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Sink or Skim: Textbook Reading Behaviors of Introductory Accounting Students

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ABSTRACT: Despite the significant emphasis that most instructors place on textbooks in introductory accounting courses, little research exists to describe how students interact with their textbooks. Using learning journals, 172 undergraduate students provided detailed, real-time accounts of their experiences with 13 chapters of an introductory financial accounting textbook. Using the method of grounded theory, supplemented with quantitative tests of association, this study begins to characterize textbook use from a student perspective. Results indicate that, for students, reading is a motivated behavior, with the specific motives varying across different groups of students and leading to different consequential actions. Academically strong students appear to read with the primary goal of understanding assigned material, as evidenced by their willingness to (1) engage in reading before the related material is covered in class, (2) persist when material becomes difficult, and (3) establish defined action plans that promptly resolve confusion. In contrast, weaker students appear to read with the primary goal of reducing anxiety, by deferring reading and terminating it when comprehension becomes difficult. The findings of this study are used to create instructional guidance that instructors can provide to students and to direct future research by outlining important and interesting questions requiring further investigation.

INTRODUCTION

When you were a student in your first accounting class, did you ever count how many pages were left in the textbook chapter while doing the assigned reading? Did you ever read the textbook while working at a part-time job? Did you ever put off the assigned reading because you thought it would be more effective to complete just before the exam? Understanding how students read textbooks is of critical importance to instructors because educational researchers have observed that higher education institutions rely extensively on textbooks (McFall 2005). Textbooks aim to communicate the content, beliefs, values, and methods of a discipline (Richardson 2002), and influence the structure of courses and knowledge that is built within a particular field (Issitt 2004). A significant barrier that might thwart these goals is that students may not use textbooks in

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the way they were intended. The existing published research offers little insight into such issues because few empirical studies describe college textbook use (Bessler et al. 1999). The purpose of this study is to develop a multidimensional characterization of how students use their textbooks, so that we can begin to determine whether students' reading behaviors are likely to prevent textbooks from achieving their intended goals.

Several authors have developed normative standards regarding how students *should* read textbooks. Allen (1999) recommends students preview a chapter to set out a reading purpose, monitor their reading to keep their focus on that purpose, and periodically evaluate how much they are learning. To this process, Barnett (1998) adds the task of revising reading strategies based on self-evaluation and external feedback. In contrast to this reasoned approach, the scant empirical evidence suggests that most students are passive readers who fail to use active strategies (McFall 2005) even when trained to do so through a reading skills workshop (Barnett 1998). Furthermore, reading strategies differ by discipline; 70 percent of students surveyed in an introductory psychology class completed the assigned readings (Clump et al. 2004) as opposed to 17 percent of students in introductory macroeconomics (Schneider 2001). Based on reviews of accounting education research (Apostolou et al. 2001; Rebele et al. 1998a, 1998b; Watson et al. 2003) and our search of the accounting literature, it appears no studies have investigated how accounting students actually read their textbooks. Consequently, there is significant theoretical, pedagogical, and practical importance in exploring how accounting students engage with their textbooks as part of the overall learning environment in which they build their understanding of accounting (Wooten 1998).

Previous research relating to accounting textbooks has taken an instructor perspective, focusing on (1) comparison of financial accounting textbooks, (2) instructors' selection criteria, and (3) critical analysis. Researchers have compared introductory financial accounting textbooks on the method of presentation of accounting material (Sullivan and Benke 1997), readability (Davidson 2005), and international content (Bracken and Urbancic 1997). Intermediate financial accounting textbooks have been compared for the cognitive skills objectives present in end-of-chapter material (Davidson and Baldwin 2005). To assess how texts are selected in different accounting courses, Smith and DeRidder (1997) surveyed faculty and found, in general, that textbook adoption decisions are made by committees for introductory and intermediate accounting courses and by individuals for upper-year and specialized courses, relying on key adoption criteria such as comprehensibility, timeliness, and exposition quality. In a critical analysis, Cuganesan et al. (1997) assessed a managerial accounting textbook for its unstated assumptions regarding the purpose of accounting, class structure, and cultural specificity.

In contrast to the previous accounting textbook research, we aim to present a student perspective on textbook reading. Our goal is to present an in-depth characterization of the ways in which accounting students read and are influenced by their textbooks. Such an objective requires that we trace the thoughts and impressions of academically ''strong'' and ''weak'' students as they interact with their textbooks at home, in the gym, and in the car, when they are feeling optimistic, tired, and frustrated. To develop such a rich characterization, we use a grounded theory approach. This qualitative research method is described in the following section.

GROUNDED THEORY RESEARCH

A grounded theory approach to research differs in many ways from the hypothesis-testing tradition that has become common in the accounting literature (Kirk and Van Staden

2001). One primary difference between these two research approaches relates to the interplay of theory and data. The tradition in hypothesis-testing research is to first propose theory from which hypotheses are derived and then gather data that capture the actions of individuals under study. The validity of the theory is established by determining the extent to which the data align with the hypotheses. In contrast, grounded theory research begins with the words and actions of individuals under study and examines these qualitative data to discover the theory that is implicit (''grounded'') within the data. The validity of the emergent theory is established by determining the extent to which the theory explains the situation and helps people in the situation to better understand and manage their experiences (Kirk and Van Staden 2001).

The preceding characterization suggests another important difference between the two research approaches. Unlike the typical hypothesis-testing study, which tends to progress from theory to hypotheses to data analysis in a linear and sequential manner, a grounded research study iterates frequently between data analysis and theory development. As the data are analyzed and theory begins to emerge, the grounded researcher consults prior research to assist in further developing the emergent theory and then returns to the data to further test, develop, and refine the theory. This iteration between data analysis and theory discovery is a central feature of grounded research. The goal is to tentatively identify key points within an initial subset of the data (called ''provisional themes'') and then ''test'' their validity by determining whether they are confirmed or disconfirmed by subsequently analyzed data. This iteration continues until no additional information is found in the data.

Standards of Rigor

Ultimately, the quality of any empirical research study depends on (1) the significance of the research question, (2) the validity, reliability, and credibility of the data to be analyzed, (3) the competence with which the data are analyzed, and (4) the extent to which the findings have explanatory and predictive ability. Despite the significance of data in grounded theory research, the research question is still paramount, with most researchers assessing a study in terms of whether the research question drives the data collection and analysis rather than the reverse (Howe and Eisenhardt 1990). Having struck upon a worthwhile research question, a grounded theorist takes steps to ensure the collected data are valid, reliable, and credible. Initial steps for obtaining such high-quality data include creating a setting for participants to openly express views without concern that an expert will pass judgment on them and ensuring that the researcher's interpretations reflect the views intended by participants (Creswell 1998).

Data validity and reliability also depend on data sampling decisions. Unlike hypothesis-testing research, where quantitative data are sampled to the extent needed to support ''statistically valid'' conclusions, sampling in grounded theory is ''theoretical'' in the sense that it involves just those individuals who can contribute to the evolving theory (Creswell 1998, 118). Typically, grounded theorists begin by sampling from a homogeneous sample of individuals (say, the ''average'' student) to identify the characteristics or central themes of the data and then, as the theory emerges, a heterogeneous group of individuals are sampled to determine the range along which these characteristics vary (''strong'' and ''weak'' students). Because the goal is to identify theory that is grounded within the data, sampling continues until no new information is obtained from the data.

Data analysis and theory building involve intense and rigorous processes. The data are initially read for meaning with the goal of being able to describe the participants' experiences. With these descriptions in mind, the researcher reexamines the data for recurring

regularities that can be sorted into categories of behavior or experience (e.g., When are chapters read? On what are students focusing?). Next, the researcher attempts to discover how major categories relate to one another (e.g., Do the best students read at a specific time with a particular focus?). By specifying relationships among categories, the grounded researcher begins to construct a theory that characterizes the behavior in a generalized way. Although rarely stated in causal terms, this theory should be useful in explaining and predicting behavior in a wide range of situations in the substantive area of study (e.g., textbook reading behavior in other disciplines).

Throughout the data analysis and theory-building processes, the researcher diligently and continuously creates and revises notes, memos, and diagrams to capture emerging observations. Because the grounded researcher seeks to identify implicit *meaning*, data are not analyzed in a quantitative or statistical sense, but instead must be examined through a method of ''constant comparison.'' Constant comparison involves iteratively comparing the data with provisional themes as they emerge from the data, with a goal of determining the extent to which the provisional themes are supported by subsequent data. Negative cases that contradict or fail to support the provisional themes are used to refine or dismiss provisional themes. The goals of constant comparison are to ensure that the data and the emergent theory cohere and that all data—not just those that support the emerging theory—are considered. Through constant comparison, the researcher minimizes the risks of overstating and misinterpreting individual pieces of data and, at the same time, rules out alternative explanations of the data.

Unlike hypothesis-testing research, where quantitative data can be aggregated and successive stages of analysis readily reported in tables, iterations between data analysis and aggregation (theory building) in grounded theory research are not amenable to reporting in succinct and successive stages. Instead, these analyses are revealed through descriptions of the process, preliminary findings, and emergent theory. To assure others of the validity of these processes and their conclusions, a grounded researcher provides extensive quotations from participants, which allow readers to assess the fit between the data and theory. Further assurance can be provided by reporting quantitative data that augment the qualitative data (Strauss and Corbin 1998), and which also allow readers to assess whether the findings have explanatory or predictive ability. A final check on the validity of the research process and conclusions involves presenting the findings to participants for their reactions and validation (Strauss and Corbin 1998, 161). The method we employ in this study adheres to these standards of rigor, as noted in the following section.[1]

METHOD

Participants and Materials

Students enrolled in two day-class sections of Introductory Financial Accounting at a public university in North America were asked to report how they read their assigned textbook by completing learning journals (LJs) as part of their required course work. In addition to the LJs documenting their reading of each chapter, students were required to complete a LJ before the midterm and the final exam, describing how they used the textbook to prepare for each exam. Learning journals were chosen as the method for eliciting data in this study because prior research indicates that this method naturally prompts students to freely and openly narrate personal stories about how they learn accounting (Hoff and Stout 1989, 88). Ten percent of the course grade was awarded for completion of the LJs,

[1] For more information on the grounded theory method, see the review by Goulding (2005).

with the remaining course grade allocated to performance on in-class quizzes (10 percent), a midterm exam (25 percent), written case analyses (10 percent), and a final exam (45 percent). Although students were encouraged to complete selected end-of-chapter assignment material as homework, their homework performance did not directly contribute to the final course grade.

The students in the Introductory Financial Accounting course were sophomores enrolled in a variety of programs and colleges and had not yet determined their majors; the median age was 19 and 57 percent were female. Introductory students were the focus of this study because the introductory accounting course relies heavily on the textbook to provide organization and course content. In addition, the textbook is the vehicle through which many of these students encounter the accounting discipline for the first time before deciding on their major, consistent with observations made by accounting education committees that the introductory accounting course is the key to providing knowledge of the accounting profession to all students (Elias 2005).

The textbook used in the course was *Fundamentals of Financial Accounting* (Phillips et al. 2006), which contains 13 chapters, each with an average body length of 25 pages. Each chapter was assigned in order covering the duration of the 13-week course. The Phillips et al. textbook can be considered ''transitional'' (Sullivan and Benke 1997) in that it presents accounting material through both debits and credits and the accounting equation, with a diminished focus on the accounting process. The textbook uses an engaging, conversational writing style and centers each chapter's content around a focus company. The body of each chapter opens with a description of learning objectives, contains embedded self-study quizzes, and concludes with a comprehensive demonstration problem. Assignment material appears at the end of each chapter, consisting of questions, multiple-choice, mini-exercises, exercises, problems, and cases. Bouillon (2006) presents additional information regarding this text.

Between 145 and 172 (84 percent to 100 percent) students completed a LJ for each chapter in the textbook, with an average LJ equaling one full handwritten page. Each LJ was submitted weekly to the course instructor; approximately 2,060 pages of handwritten text were available for analysis. The LJ questionnaires divided each of the 13 textbook chapters into 5 sections; students were required to answer three main open-ended questions about their reading for each section: (1) Where are you? (2) When did you start and end this section? (3) How are you feeling when you are reading this section? In addition, students indicated how they used the learning objectives, which described the key concepts of each chapter. Students then completed closed-ended questions regarding how they used other pedagogical elements of the textbook. These questions asked whether students completed the chapter-embedded self-study quizzes and demonstration problems as they were encountered when reading the chapter, after students had completed reading the chapter, or not at all. Questions also asked students to indicate the extent to which they had completed end-of-chapter homework material and to evaluate the assigned textbook.[2] To deter students from unnaturally focusing on or fabricating reading strategies, none of the questions explicitly asked students to explain or evaluate their reading strategies. A copy of the learning journal template distributed for each chapter is presented in Table 1.

[2] Because our goal is to characterize students' textbook reading behavior, we do not present detailed analyses of their use of end-of-chapter homework material in this paper. Generally speaking, a typical student completed some of the recommended homework material and little of the unassigned end-of-chapter material, and consulted solutions as the homework was completed.

TABLE 1
Learning Journal Questionnaire

Reading the Textbook

Section Heading	a) Where are you?*	b) When did you start/end it?	c) How did you use the LOs?**	d) How are you feeling when you're reading this? Explain below and on attached page.
Intro & Understand ...				
Study ...				
Evaluate ...				
Reconsider ...				
For Your Review				

* 1 = library *or* 2 = reading room *or* 3 = home *or* 4 = bus *or* 5 = other (describe in attached page if necessary).
** 1 = I read them first *or* 2 = I read them when they were presented in the chapter *or* 3 = I skipped them *or* 4 = Other (describe).

Using the Textbook

e) Did you complete *most* of the self-study quizzes? (check one)
- ___ When they were presented in the chapter, I tried to answer them before I looked at the answer.
- ___ When they were presented in the chapter, I read them and then immediately read the answer.
- ___ I skipped them while I was reading but tried to answer them after I was done the chapter (e.g., for review, homework).
- ___ I skipped them.

f) Did you use the demonstration case? (check one)
- ___ When it was presented in the chapter, I tried to answer it before I looked at the answer.
- ___ When it was presented in the chapter, I read it and then immediately read the answer.
- ___ I skipped it while I was reading but tried to answer it after I was done the chapter (e.g., for review, homework).
- ___ I skipped it.

g) What proportion of the assigned homework for this chapter did you do? (check one row for each column)
(Continued)

TABLE 1 (Continued)

	Questions	Multiple Choice	Mini-Exercises	Exercises	Problems	Cases
All (100% of it)						
Most (75–100%)						
Some (25–75%)						
Little (< 25%)						

h) Did you look at most of the solutions to the assigned homework? (check one)
- ___ I looked at them after I completed the assigned homework.
- ___ I looked at them as I was completing the assigned homework.
- ___ I didn't look at them at all.

i) What proportion of the unassigned end-of-chapter homework did you do? (check one row for each column)

	Questions	Multiple Choice	Mini-Exercises	Exercises	Problems	Cases
All (100% of it)						
Most (75–100%)						
Some (25–75%)						
Little (< 25%)						

Evaluating the Textbook

Indicate your agreement or disagreement with each of the following statements by checking one of the boxes below.

j) I liked the writing style (e.g., word choice, examples, tone) of this chapter.

☐	☐	☐	☐	☐
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

k) I found the Coach's Corner helpful in understanding this chapter.

☐	☐	☐	☐	☐
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Procedure

Written narrative responses in the LJs were analyzed using the grounded theory method, following the steps outlined in the previous section of this paper. The LJs were read using line-by-line analysis, identifying words and sentences in the text that help develop provisional explanatory themes. The constant comparison method was used in that each LJ was compared to the ones before it to ensure consistency of provisional themes and to identify negative cases that did not support the provisional themes. For example, a tentative provisional theme identified in the LJs after the midterm exam was increased reliance on the textbook's help functions, such as definitions and learning tips highlighted in the margin of each chapter and the review materials presented (demonstration problem, chapter summary) at the end of each chapter:

> I actually did this part [demonstration problem] from beginning to end this time and I wish I'd always been doing this part. It's very helpful and good practice.

The researchers made a note to look for similar statements in subsequent LJs. However, only two other students mentioned increased reliance on textbook help functions (i.e., one mention of using the chapter summary and one mention of using margin advice). Consequently, in the researchers' judgment, further analysis did not support this behavior as a ''typical'' reading strategy, and it was excluded from the multidimensional description of reading behavior that is presented in later sections of this paper.

Decisions about whether provisional themes had been supported by the data were made judgmentally by the researchers and depended on the clarity with which the themes emerged and the weight of evidence supporting each theme. Although grounded research does not rely on hard-and-fast rules about the quantity of statements needed to characterize a theme as ''supported,'' generally speaking we considered a provisional theme to be supported if it was evident in the LJs of at least ten students without disconfirming evidence emerging in other students' LJs.

Some tentative themes were eliminated through disconfirming evidence. At first, it appeared that strong students were confident in their grasp of the material and weak students were unsure of their understanding. However, further analysis uncovered many instances where strong students were confused and anxious and weak students were (over)confident. For example, one of the students expressed the following positive feeling late in the term:

> Going through the chapters again and taking time to do the questions (and to understand the material) has made a huge difference!

This level of confidence was unfounded; the student ultimately earned a low course grade (55 percent).

The analysis of these qualitative data was an iterative process among different chapters, students, and authors, and continued until no additional information was found in the data. Specifically, the process began with one of the authors reading Chapter 1 LJs first, followed by Chapter 2 LJs, and so on, to tentatively identify themes and their progression over time. Next, the other author independently read the LJs for each chapter, tentatively noting emergent themes. Subsequently, the authors discussed each of the previously identified themes and re-examined the LJ data when necessary to confirm or dispel the provisional themes. Through this discussion and analysis, the two authors agreed upon the themes that had emerged from and were supported by the data.

After identifying these themes, which focused on the common experiences of most participants, we divided the LJs between top-ranking and bottom-ranking students, based on final course grade, and compared their LJs to highlight differences in reading strategies

between strong and weak students. Sampling ended after analyzing the 13 chapter-based LJs of each of the five top-ranking and five bottom-ranking students because, at that point, no new observations were emerging from the data. To explore the potential impact of exams on reading behavior, we compared the LJs of students with the biggest net gain between midterm and final exam performance to the LJs of students with the biggest net loss to identify possible changes in reading strategies over the term. This analysis also terminated after examining the LJs of the five biggest gainers and five biggest losers because no new observations were emerging from the data.

The final steps of our analyses involved specifying the relationships between key themes to develop a multidimensional description of students' textbook reading behaviors and using quantitative analyses to examine their association with course performance. These latter tests of association, which segment participants into quartiles based on their overall course grade, are initial attempts to validate the significance of the themes that emerged from the qualitative analyses.[3] After the authors had completed these qualitative and quantitative analyses, further validation was obtained by sharing a summary of key findings with participants to obtain their feedback.

Several steps have been taken to ensure that the experiences presented in this paper represent the voices of the full group of student participants. All quotes are taken verbatim from students' LJs, albeit with some spelling and punctuation corrections for ease of understanding. The quotes are typical and representative of students' responses. No student is directly quoted more than once. We were aware that the potential existed for students to bias their comments when completing LJs for their instructor, particularly if participants perceived that individual as an expert who was likely to pass judgment on their behavior. To reduce this self-reporting bias, credit was awarded for each completed LJ regardless of its content; unpopular opinions were not punished with low grades. Students appeared to be honest in recording their thoughts and feelings about their reading, at times expressing their boredom or recording when they had not completed the assigned reading. They honestly discussed a wide variety of side issues including time management, other classes, personal problems, and even reasons for dropping the course. As one student wrote:

> I am starting to get sick of school which is bad because it is only just beginning! So truthfully, I put this off way too late because I didn't want to read it. That was a bad idea because the quiz is tomorrow and I feel unprepared. There are a few concepts that I don't quite understand and that's frustrating me. I want to do well in this class so I can't lose any focus!

RESULTS

Reading Mood and Setting

Students initially approached the introductory financial accounting textbook with both optimism and apprehension. A surprising majority of students stated that they were ''excited,'' ''interested,'' ''motivated,'' ''alert,'' ''ready,'' and ''confident'' when opening the textbook for the first time. Concurrently, students were afraid that the textbook might present difficulties to learning. To the question, ''How are you feeling?'' these students answered:

> A bit worried beforehand that it [the textbook] will be really complicated.

> I am feeling nervous because I am not sure if I will understand the chapter.

[3] For clarity, this paper refers to the quartile-based comparisons as ''quantitative analyses''; all other analyses (including comparisons of the five top- and bottom-ranking students and the five biggest exam gainers and losers) are labeled as ''qualitative analyses.''

This apprehension resurfaced before exams and could disrupt reading strategies, as discussed below (see ''Reading before Exams'' section).

Where does reading occur? The ideal of a solitary student poring over her textbook in the silent library is a myth. Only 15 percent of students read the textbook in the library as opposed to 78 percent who read it at home. Students mentioned that they read the textbook in a wide variety of settings, including while eating, watching TV, babysitting, working at a job, working out, visiting friends and family, waiting at a hair salon, traveling in the car, attending church, or sitting in other classes. Consequently, students faced many distractions to effective reading. They specifically mentioned challenges such as personal illness, family illness, party preparations, hangovers, noisy roommates, computer interruptions, home relocations, car breakdowns, and relationship breakdowns. The biggest barriers to reading mentioned by students were heavy workloads from other classes and ''being tired''—32 percent of students spontaneously mentioned they were tired while reading the textbook during the very first week of class.

Reading Strategies: Sinking versus Skimming

Students expressed few clear and consciously articulated reading strategies. Only 26 percent indicated that they focused their initial reading on the learning objectives listed in the chapter, and 13 percent admitted to skipping them altogether. However, most students did mention two methods of reading the textbook: (1) reading topics slowly with concentration so as to ''sink'' material into one's understanding and memory, or (2) reading quickly so as to ''skim'' across the material to get through it and finish the assigned reading. The first strategy, sinking, included reading carefully for understanding, taking notes or highlighting important topics, rereading parts of the chapter that caused confusion, and reviewing previous chapters or class notes to tie information together. The sinking strategy is illustrated by the following quotes:

> I am reading slowly to let it sink in.
>
> I am trying to read the chapter more slowly instead of just trying to get through it because I only got a 7 on the quiz. I am going to try to pay more attention to the details that I would usually skip through.
>
> I think taking notes helps me to actually read the material instead of just skimming through it so I am forcing myself to jot things down.
>
> Reading the allowance process over a few times and seeing how the journal entries were made, the confusion was cleared up for me.

Although students admitted they knew they should use a sinking strategy for all chapters, they often used a skimming strategy where, as one student described, information went ''in one eye and out the other.''

> I was really tired of reading by the time I got to this point so I found it hard to concentrate and really rushed through the material. I would have got more out of this section if I would have read it another time; however, I read it then because I wanted to get it over with.

Some students acted as if learning would miraculously occur just because their eyes had scanned all the assigned lines of the textbook. However, most students justified their use of the skimming strategy by assuring themselves that they would return to the textbook at some future date when they would have time to use a sinking strategy:

> I am quickly skimming the page and I will reread it at a later time when I am feeling better. I still don't understand the revenue and expenses but I'll reread parts of the chapter to prepare for the test. I will also complete more of the exercises and problems in hopes of doing better.

Although students were well aware of their time constraints, many who used the skimming strategy were surprised when their planned-for rereading of the textbook never came to pass:

> Finals are quickly approaching and I'm becoming very anxious because I don't have time to go back and review.

> Ha-ha. Life is funny. I put this [reading the textbook] off for studying and now it's the night before and I regret it. Figures though. Murphy's Law. Not enough time.

Reading Differences between Strong and Weak Students

Although the average student did not focus on the learning objectives when reading the chapter, this guidance was important to the ''strong'' students (i.e., those who ranked in the top two quartiles of the class based on overall course grade). Of those who read the learning objectives, 39 percent were in the first quartile and 27 percent were in the second quartile. In contrast, most students who skipped the learning objectives were in the fourth and third quartiles (33 percent and 30 percent, respectively). A Chi-square analysis reveals that this association between class ranking and use of learning objectives was statistically significant ($\chi^2 = 103.1$; $p < 0.001$).

An association between student ranking and use of sinking versus skimming strategies did not emerge in our qualitative analyses; all students mentioned that they used both strategies depending on the situation. In addition, our qualitative analyses suggested that top-ranking and bottom-ranking students were just as likely to describe themselves as ''confused'' and ''having a good grasp of the material,'' ''anxious'' and ''confident,'' and ''overwhelmed'' and ''comfortable.'' The key difference between strong and weak students was that when strong students were confused and anxious, they immediately tried to enhance their understanding through rereading, elaborating, and seeking outside help if necessary:

> It took me a little while to get each method (LIFO, FIFO, and Weighted Average) straight in my head. I was thinking about other analogies for the LIFO method and it helped to think of people getting in an elevator or bus where the last person on is usually the first person off.

> I did take things a bit slower and, rather than just reading through, I worked out in my mind the logic behind why we would add or subtract each item. This helped me to develop a better understanding of the SCF. So while it did take longer, I'm feeling pretty good that I did some good studying there.

In contrast, weak students tried to reduce their anxiety by refusing to read further or by attempting rote memorization:

> I skipped this section because it was short and the more I read the more I realize I don't get this and the more frustrated I get.

> I hope that memorizing how to adjust for current assets and liabilities will be enough. It is hard for me to understand why we change the asset signs but leave the liabilities.

When strong students mentioned that they would have to reread sections of the textbook, they indicated that rereading would occur in the near term, such as ''immediately,''

''tomorrow,'' or ''this weekend.'' In contrast, weak students framed their rereading as occurring at a vague, undefined future time:

> This section was not particularly helpful right now because I didn't really understand the information in the [previous] section. Therefore, I didn't complete the demonstration case but will attempt it at a later time.

> I didn't get a great understanding of the material but I've already told myself I have to read the chapter again before the midterm and do some more questions.

Not surprisingly, weak students craved simplicity and resented the ''tangled web of accounting concepts'' as the course progressed:

> I also think that having all these different ways of deciding how much an asset depreciates is confusing, not only for me, but also for people who actually do the investing, and I wish there was only one way. That would make this whole thing much easier. I would only have to know one equation, rather than three.

> I am trying to understand this and simplify it as much as possible for the final. I think I am also going to get a tutor because they are usually very good at breaking things down and simplifying things.

> I wish that it could be like the beginning of term again when I felt comfortable and knew what I was doing for certain.

Timing Strategies

Students spent an average of 100 minutes reading each chapter (interquartile range of 60 to 120 minutes). Most students (85 percent) skipped the embedded self-study quizzes and many (68 percent) also skipped the end-of-chapter demonstration problems when they first encountered them. Later, after the initial chapter reading was completed, the majority of these students did not return to review the self-study quizzes (69 percent) or demonstration problems (39 percent). Our qualitative analyses also revealed that students appeared to hold implicit theories about how they should time the reading of the textbook chapters along two dimensions: (1) reading before class or after, and (2) reading a chapter in a single sitting or over multiple sessions.

Before or After

In total, students read 17 percent of the textbook chapters before the content was first discussed in class, 28 percent concurrent with days when the content was discussed, and 55 percent after attending all lectures on the chapter. Students identified several benefits to reading the chapter before the lecture, including not feeling ''lost'' during the lecture and finding the chapter more interesting.

> It seems that if I read the chapters over before I get to class, I am able to follow better in class. Then, after the week is over, I can go and review quickly and do the assigned problems without too much trouble.

Students who read the chapters after the lecture indicated that this made the textbook quicker to read and easier to understand:

> I tend to read the chapters after we have gone through the information in class and find that it clears up any questions I might have had that you did not touch on.

The percentage of students choosing to read the textbook before or after the related lecture changed over time. As shown in Table 2, reading *before* the lecture was most likely

TABLE 2
Number (Percentage) of Students Reading Each Chapter Before, After, or Concurrent with Lectures

Chapter	Before	After	Concurrent	Total
1	**50 (35%)**	*29 (20%)*	65 (45%)	144 (100%)
2	**35 (24%)**	*58 (40%)*	51 (36%)	144 (100%)
3	20 (14%)	89 (60%)	39 (26%)	148 (100%)
4	27 (19%)	*55 (38%)*	**63 (43%)**	145 (100%)
5	33 (23%)	**101 (70%)**	*10 (7%)*	144 (100%)
6	*4 (3%)*	72 (58%)	**48 (39%)**	124 (100%)
7	*9 (6%)*	79 (57%)	51 (37%)	139 (100%)
8	*11 (8%)*	90 (64%)	39 (28%)	140 (100%)
9	*9 (6%)*	80 (59%)	47 (35%)	136 (100%)
10	18 (12%)	60 (44%)	**60 (44%)**	138 (100%)
11	*10 (8%)*	**121 (91%)**	*2 (1%)*	133 (100%)
12	*13 (9%)*	94 (66%)	35 (25%)	142 (100%)
13	**58 (50%)**	55 (48%)	*2 (2%)*	115 (100%)
Total	297 (17%)	983 (55%)	512 (29%)	1792 (100%)

A Chi-square test indicates that the proportion of various timing strategies (before, after, concurrent) was significantly associated with chapter coverage ($\chi^2 = 396.0$; df = 24; $p < 0.001$). Analyses of the standardized residuals from each cell (Hays 1988, 779) indicate that certain proportions were significantly different ($p < 0.05$) from the values that would be expected from overall total proportions. Significantly larger (smaller) proportions are indicated as bold (italic).

to occur with the first two chapters of the textbook. As students progressed to later chapters, the overall tendency was for fewer students to read before the lecture and instead read after or concurrent with material coverage in class. Despite this general shift toward reading later, we observed that individual students experimented with different before-or-after timing strategies from chapter to chapter.

> My reading of this chapter was different from the others. This time I read it after the lectures instead of before. I found this way less effective. I caught myself basically just skimming through things because I was already aware of them and felt I already knew the concepts. I guess it is that I will always listen in class because I want to know what you think is important because you make the tests and mark them. But when I already know what you think, I feel like I don't need to read the text well.

To assess whether a before or after reading strategy might be associated with course performance, participants were classified into four quartiles based on their final grade. Results of a Chi-square analysis, shown in Table 3, indicate that the before-or-after reading strategy was significantly associated with course performance ($\chi^2 = 42.0$; $p < 0.001$). Students in the top quartile were more likely to read the textbook chapters prior to attending the related lecture than students in the second, third, and fourth quartiles. Likewise, students in the lowest quartile were more likely to wait until they attended the lecture before they began reading the textbook chapters.

Single or Multiple Sessions

The second timing strategy involved reading a whole chapter in one sitting (54 percent of all reading) or reading the chapter over two or more discrete time periods. Students

TABLE 3
Number (Percentage) of Chapters Read Before, After, or Concurrent with Lectures by Course Performance Quartile

Quartile	Before	After	Concurrent	Total
1	**123 (24%)**	*242 (47%)*	148 (29%)	513 (100%)
2	80 (17%)	258 (54%)	138 (29%)	476 (100%)
3	59 (14%)	245 (59%)	113 (27%)	417 (100%)
4	*35 (9%)*	**238 (63%)**	107 (28%)	380 (100%)
Total	297 (17%)	983 (55%)	506 (28%)	1786 (100%)

Students were separated into quartiles based on final course grade (with the highest-scoring students in the first quartile and the lowest-performing students in the fourth quartile). A Chi-square test indicates that the proportion of various timing strategies (before, after, concurrent) was significantly associated with course performance quartile ($\chi^2 = 42.0$; df = 6; $p < 0.001$). Analyses of the standardized residuals from each cell (Hays 1988, 779) indicate that certain proportions were significantly different ($p < 0.05$) from the values that would be expected based on overall total proportions. Significantly larger (smaller) proportions are indicated as bold (italic).

stated that reading the whole chapter at once allowed them to ''stay focused'' and integrate the information in the chapter. Students who preferred to read the textbook in pieces felt this strategy allowed them to avoid skimming because of boredom or fatigue:

> I'm planning not to read the whole chapter all at once which makes me feel better about it because I don't feel so much pressure to read quick and finish.

The proportion of students who read the chapters in one sitting increased over time from Chapter 1 (38 percent) to Chapter 13 (72 percent), as presented in Table 4. Students experimented with this reading strategy as well:

> Breaking up the reading in this chapter was definitely the key for me, since for once I had something left to actually focus in on this section, instead of just skimming over it to get to the questions.

To determine whether a single or multiple session reading strategy was associated with course performance, a Chi-square analysis was conducted. As shown in Table 5, the results of this analysis indicate that these two variables are associated ($\chi^2 = 33.3$; $p < 0.001$). Nearly two-thirds of the chapters read by students in the top quartile were completed during a single reading session, whereas only one-half of the chapters read by students in the lowest quartile were completed in a single reading session. These results should be viewed with caution however because the second quartile, which one might expect to exhibit behavior similar to the top quartile, was actually the least likely group to read chapters in a single setting. Despite subsequent qualitative analyses, we were unable to resolve this puzzling discrepancy.

Reading before Exams

Students read the chapters that immediately preceded the midterm and final exams differently from the other chapters. Several students appeared to use a type of focused skimming strategy, called ''study mode'' by one student, which entailed reading the parts of the chapter that students guessed would be important on the exam and ignoring the rest.[4]

[4] As in the regular skimming strategy, students felt they would return to these ignored paragraphs at a later time.

TABLE 4
Number (Percentage) of Students Reading Each Chapter In Single or Multiple Sessions

	Read in One Sitting?		
Chapter	**Yes**	**No**	**Total**
1	*67 (38%)*	**110 (62%)**	177 (100%)
2	*69 (39%)*	**107 (61%)**	176 (100%)
3	78 (44%)	99 (56%)	177 (100%)
4	90 (55%)	75 (45%)	165 (100%)
5	73 (46%)	87 (54%)	160 (100%)
6	80 (54%)	68 (46%)	148 (100%)
7	87 (56%)	67 (44%)	154 (100%)
8	95 (64%)	53 (36%)	148 (100%)
9	91 (61%)	58 (39%)	149 (100%)
10	84 (54%)	71 (46%)	155 (100%)
11	**98 (69%)**	*44 (31%)*	142 (100%)
12	100 (66%)	52 (34%)	152 (100%)
13	**93 (72%)**	*37 (28%)*	130 (100%)
Total	1105 (54%)	928 (46%)	2033 (100%)

A Chi-square test indicates that the proportion of reading sessions (single, multiple) was significantly associated with chapter coverage ($\chi^2 = 92.7$; df = 12; $p < 0.001$). Analyses of the standardized residuals from each cell (Hays 1988, 779) indicate that certain proportions were significantly different ($p < 0.05$) from the values that would be expected based on overall total proportions. Significantly larger (smaller) proportions are indicated as bold (italic).

TABLE 5
Number (Percentage) of Chapters Read In Single or Multiple Sessions by Course Performance Quartile

	Read in One Sitting?		
Quartile	**Yes**	**No**	**Total**
1	**353 (63%)**	*210 (37%)*	563 (100%)
2	*228 (46%)*	**268 (54%)**	496 (100%)
3	297 (57%)	224 (43%)	521 (100%)
4	225 (51%)	216 (49%)	441 (100%)
Total	1103 (55%)	918 (45%)	2021 (100%)

Students were separated into quartiles based on final course grade (with the highest-scoring students in the first quartile and the lowest-performing students in the fourth quartile). A Chi-square test indicates that the proportion of reading sessions (single, multiple) was significantly associated with course performance quartile ($\chi^2 = 33.3$; df = 3; $p < 0.001$). Analyses of the standardized residuals from each cell (Hays 1988, 779) indicate that certain proportions were significantly different ($p = 0.05$) from the values that would be expected based on overall total proportions. Significantly larger (smaller) proportions are indicated as bold (italic).

In addition, we observed that students were less likely to use elaboration strategies and instead were guided by their exam expectations:

> The part on internal control was long. I don't think I'll actually have to know that information for an exam, so I'm not paying too much attention to memorizing it.

> I find myself not paying as much attention as I used to because I know I'm going to be reviewing all of this very shortly in preparation for the final exam.

After the midterm exam, students returned to their regular reading strategies (i.e., sinking and skimming). However, the focus of their reading was now informed by the format and topics covered by the exam:

> I skimmed pretty quickly over this section. I want to get into the practice questions because that really helped the most when preparing for the exam.

> For some reason, I understand the ratios in accounting. However, I am sure I will make a mistake on the final so I'd better go over them a little more.

Textbook as a Study Aid

In contrast to their regular reading strategies, students appeared to have consciously thought about how they used the textbook in preparation for the midterm and final exams. Although the students had purchased detailed class notes, most turned to the textbook as a key study aid.

> This was the starting point for my studying; without this textbook, I know I would have been lost.

More than 90 percent of students used the textbook when reviewing for the midterm and final exams. The few students who did not use the text preferred instead to use their own notes made while reading the textbook and/or the detailed class notes they had purchased for the course.

Students identified three different ways they used the textbook as a study aid. Almost a third of students (29 percent) reviewed previously highlighted portions of the textbook. These students generally reviewed more than half of the textbook, focused by their prior understanding of the text:

> As I had read the text previously, I had highlighted parts that I thought would be important for the future, so while I was studying for this midterm, I skimmed most of the text and spent most of my time focusing on the parts that I had highlighted. I also paid attention to the hints and definitions that are contained in the margins of the text but I found in order to get a really good idea of what was what then I needed to read more than just what can be found in the margins. If I found that after reading the highlighted text I still didn't completely understand the concept then I read some of the other text that wasn't actually highlighted.

Students who used this method felt that it led to positive outcomes:

> I found the exam fairly easy to study for because I knew I was ahead already by having read the chapters as we did them in class. I didn't have to sit there and pick through all the text to find what I really needed to study.

A second strategy entailed reviewing only the parts of the text that students had trouble comprehending or that they thought would be of particular relevance to the exam. These students (36 percent) generally reviewed less than half of the textbook:

> If there was something I didn't understand in the class notes, I went and read these sections in the textbook.

The third exam review strategy, used by approximately a quarter of students (26 percent), was to read over everything in the textbook without keying in on specific topics. Students sometimes made notes or highlighted the text in these final stages of preparing

for the exam because it helped them focus their attention. Several students admitted this strategy was necessary because they had only skimmed the chapters previously, but some used it consciously:

> I reread these sections and highlighted information this time. (I don't the first time to ensure I go back to the text and do some sort of review.)

However, this strategy caused problems for some students because it took so much time, especially before the final exam:

> All I did was read the text/class notes. I did not have a chance to look at any questions/ problems because I spent too much time reading.

Finally, a few students admitted to using exam-preparation strategies that even they would recognize as inadequate:

> I read the chapters the day before the exam (for the first time).

> My approach to studying for this midterm was to wake up at 4 a.m. and read through the text.

Study Differences between Strong and Weak Students

There was no overall association between course ranking and type of exam-preparation strategy used ($\chi^2 = 2.50$; $p = 0.287$). We did observe that students who scored in the top quartile were the only group to change their strategies between the midterm and final exams ($\chi^2 = 6.71$; $p = 0.035$). As indicated in Table 6, to prepare for the midterm exam, the best students were more likely to review the highlighted portions of their textbook, which comprised more than half of the textbook. In preparation for the final exam, these same students were more likely to use the textbook to review only the topics and concepts that they had trouble comprehending, which comprised less than half of the textbook. It appears that this strategy shift was possible because, as mentioned previously, strong students tended to tackle their confusion throughout the course, as they encountered difficulty. Weak students did not change their study strategies between the midterm and final exams ($\chi^2 = 2.64$; $p = 0.267$) quite possibly because their failure to promptly address problems during the term required that they review more of the textbook when preparing for the final exam.

DISCUSSION AND CONCLUSIONS

This paper provides the first in-depth characterization of the reading behaviors of students learning from an introductory financial accounting textbook. These behaviors stem

TABLE 6
Number (Percentage) of Students Scoring in the Top Quartile of Course Performance Using a Highlighted Topics, All Topics, or Problematic Topics Study Strategy

Exam	Highlighted Topics (50%+ of text)	All Topics	Problematic Topics (< 50% of text)	Total
Midterm	19 (44%)	13 (30%)	11 (26%)	43 (100%)
Final	8 (22%)	9 (25%)	19 (53%)	36 (100%)

A Chi-square test indicates that the proportion of reading strategies when reviewing for exams (read highlighted, all, or problematic topics) was significantly associated with course performance quartile ($\chi^2 = 6.71$; df = 2; $p = 0.035$). Analyses of the standardized residuals from each cell (Hays 1988, 779) indicate that no cells were individually responsible for this significant association.

from choices between sinking and skimming, before or after timing, and single or multiple sessions of reading. The proximity of reading time to exam time affects reading behavior and it appears that students have three general methods of using the textbook as a study aid. The practical and theoretical implications of these findings are discussed in turn.

Implications for Practice

The results of our analyses suggest some practical advice for accounting instructors to initiate good textbook reading habits. First, there is no need to scare students by emphasizing how difficult the material is in an attempt to spur students to put more effort into reading the textbook. Students already fear the textbook and expect topics to be confusing; in our study, students were not motivated by their anxiety to adopt better reading strategies. This finding suggests an alternative approach for engaging students in good reading habits: instructors should play to students' optimism and good intentions regarding the textbook, especially in the first days of the course.

Early on, instructors can explicitly mention the sinking versus skimming reading strategies and remind students that they may not have time to return to the text if they adopt a skimming approach. This type of reading instruction matches students' existing beliefs about textbook reading, making it more likely that they will accept this advice (Phillips 2001) and turn their good intentions into action. In addition, instructors can schedule quizzes or assignments early in the term to demonstrate time constraints and bolster the importance of ''sinking'' reading strategies.

Throughout the term, instructors who wish to discourage skimming or a memorization-focused approach could reiterate the benefits of a sinking strategy at the crucial times before particularly complex material or just before exams when students may unintentionally slip into less effective reading habits. This type of instruction can reawaken students' good intentions:

> I have to admit that had you not really emphasized the importance of reading [the chapter] this week, there is a good possibility that I wouldn't have read it.

Finally, instructors can emphasize the importance of resolving confusion immediately by rereading the textbook or asking for help. This is one of the key characteristics that distinguished strong students from weak students and may allow weak students to handle the increasing complexity of the introductory financial accounting course with aplomb.

One unexpected piece of practical advice that emerges from this study is that learning journals themselves are a means to ensure timely reading.

> By handing in learning journals once a week, I am forced to read the chapter which helps me keep up. My first year of university was a flop because I lacked the motivation to do unassigned work.

> Even though they were sometimes annoying, I have found these learning journals have helped me to focus on the major topics/sections and have forced me to read the text, something I don't normally do often.

Much like a ''one-minute paper'' (Almer et al. 1998), learning journals offer the instructor a window into student understanding of course topics and let the instructor respond immediately to questions and clarify areas of confusion (Hoff and Stout 1989). This quick response may enhance the learning of weak students who are more likely to leave problems until the very end of the course. Unlike minute papers, however, reading and responding to learning journals is tremendously time-consuming. Plus, use of learning journals cannot

ensure students will adopt a sinking reading strategy; some students use a skimming strategy to get the chapter reading ''done'' before the learning journal is due.

In summary, our findings reinforce the need for instructors to actively advise students how to read the textbook—not only to avoid putting off reading the chapters, but also to identify and resolve the issues that seem most confusing. Without this thoughtful approach, students are likely to run out of time to adequately prepare for exams. Ideally, what our findings advocate is that students should learn to frame their initial textbook reading itself as ''studying'' and abandon the notion that studying only occurs during a formal preparation period immediately preceding an exam.

The Appendix to this paper summarizes advice for students in a format that can be easily distributed by instructors. We have restricted this summary to only the findings from this study; instructors may wish to expand it with other reading advice.[5] We provided a draft version of the Appendix to all students who participated in this study and solicited their feedback about the clarity and helpfulness of the four points of advice. Responses indicated that students generally agreed that the advice reflected their lived experience.

> I think every statement makes sense to me.
>
> All four are very true.

However, some of the students felt that the wording of the second point in our initial draft overemphasized the difficulty of the material, which could lead to an unproductive level of anxiety. Consequently, we reworded the second point to better capture the essence of the observation. Beyond accurately reflecting their reading experiences, the students agreed that the advice arising from the study would be helpful to future accounting students.

> I think all the statements would be useful to students who are taking the class.
>
> It has taken me 5 years of university to figure out these tips and I believe those are the most helpful. Since I've started reading my textbooks according to statements such as yours above my grades have increased drastically and I have felt more confident in my academics. I have also experienced less stress related to school ... I know I would have appreciated tips such as yours when I first entered university.

Implications for Theory

As with all grounded theory research, there is an expectation that this study culminate with a theory about the phenomenon studied. In this section, we present a summary of our observations and some speculative explanations about the behavior we observed. We remind readers that our conjectures about motivational antecedents and consequential behaviors are based on the understanding that emerged from our data analyses, but will require further empirical testing to determine how and why they might be causally related.

We discovered that students' engagement with their textbook begins before they open its cover because they enter the reading experience with great anticipation, ranging from feelings of confidence and interest to those of anxiety and apprehension. Upon opening the textbook, few students are guided by clearly articulated reading strategies, but instead are

[5] One reviewer suggested that it would be helpful to also remind students of the following: A textbook is not a novel; do not start reading without knowing where you are going. First, read the chapter learning objectives to understand the core purpose of the chapter. Second, read the major and minor headings on each page of the chapter. Make notes of these headings to use as an outline. Third, as you are reading the headings on each page, pay attention to and make notes about information boxes or tables presented with the text. Fourth, read the end-of-chapter summaries, which will reinforce the major topics of the chapter.

inclined to experiment with alternative reading approaches. For some, these alternative approaches are consciously and proactively chosen, but for most, reading behavior is reactive and dictated by the particular circumstances in which students find themselves. This lack of conscious strategy leads students to read in settings where their concentration is hampered, to read without explicit goals, and to skip pedagogical features that are intended to support learning. Students sometimes read chapters in their entirety in a single sitting, but these same students also read chapters in bits and pieces. The reading sessions sometimes occur before class discussion and, at other times, concurrent with or after related topics are covered in class. Exams significantly influence reading behavior by disrupting reading habits immediately prior to an exam (e.g., students may decide to defer material that might otherwise have been read on a timely basis) and restricting reading after an exam (e.g., students increasingly focus on material that they believe is most likely to be examined). When students prepare for exams, the textbook is the primary source of guidance, even for those students who do not appear to have previously paid much attention to it.

Speculating about the general themes that pervade this study, we propose that students' textbook reading should be viewed as a motivated behavior, with the specific motives varying across different groups of students and leading to different consequential actions. Academically strong students appear to read with the primary goal of developing an understanding of the assigned material. Given this goal, they willingly engage in reading before the related material is covered in class because it allows them to read with greater attention and focus. These students persist when material becomes difficult and they establish defined action plans that promptly resolve confusion. They appear to recognize that the future is unlikely to be any less demanding than the present, in the same way that the adage suggests: ''There's no time like the present.'' In contrast, academically weak students appear to read with the primary goal of reducing anxiety. For some, this means sacrificing understanding to ''get through'' the material on a timely basis, as if they fulfill their assigned reading responsibilities by merely turning pages. Others appear to reduce anxiety by putting off reading until the material is first covered in class, by halting reading when difficult material is encountered, or by omitting it altogether. For these students, the future seems to offer greater opportunity for learning than the present. Of course, when the future turns into the present, these students often are unpleasantly surprised to discover that their hopes for clarity and easy learning remain unrealized.

In addition to identifying these general themes that comprise a theory of student textbook reading, this study also uncovers specific questions for future research. Although students experimented with their reading strategies over the duration of the course, we, as accounting scholars, have little advice to give them regarding which strategies are most effective. For example, it is not yet clear whether we should advise all students to read the textbook before attending a lecture on the topic. Although strong students were more likely to read the textbook before the lecture than weak students, it is not clear that this strategy actually was the cause of their superior performance. It may be that strong students were more likely to read the textbook before class because they were more capable of doing so or they may have adopted this approach for other, unrelated reasons (e.g., to ensure adequate time for completing learning tasks).

Theoretical models of reading (Barsalou 1999; Gernsbacher 1997; Zwaan and Radvansky 1998) and experimental accounting education research (Phillips and Vaidyanathan 2004) provide clues to how a before-or-after timing strategy might impact learning. This research suggests that students create mental models of material as they are

learning it and rely on these mental models to interpret and make sense of subsequently encountered material. Of significance to the ''before-or-after'' timing question is the proposition that mental models formed from class lectures can be impoverished relative to those created when material is learned from textbooks (or case materials) and, therefore, can constrain what students think about when they encounter new material in textbooks (or cases). For strong students, this constrained thinking can be detrimental; however, it remains unclear whether this constrained thinking might be beneficial when other students are first learning about a new topic. It is possible that a lecture and the resulting constrained thinking may provide a needed framework on which weaker students can rely when reading. If true, then this would imply that different types of students are best served by different timing strategies. Strong students may have the ability to read before class to increase interest and use the lecture as a check of understanding; weak students may need a careful explanation of the topic in class first before tackling a chapter on their own. Future research that examines these potential reasons for the associations observed in this study would enable instructors to advise individual students on appropriate reading strategies.

Other findings that require further investigation include the association that was observed between strong academic performance and reading each chapter in a single sitting. One might speculate that reading a complete chapter in a single sitting allows students to form a more coherent mental model that facilitates subsequent knowledge acquisition and use, but additional analysis is needed to understand why this association between performance and timing strategy did not consistently appear throughout all student groups in this study. Also, our findings suggest that good performance was associated with shifting one's study strategy from reviewing all passages of highlighted text to reviewing only those concepts that are confusing. However, a correlation such as this does not necessarily imply that this strategy causes better learning outcomes. It may be that another, unspecified variable is responsible for producing the observed association. In the future, researchers should empirically examine how textbook reading strategies causally affect knowledge acquisition and use, and whether the optimal strategies differ between strong and weak students. Are strong students better learners *because* they adopt certain reading strategies or are they better learners for other reasons that happen to cause them to adopt certain reading strategies?

As with most research, our study is subject to limitations, which also provide directions for future research. The detailed and time-consuming data analysis conducted in this study limited our sample to one group of students in one accounting class using one textbook. Future research is needed to examine the reading behaviors of a broader sample of students who engage with textbooks at varying difficulty levels (e.g., introductory, intermediate, advanced). Other limitations create opportunities for future qualitative research. Because the nature of the instructions given in our learning journals was purposefully nondirective, several factors did not naturally emerge from the data to yield conclusions that one might have expected. For example, individual factors such as work experience, an inherent interest in accounting, or high school accounting training did not materialize as important determinants of reading behavior. Similarly, certain process-related factors did not emerge; as the course progressed, students did not appear to shift their reading behaviors from superficially studying vocabulary and memorizing journal entries to engaging in deeper approaches to learning. It is possible that these factors might be influential in textbook reading, but because participants in our study did not document them, we are unable to confirm or dispel their influence. Future qualitative studies are needed to examine factors such as these, on which we were unable to shed light. We advise that such research include sources of

data other than learning journals because the requirement that students record their thoughts and actions may interfere with typical reading behaviors (Brown and Pressley 1994; Lan 1996; Smith 2001, 674).

A summary of future research questions, which extend and enrich the findings of the current study, is provided in Table 7. Only through further qualitative and quantitative research will we, as instructors, help our students to gain the greatest possible understanding from one of the primary means of delivering course content to students—the textbook. We agree with an assertion made by Clump et al. (2004, 231) that to be effective instructors, we must know more ''about when and why students do and do not use their textbooks.''

TABLE 7
Questions and Hypotheses for Future Research

Antecedents
- Are reading strategies associated with individual factors such as gender, age, work experience, intention to major in accounting, or high school accounting training?
- Are reading strategies associated with environmental factors such as course load, competing demands, family and social commitments, or fatigue?

Process
- To what extent do students enrolled in other business courses and other colleges exhibit textbook reading strategies noted in this study? What factors explain potential differences?
- Do reading strategies evolve over the duration of a course? In what ways?

Outcomes
- Is learning, both in the short-term and long-term, enhanced by reading before or after a lecture? Does this differ between strong and weak students? By what processes do such differences arise?
- Is learning, both in the short-term and long-term, enhanced by reading each chapter in single or multiple sessions? Does this differ between strong and weak students? By what processes do such differences arise?
- How do alternative uses of a textbook during final exam preparations influence subsequent performance? Specifically, do differences exist when students focus on all highlighted (important) points, focus on only the points of prior confusion, or review all assigned material?

APPENDIX
Advice on Using Your Textbook

The following advice is generated from an in-depth study of 172 undergraduate students of varying backgrounds, all of whom were enrolled in an introductory financial accounting course.

- **Read the chapters to learn rather than just to get through them.** Learning doesn't miraculously occur just because your eyes have skimmed all the assigned lines of the textbook. You have to think and focus while reading to ensure that you sink the material into your understanding and memory. Use the learning objectives in the text to focus on what's really important in each chapter.
- **Don't get discouraged if you initially find some material challenging to learn.** At various times, both the best and weakest students describe themselves as ''confused'' and ''having a good grasp of the material,'' ''anxious'' and ''confident,'' and ''overwhelmed'' and ''comfortable.'' The simple fact is that learning new material can be challenging and initially confusing. Success does not appear to depend as much on *whether* you become confused as it does on *what you do* when you become confused.

- **Clear up confusion as it arises.** A key difference between the most and least successful students is how they respond to difficulty and confusion. When successful students are confused or anxious, they immediately try to enhance their understanding through re-reading, self-testing, and seeking outside help if necessary. In contrast, unsuccessful students try to reduce anxiety by delaying further reading or by resorting to memorizing without understanding. Aim to clear up confusion when it arises because accounting, in particular, is a subject for which your understanding of later material depends on your understanding of earlier material.
- **Think of reading as the initial stage of studying.** Abandon the idea that ''studying'' only occurs during the final hours before an exam. By initially reading with the same intensity that occurs when later reviewing for an exam, you can create extra time for practicing exercises and problems. This combination of concentrated reading and extensive practice is likely to contribute to better learning and superior exam scores.

To learn more about the study on which this advice is based, see ''Sink or Skim: Textbook Reading Behaviors of Introductory Accounting Students'' (Phillips and Phillips 2007, *Issues in Accounting Education* 22 (February: 21–44)).

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