that encompasses both the theories, approaches, and anomalies of accounting knowledge, as well as the regulations regarding the normative aspect of Public Accounting" (pág. 6). On the other hand, accounting with a lowercase letter refers to "a) the system adopted for keeping accounts and records in public and private offices, and b) the abilities of things to be reduced to accounts and calculations"

according to the DRAE (2001, as cited in the Academic Program Committee of Public Accounting, 2011, pág. 6).

The objective of this article is to analyze the pedagogical influence of debate and reflection activities in the comprehensive learning process of the concept of Accounting among students enrolled in the seminar on accounting theory of the public accounting program at the Universidad del Valle, Palmira campus. The study population consists of sixth-semester students of the public accounting program at the Universidad del Valle, Palmira campus, enrolled during the second semester of 2015.

The structure that facilitates the approach to the study topic in this document is presented as follows: after this introductory part that provides an overview and contextualizes the issues surrounding the conceptualization and nature of accounting knowledge, the second part presents a theoretical framework on comprehensive learning and outlines structures that provide theoretical support to Accounting. In the third part, the results and analysis of the information collected from the study population are presented, and finally, in the fourth part, the research conclusions are presented, which open up other possibilities for studying from pedagogical, epistemological, and semantic perspectives.

Theoretical Framework

Comprehension is understood as the "ability to think and act flexibly based on what one knows (...) it is the capacity for flexible performance" (Penkis, 1999, pág. 1). Comprehension, or comprehensive performance, is recognized through a criterion of flexible performance: "comprehension occurs when people can think and act flexibly based on what they know" (pág. 2), allowing them to go beyond memorization and routine activities.

According to Perkins (1999, pág. 15), comprehensive learning is rooted in a type of performance-based constructivism that "emphasizes building a repertoire of performances of understanding for students, rather than cultivating the construction of representations." According to Gardner (1991, as cited in Perkins, 1999), comprehensive learning is guided by the following principles:

1. Learning for understanding primarily occurs through reflective engagement with performances of understanding that are approachable but challenging.
2. New performances of understanding are constructed based on prior understandings and the new information provided by the institutional environment.
3. Learning a set of knowledge and skills for understanding invariably requires a chain of performances of understanding of increasing variety and complexity.
4. Learning for understanding often involves a conflict with older repertoires of performances of understanding and their associated ideas and images (1999, pp. 12-13).

For Gardner (1991, as cited in Perkins, 1999), the first principle pertains to engagement, the second to grounding, the third to the progression of complexity, and the fourth to the renewal of prior knowledge. According to Gardner, in the first principle, "no performance can be mastered unless the subject becomes engaged in it" (Perkins, 1999, pág. 12). Gardner also highlights that learning benefits from reflective engagement, the possibility of approaching performances, and the fact that "it is unlikely that the performance of an already controlled understanding will expand the repertoire of performances (...) However, in many conventional educational environments, students never undertake performances that align with certain teaching goals" (Perkins, 1999, pág. 12).

Regarding the second principle, Gardner (as cited in Perkins, 1999) states that a person cannot engage in a performance of understanding without prior grounding. Sometimes, the construction of new understandings only occurs in students "through work and reflection on previous knowledge and understandings (…) This emphasizes the importance of transmitting information, even didactically through lectures, as long as they are followed by performances of understanding" (1999, pág. 13).

In the third principle, Gardner (as cited in Perkins, 1999) explains that "understanding needs to evolve through a series of performances of understanding that increase in complexity and variety" (1999, pág. 13). However, prior understandings, whether correct or incorrect (second principle), can become obstacles that hinder the renewal of knowledge (fourth principle). Hence, prior knowledge must be flexible and provisional enough to be transformed into new understandings.

From a pedagogical standpoint, "learning for understanding is like learning a flexible performance" (Penkis, 1999, p. 1). Thus, comprehensive learning, which refers to performance-based learning, aims to motivate both teachers and students towards discovery through reflective engagement. It takes into account learners' prior knowledge or understandings, whether correct or incorrect. Learning is achieved through sensory experiences, presents achievable challenges for students without overwhelming them, gradually progresses in complexity, and ultimately pursues specific learning goals.

In the context of accounting, what follows should be seen more for academic purposes rather than as definitive, general, or unique theories about Accounting. Therefore, reference will be made to theories about accounting rather than theories specific to accounting.

Accounting, as a factual, cultural, and applied science, and as a social technology, according to García Casella, is a "theory in the sense of reflecting on how it is and how it should be" (2012, pág. 3). In other words, accounting theory performs a descriptive task while also normalizing it. Implicitly or explicitly, there are a series of verified hypotheses that form part of the conceptual and pragmatic body of knowledge that constitute the so-called laws of accounting.

When referring to the theory of accounting, García Casella (2012) assimilates it to the category of science, as its field of knowledge allows for the development of axioms, principles, laws, and more, which, after being presented, debated, and accepted by a scientific community, result in theories that frame and delimit the actions of researchers. However, it should be noted that, conceiving accounting as a technology, argues the author, it is also possible to use theories that are not necessarily accounting-related but can come from related scientific or technological disciplines such as management, economics, and others.

For García Casella (2012), the theoretical foundation for accounting comes from transdisciplinary studies and frameworks, primarily from administrative and economic sciences due to their close interrelation. However, it also encompasses sociology, anthropology, psychology, politics, linguistics, and many other disciplines that support and consolidate the field of accounting.

On the other hand, Gil (2004) considers that the debate about the epistemological status of accounting arises between the technical, technological, and scientific positions. He emphasizes that the approach to these statuses is not carried out from the natural sciences, as accounting would not withstand scientific analysis, but rather from any of the social disciplines. In this sense, he states:

> The distinction between technique (pre-scientific) and technology (grounded in science) is acknowledged and formulated by Lewis Mumford, from a historical perspective (Bunge, 1985:32). This approach allows us to relate, in our field of knowledge, the evolution from bookkeeping as practical knowledge based on empirical foundations to Accounting as a university discipline grounded in the scientific method. The former is a technique, while Accounting is a technology (Gil, 2004, pág. 3).

According to Chapman (1984, as cited in Gil, 2004), the interaction between science and technique leads to the concept of technology, which has the following characteristics: 1) it is compatible with contemporary science; 2) it is controlled through the scientific method; 3) it is used to "control, transform, or create natural or social things or processes" (Gil, 2004, p. 5); 4) it is an artificial structure or construction (models); 5) it has a prior design (systems); and 6) social technologies have social value (or disvalue).

Characterizing accounting as a technology, Gil (2004) explains, implies conceiving it as "a set of rules suitable for application to an activity that uses knowledge derived from mathematics and economics" (p. 5). Its field of knowledge is represented by "artificial objects, with planned schemes as a system of isomorphic representation with reality, based on a model that develops its own operations (capturing, measuring, recording, analyzing, interpreting), produces outputs (information), and is designed to influence decision-making and control processes" (p. 6).

Furthermore, accounting as a discipline is characterized by: 1) its connection to economic reality; 2) its utility in serving decision-making by its users; 3) its status as a duty of the economic entity, stemming from the social responsibility of the entity; and 4) its nature as a scientific and formalized discipline (Tua Pereda, 1995).

Research Problem

What is the pedagogical influence of debate and reflection activities on the comprehensive learning process of the concept of accounting among students enrolled in the Seminar on Accounting Theory in the Public Accounting program at the University of Valle, Palmira campus?

Methodology

The research is exploratory and descriptive (Aktouf, 2001) in nature, with a mixed approach (Hernández Sampieri, Fernández Collado, & Baptista Lucio, 2014), and utilizes deductive, analytical, and synthetic methods (Méndez Álvarez, 1997). The study population consists of 40 students enrolled in the 6th semester during the second semester of 2015 in the Seminar on Accounting Theory within the Public Accounting program at the University of Valle, Palmira campus. Two sources of information are utilized: primary data, corresponding to the study population, obtained through a questionnaire with a single question: "In your opinion, what is accounting?" and secondary data, corresponding to the review of the seminar's literature (suggested and mandatory) on accounting theory (Universidad del Valle, n.d.).

The conceptual inquiry is conducted in three stages during the seminar: at the beginning (prior individual conceptualization), the question is addressed in the initial class sessions with a dual purpose: first, to diagnose the students' learning process (the subject is positioned midway through the curriculum), and second, to establish a conceptual reference point for each participant.

The second stage involves the debate activity (conceptualization and group reflection), conducted in five stages:

A) Students are randomly grouped and assigned a number and an epistemological nature of knowledge: art (1); technique (2); technology (3); discipline (4); and science (5), which must be argued based on the readings and academic discussions addressed in class.

B) Each group must identify the characteristics of the assigned epistemological nature of knowledge for an estimated period of time, and then relate these characteristics to the concept under study: Accounting.

C) During another period of time, each group must present arguments and publicly defend the reasons why accounting assumes that epistemological nature.

D) Each group must pay attention and take notes on the arguments presented by the other groups to later engage in counter-argumentation.

E) Randomly and for an estimated period of time, each group is assigned a different epistemological nature than the one initially assigned to them in order to counter-argue the reasons presented. The counter-argumentation must be presented publicly again, and this exercise of argumentation/counter-argumentation can be repeated depending on the dynamics, interest, and participation of the groups.

Once the mandatory readings of the course have been addressed, reflected upon, and discussed, in the third stage (posterior individual conceptualization), we revisit the guiding question to conclude the seminar and gather the participants' impressions regarding the change or sustained argumentation of their initial perception about the concept of Accounting.

The strategy followed to conduct the content analysis (Bernete, 2013) (Gómez Mendoza, 2000) (Piñuel Raigada, 2002) and discourse analysis (Van Dijk, 2001) (Van Dijk, 2001) on the collected data involved systematizing the responses first based on the activity stage (prior concepts - debate - posterior concepts), and then based on the epistemological nature (art, technique, technology, discipline, science) explicitly indicated by the students. In cases where it was not possible to establish this classification, either due to ambiguity (applies to the explicit variable) or incoherence (applies to the implicit variable), the responses were classified under the holistic option. Responses that included more than one epistemological option were also included in this category.

Subsequently, the provided responses were reexamined to establish the coherence (implicit) between the indicated epistemological nature of accounting and the attributes that characterize it, according to what is discussed in the theoretical framework section of this document.

Research Problem Solution Outline

This article is structured around three fundamental axes: the first part presents the introduction to the topic by presenting the most relevant theoretical-conceptual aspects related to the research problem. The second part examines and analyzes the course on which the research was conducted, indicating the students' participation at different stages of the activity. Subsequently, the results and analysis of the concepts and contributions gathered about accounting in the three divided stages of the activity are developed. Examples of responses in each category are presented in that order. This stage also describes the public and collective debate that took place during the second stage of the activity, where arguments for and against the concept of accounting are presented. Next, the individual responses of the students are analyzed and the results are presented, allowing for a comparative analysis

between the prior and posterior moments of the activity. At the end of the second part of the article, the findings are summarized and changes in the students' responses and arguments are highlighted. Finally, in the third part, the conclusions of the article are presented.

Writing Plan

1. Results and Analysis

The course began in August 2015 with a total of 40 students enrolled in the subject, of which 100% of the study population participated in the first stage of the activity (prior concept). For the second stage (epistemological debate conducted in November 2015), there were 36 enrolled students, of which 24 participated (66.7%). For the course closure (posterior concept), 29 students were enrolled, of which 10 participated (34.5%) (see Table 1). Based on this, it can be statistically stated that the activity had an average participation rate of 67% of students in its three stages, allowing for comparability of the results among the participants.

				Explicit		**Implicit**		**Gender**	
No.	**A priori** (25/08/2015)	**Debate** (3/11/2015)	**A posteriori** (22/12/2015)	**A priori**	**A posteriori**	**A priori**	**A posteriori**	**M**	**F**
1	1	1		Tc		Tc		1	
2	1	1		Tc		Tc			1
3	1	1		Tc		Tc		1	
4	1	1	1	Tg	Tc	Tg	Tg	1	
5	1	1	1	H	Di	Di	Di		1
6	1	1	1	Tc	Di	Tc	Tg		1
7	1			Ci		Ci			1
8	1	1	1	Tc	Di-Tg-Nor-CS=H	Tc	H		1
9	1			Ci		Ci			1
10	1	1		Tc		Tc			1
11	1	1		Tc		Tc			1
12	1	1		Tc		Tc		1	
13	1	1	1	Tc	Ci	Tc	Di	1	
14	1	1		Tc		Tc			1
15	1	1		Tc		Tc -Prof -Tc			1
16	1	1		Ci		Di			1
17	1			Ci		Ci			1
18	1	1		Tc		Tc			1
19	1		1	Ci	Tc-Ci=Tg	Ci	Tg		1
20	1			Tc		Tg		1	
21	1	1		Tc		Tc			1
22	1	1	1	H	Ci-Tc	Tg	Tg		1

23	1	1		Tc		Tc			1
24	1	1		Ci		Ci			1
25	1	1	1	Tc	Di	Tc	Di		1
26	1	1	1	Tc	Di-Ar-Tc	Tc	Di	1	
27	1	1	1	Tc	Di	Tc	Di	1	
28	1	1		Tc		Tc			1
29	1	1		Di		Tc		1	
30	1			H		Di - Tc			1
31	1			H		H			1
32	1			Tc		Tc		1	
33	1			Ci		Tg		1	
34	1			Ci		Tg			1
35	1			Tc		Tc		1	
36	1			Tc		Tc			1
37	1			Tc		Tc		1	
38	1			Tc		H		1	
39	1			Tc		Tc		1	
40	1			Tc		Tc			1
	40	**24**	**10**	**40**	**10**	**40**	**10**	**15**	**25**

Public University of Valle, Palmira campus, 2015-2.
Taken from: (Hincapié M, 2022).
Note: (Ar): Art; (Tc): Technique; (Tg): Technology; (Di): Discipline; (Ci): Science; (H): Holistic; (Prof): Profession; (Norm): Normative; (CS): Social science.

It is important to bear in mind that, in addition to the variation in the population based on the number of enrolled students, participation in this activity is voluntary (research ethics). For these reasons, there is a fluctuation in participation within the study population across the 3 moments of the activity. Regarding the participants' gender, in the first moment, 62.5% were women and 37.5% were men. In the second moment, the participation rate for women was 66.7%, while for men it was 33.3%. In the third moment, 60% of the participants were women, and the remaining 40% were men.

Next, we present the results obtained from the classification of the concepts and participations collected on accounting based on the 3 moments of the activity and the selected study variables.

Variables	Art	Technique	Technology	Discipline	Science	Holistic	Total
A priori (explicit)	0	26	1	1	9	3	40
A priori (implicit)	0	24	5	2	5	4	40

Table 2. Classification of a priori concepts on Accounting at Palmira Campus 2015.
Taken from: (Hincapié M, 2022).

In the explicit a priori stage, 65% of the total responses (40) consider Accounting as a technique, followed by 22.5% considering it as a science, and 7.5% offering an ambiguous or incoherent response. In the implicit a priori stage, the results maintain consistency with the previous options, as 60% of the participants perceive Accounting as a technique, 12.5% as science, and 10% holistically. The significant difference between these implicit a priori stages is that participants implicitly expressed arguments related to the technological status of Accounting, accounting for 12.5% of the responses.

Some of the responses classified under the holistic option are as follows: "(...) personally, the concept was purely financial, however, with the course of the seminar readings, this concept (...) changed [sic], and I believe that the group also experienced this conceptual change" (Student No. 5); "Unlike accountancy, accounting is the technique, and accountancy is the science that governs accounting" (Student No. 15); "For me, accounting is a science and an organized information system that helps me prepare financial statements that assist me in decision-making (sic)" (Student No. 22).

After the first stage of conceptualization (a priori) and having critically and reflectively approached half of the required seminar readings (modules 1 and 2), we move on to the second stage of the activity: public and collective debate. In this case, students were randomly grouped into five teams, each corresponding to a nature of accounting knowledge, which were substantiated in different class moments, some of which were presented in the theoretical framework of this document.

Table 3 presents the random assignment of debate groups, which repeats the cycle of counter-argumentative assignment. In this group, location, and year, students requested and were able to complete two counter-argumentation exercises on different epistemological natures of accounting. However, defending accounting as an art argumentatively during the study period and/or currently can be a challenging and complex task (although there are still a handful of students and professionals who explicitly perceive it that way). Therefore, all teams were assigned the status of art in some counter-argumentative cycle to share the level of difficulty corresponding to Group 1 assigned to art at the time of argumentation.

Arguments	**Counterarguments**				
Status	Art	Technique	Technology	Discipline	Science
Art		X	X		
Technique	X				X
Technology	X			X	
Discipline	X	X			
Science	X	X			

Table 3. Argumentative and Counter-Argumentative Relationship on the Epistemological Status of Accounting, Palmira Campus 2015.
Taken from: (Hincapié M, 2022).

The following are some of the arguments put forth by the working groups during the debate on the epistemological statute of accounting:

> If we see art as an aspect of reality, based on experiences, skills, abilities, and imagination, we can demonstrate that accounting is the art of interpreting the needs to quantify and measure, attitudes of everyday human life. (Group 1: Art).
>
> Accounting is a technique because it makes use of knowledge oriented to know-how and maintains a specific relationship with the practice that establishes fundamental principles and rules to keep an exact control of all goods, rights, and obligations. (Group 2: Technique).
>
> Accounting is technology [because] it is the use of applied science to solve social problems or deal with the knowledge of systems (...) it allows the manufacture of tools or instruments that serve to cover people's needs. (Group 3: Technology).
> It is assumed that the accounting discipline is to develop, reformulate and propose the theoretical frameworks, the instruments and the formative references to, from there, respond to the accounting-financial-social information needs of organizations. (Group 4: Discipline).
>
> It is considered a science according to the following postulates: () It approximates mathematical science; () Deepening in social science. According to Montesinos (...) Richard Mattessich developed a mathematical model, which consists of recording accounting through algebraic matrices. But it should be clarified that the development of accounting was not simply ventured with the implementation of mathematical models (...), but it had to accommodate Economics, Statistics, Law, Sociology, and Administration. (Group 5: Science).

As for the counter-arguments presented in the random assignment during the debate on the epistemological statute of Accounting, the following are noted:

> (...) accounting will not be a technique or a technology, as these make a transformation of generalized reality based on methods that are said to dictate how to do, but these are limited to a generality and do not allow each individual to express their particular needs based on their experience or imagination. (Group 1: Art, against groups 2 and 3).
>
> Currently, it cannot be defined as an art since it is not subjective, it is based on real measurable and quantifiable facts. Accounting is also not a science, as it does not focus on something global, and it is not unfinished because it is already formulated, structured, and systematized, (...). (Group 2: Technique, against groups 1 and 5).

> Accounting is not art: () It is not based on the inspiration of individuals; () Art is a consequence of aesthetics and currently an information system does not have this. It is not discipline: () Because it is not a rule of behavior; () Because it cannot be developed by any human being; (*) It does not give a [predicted] result (sic). (Group 3: Technology, against groups 1 and 4).
>
> Accounting is not a technique because the technique is a mechanical procedure and accounting needs human knowledge as is discipline. (...) Accounting as a disciplinary knowledge is immersed in the development of science and technology. Accounting is not an art because art can become abstract, which means that it is not based on a structured system; in accounting, it is very necessary to have punctual systems of structuring and solid bases for its registration. (Group 4: Discipline, against groups 2 and 1).
> Accounting is not art because we have to start by defining that art is a creation made by the human being that expresses a sensitive and free vision of the world, which allows expressing ideas, emotions, perceptions, and sensations. With this concept, we can say that accounting is not an art since it is based on commercial transactions according to the rules established in each country. Accounting is not a technique because the technique is a set of rules applicable to the registration of commercial operations of organizations, however, this is only a part of accounting but does not define it (...) Accounting is a science of social and economic nature that produces information to transform reality and this is what allows (...) to contribute to social development and is not a mere orderly record. (Group 5: Science, against groups 1 and 2).

Having reached this point and, having addressed the majority of the seminar readings assigned for modules 3 and 4, in accordance with the dynamics and pace of the study group, we move on to the third moment of the activity which corresponds to the individual conceptualization of Accounting (a posteriori). Table 4 presents the results of the responses and/or classifications made after having applied the conceptual content analysis.

Variables	Art	Technique	Technology	Discipline	Science	Holistic	Total
A posteriori (explicit)	0	1	0	4	1	4	10
A posteriori (implicit)	0	0	4	5	0	1	10

Table 4. Classification of a posteriori concepts on Accounting, Palmira branch 2015.

Taken from: (Hincapié M, 2022).

In the explicit a posteriori stage, a uniform distribution is observed between the disciplinary and holistic options, each accounting for 40% of the total responses. Some of the ambiguous responses that were collected are as follows: "It is a discipline that has been evolving (...) the so-called technoscience because it uses the scientific method (...), it has adapted through empiricism, mostly it can be normativist, and it is related to social sciences for the

development of administrative studies" (student No. 8); "It is a discipline that allows us to understand both the financial situation and its impacts on society (...). Accounting is also a language and the result of a historical process that enables humans (...)" (student No. 26); "In addition to being a technique, as it allows for systematic information processing, it can also be (...) a science, and that's how an author called it technoscience; and personally, I consider that definition to be the most fitting" (student No. 19).

Regarding the implicit a posteriori responses, 50% of the participants provide arguments related to the disciplinary option, while 40% conceptualize Accounting as a technology. In order to demonstrate the changes in the classification of the responses provided in the first and third stages as a result of the conceptual content analysis, the variation of the Accounting concepts is presented in Table 5.

	Explicit		**Implicit**		**Variable**	
Statute	**A priori**	**A posteriori**	**A priori**	**A posteriori**	**A priori**	**A posteriori**
Art	0	0	0	0	0	0
Technique	26	1	24	0	-2	-1
Technology	1	0	5	4	4	4
Discipline	1	4	2	5	1	1
Science	9	1	5	0	-4	-1
Holistic	3	4	4	1	1	-3
Total	**40**	**10**	**40**	**10**		

Table 5. Variations in classification of concepts on Accounting at Palmira campus 2015.

Taken from: (Hincapié M, 2022).

n terms of explicit categorization, the highest variation between the prior and posterior stages is observed in the discipline option, where the number of responses increases from 1 to 4. It is followed by the science option, which shows a variation from 9 to 1 response, and the holistic option, which changes from 3 to 4 responses. On the implicit side, the most significant changes in the conceptualization (prior and posterior) of Accounting are found in the science option, which goes from 5 responses to none, followed by the holistic option, which goes from 4 to 1 response, and the discipline option, which changes from 2 to 5 responses.

It is evident that when comparing the prior and posterior stages based on discursive content (see Table 5), in the first stage (prior), the highest positive variation occurs in the technological option with 4 responses, while the highest negative variation is found in the

science option with the same number of responses. In the second stage (posterior), similar to the previous case, the highest positive variation occurs in the technological option with 4 responses, and the highest negative variation is in the holistic option with 3 reclassified responses.

In this comparison, the responses in the technical option have not been taken into account, as the magnitude of the variation, both in the explicit and implicit aspects, exceeds 2.6 times the total number of responses from individuals who participated in the posterior stage of the activity.

It is also worth noting that in this study group, no responses were obtained in either the prior or posterior stage that explicitly considered Accounting solely as an art, as observed in other study groups at this or different campuses of the University of Valle where the academic program is offered. However, some of the responses classified here in the holistic option did explicitly mention this assumption.

Variable	Art	Technique	Technology	Discipline	Science	Holistic	Total responses
Explicit total	0	27	1	5	10	7	50
Implicit total	0	24	9	7	5	5	50
Percentage by correspondence	0	89%	900%	140%	50%	71%	

Table 6. Percentage of discursive correspondence between Accounting concepts and their epistemological foundation, Palmira campus 2015.

Taken from: (Hincapié M, 2022).

Table 6 presents the degree of discursive correspondence between the concept of Accounting provided by the participants and its epistemological foundation. It follows that out of the total responses (50), only 50% of the responses related to the science option exhibit a relationship between denotation and connotation. Regarding the exposition as a technique, the correspondence rate is 89%. On the other hand, 71% of the responses classified as holistic remain ambiguous and/or encompass a mixture of attributes from other epistemological statuses.

In this regard, it is also observed that there is an increase in the argumentative burden presented by the students concerning the discipline options, with a 140% increase. The greatest variation is found in the technology option, with a 900% variation. This means that, in comparison to what was explicitly indicated by the participants, 9 students put forth arguments loaded with the attributes of this nature of knowledge.

Conclusions

Concepts, as mediators of individuals' mental representation, enable the recognition and understanding of phenomena in reality. However, in the case of accounting, there is no clear and consistent semantic and epistemological delimitation of the concept, as revealed by the literature review conducted.

The results from the study population suggest that, in the initial stage (individual a priori conceptualization), 65% of the students explicitly considered Accounting as a technique, referring to bookkeeping, followed by its conception as a science at 22.5%. After conducting a conceptual content analysis of the students' responses regarding their understanding of Accounting, it is observed that 60% of the responses implicitly reflect arguments aligned with the technical perspective, whereas the percentage decreases to 12.5% in its scientific conception.

Following the public and collective debate (second stage) carried out in the accounting theory seminar, where a cycle of argumentation and two cycles of counter-argumentation on the epistemological nature of Accounting (art, technique, technology, discipline, and science) were randomly conducted, in the third stage (individual a posteriori conceptualization), and after a significant decrease in the participating population, it was found that 40% of the explicit conceptions of Accounting assumed it as a discipline. However, the analysis of conceptual content reveals that implicitly, 50% of the responses present arguments close to this epistemological status, followed by 40% conceptualizing it as technology.

Both in the initial and the final stage of individual conceptualization, ambiguous and/or incoherent responses (holistic) were found. In the a priori stage, the explicit responses ranged from 7.5% to 10% implicit. In the a posteriori stage, the conceptual reconfiguration becomes more evident, as the percentage of responses decreased from 40% explicit to 10% implicit.

It can be concluded that, for the study population, after attending the accounting theory seminar, the concept of Accounting shifted from being perceived as a technique to being conceived as a discipline, with a close proximity to its technological conception. These results are highly significant as they indicate that the discussion on the epistemological status of accounting has a positive influence on how the students in the seminar comprehend the concept of Accounting at the University of Valle, Palmira campus, during the 2015-2 academic term.

The aforementioned changes in the arguments put forth may indicate that the participants were able to gather arguments from the public and collective debate to change their way of conceptualizing accounting. Alternatively, they may have adopted a way of understanding it that is closer to their mental structures and/or their everyday life experiences. These arguments are closely related to the theory of comprehensive learning, as the comprehension of the concept of Accounting occurs in the study population when they can "think and act

flexibly based on what they know" (Penkis, 1999, p. 2), but also based on the publicly and collectively debated ideas in the second stage of the pedagogical activity.

In summary, the research demonstrates that there is a positive pedagogical and conceptual influence of debate activities (public and collective) and reflection (individual) in the comprehensive learning process of this subject. However, there are also interpretive and/or experiential obstacles that prevent individuals from unlearning certain preconceptions about Accounting during their educational journey. Therefore, it is necessary to continue conducting this type of research to promote comprehensive learning of Accounting or, at the very least, from its conceptualization.

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