

FRAUD MINI-CASES: AN ACTIVE LEARNING PEDAGOGY TO ENHANCE STUDENT COMPETENCIES IN FINANCIAL ACCOUNTING PRINCIPLES

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ABSTRACT

Research reveals the challenges of engaging students in the introductory accounting course (Jones and Fields, 2001), possibly due to the lack of relevance perceived by students (Chen et al., 2004) or the opinion that the course is boring (Stivers and Onifade, 2014). This paper provides an in-class, active learning instructional strategy that promotes fraud education and engages introductory financial accounting students while maintaining the integrity of the transaction analysis process found in most introductory financial accounting textbooks. Using one-page mini-cases with illustrations to examine actual corporate frauds, students analyzed transactions and identified the subsequent financial statement misstatements. Five mini-cases, presented to students, include five specialized topics: inventory, cash, accounts receivables, fixed assets, and liabilities. The Teaching Notes provide a full set of materials to enhance the teaching/learning experience including the requirements' solutions, epilogues, optional discussion questions with suggested responses, and resources. Survey results reveal students perceive the method to be useful, relevant, and helpful in understanding accounting and in enhancing their analytical thinking skills.

Key words: Active learning, transaction analysis, financial accounting principles, fraud cases, instructional strategy

Data availability: The authors are willing to share the data contained in this manuscript.

INTRODUCTION

Research reveals that introductory financial accounting, required in most business programs, presents a challenging environment for instructors to motivate students who have a varied range of interests, skills, and aptitudes (Jones and Fields, 2001). Students tend to view introductory accounting courses as more demanding than other business courses (Malgwi, 2006). In addition, introductory accounting students view the course as boring (Stivers and Onifade, 2014) and lacking in relevance (Chen et al., 2004). The Accounting Education Change Commission (AECC), pivotal in identifying these challenges, stresses not only the significance of the first accounting course, but also vocalizes an important call for change in the first course to ensure students “understand the role of accounting information in decision making by managers, investors, government regulators, and others” (AECC, 1992 p.307). The call for change in accounting education continues, most recently with the numerous initiatives of the Pathways Commission (Behn et al., 2012), a joint project of the AICPA and American Accounting Association. As a result, research related to the first accounting course continues to expand, providing a variety of approaches and strategies designed to provide best practices in accounting education (Wygol and Stout, 2015). In addition, calls for the integration of fraud education in accounting programs also exist (National Institute of Justice, 2007; Albrecht and Sack, 2000).

The overriding purpose of this study is to respond to the call for change in accounting education, more specifically the introductory financial accounting course, by providing a pedagogical technique that (1) addresses fraud education, (2) enhances analytical thinking, and (3) integrates an active learning strategy in the classroom. The pedagogical technique described in this paper employs mini-cases that require the application of the transactions analysis process and subsequent identification of financial statements’ (income statement and balance sheet) effects.

The mini-cases were written with the objective of generating interest and intellectual curiosity in accounting and presenting a pedagogical method for teaching transaction analysis and the subsequent effects on the financial statements. The mini-cases contain relevant and nonrelevant information with an ultimate goal of developing a deeper level of analytical thinking beyond the basic structured, transaction analysis provided in most introductory accounting textbooks. In addition, pictorial illustrations created for each case meet the needs of the visual learner and generate interest for the typical Google, Facebook, Twitter, and Instagram-based student.

The mini-cases contain real-life frauds with requirements that align with the content and focus of the introductory financial accounting course, namely transaction analysis and financial statement effects. As a by-product, the mini-cases provide for a deeper discussion beyond the basic transaction analysis and financial statements’ effects purpose. Optional discussion questions appear at the end of each case and serve as talking points while students are interested and immersed in the case. For example, the classification of an asset as a fixed asset or inventory, internal controls, investor responsibility, and auditors’ professional responsibilities are a few of the extra talking points provided through the use of the optional discussion questions.

Pedagogical tools, in addition to the text of the written mini-cases and pictorial illustrations, include a basic income statement and balance sheet, and the accounting equation. In addition to

erving the visual learner, all illustrations serve as teaching tools to explain the case. Three of the case illustrations introduce the students to information and process flows. The last case illustration contains a line graph of projected and actual revenues over a three-year period.

The mini-cases introduce introductory accounting students to issues involved in the fraudulent activity of real-life companies alleged or convicted of committing fraud. The five illustrated mini-cases, presented to students, contain one of five specialized topics: (1) inventory, (2) cash, (3) accounts receivables, (4) fixed assets, and (5) liabilities. Students evaluate the cases to identify the effects of fraud on specific accounts, elements to the financial statements, and specific financial statements. Survey results reveal students perceive the method to be useful, relevant, and helpful in understanding accounting material and in enhancing their analytical thinking skills.

The literature review provides the foundation from which the cases were developed and appears in the next section. The remainder of the paper describes the fraud mini-case pedagogy, including the teaching and student learning objectives, the development of the fraud mini-cases, course logistics, strategies for implementation, efficacy evidence, and challenges and limitation to implementation. The summary and conclusions appear in the final section.

LITERATURE REVIEW

A review of the literature reveals numerous calls by the accounting profession for fraud education, active learning, and analytical thinking. In addition, a plethora of evidence exists that describes the use of cases as an active learning strategy to increase analytical thinking. Literature on the use of mini-cases is limited, but exists and reports positive results. The remainder of the literature review contains relevant literature related to the integration of fraud education, active learning strategies, transaction analysis and analytical thinking, and mini cases.

Integrating Fraud in the Accounting Curriculum

The continued occurrence of financial statement fraud points to the need for all business students to develop an extensive awareness and understanding of fraud in the corporate environment. The Committee of Sponsoring Organizations of the Treadway Commission (COSO, 1987) and the 2002 Sarbanes-Oxley Act provide evidence of continued financial statement fraud; both created after pervasive fraudulent behavior by publicly-held companies.

The volume of literature focused on financial statement fraud provides additional insight into the salience of this topic (Hogan et al., 2008). A recent survey of accounting practitioners and educators reveals that while few schools offer a separate course, fraud and forensic topics are considered to be highly important topics (Daniels et al., 2013). Similarly, Andre et al. (2014), citing the *Association of Certified Fraud Examiners' Report* suggests that fraud education should appear in all business curriculums. In 2007, The National Institute of Justice (NIJ) co-funded a taskforce to develop a guide for fraud and forensic education (NIJ, 2007), suggesting a need for integration in all areas of the accounting curriculum. Kranacher et al., (2008) provide guidance and advice on actual implementation of the NIJ's model. Brickner et al., (2010) use this to incorporate an IRS Criminal Investigation Project into their curriculum. Research, however, shows that overall, adherence to this model appears to be low (Seda and Kramer, 2015).

Professional accounting organizations and researchers have joined the call to increase fraud education. Fraud auditing is a recommended topic for the 21st century in the Albrecht and Sack (2000) monograph, *Accounting Education: Charting the Course through a Perilous Future*. The AICPA's Pre-Certification Education Executive Committee Fraud Education Task Force (Catanach,

2004) advocates fraud education integration in the financial accounting course. The Pathways Commission (2012) recognizes the need for skills and knowledge in fraud control with integration throughout the accounting curriculum.

The idea of fraud education in the introductory financial accounting course is not unusual, as evidenced by the addition of fraud content in some textbooks (Weygandt et al., 2013). Discussion of fraud typically accompanies the internal control chapter and includes the fraud triangle and SOX 2002 requirements. However, the text and related end-of-chapter assignments fall short of integrating fraud with transaction analysis and financial statement effects. The effects of fraud on the financial statements are arguably more relevant to accounting and non-accounting, business majors than the coverage that exists in most introductory financial accounting textbooks.

Academics have heard the call to integrate fraud education into the accounting curriculum. Saylor (2006) suggests teaching Ponzi schemes in a simulation as a method of enhancing student skepticism. Stice and Stice (2006) use a 45-minute discussion during the first class to cover Enron issues and motivate student interest in the course.

Fraud cases are used in graduate and undergraduate courses for forensics and auditing, with positive student feedback on the use of cases (Marshall and Cali, 2015; Gissel, 2014; Lokanan, 2014). Clayton and Ellison (2011, p. 141) provide a comprehensive case, primarily for auditing and fraud examination courses, that involves actual fraud investigations discovered through financial statement analysis. Chu and Libby (2010) describe a hands-on assignment for intermediate financial accounting where students write their own mini-cases. *The Kiondo Bag Boutique* case study promotes active learning through transaction analysis (Siriwardane, 2014). *Home Heaters* is an integrated case involving transaction analysis of financial statements, shown to achieve the higher cognitive process of analysis in Bloom's (1956) taxonomy (Claiborne and Wilcox, 2011). *Satyam Fraud: A Case Study of India's Enron* provides an extended case study on international fraud, providing an abundance of opportunities for transaction analysis, analytical thinking, and active learning (Brown et al., 2014). The aforementioned literature reveals the use of cases as an active learning strategy as suggested by the AECC (1992).

Active Learning Strategies

The AECC (1992) places importance on active learning strategies to teach today's accounting students. Position Statement Number One of the AECC (1990) calls for a continual expansion of instructional strategies. Pedagogical methods, such as case studies and group projects as well as the inclusion of real world examples, are stressed in Position Statement Number Two (AECC, 1992). The AECC's Issues Statement Number 5 (*Evaluating and Rewarding Effective Teaching*) emphasizes strong curriculum design that allows students to learn to "think through a problem" (AECC 1993, p. 436). Similarly, the new AACSB standards (AACSB, 2013) promote active learning, with research promoting a variety of instructional strategies such as concept mapping to address these new criteria (Maas and Leaby, 2014).

Bonwell and Eison (1991, p. 19) define active learning as "anything that involves students in doing things and thinking about the things they are doing." Ryan and Martens (1989, p. 29) state that active learning is "more likely to take place when students are doing something besides listening." Hermanson (1994, p. 301) states that students are "full participants in the educational process" when they learn by doing.

Active involvement of students in the classroom appears in numerous studies, both in and out of the accounting discipline, and reveals enhanced student learning (Cross 1977, 1987, 1988).

Active learning pedagogical techniques enhance student learning and result in students who are more engaged (active participants in the learning process) and involved (Bain et al., 2013). Matherly and Burney (2013, p. 679), who describe four techniques for managerial accounting, conclude that the use of active learning activities is “successful in involving students in their learning, improving their perceived content knowledge, and increasing their interest in the class, as well as in accounting.” Chu and Libby (2010, p. 245) state that when teaching with an active learning strategy, student understanding of technical accounting information is improved due to their “active role in processing information.” Transaction analysis is a technical accounting process that requires processing information (i.e. analytical thinking skill).

Transaction Analysis and Analytical Thinking

Teaching difficult concepts and skills requires an active learning approach (Bonner, 1999). Nonetheless, Duchac and Amoruso’s (2012) examination of the teaching approach of introductory accounting courses across the country found that while 94 percent of surveyed institutions report that their teaching strategy combines lecture and homework problem calculations, less than six percent described their approach as an active learning strategy that includes the use of cases, simulations or projects.

Expansion of student skills and knowledge beyond the accounting process is the primary focus of the Accounting Education Change Commission (AECC, 1990), which states that in accounting curriculum the ‘focus should be on developing analytical and conceptual thinking, not on memorizing professional standards.’ Transaction analysis is an important component of accounting education, requiring analytical thinking that challenges introductory students in their understanding of the accounting process (Johnson and Slater, 2012; Turner et al., 1997).

Numerous studies examine instructional strategies for enhancing a student’s ability to analyze transactions. Phillips and Johnson (2011) analyze the use of online homework systems versus intelligent tutoring systems to determine the more effective method of teaching transaction analysis to students. Phillips and Heiser (2011) find that the emphasis of a transaction’s effect on the accounting equation when teaching introductory students leads to enhanced skills when students move to more advanced levels. Use of computer-based learning rather than a textbook to teach transaction analysis in a study on principles of accounting found that while students performed equally well compared to the traditional method, student satisfaction increased with computers (DeBerg and Chapman, 2012).

Research provides a variety of unique active learning strategies to enhance analytical thinking skills. The *Gift Card Project* used in introductory accounting classes proves to develop analytical thinking skills through its design requiring students to analyze the transaction and financial statement effects of a gift card on a business operation (Glover and Hwant, 2013). *The Research Project Course* requires analytical thinking as teams of students evaluate and present academic accounting research in a simulated boardroom discussion to the class (Entwistle, 2011).

The use of case studies is a vital active learning strategy, used for decades by educators as a method to teach decision-making skills and critical thinking in top business schools (Sheppard and Vibert, 2016; Theroux and Kilbane, 2004). Bierstaker, Bedard, and Biggs (2000) provide educators with a framework to assist accounting faculty in teaching critical thinking skills. Their work includes cases for use in an auditing classroom to demonstrate the framework’s approach. Case study journals, textbooks, publications, and conferences attest to the widespread use of case studies as a

prevalent active learning strategy. The use of shorter mini-cases, although limited, also exists in the literature as an active learning strategy.

Mini-Case Studies

The use of mini-cases spans the business education disciplines, with reporting of mini-cases in information systems (Prat, 2012; Mukherjee, 2000), management (He, 2015), finance (Goetz et al., 2005), and accounting (Chu and Libby, 2010). In addition to learning the content of the course, all speak to some degree of moving students from passive to active learning. Prat (2012, p. 71), citing from Barnes et al. (1994), states that cases “encourage student involvement” with a narrative “essential to analysis of a specific situation.” Goetz et al. (2005, p. 234) citing from Kolb, 1984, speaks to cases as an active learning technique where students are encouraged to become involved “by applying what they learn to real situations.” Along the same lines, active learning encourages analytical thinking, as Pearce (2002, p. 739) states that these skills are enhanced when students provide logical explanations to their peers. Specifically related to accounting, the use of mini-cases is found in introductory financial (Siriwardane, 2014) and managerial accounting (Adams et al., 1999), intermediate accounting (Amernic and Robb, 2003), junior-level cost/managerial (Bamber and Bamber, 2006), accounting information systems (Larres and Mulgrew, 2009), introductory taxation (Chu and Libby, 2010), and auditing (Udeh, 2013).

The purpose served by the mini-cases varies from their use in framing intermediate accounting as a “quality of earnings” course (Amernic and Robb, 2003) to their use as a teaching tool to integrate an ethics component in accounting information systems (Larres and Mulgrew, 2009). Lehman (2010) suggests that a shorter case allows students to focus on a single issue, and reduces student frustration, unlike longer and more complex cases. Two studies state the purpose of using mini-cases is to bridge the gap between text material/end-of-chapter problems and real life managerial decisions (Bamber and Bamber, 2006) or accounting information’s relevance in business (Siriwardane, 2014). Three studies use mini-cases as an active learning strategy (Siriwardane, 2014; Chu and Libby, 2010; Larres and Mulgrew, 2009). Two studies compare active to passive learning, where passive learning is the “receipt of information” (Chu and Libby, 2010, cf Hermanson, 1994) obtained from listening to lectures (Siriwardane, 2013). Chu and Libby (2010) use mini-cases as an end result, requiring students to create mini-cases.

Although a few mini-case studies report the use of mini-cases as an in-class activity (Larres and Mulgrew, 2009) or recommend their use in class (Udeh, 2013), the requirements are quite comprehensive and would absorb a large amount of class time. Most of the mini-cases clearly require outside of class work (Siriwardane, 2014; Bamber and Bamber, 2006; and Adams et al. 1999). Two of the studies use real-life companies (Amernic and Robb, 2003), while the remaining studies use hypothetical companies. Some of the mini-cases appear more like extended problems that appear in textbooks (Udeh, 2013; Adams et al., 1999).

Evidence of mini-case efficacy varies by study, where one study reports efficacy based on course evaluations, stating the use of mini-cases was “overwhelmingly positive” (Amernic and Robb, 2003, p. 2) and a second study reports that “students were more engaged, displayed better curiosity ...” (Siriwardane, 2014, p. 100). Others report student perceptions as evidence of efficacy (Chu and Libby, 2010; Bamber and Bamber, 2006; Adams et al., 1999). On a scale of 1-5, with 5 = very positive, Adams et al. (1999) report an overall average score of 3.94 over four years of using mini-cases at their institution and 4.26 for a second institution that used the cases for two years. Bamber and Bamber (2006) report on a scale of 1-5, with 1 = strongly agree. Reversing the scoring

(where 5 = strongly agree) for comparability, students' perceptions on a 10-statement instrument ranged from 3.85 ("I wish that more accounting courses incorporated real companies' financial statements") to 4.47 ("The financial statement cases were challenging"). Overall, the use of mini-cases in intermediate accounting received a score of 4.21 (Bamber and Bamber, 2006).

Chu and Libby (2010) report results of a 19-statement instrument that include average scores on a scale of 1-7, where 7 = strongly agree. In addition, they report the percentages of students that replied to "less than 4," "4 (neutral)," and "greater than 4." Eighteen of the 19 items were classified into four categories: (1) student satisfaction with the assignment, (2) perceived degree of learning/knowledge gained, (3) student engagement in learning, and (4) creativity, critical thinking, and integration of concepts. The percentages that rated items above neutral ranged from 50 to 88 percent, with the creativity, critical thinking, and integration of concepts receiving the highest percentages and student satisfaction with the assignment receiving the lowest percentages. All items, except for one, were significantly different from the neutral response.

Fraud Mini-Cases Pedagogy

The fraud mini-cases of this study provide for a rich set of materials to draw interest, engagement, and intellectual curiosity into learning the accounting foundations, with a focus on real-world accounting applications from industries in which students might relate – textbook publishing, computer services, banking, oil and gas, and agriculture-based industries. Aligning with the suggestions of Amernic and Robb (2003), the mini-cases include real companies and industries familiar to the students. A different, real-life company is used for each mini-case, preventing the boredom expressed by students in the Adams et al. (1999, p. 653) study. Several of the companies operate in different countries (e.g. China, India, Mexico) in addition to the United States, subtly adding the element of internationalization.

The fraud mini-cases require analytical-thinking skills, as the instructional approach rises above the nuts-and-bolts of journal entry accounting by focusing on the financial statement effects of corporate fraudulent activities. The cases of the current study build on previous knowledge learned in the course as "preparation" for the mini-cases, as suggested by Amernic and Robb (2003). More specifically, the steps of the transaction analysis process and the financial statements learned earlier in the course (typically by Chapter 2) are required to complete the mini-cases.

The use of in-class, corporate fraud mini-cases as an active learning strategy to engage students in understanding transactions and their effects on the financial statements (specific statements, accounts, and elements) is the foundation of this pedagogical technique. The cases force students out of the traditional textbook presentation of transactions and require them to identify relevant information from an unfamiliar environment and context. The mini-cases serve to place students in a new environment for transaction analysis, away from memorized journal entries and the sterile environment of the textbook. The format provides nonrelevant information for transaction analysis and financial statement effects that requires analytical thinking to sort through the story. The entire active learning process occurs in the classroom. Students are engaged in the activity starting with their individual analysis of the effects on the financial statements, followed by discussions with their peers, and finally in the discussion with the class as a whole.

The use of mini-cases presented in the literature requires students to think through the case(s) prior to class discussion. The proposed mini-cases in this study capitalize on the group dynamics of in-class discussions between group members, allowing for sharing of ideas and learning together, by presenting the mini-cases in class only. The remainder of this section contains teaching and

student learning objectives, development of the mini-cases, course logistics, strategies for course use, evidence of efficacy, and challenges and limitations to implementation.

Teaching and Learning Objectives

From a teacher perspective, the objectives of the mini-cases include providing the 94 percent of accounting faculty (according to Duchac and Amoruso, 2012) that do not use active learning in their classrooms with an easy-to-implement, in-class activity that maintains the integrity of traditional introductory financial accounting course. It is also an objective to provide an engaging mechanism for teachers to draw student interest in accounting. The final objective includes the introduction of fraud education in a format that extends beyond the somewhat dry content that currently exists in textbooks, or the introduction of fraud education for textbooks that lack a fraud section.

The student learning objectives include the following:

1. Increase (or generate) students' interest and appreciation in accounting
2. Enhance analytical thinking skills.
3. In general, increase students' understanding of accounting; specifically, increase students' understanding of transaction analysis and financial statement effects.

Development of Fraud Mini-Cases

Five real-life financial statement frauds found in the news were identified, researched, and written into short "stories" for use in the introductory financial accounting course. The goal was to provide information that created the need to analyze effects on the financial statements. In addition, the goal was to produce a quick and easy method to supplement the traditional lecture format for a course that has little time for "extra" activities.

Each case includes one pictorial illustration that serves two purposes: (1) teaching aid for the teacher and (2) assistance for the visual learner. In addition, a diagram is included that contains a simple income statement and balance sheet, with the accounting equation appearing at the bottom of the balance sheet. The purpose of the diagram is to summarize the transaction analysis process and financial statement effects, after the discussion of the mini-cases.

Optional discussion questions were added for each mini-case, as the case discussion naturally leads to the topics that appear in the optional discussion questions. However, many of the discussion question topics would not necessarily appear in the same chapter as the mini-case topic. For example, the mini-case on cash (typically a chapter that appears near the mid-term) contains discussion questions on topics that typically appear in an introductory chapter (e.g. What is a publicly-traded company, What do you think is the auditors' role in financial reporting?).

The requirements for each case include the identification of the fraud effects (overstate, understate, or no effect) on (1) specific accounts, (2) total revenues, (3) total expenses, (4) net income, (5) total assets, (6) total liabilities, and (7) total equity. In addition, each case requires students to identify the financial statements affected by the fraud.

The companies associated with the frauds include John Wiley & Sons, Inc., Satyam Computer Services Limited, Oceanografia, AgFeed Industries, Inc., and Fortress Financial Group, Inc. The companies and related frauds align with topics typically found in the introductory financial accounting course; namely, inventory, cash, accounts receivable, fixed assets and liabilities (see Appendix for the five cases with requirements and optional discussion questions).

Course Logistics

Two faculty (Prof A and Prof B) at two different institutions employed the fraud mini-cases in five sections of the introductory financial accounting course. One institution is a medium-sized, regional, AACSB-accredited institution and the other institution is a small, eastern, military, AACSB-accredited institution. The use of the mini-cases with reported results occurred between the fall of 2014 and the spring of 2016. Students in all sections met in the face-to-face environment. However, the mini-cases could easily be adapted to the online environment with the eight requirements added as objective, immediately graded assignment in the university’s learning management system. In addition, the discussion questions could be added in the learning management system’s discussion forums. The military school had 100 percent males; whereas, the regional institution has a mixture of males and females (see Table 1).

TABLE 1

Class Logistics

	Professor A		Professor B	
	Flipped	Lecture	Lecture	Lecture
Term, Year	Fall 2014	Sp 2016	Fall 2014	Fall 2015
Number of Sections	1	2	1	1
Number of Students	32	35	30	26
Gender (% Male)	62.5	45.7	100	100
Case Coverage Method	By chapter	All at once	By chapter	By chapter
Overall Student Perception Average (scale 1-5 where 5 = strongly agree)	4.11	4.11	4.13	4.35

Both the flipped classroom environment (Prof A) and the more traditional lecture/discussion delivery (Prof A and Prof B) environment used the mini-cases as part of the in-classroom discussion. Students did not receive course credit, other than observed class participation, for the discussions or responses.

Both faculty used traditional, debit/credit textbooks in their courses. One faculty member used the Weygandt, Kimmel, and Kieso, *Accounting Principles 11th ed.* (2013) text. The other faculty member used the Needles and Powers, *Financial Accounting 11th ed.* (2012) text. Both faculty taught the basic transaction analysis approach throughout the course, identifying the accounts affected and making journal entries. They extended the transaction analysis discussion to identify the financial statement effects.

Strategies for Use in Class

The mini-cases function as an excellent tool to increase fraud education in the introductory accounting course and enhance analytical thinking through the transaction analysis process. The mini-cases could also be used as an example of internal control and/or audit failure, as a method to expose students to the use of actual corporate financial statements, or to show examples of unethical behavior through the prevalence of corporate fraud.

The short length of each case can be expanded, according to the instructor’s goals, by integrating the optional discussion questions. The discussion questions could be used as discussion

questions or as talking points for the professor. The teaching notes contain comprehensive suggested solutions to the optional discussion questions.

Two strategies were implemented to integrate the cases in class. One strategy interspersed the cases with the relevant chapters. This “by chapter” strategy added the relevant case to the class discussion after the related chapter was covered in class. For example, the John Wiley & Sons case was presented after the discussion of merchandising operations and inventory; the Satyam case was integrated into the class discussion after the discussions of the cash and internal controls chapter. A second strategy utilized by one of the faculty members was an “all at once” approach. This instructor dedicated a single, 75-minute class period to the case discussions. In this situation, all five cases were presented and discussed in the same class period, at the end of the semester.

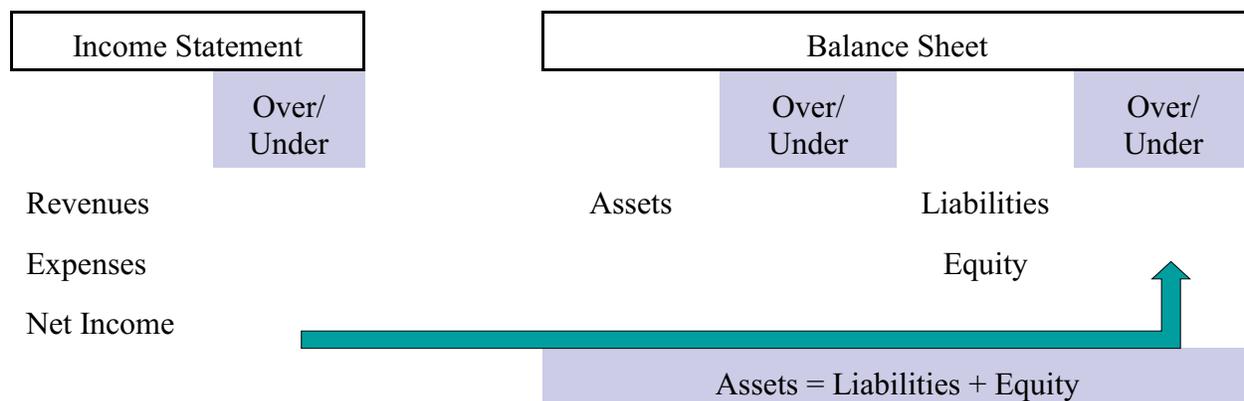
Both strategies involved providing a copy of each mini-case and the requirements to the students, each student receiving their own copy. In addition, the cases were displayed with an overhead projector. Students were given approximately 10 minutes to read the case, think for themselves, and brainstorm with their neighbors in class. Then, the class as a whole responded to the requirements of the case. Students had not seen any of the cases prior to attending class and students were not allowed to keep the copies.

The follow-up class discussion included student responses and the professor presenting the transaction analysis with a diagram of the accounting equation, balance sheet and the income statement (see Figure 1). The diagram provides a visual for students to see the effects on the financial statements, the relationship between the two statements, and the equality of the accounting equation. A separate diagram was presented for each mini-case at the end of the discussion. Both faculty members allowed students to search the Internet for responses to, “what happened in this case,” which furthered class discussion as students discovered the extensive media coverage associated with each fraud, and the consequences of each situation.

FIGURE 1

Analysis of Fraud Cases Tool - Financial Accounting Principles

This tool is intended to clearly illustrate the impact of the fraud in each of the five mini-cases contained in this document. Students will more clearly “see” the impact on the financial statement elements, as well as the relationship between the Income Statement and the Balance Sheet.



The professors utilized some of the optional discussion questions as “talking points,” to reiterate tangential, previously learned material or to introduce new topics. For example, the inventory mini-case contains an optional discussion question (talking point) to introduce internal controls (e.g. What is the intent of textbook publishers sending textbooks directly to professors, instead of the sales reps?).

Evidence of Efficacy

Students in both instructors’ financial accounting principles courses completed a 10-statement, five-point, Likert-type scale, perception survey after the completion of all five cases (see Table 2). These surveys were completed, anonymously, during class. The students responded, on

TABLE 2

Student Perceptions of the Mini-Cases

Statements*	Professor A		Professor B	
	Flipped	Lecture	Lecture	Lecture
	Fall 2014	Sp 2016	Fall 2014	Fall 2015
1. I found the fraud cases to be very interesting.	4.14	4.03	4.33	4.58
2. The fraud cases were easy to understand.	3.79	3.69	3.53	4.38
3. I enjoyed discussing the fraud cases in my accounting class.	4.21	4.15	4.13	4.50
4. I understood more about accounting through the study of the fraud cases.	3.61	3.89	3.87	4.04
5. The questions completed after reading the fraud cases required me to think analytically.	4.46	4.37	4.23	4.19
6. I believe the topics covered in the fraud cases were relevant to my accounting course.	4.29	4.43	4.27	4.58
7. The fraud cases helped me to better understand the financial statement effects that result from transactions.	4.32	4.29	4.27	4.15
8. The fraud cases helped me to obtain a better appreciation of accounting.	3.96	4.09	4.13	4.23
9. I would enjoy more discussions about fraud in this class.	4.14	3.91	4.33	4.27
10. Overall, I found the use of the fraud cases to be a worthwhile learning experience.	4.18	4.29	4.20	4.54
Overall average	4.11	4.11	4.13	4.35

*Students responded from 1 to 5 (strongly disagree to strongly agree)

a scale from strongly disagree to strongly agree (1 to 5), to their level of agreement related to various aspects of using the cases. Simple average scores for each statement, as well as a combined average of all 10 statements, are presented to determine students' satisfaction with the use of the fraud mini-cases. Average scores for all 10 statements ranged from 4.11 to 4.35, indicating agreement to the benefit of the cases (see Table 1). This range appears comparable to the overall averages of Adams et al. (1999) (averages 3.94 and 4.26) and Bamber and Bamber (2006) (average 4.21).

Overall, students believe the cases provide a "worthwhile learning experience" with a range of 4.18 to 4.54 over the class sections in the current study. These results apply across professors, classroom environments (flipped or lecture/discussion) and case delivery method (all at once or by chapter). A large majority of the students believe that the cases required them to "think analytically" and provided relevance to their accounting course. In addition, students believe the cases were interesting and helpful in better understanding accounting, enjoyed discussing the cases, and would enjoy more discussion about fraud in the financial accounting principles course.

Drawing on the work of Chu and Libby (2010), the percentage of students that replied agree and strongly agree were calculated (see Table 3). In addition, the statements (different from Chu and Libby (2010), but similar in category) were classified into three of the four categories (satisfaction, learning/knowledge, and critical thinking) used in Chu and Libby (2010). Statements on the perception survey that did not fit into the Chu and Libby's (2010) categories were classified as Relevance, Appreciation for Accounting, and Global (Overall). Recall, Chu and Libby (2010) required students to write their own mini-cases and differs from the current study in which mini-cases were provided to the students. In addition, Chu and Libby's (2010) assignments applied to an introductory tax course compared to an introductory financial accounting course of the current study. It is with these differences in mind that comparisons are drawn.

Chu and Libby's satisfaction category results in a weighted average of 60 percent (range is 55 to 70) on three statements for the percentage of students that agreed with the satisfaction statements. The current study produced an average satisfaction of 83 percent (range of 77 to 86). Chu and Libby (2010) had two statements classified as learning/knowledge; whereas the current study had three statements. Chu and Libby's (2010) and the current study resulted in the same percentage (75%) of students that agreed the assignments enhanced their learning of the material. Chu and Libby had one statement that specifically asked about critical thinking that resulted from the assignment. Seventy-three (73) percent of the intermediate students agreed that relative to the traditional form of the assignments, the cases required critical thinking. Ninety-one (91) percent of the introductory financial students perceive the cases required them to think analytically.

Overall, the introductory financial accounting students indicate a relatively high level of satisfaction with the mini-cases (average 83%), perceive that their knowledge of accounting increased (weighted average 75%) and perceive that the mini-cases required them to think analytically (91%). In addition, 80 percent of the students indicated they have a better appreciation for accounting, 94 percent believe the cases provide for a worthwhile learning experience, and 97 percent believe the mini-cases are relevant to the introductory accounting principles course.

Similar to Chu and Libby (2010), t-statistics were used to test the difference of the average scores on each statement from the neutral (no opinion) responses. The tests revealed significant differences for all 10-perception statements in the introductory financial accounting course.

Anecdotally, both faculty witnessed a marked increase in class discussion during the case discussions. In addition to questioning the outcome of the case, students appeared to be engaged in

TABLE 3**Student Perceptions: One-Sample T-Tests**

Spring 2016* section: Averages different from the neutral response of 3**

<u>Statements</u>	<u>% 4&5</u>	<u>Average</u>	<u>Std. Dev.</u>	<u>t-stat</u>	<u>df</u>	<u>Prob>t</u>
Satisfaction						
1. I found the fraud cases to be very interesting.	86	4.03	0.75	8.15	34	0.000
3. I enjoyed discussing the fraud cases in my accounting class.	86	4.17	0.71	9.81	34	0.000
9. I would enjoy more discussions about fraud in this class.	77	3.91	0.82	6.61	34	0.000
Satisfaction average		83				
Learning/Knowledge (Useful)						
2. The fraud cases were easy to understand.	69	3.69	0.68	6.00	34	0.000
4. I understood more about accounting through the study of the fraud cases.	71	3.89	0.83	6.30	34	0.000
7. The fraud cases helped me to better understand the financial statement effects that result from transactions.	86	4.29	0.76	9.93	33	0.000
Learning/Knowledge weighted-average		75				
Analytical Thinking						
5. The questions completed after reading the fraud cases required me to think analytically.	91	4.37	0.75	11.10	34	0.000
Relevance						
6. I believe the topics covered in the fraud cases were relevant to my accounting course.	97	4.43	0.56	15.16	34	0.000
Appreciation for Accounting						
8. The fraud cases helped me to obtain a better appreciation of accounting.	80	4.09	0.75	8.42	33	0.000
Global (Overall)						
10. Overall, I found the use of the fraud cases to be a worthwhile learning experience.	94	4.29	0.79	9.65	34	0.000

* Results of remaining three sections produced similar results

** Students responded from 1 to 5 (strongly disagree to strongly agree)

the transaction analysis process. A student who did not particularly care for accounting asked the professor after discussing the cases, “What does it take to get into forensic accounting?”

Challenges and Limitations

In general, the integration of the cases was relatively easy. However, the use of real-life cases generates student interest and subsequent student questions. The most often-asked question was, “What happened in this case?” As such, the professor will need to prepare for responding to the question. Two approaches to “preparation” for a response include (1) reading the epilogue in the Teaching Notes or (2) requesting that students use their smart phones and Google the company and fraud.

Additional preparation time occurs when the professor must prepare for the basic case presentation. Professors will need to read the case and be familiar with the company and the participants. This is easily accomplished by reading the mini-cases and the Teaching Notes.

The use of classroom time may also be a limitation. For most professors teaching a preparer-based introductory course, extra classroom time for adding activities is limited, or non-existent. The authors replaced a few transaction analysis-based, in-class, end-of-chapter assignments with the cases. One mini-case takes a minimum of five minutes, if the mini-case is projected on the screen, with the professor explaining the case and then allowing students to brainstorm correct responses. The extra benefits derived, analytical thinking and developing student interest, is for the authors an extremely worthwhile trade-off of the 5-10 minutes of lecture time.

Additional classroom time is required when integrating the optional discussion questions. Open-ended discussions and/or Googling responses require a large amount of class time. Although many of the optional discussion questions touch on topics that typically appear in introductory accounting textbooks (e.g. What is the importance of operating income? What is a publicly-traded company? What is the auditors’ role in financial reporting?), time could be minimized by the professor simply “lecturing” the discussion questions.

As with any topic on any given day, students will miss the opportunity if they do not attend class. This opportunity is more critical if the cases are presented all at once, during one class period.

SUMMARY AND CONCLUSION

The accounting profession, both academic and practitioners, continue to call for accounting educators to implement curriculum changes that address various issues, including active learning techniques, analytical thinking, and fraud education. Accounting educators have responded, as evidenced in the literature, by integrating numerous methods and activities into accounting courses. However, limited research exists with respect to the integration of activities in the introductory financial accounting course that address all three of these curriculum changes into one activity. This article combines these areas in an easy to implement instructional strategy for introductory accounting principles.

The five mini-cases in this article present a pedagogical technique that requires students to examine fraudulent activity within real-life companies from the perspective of transaction analysis and immediate evaluation of the financial statement effects, via the financial statements and the accounting equation. The fraud mini-cases presented in this article contribute to the literature by providing an in-class, active learning pedagogical technique that provides for student engagement and active participation while enhancing students’ abilities to apply analytical thinking to transaction analysis. The use of these mini-cases is most appropriate in either a flipped or traditional lecture

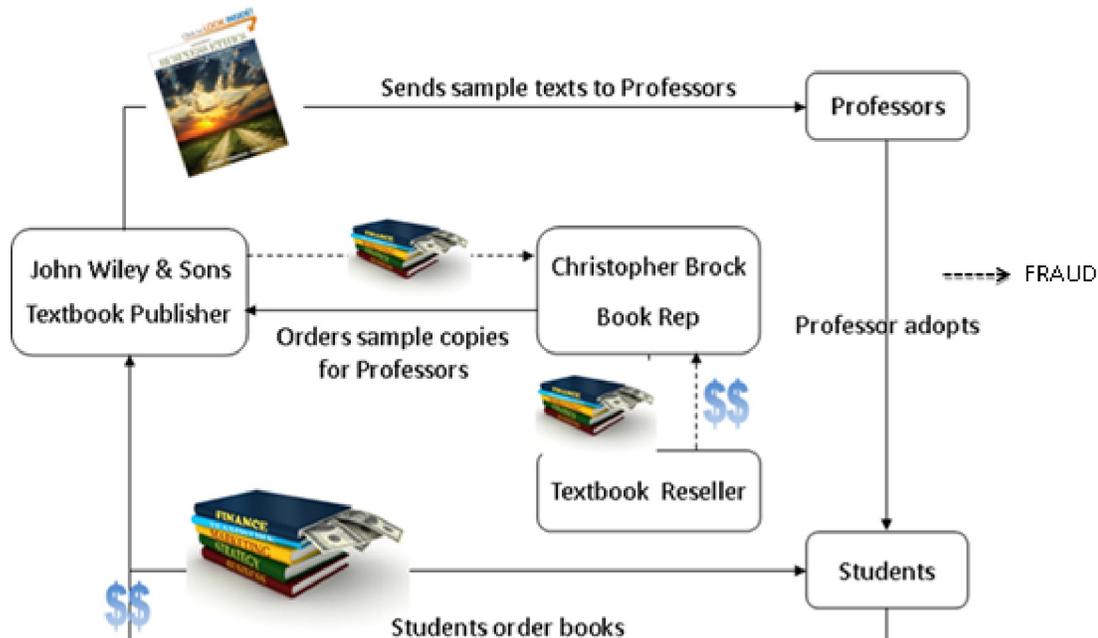
delivery classroom. In addition to students' high level of satisfaction with the discussion of corporate fraud and the use of the mini-cases, this technique addresses the continuing call for change in the accounting curriculum through active learning, fraud education, and analytical thinking with transaction analysis and the identification of financial statement effects.

APPENDIX: MINI-CASES

John Wiley & Sons, Inc. – INVENTORY

The Case

Christopher Brock was first a higher education publishing representative, and then a district sales representative for John Wiley & Sons, Inc., one of the top textbook providers in the United States. Overall, Brock's job was to encourage faculty members to adopt Wiley textbooks for use in their classes. Most textbook representatives advertise by providing free sample copies to professors for review, with hopes that faculty adopt and require the use of the textbook for their courses. Faculty adoptions lead to the purchase of textbooks by students from the publisher (i.e. John Wiley & Sons). John Wiley & Sons earns revenue from the sale of their textbook inventory to students.



Over a period of almost seven years, 2006-2013, Brock placed orders directly into the company's computer system for free sample textbooks to be distributed to teachers in higher education. However, instead of having them sent directly to the professors, he had the textbooks sent to his own and other addresses for which he had access – often naming a fictitious professor. He received a total estimated 16,000 free textbooks, worth \$2.8 million. Instead of distributing these textbooks to teachers, Brock sold the textbooks to textbook resellers. Brock received \$450,000, through PayPal, from the sale of the textbooks.

Requirements

1. Which of John Wiley & Sons (Wiley) accounts, if any, were affected by this fraud? Assume that books sent to faculty were classified as Advertising Expense.
2. What is the effect (overstated, understated, or no effect), if any, on Wiley's Total Revenues?
3. What is the effect (overstated, understated, or no effect), if any, on Wiley's Total Expenses?
4. What is the effect (overstated, understated, or no effect), if any, on Net Income?

5. What is the effect (overstated, understated, or no effect), if any, on Wiley's Total Assets?
6. What is the effect (overstated, understated, or no effect), if any, on Wiley's Total Liabilities?
7. What is the effect (overstated, understated, or no effect), if any, on Wiley's Total Equity?
8. Which of Wiley's financial statements, if any, were affected by this fraud?

Optional – Discussion Questions

1. What is the effect of the lost textbooks due to fraud?
2. Why are textbooks so expensive?
3. What is the intent of textbook publishers sending texts straight to professors instead of to the sales reps?
4. What detection methods may have prevented the fraud?
5. Why is it important to accurately report Operating Income?
6. What method(s) is (are) used to value Wiley's inventory at April 30, 2015? Notes to the Financial Statements: John Wiley & Sons. Inc. (2015) Read Note 2, Summary of Significant Accounting Policies; Section Inventories. http://www.wiley.com/legacy/about/corpnews/fy15_10kFINAL.pdf. It may be necessary to cut and paste the link into the web browser.

Satyam Computer Services, Limited – CASH & CASH EQUIVALENTS

The Case

You can imagine the surprise of the SEC when they received Satyam Computer Services (Satyam) required financial reports, with a confession letter attached! The letter, from the company's Chairman, B. Ramalinga Raju (Raju), stated that the cash and cash equivalent balance of \$1 billion reported in the financial statements was fictitious. The correct cash and cash equivalent balance that should have appeared in the financial statements was only \$66 million. Raju also stated that the fictitious cash and cash equivalent balances resulted from recording cash sales that did not exist.

The SEC charged several senior and mid-level executives (Chairman, CFO, VP for Accounts and Audits, Senior Manager for Treasury, Global Internal Audit Head, and Assistant Manager for Invoicing) and the lead audit engagement partners from the independent auditing firm with fraudulent activity. The SEC alleged that the former executives provided certain employees with "super user" login usernames and passwords, and required that these employees input false sales invoices for services that were never provided. In some cases, fake customers were created to record cash sales. Satyam allegedly created 200-300 fictitious invoices per month (over 6,600) during the years 2004 through 2009.



Requirements

1. Which of Satyam's accounts, if any, were affected by this fraud?
2. What is the effect (overstatement, understatement or no effect), if any, on Satyam's Total Assets?
3. What is the effect (overstatement, understatement or no effect), if any, on Satyam's Total Liabilities?
4. What is the effect (overstatement, understatement, or no effect), if any, on Satyam's Total Equity?
5. What is the effect (overstatement, understatement or no effect), if any, on Satyam's Total Revenues?
6. What is the effect (overstatement, understatement or no effect), if any, on Satyam's Total Expenses?
7. What is the effect (overstatement, understatement or no effect), if any, on Net Income?
8. Which of Satyam financial statements, if any, were affected by this fraud?

Optional – Discussion Questions

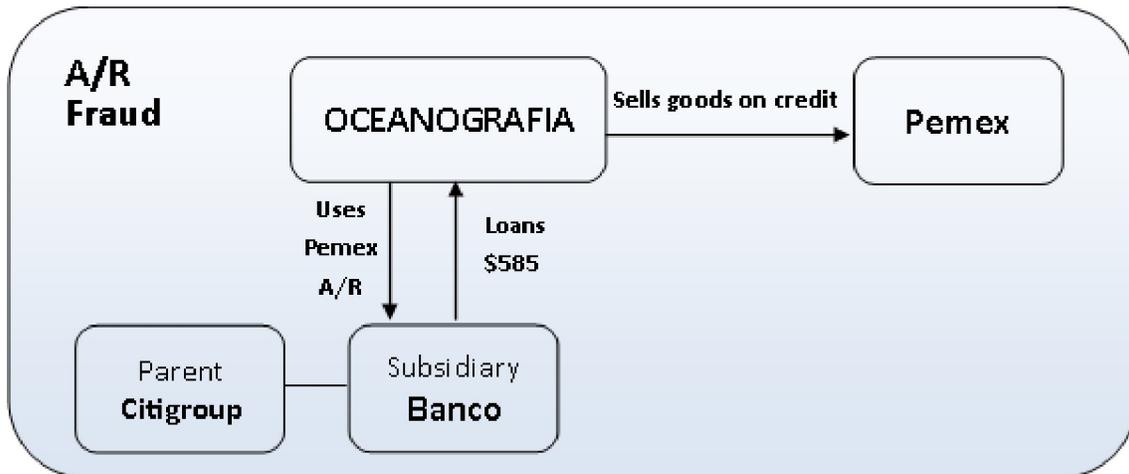
1. What is a publicly-traded company?
2. What is the role of the Securities and Exchange Commission (SEC)?
3. What do you think is the auditors' role in financial reporting?
4. Why should auditors obtain bank statements directly from the bank?
5. What are the auditors' Professional Responsibilities?
6. What is the Sarbanes-Oxley (SOX) Act of 2002 and PCAOB (Public Company Accounting Oversight Board)?
7. How does Satyam define cash and cash equivalents? Notes to the Financial Statements, Cash: Read Notes to the Consolidated Financial Statements #2 (f) Cash and Cash Equivalents. <http://www.sec.gov/Archives/edgar/data/1106056/000114554907001844/u93125exv99w6.htm> (filed with SEC, EX-99.6 for six months ended September 30, 2007).

Oceanografia – ACCOUNTS RECEIVABLE AND BAD DEBTS

The Case

Oceanografia is a supplier of services and construction to organizations in the oil and gas industry. They sell services and goods, on credit, to Pemex (another organization in the oil and gas industry) in Mexico. As such, Oceanografia has Accounts Receivables (A/R) from Pemex.

Oceanografia used the A/R from Pemex as collateral to secure a \$585 million loan from Banco, the 2nd largest bank in Mexico. The A/R used as collateral contained \$400 million of illegitimate invoices. Oceanografia created sales invoices for fictitious credit sales to Pemex.



Requirements

1. Which of Oceanografia's accounts, if any, were affected by this fraud?
2. What is the effect (overstatement, understatement or no effect), if any, on Oceanografia's Total Revenues?
3. What is the effect (overstatement, understatement or no effect), if any, on Oceanografia's Total Expenses?
4. What is the effect (overstatement, understatement or no effect), if any, on Net Income?
5. What is the effect (overstatement, understatement or no effect), if any, on Oceanografia's Total Assets?
6. What is the effect (overstatement, understatement or no effect), if any, on Oceanografia's Total Liabilities?
7. What is the effect (overstatement, understatement or no effect), if any, on Oceanografia's Total Equity?
8. Which of Oceanografia's financial statements, if any, were affected by this fraud?

Optional – Discussion Questions

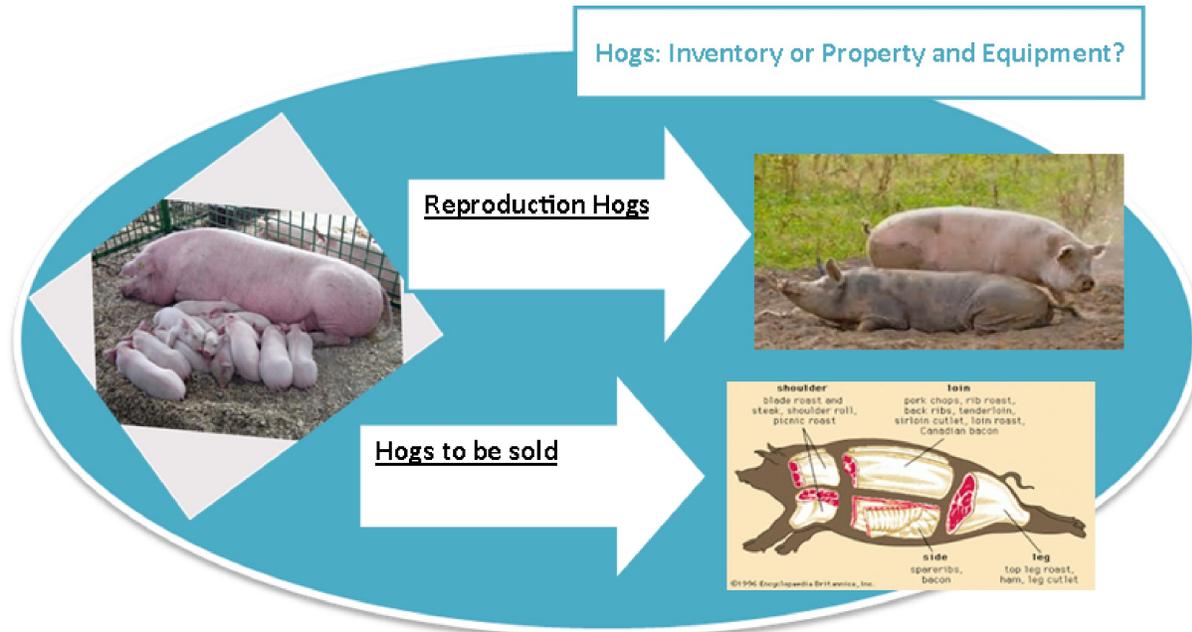
1. What is the purpose of the Allowance for loan losses?
2. In general, what is the benefit to Banco of loaning money to Oceanografia based on Loans (Accounts) Receivable?
3. What is a Parent-Subsidiary relationship?

4. Locate the Allowance for Loan Losses on Citigroup Inc.'s Balance Sheet. (a) What is the amount reported for this account in 2015? (b) What section of the Balance Sheet does this account appear? (c) What is the calculation (in numbers) to get the Total loans, net, of \$604,991 million reported for 2015? Notes to the Financial Statements <http://www.citigroup.com/citi/investor/data/k15c.pdf?ieNocache=520> (might need to copy and paste this link). Use the find function after opening the link.

AgFeed Industries, Inc. – FIXED ASSETS

The Case

In March of 2014, the SEC charged six AgFeed Industries, Inc., top executives with overstating revenues. The alleged overstatements occurred between the years of 2008 and 2011 and totaled about \$239 million. This alleged fraud caused revenues to be overstated by 71 to 103 percent, annually. AgFeed operates in the United States and China with two main businesses: (1) animal nutrition (mainly animal feed) and (2) hog (swine) production. The hog production business was just that, hogs were maintained to produce more hogs. The offspring were fattened up and sold down the



supply chain to packaging companies and slaughter houses. AgFeed classified hogs used for reproduction as Property and Equipment, because the hogs were long-term in nature and used in current operations to generate revenue. The cost of the reproduction hogs were subject to annual depreciation. Hogs to be sold were classified as Inventory. In order to show more revenue than the company actually earned, AgFeed created fictitious purchases of reproduction hogs. Instead of recording a decrease in Cash or an increase in A/P, AgFeed offset the purchase by increasing revenues. The company maintained two sets of accounting records to hide the fraud.

Requirements

1. Which of AgFeed's accounts, if any, were affected by this fraud?
2. What is the effect (overstatement, understatement or no effect), if any, on AgFeed's Total Revenues?
3. What is the effect (overstatement, understatement or no effect), if any, on AgFeed's Total Expenses?
4. What is the effect (overstatement, understatement or no effect), if any, on Net Income?
5. What is the effect (overstatement, understatement or no effect), if any, on AgFeed's Total Assets?

6. What is the effect (overstatement, understatement or no effect), if any, on AgFeed's Total Liabilities?
7. What is the effect (overstatement, understatement or no effect), if any, on AgFeed's Total Equity?
8. Which of AgFeed's financial statements, if any, were affected by this fraud?

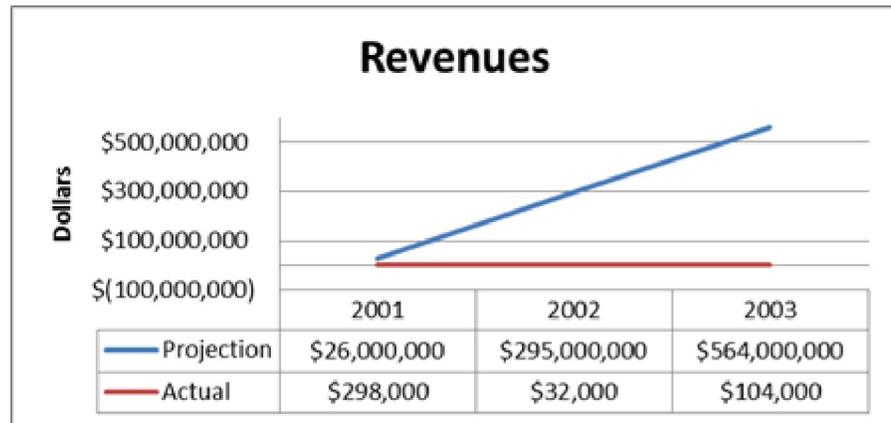
Optional – Discussion Questions

1. Why are the hogs sometimes classified as fixed assets and sometimes classified as inventory?
2. What could the external auditors have done to detect the fictitious purchase of hogs?
3. What is the difference between Depreciation Expense and Accumulated Depreciation?
4. Why is the 3.5 years an estimate of the reproduction hogs useful lives?
5. What is book value and how does it differ from fair value?
6. What details are provided in the Financial Statements related to Property and Equipment? Notes to the Financial Statements: Read Note 2 of AgFeed's quarterly (10Q) financial statements, Summary of Significant Accounting Policies; Property and Equipment section (see http://www.sec.gov/Archives/edgar/data/1331427/000114420410058751/v201558_10q.htm). *Hint: You will need to locate Property and Equipment.* (a) What depreciation method is used for the Swine for reproduction? (b) What is the useful life of the Swine for reproduction? (c) What is the total amount of Property and Equipment for the nine months ended September 30, 2010? (d) What is the total amount of Accumulated Depreciation? (e) What is the book value of the Property and Equipment?

Fortress Financial Group, Inc. – LIABILITIES

The Case

In 2001, Jeffrey Richie was the President and CEO of a new organization, Fortress Financial Group, Inc. Fortress was in the business of providing employee retirement benefits packages. Prior to opening the doors of this new organization, Richie sold the “idea” of his company to 85 investors, offering shares of Preferred Stock and pulling in a total of \$2.9 million. Richie promised not to spend any of the stock proceeds until Fortress raised an additional \$2 million; but he did not honor that promise.



The shares of stock sold to investors were not registered with the SEC. Fortress violated the SEC rules required to sell unregistered shares of stock, as Fortress did not provide investors with an audited balance sheet or other financial information required for unregistered stock.

Among other charges, the SEC charged Richie with providing false and misleading financial information to potential investors. Additionally, a \$1 million liability was omitted from the financial information provided to investors. Assume the liability resulted from legal expenses charged by an attorney to Fortress.

Requirements

1. Which of Fortress’s accounts, if any, were affected by this omission of the liability (assume the undisclosed liability resulted from unrecorded legal expense)?
2. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Fortress’s Total Revenues?
3. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Fortress’s Total Expenses?
4. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Net Income?
5. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Fortress’s Total Assets?
6. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Fortress’s Total Liabilities?
7. What is the effect of the undisclosed liability (overstatement, understatement or no effect), if any, on Fortress’s Total Equity?

8. Which of Fortress's financial statements, if any, were affected by this fraud?

Optional – Discussion Questions

1. Why was it important that Fortress Financial should make investors aware of the outstanding liability?
2. Should the investors be held accountable for their loss, because they did not request an audited balance sheet?
3. Considering the projected revenues presented in the case illustration, do you believe the projections to be reasonable? Why or why not?
4. Compare the chart of actual and projected revenues presented in the case. Was Fortress close in their projections?

TEACHING NOTES

Teaching notes are available from the editor. Send a request from the “For Contributors” page of the journal website, <http://gpae.wcu.edu/>.

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