

Article

Correspondence between Professional Learning Expectations and Learning Opportunities in Financial Management Textbooks

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Abstract: This research investigated the correspondence between a sample of Financial Management textbooks and professional learning expectations synthesized in the construct of Expectation of Use. To this end, a conceptual framework developed from research on professional practice was integrated with the theoretical perspective of commognition and the analysis of mathematics education textbooks. A qualitative content analysis was performed on the narrative and the end-of-chapter problems of the textbooks, which identified the experiences they can offer and their relationship with professional practice. It was evidenced that the narrative of the textbooks focuses on promoting the development of concepts, principles, and procedures of financial theory; the financial situations presented in the narrative and in the end-of-chapter problems are artificial and therefore have limited relation with professional practice. It was concluded that, according to the textbooks, the mastery of Financial Management consists of appropriating a broad set of financial concepts that excludes the use of these concepts to address problems that simulate the profession. Restructuring the narrative in Financial Management textbooks and consciously including routines that respond to the professional learning needs of the financial community is recommended.

Keywords: financial administration; corporate finance; guide text; university and business; financial analyst



Citation: Acevedo-Arango, D.; Villa-Ochoa, J.A.; González-Gómez, D. Correspondence between Professional Learning Expectations and Learning Opportunities in Financial Management Textbooks. *Educ. Sci.* **2023**, *13*, 15. <https://doi.org/10.3390/educsci13010015>

Academic Editor: Yusuf Sayed

Received: 28 October 2022

Revised: 19 December 2022

Accepted: 20 December 2022

Published: 23 December 2022



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1. Introduction

Finance studies the structuring of the necessary economic arrangements and the administration of monetary resources for the achievement of an objective of a household or public and/or private organization [1]. In higher education, finance can be the subject of study in undergraduate programs such as finance or financial engineering, a foundational component of business and accounting programs, or an elective subject in engineering and economics [2,3]. A professional can work in positions such as investment advisor, financial advisor, credit analyst, treasurer, financial manager, or financial market operator. The relevance of their decisions in society requires them to have a broad knowledge of financial theory and the ability to apply it to the financial situations of the profession [4]. Students are expected to receive an education that prepares them to participate adequately in the workplace [5–8]. In particular, the recognition of those educational needs gives meaning to the term learning expectation, which is used “to denominate, in a generic way, those capacities, competencies, knowledge, expertise, aptitudes that graduating seniors are expected to achieve, acquire, develop and use” [9] in their education and professional practice.

The international literature has extensively documented the expectations that employers, practitioners, consultants, and academics expect from finance-related graduates; in particular, emphasis is placed on their ability to solve professional problems [10,11], communicate assertively [12–15], their knowledge of the work environment [16], and their

ability to relate to professionals from other areas within and outside the organization [17]. These expectations have direct repercussions in the contexts in which the professionals work; they are not framed by the needs of a region, but are of global interest [4,6,10–20]. In their study, Hernández-March et al. [15] and Osmani et al. [14] report that employers recognize the contribution of graduating seniors to companies, and they consider that higher education prepares people with a solid knowledge base and analytical capacity that allow a rapid assimilation of new knowledge. However, this educational process does not bring graduating seniors close enough to professional practice. The need to improve the transition of graduating seniors to professional practice and the complaint about privileging some situations suggests that the expectations of higher education are being partially met [5–8,15,16,21,22].

Research on graduated senior performance in the workplace reports that they are not able to carry out actions related to the application of theoretical knowledge [8,14,23,24], problem solving [6,11,14], evaluating a typical situation of the professional practice of finance, structuring problematic situations in realistic contexts, working with a sense of direction to execute the assigned task, and arguing the proposed solutions [20,25,26]. In this study, we will call these educational needs Expectation of Use, i.e., the ability to apply theoretical and technical knowledge to solve problems in the profession [6,15,18]. Overall, the literature reviewed highlights the relevance of understanding the educational factors associated with these needs and of inquiring about the elements that constitute the student's experience during the class, such as the curriculum, the content presented, the teacher's teaching strategies, the activities developed, the textbooks, and the complementary class material.

Textbooks draw special attention since they are a widely used resource in higher education [27,28] and are designed to translate the curricular intentions of a program or course into readings, examples, and activities that teachers and students can carry out [29–31]. Identifying the opportunities offered by textbooks provides information about the experiences that students have in their educational process [32–34]. In that sense, the textbook provides links between professional expectations and the classroom [29] and represents an interpretation of these in terms of concrete teaching actions [29,35,36]. Based on previous arguments, the purpose of this study is to establish the correspondence that exists between the contents and problems presented in the textbooks used in the subject of Financial Management with the Expectation of Use mentioned above. Therefore, in this article, we intend to answer the following question: What is the correspondence between the contents and problems presented in the Financial Administration textbooks and the Expectation of Use? It was decided to focus the study on this subject, since the topics taught are reported as relevant in professional practice and in the curriculum of programs related to finance [2–4,18].

2. Conceptual Framework

2.1. Expectation of Use in Action

In terms of its meaning, Expectation of Use comprises two components: the theoretical and the problems of the profession. The first corresponds to the set of concepts, principles, and procedures (CPP) inherent to financial theory. The second corresponds to the set of financial situations faced by the professional in which the theoretical component is applied.

In the theoretical component, structured situations or structured problems are used in the classroom that require identifying, selecting, and using information on a particular topic in a predictable situation [23,26]. CPPs are explained through descriptions, and then prototypical examples are used with emphasis on correct estimation and interpretation. Finally, students perform structured problems similar to the previously presented examples [37,38]. Structured problems usually include only the information necessary to obtain a correct solution, previously known by the designer of the activity; this kind of problem is the most used method to introduce students to the different finance theories [24,26]. Success in the theoretical component is evidenced by fluency in discourse related to the

explanation of CCP, a correct estimation and interpretation of the different elements of financial theory, and an appreciation of the role of finance in a particular context [4,18].

Some authors [6,13,15–17,37] identify, in isolation, different characteristics related to the problems of the profession component, such as: they have an ambiguous nature, they do not have a single preconceived correct solution, they require argumentation to explain their feasibility, the process to reach the solution is not predetermined, financial knowledge is implicit, and their usefulness depends on the constraints of the environment. Arts et al. [22] state that when these types of problems are taken to the school context, they are known as unstructured problems. These allow the student to face situations close to professional practice because their objective is vaguely established; the information is rarely adjusted to the requirements of the problem and must be searched for from diverse sources and processed; they do not establish in advance the appropriate methods for their solution; and the solutions are not correct or incorrect, so they are assessed in terms of feasibility and depend to a great extent on their argumentation [13,25,38]. In conjunction with the approaches of various referents that link professional practice with the classroom [8,13,14,18,22,25,26,39], an understanding of the set of actions needed to fulfil the Expectation of Use is developed. A student evidences, in his/her discourse, the fulfillment of the Expectation of Use if, when facing unstructured problems, he/she is able to: define and articulate the questions to be answered; determine an appropriate plan to carry out a precise and exhaustive analysis; gather, assess, or locate information, classifying it as relevant or irrelevant; select the appropriate theories and tools to solve the problem; evaluate the implications of the proposed results; and support his/her proposals, methods, and results, adapting his/her arguments to different target audiences.

2.2. *Commognition as a Theoretical Perspective for Textbook Analysis*

Commognition is a learning theory within Mathematics Education introduced by A. Sfard that mixes the words communication and cognition as a way of showing that there is no difference between communicating and thinking [40]. This theory provides a set of analytical tools that make explicit the learning opportunities that different discourses can provide [41]. The word discourse denotes a particular type of communication, whether written, oral, or gestural, distinguishable from any other by the use of words, narratives, and visual mediators and their routines [42]. With the help of these features of discourse, participants in a community communicate with each other and tell narratives about chosen aspects of reality.

There is an affinity between finance and mathematics, which is reflected both in conceptual and professional aspects, and in their teaching. Conceptually, finance draws on mathematics to develop models and practices that guide its objectives [43]; professionally, some activities of financial management require the development of indicators, mathematical problem solving, interpretation and argumentation based on data, scenario analysis, and the processing of quantitative and qualitative information to support decision making [4,18,44]. In their teaching, it is possible to identify the applied character of both areas, the recognition of communities, competencies, and discourses [3,45,46]. Likewise, they also share some problems, among them being the emphasis on expository practices, with methodologies based on definition, examples, and exercises [2]. They can also share some theoretical frameworks that, although constructed in one of the areas, can provide useful information for research in the other.

To argue for that possibility, in this study, we describe community and learning in terms of the theoretical perspective of commognition within the context of Financial Management. The financial community is composed of people who participate in the financial discourse as academics, employers, consultants, and practitioners in finance. This community allowed us to establish the construct of Expectation of Use. Consequently, learning is becoming fluent in the discourse of the community [41]. Hence, within a subject, learning can be defined as modifying and increasing the complexity of one's own discourse [47]. Therefore, teaching implies creating opportunities for participation in discourse and being

part of a community [48]. It is possible, then, to affirm that commognition is suitable to research in both mathematics and Financial Management.

As mentioned above, discourse has four characteristics. The first, the use of words, corresponds to what the user can say about (and therefore how they see) the world [49]. It refers to the use of specific finance vocabulary (e.g., financial statements, liquidity, profitability, fixed income). The second, visual mediators, are resources with which an object of communication can be identified and are specially created to facilitate the exchange of ideas [50]. In finance, they correspond to the visual resources used in everyday tasks (tables, diagrams, graphs, images, symbols, among others). The third is endorsed narratives, which are a sequence of utterances framed as a description of objects, of relations between objects, which is labeled as true by the discourse community [47]. Examples of these narratives are the definitions of financial concepts accepted by the community that are usually presented in textbooks. Finally, routines are reiterative patterns or actions that are present in discourses, for example, in ways of classifying, presenting, or viewing situations as the same or different [49]. Routines can be inferred by observing the regularities that exist in the other three discourse characteristics [51,52]. For example, when defining objects, carrying out procedures, or organizing ideas, conscious and unconscious observable patterns appear [53].

In commognition theory, the routine is the unit of analysis for investigating learning [42]. Knowing the implemented routines provides a basis for predicting the learner's future reaction to a similar situation [47]. A person in a given situation may act on it because there are precedents (routines) that are interpreted as similar, to justify repetition or a variation of what was done in the past [42]. This means that in order to know the learning opportunities offered by a discourse, it is necessary to unveil the routines it promotes.

Textbooks provide students with information about the way in which experts participate in a discourse and indications of how to communicate in order to be accepted as a member of a community [54]. In higher education, they are positioned as legitimizers and the authority of disciplinary knowledge; in this regard, commognition expresses that the rules of discourse are established by that which is considered authoritative [47]. The textbook teaches a discourse through a process of supply and demand; it offers the content of a given subject through explanations and examples, while demanding related actions from students in the form of questions and problems [29,30,36,55,56]. The present study uses routines as the unit of analysis to establish links between the opportunities offered by the textbook to Financial Management course students and the discourse expected by the financial community in terms of the Expectation of Use.

3. Methodology

3.1. Method and Research Setting

The aim is to give an account of the favored routines in the contents and problems of textbooks through qualitative content analysis (QCA). Within mathematics education, according to Mesa [57], the analysis of the content in textbooks is a project that aims to answer the question:

“What would students learn if their mathematics classes were to cover all the textbook sections in the order given? What would students learn if they had to solve all the exercises in the textbook?” (p. 255).

The QCA aims to reveal and map the characteristics, frequencies, and/or trends of a text under a particular theoretical lens of research interest through the use of categories [58]. When finding several fragments of content that can be considered similar to each other, these are classified within a category with the objective of reducing large amounts of text into meaningful smaller units [59] that are constructed from the notion of Expectation of Use and the perspective of commognition.

In this research, the process of fragmenting text, coding, creating, and analyzing categories seeks to make explicit the routines defined as the actions that the textbook performs or invites one to perform. Routines are inferred through a process of analysis and

categorization of the regularities of the content; everything that can be considered similar constitutes a repetitive pattern or routine [60], which in turn coincides with the definition of category within the QCA. The framework presented in Table 1 was used repeatedly during the process of text coding and category creation. This framework synthesizes a set of concepts or words of interest in the research related to Expectation of Use that make us aware of the possible classification of fragments into categories [61].

Table 1. Reference framework for content analysis.

Routines in Correspondence with the Theoretical Component of the Expectation of Use
Present the set of concepts, principles, and procedures (CPP) specific to the subject in a broad and detailed manner, in a predictive and prescriptive arrangement.
Give examples to illustrate the CPPs presented previously in prototypical spaces with the necessary information.
Present the content and situations within the financial context without involving other fields of knowledge.
Propose problems similar to the examples presented during the subject matter that promote the explanation of concepts and principles, as well as the proper use of procedures.
Propose problems that provide only the necessary information to reach the solution without requiring a differentiation between relevant and irrelevant information that usually has a single correct solution focused on obtaining a numerical result.
Propose problems that remain in financial spaces without actively involving other fields of knowledge.
Routines in correspondence with the problem component of the Expectation of Use profession
Presents situations with constraints, promotes multiple perspectives, recognizes the existence and implications of various solutions, and is consistent with those that a professional faces.
Presents situations that deal with financial problems in which the theoretical component should be implicit and that are probable, close, and/or simulate professional practice.
Presents ample information in the examples that comes from diverse sources, requiring to be selected and processed with diverse criteria in order to be used with and/or actively involve other fields of knowledge.
Proposes problems that present dilemmas, constraints, and/or contradictions in concepts and principles where solutions are assessed in terms of feasibility, and are probable, close, and/or simulate professional practice.
Proposes problems that do not suggest a path for their solution in which strategies different from those presented in the subject matter must be created and justified.
Proposes problems that require searching for, organizing, and processing information from different sources.

Note: Own elaboration based on ABDC [18]; Arts et al. [18]; Carrithers, Bean, and Ling [26]; Garcia et al. [12]; Jonassen [37,39]; Osmani et al. [14]; QAA [4]; Voss [38] and Wood [44].

For this study, widely assigned Financial Management textbooks were selected to identify globally accepted practices in this subject. The textbooks are published by international publishers, have been translated into different languages, and have a high circulation in the university environment. Also selected were those textbooks whose authors had extensive experience in consulting and research in Financial Management and whose different versions covered not only Latin America, but also other regions of the world.

Based on these criteria, we started with a search in the university library catalogs of the top five universities according to the Colombian ranking for the area of finance in 2020 [62]. This search yielded 24 references, from which the latest available editions of the different authors in English were selected. The final sample of selected textbooks is presented in Table 2. As such, the set of textbooks selected is appropriate for the purpose of revealing the correspondence between Financial Management textbooks and the Expectation of Use. They give an account of global practices, so they are not limited to the Colombian context.

Table 2. Selection of textbooks and chapters for qualitative content analysis.

Author and Region of Use	Edition	Publisher
Brigham and Houston [63], United States	15	Cengage
Titman et al. [64], United States	13	Pearson
Block et al. [65], United States	17	McGraw Hill

Table 2. Cont.

Author and Region of Use	Edition	Publisher
Ross et al. [66], United States	12	McGraw Hill
Zutter and Smart [67], Global edition	15	Pearson
Adam et al. [68], Asia-Pacific, Australia	2	Cengage
Atrill [69], United Kingdom	8	Pearson

Note. Textbooks by the authors Stephen Ross, Sheridan Titman, and Eugene Brigham have a European, Canadian, and/or international versions.

In the literature on content analysis and textbooks, selecting some lessons or topics in order to analyze a broader sample of textbooks that represent the experiences of an academic community is recommended [58,70–72]. To answer the research question, the data sources were the narratives and problems of the topics that are the focus of the subject of Financial Management and at the same time are directly related to professional practice. According to Hoadley et al. [45], the topics that meet these conditions and were selected for the present study are Analysis of Financial Statements, Financial Planning, and Working Capital Management. Other topics such as CAPM, net present value, or portfolio efficient frontiers were not considered because they are of a conceptual nature to explain the market economy and their applications are not frequent in the workplace [31].

3.2. Data Analysis

For the analysis of the narratives, first an inductive generation of categories was carried out due to the scarcity of literature that analyzes the content of finance textbooks. For the analysis of the problems, we used category systems from mathematics textbooks that have been used in different disciplines that are close to the Expectation of Use due to the existing relationships between finance and mathematics. The analysis started with a pilot study in order to refine and test the category system to be used in the whole sample. Brigham's book was used since it has the highest global usage, with the highest number of translations into other languages [73].

The pilot study began with a first reading of the chapter. The text was coded line by line, classifying the fragments accompanied by a possible description of the actions performed in the textbook. An analysis of fragments and descriptions revealed that some could be considered similar to each other; this event gave rise to the first group of categories. A second reading classified several fragments in the first group of categories, some were modified, and new descriptions emerged in the coding. The process was repeated, resulting in a redefinition of the previous group of categories and the creation of new ones. Mayring [58] and Kuckartz [61] indicate that the reading–classification–analysis loop should be repeated until the emergence of categories stops and the fragments are classified within them. The completion of the loop means that the entire text is classified within the set of categories generated from the interaction between the textbook, the coder, and the reference framework. This process resulted in eighteen routines, presented in Table 3, that were grouped according to their degree of affinity into four sets.

A problem is a text fragment that requires a set of actions to move to a desired goal state or solution and these actions have social, cultural, or intellectual value [37,74]. Problems are an opportunity to engage students in situations that can evidence their learning in the subject matter in different ways [30]. Problem analysis consists of classifying problems into predetermined category systems that inform the actions required to solve them [55,74]. Son and Diletti [75], in their literature review, group problem analysis into three interdependent classes of category systems that are presented in Table 4. The first class, Cognitive Requirements, refers to category systems that classify the routines required to reach the solution through a descriptive scale of difficulty or level of user involvement. Problems with low cognitive requirements demand recalling words or generic narratives in relation to various elements of financial theory, while those with high cognitive requirements provide the opportunity to engage in routines that increase the level

of participation in a discourse. The latter demand making connections between words, creating endorsed narratives, and using mediators in a particular context. The second class, Type of Response, refers to category systems that group the routines in terms of the actions required to express a solution. The third, Relevance of Non-Textual Elements, refers to systems that describe the use of visual mediators in problems.

Table 3. Category system for coding and analysis of narratives.

<p>Textbook Style (Set of Routines)</p> <p>Groups the set of routines that reveal the structure that the textbook uses to present its main ideas.</p> <p>Description: Describes a financial situation that establishes a reason to study or use the financial subject matter through a narrative; they are also fragments that offer information, complement, or exemplify without going into details of estimation of some previously exposed concept. This category also includes fragments that describe non-financial situations that present a context in a general way that precedes a financial situation.</p> <p>The fragments in this category are not intended to present definitions of concepts or procedures per se.</p> <p>Definition: Defines one or more financial concepts, often involving formulas. They group definitions specific to the financial topic being worked on.</p> <p>Definition–Description: Uses a description of a financial situation to explain a definition and gathers the fragments where examples with detailed procedures are used. Unlike the Description fragments, the text refers to a specific definition or concept in an intentional and detailed manner.</p> <p>Visual mediators: These are resources that help identify an object and coordinate its communication. Mediators such as diagrams, graphs, images, tables, and spreadsheets are found.</p> <p>Opening–closing: The first informs about the subject and objective of the chapter presented at the beginning of each chapter, while the second summarizes and concludes the relevant aspects of the chapter.</p> <p>Review activity: These are questions on the topics that have been covered in the previous content. Most of them contain open questions, problems, or solved examples.</p> <p>Analysis process: Fragments of text that integrate concepts to reach conclusions about a financial situation.</p>
<p>Complementary (Set of Routines)</p> <p>Groups the set of routines that assist or dynamize the development of the Textbook Style set.</p> <p>Anecdote: Story, event, or narrative in which it is intended to inform, exemplify, or justify a concept of the subject matter. The main characteristic of the anecdote is that it provides very little numerical evidence to support its central argument. Most of them are expressed in an anecdotal, historical, or informative way, and the intention is not to achieve a detailed exposition of a concept, but to complement it.</p> <p>Consultation info: Presents information that comes from public websites and/or recommends consultation websites that are useful in the development of the subject matter. It also suggests the use of tools necessary for professional practice.</p> <p>Post it: Side boxes with relevant information that are presented in the margins of the page.</p>
<p>Constraint (Set of Routines)</p> <p>Constraints indicate fragments where the interpretation of CPP is restricted and depends on other factors.</p> <p>Clarification: This is a reinforcement to a situation previously presented as a constraint. The main characteristic is that its presence in the text has complementary purposes to make explicit ideas that might not be obvious to the unsuspecting reader.</p> <p>Action: The concept provides partial information that must be supported by complementary information or caution in its interpretation. The constraint should be explicit and recommend a specific action.</p> <p>Ambiguous: The fragment is ambiguous and does not provide an example for disambiguation. The fragment presents a constraint to be taken into account that may be of great importance without going into it in depth.</p> <p>Previous/Subsequent: will be worked on in future chapters or was presented previously.</p>
<p>Professional Reference (Set of Routines)</p> <p>It groups the set of routines that make an explicit mention of the profession.</p> <p>Applied: Advises and exemplifies an action to be performed in the profession.</p> <p>Basic: The professional reference is intuitive or common sense for a student of a program related to finance.</p> <p>Specialized: The content requires previous knowledge; however, the fragment can be interpreted without the need for an example.</p> <p>Non-applied: Advises, promises, or suggests an action that it does not exemplify.</p>

Table 4. Category systems for the analysis of problems in mathematics textbooks.

Cognitive Requirements
Depth of knowledge [76]
Level 1: Memorize, reproduce: Solve a problem in one step, recognize an equivalence, recognize a concept or principle, retrieve information from a visual mediator.
Level 2: Simple application/concept: Use simple situations to represent financial concepts, solve an algorithmic problem in several steps, retrieve information from a visual mediator to solve a problem, identify and explain relationships between CPPs.
Level 3: Strategic thinking: Explain ideas in the face of multiple viable response scenarios, make and/or justify inferences made from information, use theoretical components to solve non-prototypical problems, perform procedures with multiple steps and decision points, describe, compare, and contrast different solution methods.
Level 4: Extended thinking: Relate concepts to professional practice situations, design a model (spreadsheet) to solve a professional problem, apply known solution strategies to non-prototypical problems, create and justify a solution strategy.
Cognitive demand [77]
Low level—Memorization: reproduce previously presented CPPs, reproduce verbatim previously presented content free of ambiguity, no connection to previously presented CPPs required.
Low level—Procedures without connections: Algorithmic procedure that is obvious from what is presented, procedure free of ambiguity about what to do and how to do it, procedure with no connection to the concepts or underlying meaning of the procedure used, reproduce correct answer rather than achieve financial understanding, or describe the procedure.
High level—Procedures with connections: Using procedures with the goal of developing deep levels of understanding of financial concepts and principles, requiring (implicitly or explicitly) relevant procedures that have a close connection to structural financial concepts and principles, using visual mediators that require inferences in order to understand the problem, requiring procedures that can only be developed from a deep articulation of the financial concepts and principles.
High level—Doing finance: Requires non-algorithmic thinking, previously presented content does not explicitly suggest a predictable path to reach the solution, requires exploring and understanding the financial nature of concepts, principles, procedures, or their relationships, requires self-assessment of progress in the situation and cognitive processes, requires accessing knowledge related to professional practice and using it in the construction of the solution, requires analyzing the problem and continually examining the constraints of the environment as it may limit the possible solution strategies and/or solution, requires considerable cognitive effort and may involve some level of anxiety for the student due to the unpredictable nature of the solution process required.
Type of response requested
Opportunity for communication [35]
No: Does not direct students to communicate what they are thinking through words (beyond a numerical response) or visual mediators.
Yes: Directs students to communicate what they are thinking through words (beyond a numerical response) or visual mediators.
Evoking: Directs students to reproduce, interpret, or represent a concept or principle.
Relevance of non-textual elements
Role of visual mediator [35]
No: A visual mediator is neither provided nor needed.
Unnecessary: A visual mediator is provided that does not require interpretation to be used. The inscription is unnecessary (superfluous) for understanding the financial situation.
No interpretation required: A visual mediator is provided that does not require an interpretation to be used. The inscription is necessary to understand the financial situation.
Interpretation required: A visual mediator is provided and must be interpreted to answer the question.
Create or modify mediator: The item directs students to create a visual mediator or modify an existing one.

The selection of category systems for problem analysis was made taking into account that the actions described were related to the reference framework described in Table 1. A group of specialists discussed which routines would make sense in finance and some routines of exclusive interest to mathematics were eliminated. Across the entire sample, the category systems Depth of Knowledge, Cognitive Demand, Opportunity for Communication, and Role of Visual Inscriptions were used. The above category systems (Tables 3 and 4) were used by three experts and the first author of this article in different textbooks to perform inter-coder agreement.

The main technique used in the QCA as a contribution to research quality is the inter-coder agreement [58]. In this technique, two or more people code the same text independently using the same category system. A coder is an expert who reads, interprets, and assigns categories to the different text passages [61]. Transparency in this agreement

provides relevant methodological information for replicating the study in a similar context, which contributes to the credibility and reliability of the research. An inter-coder agreement was performed with 28.9% of the total sample distributed among all books and subjects using the MAXQDA 2020 (qualitative data analysis software). The activities carried out during the inter-coder agreement are summarized in Table 5. In addition to the first author of this article, three other coders were selected who were experts in financial topics, with more than 5 years of experience in the practice of their profession and in financial teaching in higher education.

Table 5. Summary of the agreement process between coders.

Activity	Responsible	Observations
1. Acceptance meeting	Authors and experts	It was explained to the experts that a significant level of detail and expertise in Financial Management was required. The following were delivered in a file: description of the research and the activity, tutorial of the coding process and software handling, manual of the category system, a coded textbook chapter as an example, and the textbook chapters to be coded.
2. Material delivery meeting	Authors and experts	The possibility of consulting issues at any time via e-mail or text message is made clear.
3. Review of the material provided	Experts	More extensive and critical activity of the process because it requires mastery of the software and multiple revisions to the example and the manual of the category system. Recoding of several fragments was required as experience was gained in the process.
4. Coding and submission of first assigned chapter	Experts	The experts' coding was contrasted with that of the first author to establish the fragments in which the coding coincided or differed.
5. Coding agreement/disagreement in fragments	First author	Meeting to establish the possible interpretations of the fragments that were in disagreement. The objective is to seek a consensus for this content.
6. First agreement between coders meeting	First author and experts	Repetition of the activity for the chapter of the second textbook. The coding exercise was more fluid for the experts.
7. Coding and submission of second assigned chapter	Experts	
8. Repetition of activity 5 and activity 6	First author and experts	
9. Fill out format for validation of categories and content	Experts	The experts fill out the content validation tool.
10. Synthesis and organization of results	Authors	Organize results and calculate levels of agreement/disagreement.
11. Validation of synthesis and interpretation of results	Authors and experts	Present results and interpretation of findings to experts. Clarify possible misinterpretations and provide suggestions regarding any overlooked details.

The results of the inter-coder agreement are shown in Table 6. The level of agreement for the narrative prior to activity 7 was above 70% except for the Block et al. [65] textbook. Then, in the meeting with each expert, some misinterpretations of the categories were clarified, and the level of agreement increased above 90% for all textbooks in the narrative and problems. A higher level of agreement was achieved with each expert on the second coded chapter due to previous experience. Finally, the experts were given a category

system validation tool inspired by Galicia, Balderrama, and Edel [78], which contains items related to clarity, coherence, and relevance. The three experts assigned the maximum value in the different items for all categories. These results indicate that the routines and descriptions created for the QCA have the capability to classify the different text fragments that constitute the chapters of the coded Financial Administration textbooks. The level of agreement above 90% achieved by the three coders together with the use of the validation tool evidenced a shared interpretation of the content coding process. It is expected that the category system, when used by experts in finance in related contexts, will achieve similar results, which is a contribution to the reliability and transferability of the research.

Table 6. Information on agreement between coders.

Distribution of Chapters and Textbooks to Code												
Coder	Topic						Textbooks Assigned					
Expert 1	Financial statement analysis						Ross et al. [66] and Atrill [69]					
Expert 2	Working capital management						Block et al. [65] and Adam et al. [68]					
Expert 3	Financial planning and projections						Titman et al. [64] and Zutter and Smart [67]					
Results in agreement between coders												
	Before agreement meeting						After agreement meeting					
	Narrative		%	Problems		%	Narrative		%	Problems		%
	Yes	No		Agreement	Yes		No	Agreement		Yes	No	
Titman et al. [64]	42	12	77.8%	16	2	88.9%	54	4	92.6%	18	18	100%
Block et al. [65]	38	27	58.5%	19	4	82.6%	61	4	93.8%	22	1	95.7%
Ross et al. [66]	70	11	86.4%	31	0	100%	80	1	98.8%	31	0	100%
Zutter and Smart [67]	46	10	82.1%	22	22	100%	53	3	94.6%	22	22	100%
Adam et al. [68]	48	20	70.6%	15	3	83.3%	65	3	95.6%	18	18	100%
Atrill [69]	123	7	96%	7	0	100%	128	2	98.4%	7	0	100%

Note: The percentages obtained in this table are calculated as the number of fragments assigned to the same category by the expert and the first author divided by the total number of coded fragments. The Brigham and Houston textbook [63] was not part of the intergroup agreement as it was given as an example to the experts.

Coding and Interpretation of Data

The first author coded the other chapters of the sample, and three principles guided the process: coding inspired by the frame of reference, the results of the pilot study, and the texts coded by the experts, as well as the records of the meetings with them; this ensured that the system of categories is sensitive to all of the textbooks and is independent of the decision to include/exclude the content of the topics proposed by each book. In total, twenty-one chapters distributed in three topics were analyzed within the seven textbooks in the sample, corresponding to a total of 627 pages and 427 problems (Table 7).

Table 7. Summary of coding content.

Textbook	Financial Statement Analysis		Financial Projections		Working Capital Management		Total per Textbook	
	Narrative # Pages	# of Problems	Narrative # Pages	# of Problems	Narrative # Pages	# of Problems	Narrative # Pages	# of Problems
Atrill [69]	47	7	42	7	43	8	132	22
Block et al. [65]	19	41	16	32	25	22	60	95
Brigham and Houston [63]	31	32	18	13	33	18	82	63
Adam et al. [68]	27	6	25	11	27	19	79	36
Ross et al. [66]	32	31	23	35	23	20	78	86
Titman et al. [64]	37	37	17	20	25	15	79	72
Zutter and Smart [67]	48	22	33	15	36	16	117	53
Total	241	176	174	133	212	118	627	427

After the coding process, sessions were held with authors 2 and 3 in which the research findings were discussed and interpreted in light of the notions of the Expectation of Use, the

needs of the financial community reported in the literature, and the theoretical perspective of commognition. Differences between the interpretations required a review of the coding and the search for information to support a shared interpretation for consensus building. The overall results of the fieldwork resulted in eighteen routines (Tables 3 and 8) grouped according to their degree of affinity into four sets: Textbook Style (7), Complementary (3), Constraint (4), and Professional Reference (4); a detailed presentation of the results can be found in the following section.

Table 8. Results of coding by routines in the narrative.

	Atrill	Titman	Block	Ross	Brigham	Graham	Zutter	Average
Textbook Style	67.8%	87.2%	75.5%	76.2%	71.6%	74.6%	70.3%	74.7%
Def-Descr	15.5%	18.4%	28.8%	28.5%	27.0%	24.1%	25.1%	23.9%
Definition	14.4%	10.9%	6.1%	14.4%	15.6%	15.1%	18.9%	13.6%
Description	10.5%	13.0%	15.4%	13.1%	15.5%	16.9%	6.1%	12.9%
Subtotal	40.4%	42.3%	50.3%	56.0%	58.1%	56.1%	50.1%	50.5%
Analysis process	4.9%	16.1%	2.7%	2.4%	1.6%	5.5%	6.4%	5.7%
Opening-closing	4.9%	12.2%	5.7%	3.1%	3.5%	6.3%	4.8%	5.8%
Review activity	11.7%	1.3%	0.0%	3.6%	3.5%	3.0%	2.8%	3.7%
Visual mediator	5.9%	15.3%	16.8%	11.1%	4.9%	3.7%	6.2%	9.1%
Flowchart	0.5%	1.8%	0.5%	0.6%	0.1%	0.2%	0.6%	0.6%
Graphic	1.7%	0.6%	0.7%	0.4%	0.7%	0.2%	0.4%	0.7%
Spreadsheet	1.5%	3.9%	10.1%	2.0%	2.4%	2.8%	1.6%	3.5%
Table	2.2%	9.0%	5.5%	8.1%	1.7%	0.5%	3.6%	4.4%
Complementary	10.9%	6.4%	18.0%	8.8%	16.1%	12.3%	17.0%	12.8%
Anecdote	10.3%	5.5%	17.3%	6.3%	7.2%	6.6%	11.7%	9.3%
Consultation-info	0.6%	0.3%	0.7%	1.1%	4.8%	0.0%	0.1%	1.1%
Post it	0.0%	0.6%	0.0%	1.4%	4.1%	5.7%	5.2%	2.4%
Constraint	9.2%	5.1%	2.8%	12.7%	8.7%	8.9%	8.9%	8.0%
Action	1.8%	1.0%	0.5%	2.4%	2.3%	1.4%	3.1%	1.8%
Clarification	3.6%	0.6%	1.1%	1.9%	1.2%	0.5%	3.1%	1.7%
Ambiguous	3.3%	2.5%	0.9%	6.4%	4.1%	6.7%	2.0%	3.7%
Previous/subsequent	0.6%	1.1%	0.3%	1.9%	1.1%	0.3%	0.7%	0.9%
Professional Reference	27.5%	23.9%	16.6%	8.3%	11.9%	13.3%	14.4%	16.6%
Applied	7.9%	13.3%	3.7%	1.6%	2.5%	0.0%	2.4%	4.5%
Basic	4.9%	2.4%	2.0%	2.4%	2.7%	2.7%	6.2%	3.3%
Specialized	2.6%	1.8%	0.0%	1.5%	0.4%	0.8%	1.2%	1.2%
Non applied	12.1%	6.3%	10.8%	2.9%	6.3%	9.8%	4.6%	7.5%

Note. A description of the routines is given in Table 3. The percentages are automatically calculated by the MAXQDA 2020 software as the number of characters assigned to each routine divided by the total number of encoded characters.

4. Results

4.1. Narrative Analysis Results

4.1.1. Textbook Style

The textbook is divided into chapters that are constructed as a set of fragments, classified in routines, to meet the needs of a subject matter. Each chapter is developed through a strategy that articulates the routines Description, Definition, and Definition–Description to expose the subject matter in a broad and detailed way that reveals a characteristic structure (Table 9F1–F3). The Description routine contains fragments that establish arguments for studying a topic, evoke simple financial situations, or exemplify concepts without going into detail, thus corresponding to an evocation routine. The Definition routine contains fragments with the concepts and principles of the subject matter, often involving formulas or instructions to carry out procedures and/or interpretations. In terms of commognition, it corresponds to a construction routine, which creates a new endorsed narrative, i.e., any sequence of utterances that aims to expand the knowledge of the presented topic. Finally, the fragments of the Definition–Description routine present a financial situation as an example to explain a CPP. Sometimes, the fragment uses the situation to explain the concept

or it is first explained with a Definition routine and then consolidated with an example, so this routine is used to endorse a narrative or as a construction routine. All textbooks in the sample contain fragments of these three routines and represent, on average, 50.5% of the coded narrative (Table 8). The reference framework (Table 1) indicates that presenting CPPs in a predictive and prescriptive arrangement accompanied by examples, as these routines do, implies that they are in correspondence with the theoretical component of Expectation of Use.

A recurring routine in all textbooks is the Review Activity. This contains fragments at the end of each thematic subsection where questions related to the ideas just presented are asked (Table 9F5). These activities require reproducing some part of the narratives contained in the Definition, Description, and Definition–Description triad, literally or with slight variations. In a similar vein, the generalized use of visual mediators is to assist this triad of routines, as can be observed in Table 9F4. The results in Table 8 indicate that the most used visual mediators are Table (4.4%) and Spreadsheet (3.5%). This is interpreted as a preference for the use of text and not graphics. When the graduating senior must use visual mediators in the profession, he/she will find that the use given to them to explain concepts is not aligned with the problems of the profession. This divergence in the use of mediators can be seen in the studies of Carrithers et al. [26] and Carrithers and Bean [25], where graduating seniors simulate spreadsheet scenarios and use visual mediators to explain concepts seen in class rather than focusing on solving the assigned financial situation. That is, graduates use mediators in a manner similar to that observed in textbooks that is dissimilar to the profession.

The Opening–Closing routine contains fragments that state the objective of the topic, generally accompanied by an anecdote to justify or exemplify its relevance in the business world (Table 9F6). In these fragments, it was found that the textbooks promote actions such as describing, listing, summarizing, and explaining, which are in correspondence with the theoretical component of the Expectation of Use. However, these actions do not satisfy the focus of the textbooks stated in the preface section. For example, in Block et al.'s [65] textbook, they state:

“Throughout the past 39 years, this text has been a leader in bringing the real world into the classroom, and this has never been more apparent than in the 16th edition. Each chapter opens with a real-world vignette and the Finance in Action boxes (found in virtually every chapter) describe real-world activities and decisions made by actual businesses”. Block et al. [65] (p. 5)

In this excerpt, they claim to bring professional practice to the classroom. As such, the textbooks should present a discourse in correspondence with professional practice, but the scope of the actions presented is limited to the theoretical component. This phenomenon, which is also the case in the other books in the sample, suggests that the conception of bringing professional practice to the classroom is not related to promoting routines that are in correspondence with both components of the Expectation of Use, but to inform the different experiences that could be had in the practice of Financial Management.

The last routine belonging to Textbook Style is Analysis Process. This routine contains fragments that integrate the themes of the chapter to reach a conclusion about a financial situation (Table 9F7). This routine breaks with the observed narrative because instead of presenting situations to explain CPP, it uses them to give an answer to financial problems, showing possible uses of it. This routine is interpreted as an approach of the textbook to move from the theoretical component to the problems of the profession Expectation of Use. However, it is relevant to clarify that, excluding Titman's textbook, its appearance is rare, representing 3.9% of the coded narrative, on average.

Table 9. Fragments (F) selected from Textbook Style routines.

Fragment	Explanation																																							
<p>Capital Structure Ratios</p> <p>In finance, we use the term capital structure to refer to the way a firm finances its assets using a combination of debt and equity. Thus, capital structure ratios are used to answer a very important question: How has the firm financed the purchase of its assets? To address this issue, we use two types of capital structure ratios: the debt ratio, a measure of the proportion of the firm's assets that were financed by borrowing or debt financing, and the times interest earned ratio, which looks at the firm's ability to pay the interest expense on its debt.</p>	<p>F1 Description</p> <p>It presents a question–answer situation as a justification for studying the subject (capital structure indicators) that evokes a possible situation within finance.</p> <p>Source: Titman et al. [64] (p. 121).</p>																																							
<p>Debt Ratio. The debt ratio measures the percentage of the firm's assets that were financed using current plus long-term liabilities.⁵ We calculate the firm's debt ratio as total liabilities divided by total assets:</p> $\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} \quad (4-6)$	<p>F2 Definition</p> <p>It presents a concept (debt ratio), the different instructions for its estimation and/or interpretation. It helps to answer the question posed in the previous routine that introduces a new word with meaning in the subject matter.</p> <p>Source: Titman et al. [64] (p. 121).</p>																																							
<p>For H. J. Boswell, Inc.,</p> $\text{Debt Ratio} = \frac{\$1,059.75 \text{ million}}{\$1,971 \text{ million}} = 53.8\%$ <p>Peer-group debt ratio = 35%</p> <p>H. J. Boswell, Inc., financed 53.8 percent of its assets with debt (taken from H. J. Boswell, Inc.'s balance sheet in Chapter 3, Table 3.2) compared with the peer-group average of 35 percent. Thus, H. J. Boswell, Inc., used significantly more debt than the average of the peer-group firms.</p>	<p>F3 Definition–Description</p> <p>Concludes the explanation of the concept and/or exemplifies its use by endorsing the previously presented narrative.</p> <p>Source: Titman et al. [64] (p. 121).</p>																																							
<table border="1"> <thead> <tr> <th></th> <th>Mobile telephone manufacturer</th> <th>Clothing manufacturer</th> </tr> </thead> <tbody> <tr> <td colspan="3"><i>Data (\$ millions)</i></td> </tr> <tr> <td>(1) Sales</td> <td>\$99,870</td> <td>\$4,979</td> </tr> <tr> <td>(2) Cost of sales</td> <td>\$53,857</td> <td>\$2,080</td> </tr> <tr> <td>(3) A/P</td> <td>\$19,060</td> <td>\$ 747</td> </tr> <tr> <td>(4) A/R</td> <td>\$27,353</td> <td>\$ 485</td> </tr> <tr> <td>(5) Inventory</td> <td>\$ 2,549</td> <td>\$ 504</td> </tr> <tr> <td colspan="3"><i>Time periods (days)</i></td> </tr> <tr> <td>(6) AAI $\{[5] \div [(2) \div 365]\}$</td> <td>17.3</td> <td>88.4</td> </tr> <tr> <td>(7) ACP $\{[4] \div [(1) \div 365]\}$</td> <td>100.0</td> <td>35.6</td> </tr> <tr> <td>(8) APP $\{[3] \div [(2) \div 365]\}$</td> <td>129.2</td> <td>131.1</td> </tr> <tr> <td>(9) OC $\{[6] + [7]\}$</td> <td>117.2</td> <td>124.0</td> </tr> <tr> <td>(10) CCC $\{[9] - [8]\}$</td> <td>-11.9</td> <td>-7.1</td> </tr> </tbody> </table>		Mobile telephone manufacturer	Clothing manufacturer	<i>Data (\$ millions)</i>			(1) Sales	\$99,870	\$4,979	(2) Cost of sales	\$53,857	\$2,080	(3) A/P	\$19,060	\$ 747	(4) A/R	\$27,353	\$ 485	(5) Inventory	\$ 2,549	\$ 504	<i>Time periods (days)</i>			(6) AAI $\{[5] \div [(2) \div 365]\}$	17.3	88.4	(7) ACP $\{[4] \div [(1) \div 365]\}$	100.0	35.6	(8) APP $\{[3] \div [(2) \div 365]\}$	129.2	131.1	(9) OC $\{[6] + [7]\}$	117.2	124.0	(10) CCC $\{[9] - [8]\}$	-11.9	-7.1	<p>F4 Visual mediator</p> <p>Use of the table to present numerical information. Mediators present financial statements, indicators, or data needed to structure various financial situations. In particular, the excerpt implicitly suggests the use of spreadsheets.</p> <p>Source: Adam et al. [68] (p. 629).</p>
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Table 9. Cont.

Fragment	Explanation
<p>Differentiate between permanent current assets and temporary current assets.</p> <p>What does maturity matching mean, and what is the advantage of this financing policy?</p> <p>What are the advantages and disadvantages of short-term versus long-term debt as identified in this section?</p>	<p>F5 Review activity</p> <p>Asks about differences between financial concepts and implications of financing decisions. Information to answer the questions is explicitly provided in the subsection.</p> <p>Source: Brigham and Houston [63] (p. 570).</p>
<p>IN EARLY 2017, car sales were slowing and inventories were climbing. For example, the Buick LaCrosse sat on dealers' lots for an average of 168 days before being sold. At the same time, sales of the Chevrolet Spark were not exactly electrifying, either, as it took 170 days for each of those cars to be sold. In the auto industry, high inventory creates problems, and those problems are often resolved by offering large incentives. For example, Jeep, which had 138 days of inventory of its Renegade, offered \$2,500 to entice new buyers. At the other end of the spectrum, it took only 38 days on average to sell a new Honda Pilot.</p> <p>As this chapter explores, the amount of time goods are carried in inventory until they are sold is an important element of short-term financial management. Industries such as automobile manufacturing pay close attention to it.</p>	<p>F6 Opening–Closing</p> <p>Presents an anecdote about proper working capital management that justifies the relevance of the subject matter and ends with the actions that the user of the textbook is expected to achieve after studying the narrative and performing the exercises.</p> <p>Source: Ross et al. [66] (p. 606).</p>
<p>Learning Objectives</p> <p>After studying this chapter, you should be able to:</p> <p>L01 Describe the operating and cash cycles and why they are important.</p> <p>L02 List the different types of short-term financial policy.</p> <p>L03 Summarize the essentials of short-term financial planning.</p> <p>L04 Explain the sources and uses of cash on the balance sheet.</p>	

Table 9. Cont.

Fragment	Explanation																		
<p>The efficiency, or activity, ratios may be summarised as follows:</p> <table border="1" data-bbox="340 387 864 616"> <thead> <tr> <th></th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>Average inventories turnover period</td> <td>56.6 days</td> <td>56.7 days</td> </tr> <tr> <td>Average settlement period for trade receivables</td> <td>37.7 days</td> <td>34.9 days</td> </tr> <tr> <td>Average settlement period for trade payables</td> <td>44.9 days</td> <td>47.2 days</td> </tr> <tr> <td>Sales revenue to capital employed (net asset turnover)</td> <td>3.20 times</td> <td>3.36 times</td> </tr> <tr> <td>Sales revenue per employee</td> <td>£160,057</td> <td>£143,962</td> </tr> </tbody> </table> <p>Activity 3.13</p> <p>What do you deduce from a comparison of the efficiency ratios over the two years?</p> <p>Maintaining the inventories turnover period at the 2015 level might be reasonable, although we need to know the planned inventories period to make a proper assessment. The inventories turnover period for other businesses operating in carpet retailing, particularly those regarded as the market leaders, may have been helpful in formulating the plans. On the face of it, a shorter trade receivables settlement period and a longer trade payables settlement period are both desirable. However, this may have been achieved at the cost of a loss of goodwill among customers and suppliers. The increased sales revenue to capital employed ratio seems beneficial, provided that the business can manage this increase. The decline in the sales revenue per employee ratio is undesirable but is probably related to the dramatic increase in the number of employees. As with the inventories turnover period, these other ratios need to be compared with planned, or target, ratios.</p>		2015	2016	Average inventories turnover period	56.6 days	56.7 days	Average settlement period for trade receivables	37.7 days	34.9 days	Average settlement period for trade payables	44.9 days	47.2 days	Sales revenue to capital employed (net asset turnover)	3.20 times	3.36 times	Sales revenue per employee	£160,057	£143,962	<p>F7 Analysis process</p> <p>It presents a summary of activity indicators and asks open-ended questions about the inferences to be drawn from this information. Subsequently, it presents an analysis derived from the integration of several concepts.</p> <p>Source: Atrill [69] (p. 101).</p>
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The Analysis Process routine presents an opportunity to show the use that should be made of the CPPs of each subject, which until now appeared in an artificial and limited way. The textbook sample presents a centralized structure in the routines Definition, Definition–Description, and Description, which broadly describe the CPPs, leaving aside the activity that these can generate in the exercise of Financial Management, because the narrative does not transition to routines that promote the problem component of the profession of the Expectation of Use. The inclusion of the Analysis Process allows the integration of CPP to address financial problems that have the theoretical component of the Expectation of Use implicit. According to Green et al. [79], it is necessary to scaffold with this type of routine so that the textbook can be mobilized from the theoretical component to the problem component of the profession.

4.1.2. Complementary Routines

This set groups four routines support Textbook Style to make it more user friendly (Table 3). The Anecdote routine is used by all textbooks to inform and exemplify a subject, concept, or historical events in finance in an anecdotal way (Table 10F1). In general, the fragments present examples of large companies such as Amazon, Dell, Walmart, Apple, and CVS. Other fragments present historical information on sectors of the economy, examples of regulations, or personal finance. The fragments within Anecdote present stories that promote interest in the subject matter, but do not describe the situations within the companies, so their capacity to represent professional practice is limited. The business situations of this routine have an informative scope that promotes the recognition of the role of finance in the company, which, according to the reference framework (Table 1), is in correspondence with the theoretical component of the Expectation of Use.

The Post It routine groups small boxes located in the margin of the page that accompany the narrative, highlight an important idea of the current topic, or repeat a fragment of the routine definition. The last Complementary routine is Consultation Info, which groups fragments where the textbooks recommend university or financial web portals (Yahoo Finance, MarketWatch, Federal Reserve) for the consultation of information in a strict financial sense that does not involve other fields of knowledge. The Complementary routines highlight conceptual aspects in the form of a story, links, or boxes relevant to the learning of finance. It was possible to interpret that they do not have their own meaning within the text; they are limited to assisting the routines belonging to Textbook Style from which it was possible to previously conclude that they are in correspondence with the theoretical component of the Expectation of Use.

4.1.3. Constraint Routines

This set groups four routines that support Textbook Style when a restricted interpretation that depends on other factors is presented (Table 3). The Previous/Subsequent routine contains fragments that refer to other chapters to avoid the repetition of topics. It invites learners to review previously presented concepts or to pass over issues that are the subject of other topics. In a similar vein, the Clarification routine contains fragments that reinforce previously presented ideas that are restricted to some kind of condition. This clarification usually makes explicit ideas that might not be obvious to the unsuspecting reader or that textbook wishes to emphasize. This routine points out limitations in the interpretation of indicators, estimates, and information generally contained in the Definition, Definition–Description, and Description routines and is therefore in correspondence with the theoretical component of the Expectation of Use.

Table 10. Selected Fragments (F) Complementary, Constraint, and Professional Reference routines.


Fragment	Explanation
<p>Dell Raises the Bar for Working-Capital Management</p>  <p>The management at computer company Dell Inc. recognized early in the firm's history that it could improve company performance by following a policy of minimizing its investment in net working capital (the difference between the firm's investment in current assets and its current liabilities). At the time, Dell's sales were dominated by retail customers who used credit cards to purchase computers. This meant that the firm's investment in accounts receivable was minimal, so the firm focused its attention on reducing inventories and expanding its use of <i>trade credit</i>, which is a type of account payable that arises when a firm provides goods or services to a customer with an agreement to bill the customer later.</p> <p>Dell used a two-pronged attack. First, to reduce inventories, the company convinced its suppliers to leave truckloads of the items that it needed at the back door of its plants. The trucks' contents belonged to the suppliers until they were needed by Dell, at which time it moved the items from the trailers into its plant. At the same time, the company's management took full advantage of the trade credit terms by paying for these items at the latest possible date. In combination, these actions didn't just reduce the firm's investment in working capital—they actually eliminated it! Without the drag of working capital on firm performance, the company's profits soared, and its stock price rose dramatically.</p>	<p>F1 Anecdote</p> <p>Presents a real case of inventory management at Dell without going into depth on any concept of the subject. This company managed to innovate in working capital management. Although this is true, and it is taken as a success story in the field of finance and logistics, it is not possible to appreciate the situation faced by the financial department, the negotiation with suppliers and customers, the technological tools used, nor how the subject matter of the textbook contributed to the achievement.</p> <p>Source: Titman et al. [64] (p. 609).</p>
<p>COPING WITH UNCERTAINTY IN THE CASH BUDGET</p> <p>Forecasts are almost inevitably wrong, at least to some degree. That doesn't mean that putting together a cash budget is pointless. Instead, it indicates that managers need to understand that a firm's actual experience will not match the projections included in the cash budget exactly and that plans to invest surplus cash or to borrow money have to be flexible enough to adjust to actual outcomes. Of course, the best way to deal with uncertainty in the cash budget is to incorporate the most careful and accurate forecasts possible. Aside from careful estimation of cash budget inputs, there are two ways of coping with uncertainty in the cash budget. One is to conduct a <i>scenario analysis</i>, in which analysts prepare several cash budgets, based on pessimistic, most likely, and optimistic forecasts. From this range of cash flows, the financial manager can determine the amount of financing necessary to cover the most adverse situation. The use of several cash budgets, based on differing scenarios, also should give the financial manager a sense of the riskiness of various alternatives.</p>	<p>F2 Action</p> <p>Presents the limitation of forecasting cash flow due to the uncertainty component, so it suggests using a scenario analysis.</p> <p>Source: Zutter and Smart [67] (p. 210).</p>

Table 10. Cont.

Fragment	Explanation
<p>Firms reduce financing costs or increase the funds available for expansion by minimizing the amount of funds tied up in working capital. Therefore, it should not be surprising to learn that working capital is one of the financial manager's most important and time-consuming activities. Surveys by <i>CFO</i> magazine and Duke University have found that corporate CFOs spend almost 30 hours per month engaged in working capital and cash management, which is more time than they spend on any other single activity. Similar surveys have revealed that CFOs believe their efforts to manage working capital effectively add as much value to the firm as any of their other activities.</p>	<p>F3 Basic Presents a survey published by a recognized financial magazine. It describes the time spent on working capital-related activities and their impact on the organization. Source: Zutter and Smart [67] (p. 694).</p>
<p>However, it is worth repeating that these statements enable managers to see how planned events are expected to affect the cash balance. The projected cash flow statements will identify periods when cash surpluses and cash deficits are expected.</p> <p>When a cash surplus is expected to arise, managers must decide on the best use of the surplus funds. When a cash deficit is expected, managers must make adequate provision by borrowing, liquidating assets or rescheduling cash payments or receipts to deal with this.</p>	<p>F4 Specialized Presents a decision to be made facing a deficit or surplus in cash flow projections. The situation requires knowledge in Financial Statement Analysis. Source: Atrill [69] (p. 475).</p>
<p>also be considered. These factors, as summarized by the American Association of Individual Investors (AAII), include the following:</p> <ol style="list-style-type: none"> 1. Are the company's revenues tied to one key customer? If so, the company's performance may decline dramatically if that customer goes elsewhere. On the other hand, if the customer has no alternative to the company's products, this might actually stabilize sales. 2. To what extent are the company's revenues tied to one key product? Firms that focus on a single product are often efficient, but a lack of diversification also increases risk because having revenues from several products stabilizes profits and cash flows in a volatile world. 3. To what extent does the company rely on a single supplier? Depending on a single supplier may lead to an unanticipated shortage and a hit to sales and profits. 4. What percentage of the company's business is generated overseas? Companies with a large percentage of overseas business are often able to realize higher growth and larger profit margins. However, overseas operations may expose the firm to political risks and exchange rate problems. 5. How much competition does the firm face? Increases in competition tend to lower prices and profit margins; so when forecasting future performance, it is important to assess the likely actions of current competitors and the entry of new ones. 6. Is it necessary for the company to continually invest in research and development? If so, its future prospects will depend critically on the success of new products in the pipeline. For example, investors in a pharmaceutical company want to know whether the company has a strong pipeline of potential blockbuster drugs and whether those products are doing well in the required tests. 7. Are changes in laws and regulations likely to have important implications for the firm? For example, when the future of electric utilities is forecasted, it is crucial to factor in the effects of proposed regulations affecting the use of coal, nuclear, and gas-fired plants. 	<p>F5 Not applied It presents recommendations of a professional association to carry out a financial diagnosis. These are in correspondence with the problems component of the profession because they involve constraints, other fields of knowledge, and a variety of solutions, thus allowing a financial diagnosis that simulates professional practice. Source: Brigham and Houston [63] (p. 134).</p>

Table 10. Cont.

Fragment	Explanation
<p>Real World 10.10</p> <p>Cycling along</p> <p>The survey of working capital by Ernst and Young (see Real World 10.2, p. 431) calculates the average operating cash cycle for the top 1,000 European businesses (excluding financial and auto manufacturing businesses).</p> <p>The average operating cash cycle has reduced by 21 per cent over the 12 years between 2002 and 2014, with each element of working capital making a contribution to this. The inventories holding period fell by 3 per cent and the trade receivables settlement period fell by 11 per cent, while the trade payables settlement period increased by 7 per cent.</p>	<p>F6 Applied</p> <p>The excerpt suggests using the Ernst and Young consulting firm's survey to learn about the historical behavior of working capital in companies. By referring to reports prepared by recognized organizations, reliable and current information can be found. This can be used as a reference within a financial situation or to establish management policies.</p> <p>Source: Atrill [69] (p. 461).</p>

The Ambiguous routine contains fragments in which the text points out a dilemma or constraint whose solution is partial or presents no solution at all. The QCA reveals a preference on the part of the books to present CPPs in different ways, to describe diverse situations in finance, and to continually reinforce the narratives presented. According to Sfard [47], several routines in the discourse are involuntary, so it can be interpreted that the Ambiguous routine is one of them.

The Action routine groups those fragments where the presented content warns about the limitation on the application of a CPP and suggests a specific action to solve it (Table 10F2). The fragments of this routine highlight the need to interpret the indicators in the context of the company, the relevance of the analysis processes, and the risks of generalizations, and seek to adequately use the concepts within a particular context, recognizing their limitations. Despite being infrequently used within the narrative, the Action routine provides an opportunity to broaden the scope of financial situations. Introducing routines such as this one with situations that involve other fields of knowledge, do not have a single correct solution, or allow the identification of the different constraints of the company's environment and/or presenting solutions are some of the actions that are in correspondence with the problems of the profession component of the Expectation of Use (Table 1).

The Clarification, Ambiguous, and Action routines reinforce the narrative grouped in the Textbook Style. The nature of the constraints presented in the textbooks are focused on highlighting conceptual or procedural aspects that require a deeper interpretation; in them, there is no intention to present a financial situation that simulates the profession. These findings suggest that the set of Constraint routines promotes the theoretical component of Expectation of Use.

The content classified within the triad of routines Definition, Definition–Description, and Description added to the routines that assist them, representing 95.6% of the coded narrative, on average (Table 8). Around this triad, a large part of the rest of the content assists it in different ways such as the use of tables, diagrams, graphs and other visual mediators to facilitate the presentation of CPP; offering clarifications, recommendations, examples, and/or counterexamples; proposing activities, exercises, and/or questions that evoke the content presented; mentioning anecdotes with concepts of the subject matter, interviews, or historical events for information purposes; and using boxes with the main ideas for emphasis. The QCA showed that almost all of the textbook narratives present routines that are in correspondence with the theoretical component of the Expectation of Use, and as a consequence, there is a notable absence of routines that promote the problems of the profession component.

4.1.4. Professional Reference Routines

This set groups four routines that contain explicit fragments related to the profession (Table 3). In the Basic routine, the professional mention is common sense for a student in a program related to finance (Table 10F3). The fragments within this routine present situations that describe the role of a professional in finance according to the subject matter being presented in the textbook. On the other hand, the fragments of the Specialized routine require previous knowledge in finance, although the professional reference is simple, so it is not necessary to back it up with an example (Table 10F4). When gathering together the fragments of these two routines, a broad inventory of the actions related to Financial Management that can be carried out in an organization without going into them in depth.

The Non-Applied routine refers to fragments related to the profession that are limited to advising or suggesting actions that a professional should perform in certain situations without becoming the subject matter (Table 10F5). This routine also provides the opportunity to articulate with others such as Applied, Action, and Analysis Process that allow the inclusion in the narrative of routines that transition to the problems of the profession component of the Expectation of Use.

The Applied Professional Reference routine contains the fragments that present a situation close to the profession and suggest an action or solution (Table 10F6). Using the fragment type of reports is an action that is observed in professional practice because it consists of gathering information to critically analyze it and make decisions within the company [12,18,79]. The reference framework (Table 1) points out that using data from various sources to make inferences and deepen analysis in the face of problematic situations involving constraints and different points of view, as the Applied routine does, are actions that are in correspondence with the profession component of the Expectation of Use. Despite the above, the use of this type of routine is rare in five textbooks of the sample, with an average of 2% of the coded narrative and only Titman et al. [64] and Atrill [69] presenting an average of 10.6%.

4.2. Problem Analysis

The routines of the different category systems (Table 4) assigned to each problem indicate the actions required to solve them and to establish their relationship with the Expectation of Use. The results of the problem analysis are presented in Tables 11 and 12.

4.2.1. Cognitive Requirements

The QCA showed that the Cognitive Requirements of the problems are low (Table 11)—the progression in the level of difficulty was concentrated in the increase in the available information and in the number of steps needed to reach the solution. According to these results, about 75% of the problems fall into some of the following routines: they require memorizing, specifying, explaining, or relating a fact, term, or property previously presented; they are free of ambiguities and/or the procedure to be followed is explicitly requested or easily deducible; they require capturing information from a prototypical statement to be introduced into one or several equations and obtaining the solution algorithmically; they are focused on producing a correct answer through a procedure; they require numerical answers or when they require verbal explanation, this is concentrated on describing the procedure or reproducing some part of the content; and/or they do not require a connection with financial concepts.

Table 13F1 presents a problem whose characteristics coincide with 70% of the coded sample. This type of problem uses financial language to promote the development of algebraic processes, asking for the replacement of the information in the equations of the subject and to perform the necessary procedures to reach an answer. We interpret that the textbook's vision of putting the subject matter into practice consists mainly of developing algorithms within statements that use financial contexts that are unlikely to occur in professional practice. According to Jonassen [37], students may become adept at solving this type of problem without understanding the underlying principles represented in the situations. In a similar vein, a kind of problem dissimilar to the profession was identified (Table 13F2)—the situation of finding balance sheet information from financial ratios is unlikely because in the exercise of the profession, it always occurs in reverse. This type of exercise promotes routines that are not related to financial management.

In problem types F1 and F2 (Table 13), there was a lack of correspondence with the situations presented in the narrative. These financial situations play the role of facilitating the explanation of CPP and focus mainly on an adequate estimation and interpretation of figures and indicators. On the other hand, 70% of the problems require routines that leave aside the interpretation of indicators; instead, they focus on the development of algebraic processes using financial words, so the routines presented in the narrative will not be practiced with the proposed problems.

Table 11. Results of analysis of textbook problems.

	Atrill	Titman	Block	Ross	Brigham	Graham	Zutter	Total	Average							
Cognitive requirements																
Cognitive demand																
Low-Memorization	0	0.0%	0	0.0%	0	0.0%	3	3.5%	3	4.8%	1	2.8%	0	0.0%	7	1.6%
Low-Proc without connections	3	13.6%	52	72.2%	81	85.3%	75	87.2%	47	74.6%	17	47.2%	17	32.1%	292	68.4%
High-Proc with connections	17	77.3%	20	27.8%	14	14.7%	8	9.3%	13	20.6%	18	50.0%	36	67.9%	126	29.5%
High-Doing finance	2	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.5%
Depth of knowledge																
Algorithmic problem in several steps	3	13.6%	51	70.8%	75	78.9%	71	82.6%	46	73.0%	15	41.7%	17	32.1%	278	65.1%
Explain relationships between CPPs	5	22.7%	10	13.9%	10	10.5%	10	11.6%	8	12.7%	16	44.4%	16	30.2%	75	17.6%
Strategic Thinking	12	54.5%	11	15.3%	10	10.5%	5	5.8%	9	14.3%	5	13.9%	20	37.7%	72	16.9%
Extended Thinking	2	9.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.5%
Type of response requested																
Opportunity for communication																
No	7	31.8%	49	68.1%	84	88.4%	75	87.2%	45	71.4%	16	44.4%	17	32.1%	293	68.6%
Evoking	1	4.5%	4	5.6%	5	5.3%	4	4.7%	5	7.9%	2	5.6%	0	0.0%	21	4.9%
Yes	14	63.6%	19	26.4%	6	6.3%	7	8.1%	13	20.6%	18	50.0%	36	67.9%	113	26.5%
Relevance of non-textual elements																
Role of visual mediator																
No	2	9.1%	38	52.8%	40	42.1%	44	51.2%	44	69.8%	16	44.4%	16	30.2%	200	46.8%
Unnecessary	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.6%	0	0.0%	0	0.0%	1	0.2%
No Interpretation required	11	50.0%	23	31.9%	34	35.8%	26	30.2%	17	27.0%	7	19.4%	18	34.0%	136	31.9%
Interpretation required	0	0.0%	2	2.8%	0	0.0%	0	0.0%	0	0.0%	1	2.8%	1	1.9%	4	0.9%
Create or modify mediator	9	40.9%	9	12.5%	21	22.1%	16	18.6%	1	1.6%	12	33.3%	18	34.0%	86	20.1%
Total per textbook	22		72		95		86		63		36		53		427	

Note: The routines are described in Table 4.

Table 12. Cross-matrix of problem analysis results grouped by routines.

	Cognitive Demand				Depth of Knowledge				Opportunity for Communication		
	Low-Memorization	Low-Proc without connections	High-Proc with connections	High-Doing finance	Algorithmic problem in several steps	Explain relationships between CPPs	Strategic Thinking	Extended Thinking	No	Evoking	Yes
Depth of knowledge											
Algorithmic problem in several steps	0.5%	62.1%	2.5%	0.0%							
Explain relationships between CPPs	1.2%	6.2%	10.4%	0.0%							
Strategic Thinking	0.0%	0.0%	16.6%	0.0%							
Extended Thinking	0.0%	0.0%	0.00%	0.5%							
Opportunity for communication											
No	0.5%	62.1%	6.0%	0.0%	61.7%	4.4%	2.5%	0.0%			
Evoking	0.9%	3.9%	0.0%	0.0%	1.4%	3.5%	0.0%	0.0%			
Yes	0.2%	2.3%	23.6%	0.5%	2.1%	9.9%	14.1%	0.5%			
Role of visual mediator											
No	0.9%	40.6%	4.8%	0.0%	37.9%	7.6%	0.9%	0.0%	39.3%	2.1%	5.1%
Unnecessary	0.0%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%
No Interpretation required	0.7%	19.9%	11.8%	0.5%	18.2%	6.2%	7.9%	0.5%	17.1%	2.1%	13.6%
Interpretation required	0.0%	0.0%	0.5%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%
Create or modify mediator	0.0%	7.6%	12.5%	0.0%	8.8%	3.5%	7.9%	0.0%	12.0%	0.7%	7.4%

Table 13. Selected Fragments (F) problem analysis.

Problem	Explanation																								
<p>EFN [LO2] The most recent financial statements for Cardinal, Inc., are shown here:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Income Statement</th> <th colspan="2" style="text-align: left;">Balance Sheet</th> </tr> </thead> <tbody> <tr> <td>Sales</td> <td style="text-align: right;">\$25,400</td> <td>Assets</td> <td style="text-align: right;">\$61,000</td> </tr> <tr> <td>Costs</td> <td style="text-align: right;">17,300</td> <td>Debt</td> <td style="text-align: right;">26,900</td> </tr> <tr> <td>Taxable income</td> <td style="text-align: right;">\$ 8,100</td> <td>Equity</td> <td style="text-align: right;">34,100</td> </tr> <tr> <td>Taxes (21%)</td> <td style="text-align: right;">1,701</td> <td>Total</td> <td style="text-align: right;">\$61,000</td> </tr> <tr> <td>Net income</td> <td style="text-align: right;">\$ 6,399</td> <td>Total</td> <td style="text-align: right;">\$61,000</td> </tr> </tbody> </table> <p>Assets and costs are proportional to sales. Debt and equity are not. A dividend of \$2,100 was paid, and the company wishes to maintain a constant payout ratio. Next year's sales are projected to be \$29,210. What is the external financing needed?</p> <p>BALANCE SHEET ANALYSIS Complete the balance sheet and sales information using the following financial data:</p> <p>Total assets turnover: 1.5× Days sales outstanding: 36.5 days^a Inventory turnover ratio: 5× Fixed assets turnover: 3.0× Current ratio: 2.0× Gross profit margin on sales: (Sales – Cost of goods sold)/Sales = 25%</p> <p>Multiple cash budgets: Scenario analysis Brownstein Inc. expects sales of \$100,000 during each of the next 3 months. It will make monthly purchases of \$60,000 during this time. Wages and salaries are \$10,000 per month plus 5% of sales. Brownstein expects to make a tax payment of \$20,000 in the next month and a \$15,000 purchase of fixed assets in the second month and to receive \$8,000 in cash from the sale of an asset in the third month. All sales and purchases are for cash. Beginning cash and the minimum cash balance are assumed to be zero.</p> <ol style="list-style-type: none"> Construct a cash budget for the next 3 months. Brownstein is unsure of the sales levels, but all other figures are certain. If the most pessimistic sales figure is \$80,000 per month and the most optimistic is \$120,000 per month, what are the monthly minimum and maximum ending cash balances that the firm can expect for each of the 1-month periods? Briefly discuss how the financial manager can use the data in parts a and b to plan for financing needs. 	Income Statement		Balance Sheet		Sales	\$25,400	Assets	\$61,000	Costs	17,300	Debt	26,900	Taxable income	\$ 8,100	Equity	34,100	Taxes (21%)	1,701	Total	\$61,000	Net income	\$ 6,399	Total	\$61,000	<p>F1 Problem with low cognitive requirements Coded under the routines: Multistep algorithmic problem, Procedures without connections, No visual mediator is provided or the mediator does not require interpretation, and No communication beyond a numerical answer is required. The problem requires using the financial indicators of gross margin, asset turnover, and dividend pay-out ratio, replacing the values provided in the statement and obtaining the necessary data to arrive at the requested answer by means of the financing needs equation. Source: Ross et al. [66] (p. 117).</p> <p>F2 Problem dissimilar to the profession The problem asks for the values for different balance sheet accounts, so it is required to use the equations of the six indicators provided in the statement to clear the value of these accounts. Source: Brigham and Houston [63] (p. 140).</p> <p>F3 Problem with high cognitive requirements Requires making or justifying inferences from information, performing procedures with multiple steps and decision points. Use of theoretical component to solve non-prototypical problems and requires explanations that evidence the interrelationships of different concepts presented in the narrative. Source: Zutter and Smart [67] (p. 228).</p>
Income Statement		Balance Sheet																							
Sales	\$25,400	Assets	\$61,000																						
Costs	17,300	Debt	26,900																						
Taxable income	\$ 8,100	Equity	34,100																						
Taxes (21%)	1,701	Total	\$61,000																						
Net income	\$ 6,399	Total	\$61,000																						

Table 13. Cont.

Problem	Explanation
<p>(a) Choose and calculate eight ratios that would be helpful in assessing the performance of Clarrods plc. (Use end-of-year values and calculate ratios for both 2015 and 2016.)</p> <p>(b) Using the ratios calculated in (a) and any others you consider helpful, comment on the business's performance from the viewpoint of a prospective purchaser of a majority of shares.</p>	<p>F4 Problems with Doing Finance requirements</p> <p>The necessary path to take is not explicit. First, it requires putting the statements into a spreadsheet to use a different CPP. Then, it requires selecting and justifying indicators that may be useful to address the situation. Finally, arguments must be presented from the investor's perspective.</p> <p>Source: Atrill [69] (p. 136).</p>

4.2.2. Type of Response Requested and Relevance of Non-Textual Elements

The results in Table 11 show that problems were concentrated in single responses and particularly in those of a numerical nature, as exemplified in Table 13F1,F2. For the Communication Opportunity category system, it was shown that 68.6% of the problems do not require communicating some inference about the situation, while 26.5% do and the remaining 4.9% require the reproduction of some part of the narrative. These results coincide with those obtained in the Cognitive Requirements: about 70% of the problems have a unique solution, either numerical or verbal, with artificial situations that are solved with algorithmic procedures, as shown in the cross-matrix in Table 12. Problems that require some kind of explanation beyond a numerical answer are also classified within the Procedures with Connections routine, as seen in Table 12. This type of problem (Table 13F3) seeks to explain the use of the cash budget to calculate funding requirements, which is a modified version of the situations presented in the narrative and is therefore in correspondence with the narrative.

All of the visual mediators in the exercises are tables, as in the narrative. This result implies that the tasks do not use, nor require using, visual mediators such as bar, line, or pie charts to solve the end-of-chapter problems. In a different vein, Agrawal and Borgman [80], Berinato [81], and Wood [44] argue that these mediators are widely used to present and argue solutions in front of different audiences or support decision making in the profession.

4.2.3. Profession-Related Problems

The results presented in Table 11 indicate that only two exercises in the sample were classified under Extended Thinking, Doing Finance, and Direct Students to Develop Arguments (Table 13F4). In this problem, there are multiple decision points on the interpretation and selection of indicators, the design of arguments, and possible perspectives of different stakeholders. The answers should be similar, but will change slightly for each person trying to solve it. Although the situation is straightforward, peer discussion and preferably the help of an expert/professor is required to establish the feasibility of the proposed solutions. According to Green et al. [79], Griffin and Coheloso [13], and Jonassen [37], these are the characteristics that the problems used in class to simulate the profession should have.

The Doing Finance problems show that it is possible to introduce variants that broaden the scope of the problems in such a way that they present situations closer to the profession. The textbook is not obliged to provide all of the solutions to the proposed exercises; it can suggest that they require help from peers and experts to be solved or there is also the possibility of providing hints on the direction to take in these situations in the appendices, clarifying that there is no single correct answer. Increasing the presence of these problems allows students to become involved in situations that go beyond algorithmic procedures and concept interpretation.

The situations in the narrative frequently set the scope of the opportunities offered by the textbook in the end-of-chapter problems [37,82]. The QCA results corroborate such a statement; the routines required in the problems do not exceed the level of difficulty of the narrative situations. To bring the narrative closer to the problem component of the profession, it is convenient to redirect the financial situations in such a way that they involve constraints, ambiguities, dilemmas, and other fields of knowledge and not only to the explanation of CPP [13,26,39]. The textbooks could reconfigure the structure of the narrative and include routines that are in correspondence with the problems of the profession component of the Expectation of Use. As the situations presented increase in complexity, the possibility opens up to do the same in the end-of-chapter problems [37,82].

4.3. Summary of Findings

The asymmetry found in the textbooks between the routines that are in correspondence with the theoretical component and those of the problems of the profession component indicates a very low degree of exposure to the latter. When faced with a related situation, the textbook user may not have sufficient precedent to repeat what was done in the past;

therefore, the automatic reaction will be to adapt the routines to which there was a high degree of exposure. This situation unleashes a commognitive conflict as there is incompatibility between the discourse that the graduate learns in the formative process with the textbook and that which is required in professional practice. This conflict is solved through a new training process within the company, which by definition is in correspondence with the problems of the profession component and perpetuates the problem posed at the beginning of the article.

From the QCA, it can be interpreted that, according to the textbooks, participating in the discourse of Financial Management consists of knowing topics, where the CPPs of these topics are presented through descriptions and examples that strive for a correct estimation and interpretation. This is an accumulation perspective that seems to indicate that the mastery of financial discourse is determined by the breadth of the inventory of financial CPPs. In a different sense, Kent et al. [83] argue that in professional practice, a broad inventory of concepts is not required, but rather performing sophisticated activities with a few. A perspective of discourse construction through routines that are in correspondence with the Expectation of Use recognizes the need to broaden this inventory, without leaving aside the possible activity that these can generate through situations that are closer to professional practice.

This research made it possible to establish a correspondence between the routines promoted by textbooks and those evidenced by finance-related graduates. Carrithers and Bean [25] and Carrithers et al. [26] report that graduates fail to effectively solve problems that simulate the profession, do not recognize the structure of the problem, and do not construct a narrative that satisfies the required solution. The authors also observed a pressing need for graduating seniors to replace the information in the different formulas and describe the meanings of the different financial indicators. In the same line, Arts et al. [22] find that the diagnoses of the graduating seniors are extensive, imprecise, and do not solve the problem posed. When comparing this research with the findings, it can be observed that the routines that promote textbook problems are the most recurrent actions in the graduating seniors. At the same time, the routines absent from the Expectation of Use in textbook problems coincide with the difficulties observed in the graduating seniors.

The QCA was able to demonstrate that, in the presentation of the subject matter in some textbooks, it was possible to gradually include information and routines that transition to the problems of the profession component. However, their appearance was infrequent and/or they moved on to other routines quickly. In order to change this situation, the textbooks can expand the prototypical space and the available information where financial situations transition to a less artificial one that allows the presentation of the concepts and at the same time seek to solve financial problems that simulate professional practice. The above also opens up the possibility of raising the requirements of the end-of-chapter problems [82] and that users practice their mastery of CPP at the end of each topic and also some possible situations of the profession that they can address with them. Textbooks cannot represent all of the situations of the profession, nor are they the only way to approach them; some situations require complementary material, special environments, and mainly the teacher's guidance. There will always be an increasing demand in the expectations held of graduating seniors and higher education [12,84]. Therefore, the findings of this research do not recommend filling the gaps found with absent routines, but aim to rebalance the routines present in the narrative and the problems so that the textbook offers experiences in correspondence with the Expectation of Use.

The textbook offers an environment that ignores interactions between peers, teachers, or experts. It is designed so that the user assumes an active role to a certain extent because he/she must study the content and solve the problems. On the other hand, with respect to the financial community, the role of the user is passive, because the textbook does not provide the opportunity to reflect, propose, or share ideas with teachers and/or peers, but rather the user is restricted to following the instructions provided in the narrative and in the problems alone.

A disconnect was found between the routines promoted by the analyzed textbooks and those carried out in professional practice, as reported by curricular documents and research in programs related to finance. The results show an excess of algorithmic problems, imprecise and/or incomplete narratives, and the absence of certain financial situations. The QCA suggests that in the development of textbooks, the routines present and absent in the textbook are unconsciously neglected. It is therefore recommended that textbooks be restructured based on a conscious construction of routines that respond to the training needs of the financial community.

5. Conclusions

A QCA was conducted on seven financial administration textbooks widely used in higher education. Three actions provided the conceptual elements to establish the correspondence of the textbooks with professional practice: making explicit professional expectations based on finance workplace research and curricular documents; using elements of the theoretical perspective of commognition such as routines, visual mediators, discourse, narrative, commognitive conflict, and precedents; and reviewing empirical studies in textbooks within mathematics education. The discourse present in textbooks to teach finance, like any discourse, is highly situated; however, Sfard's [47] commognition framework in conjunction with training expectations allowed us to present a classification of discursive routines present in the textbook content. This type of research could be taken to other areas of administration where its objects of study are appreciable in the exercise of the profession and that additionally require a broad use of mathematics.

The results showed a self-contained textbook, which evidences a tendency to present limited artificial situations in which there is a single answer and this is supplied by the textbook. This need to be self-contained by presenting the correct answers limits its potential to promote routines that are in correspondence with the Expectation of Use. A textbook that presents situations with constraints, that promotes different perspectives, that involves other fields of knowledge, and that recognizes the existence and implications of diverse solutions must make it explicit that it is not self-contained. The textbooks must recognize that it is necessary to promote routines and address situations whose answer is not explicit nor derived exclusively from the user/textbook relationship, but on the contrary, will require working with other students, teachers, and/or experts, gathering information from various sources and other fields of knowledge so that it can provide experiences that contribute to future professional performance.

There is significant potential to investigate the relationships between textbook content and different professional training expectations, as was, in this case, the case for the financial community. Insights from practice research can contribute to analyzing and shaping finance textbooks; it was also evident that the classroom and the workplace are two different, but not unrelated, contexts that must have a degree of familiarity and alignment in order to meet training objectives. A change in the vision of the current textbook exposed in the research requires promoting collaborative work between researchers of professional practice, professors, authors, publishers, and higher education institutions that introduce favorable conditions that jointly benefit the learning of their future professionals.

6. Future Research

This research provides some contributions and recommendations on the structure of textbooks, class design, and textbook design in subjects related to Financial Management. The first contribution is related to identifying the current guiding structure of textbooks, making it explicit in routines and establishing the possible experiences it can offer. Secondly, it presents teachers, curriculum designers, publishers, and authors with a set of actions stemming from the demands of the financial community that can be used to design their classes and texts based on a flexible approach that promotes an education closer to professional practice. The third contribution is related to the conceptual elaborations, inspired by mathematics education, which were developed in the research, such as professional

expectations, the reference frame, and the systems of categories of problem analysis. These elaborations, which have not been reported in the literature on Financial Management education, can contribute to higher education and to the field of textbooks as a guide for a possible reorganization of textbooks and to promote new research, which in turn will make it possible to build links between mathematics education and finance.

Conceptualizing the requirements of professional communities from different disciplines in expectations allows us to investigate the experiences within higher education and establish their degree of connection with professional practice. Commognition provided elements such as routines, which allowed for a dialog between two distant objects such as the learning expectations of senior graduates and a structured set of repetitive actions present in the textbook. In addition, the concept of routine as a pattern coincides with the definition of a category that constitutes the main element of study within the QCA, the latter of which provided methodological support and scientific rigor to carry out the fieldwork. The results presented reveal a significant potential to investigate the different experiences that constitute the educational process within higher education such as the curriculum, teachers' lectures, class activities, or textbooks and to identify possible disconnections with professional practice and to take preventive or corrective actions.

Author Contributions: Conceptualization, D.A.-A.; Methodology, D.A.-A.; Software, D.A.-A.; Validation, D.A.-A.; Formal analysis, D.A.-A. and J.A.V.-O.; Investigation, D.A.-A.; Data curation, D.A.-A. and J.A.V.-O.; Writing—original draft preparation, D.A.-A.; Writing—review & editing, J.A.V.-O. and D.G.-G.; Supervision, J.A.V.-O. and D.G.-G. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data is contained within the article.

Conflicts of Interest: The authors declare no conflict of interest.

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