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TEXT RELEVANCE AND LEARNING FROM ONE'S UNDERGRADUATE MATHEMATICS TEXTBOOK

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Text Relevance and Learning from One's Undergraduate Mathematics Textbook[1]

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We consider the role of text relevance in formulating an explanation for why undergraduate students do not read large parts of their beginning mathematics textbooks. In a previous paper (Authors, 2012), we asked why it is that good readers, who were also good at mathematics, did not read large parts of their beginning mathematics textbooks ***effectively****, that is, why they could not work straightforward tasks based directly on that reading. Here, we reanalyze that data in terms of text relevance to consider the role that students' personal implicit or explicit goals may play.*

Reading has been conceptualized "as a goal-directed activity in which the reader uses text to accomplish some task" and "that successful reading comprehension is contingent upon a reader's ability to identify *text relevance*," where text relevance refers to "the instrumental value of text information for enabling a reader to meet a reading goal." (McCrudden, Magliano, & Schraw, 2011, p. 2).

In this exploratory, mainly qualitative, study we examined the mathematics textbook reading of six precalculus and five calculus students from the perspectives of their difficulties in working tasks in the passages read, the writing style of beginning U.S. mathematics textbooks, and the reading comprehension and text relevance literatures. We also attended to whether these students could reasonably be seen as good at, or promising in, both mathematics and general reading comprehension.

In the first section, we briefly describe the reading comprehension literature; discuss how beginning mathematics textbooks differ from other textbooks, and note the limited amount of research that has been done on how students read their mathematics textbooks. In the next section, we indicate what we mean by effective reading and describe the goals of this study. After that, in the following section, we describe the students and our data collection methods. Next there is a section in which we describe the students' difficulties in working straightforward tasks from their mathematics textbooks. Finally, we discuss our findings in terms of text relevance and individual goals. Along the way, we propose some directions for future research.

RESEARCH QUESTION

A consideration of text relevance and individual goals rather naturally brings up the question, "What are the reading goals of typical undergraduate students when reading their beginning mathematics textbooks?"

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In a previous paper (Shepherd, Selden, & Selden, 2012), we asked why it was that good readers, who were also good mathematics students, did not read large parts of their mathematics textbooks effectively, that is, why they could not work straightforward tasks based on that reading. We conjectured that one possible explanation was that the students in our study had experienced *cognitive gaps*, that is, periods of lapsed or diminished focus, during their reading, and hence, may have missed some important points. What we could not explain was why, unlike mathematicians, the students did not go back and reread portions of their textbooks upon discovering that they had worked an exercise incorrectly. Instead they said things like, "At this point, if I was really reading this [as opposed to reading at the interviewer's request], I would be frustrated and quit and then I would go ask somebody."

In this paper, we re-examine our data in terms of text relevance, that is, in terms of the students' possible goals for their reading. In particular, we ask: What does the concept of text relevance have to offer in terms of explanatory power when investigating why university students do not read their beginning mathematics textbooks effectively?

BACKGROUND AND LITERATURE REVIEW

We review here, and later call on, work from several distinct areas: reading comprehension research, the writing style of mathematics textbooks, and the limited research on reading mathematics textbooks.

Reading Comprehension Research

During the past fifty years, reading researchers have come to view reading as an active process of meaning-making in which readers use their knowledge of language and the world to construct and negotiate interpretations of texts in light of the particular situations within which they are read (e.g., Borasi, Seigel, Fonzi, & Smith, 1998; Brown, Pressley, Kintsch, 1998; Palincsar & Brown; 1984; Pressley & Afflerbach, 1995). They have expanded the notion of reading from that of simply moving one's eyes across a page of written symbols and translating these symbols into verbalized words into the idea of reading as a mode of thinking and learning (Draper, 2002). From this perspective, the reader integrates new information with his or her preexisting knowledge structures to create meaning (Flood & Lapp, 1990; Rosenblatt, 1994), for example, through assimilation and accommodation (Pressley & Afflerbach, 1995, p. 103).

Reading and literacy researchers agree that reading includes both decoding and comprehension. Research on reading comprehension, often based on think aloud protocols, indicates that there are many responses and strategies that good readers employ before, during, and after they read. These responses and strategies seem to vary from reader to reader and to depend on the material being read and the goals of the reader (e.g., Borasi et al., 1998; Brown et al., 1996; Flood & Lapp, 1990; Palincsar & Brown; 1984; Pressley & Afflerbach, 1995). However, none of these studies involved the reading of mathematical text. What makes mathematical text different?

The Writing Style of Mathematics Textbooks

Mathematicians appear to prize brevity, conciseness, and precision of meaning in mathematical writing. Further, there is often little room for an interpretation of a mathematical passage that is different from the one intended by the author.

Special features of the style of mathematical writing that can sometimes lead to student difficulties include: (a) the need to read from right to left, top to bottom, bottom to top, or diagonally; (b) that there are more concepts per sentence, per word, and per paragraph than in other writing; (c) that the concepts are often abstract and difficult to visualize; (d) that the writing is terse and compact; (e) that words have precise meanings which students often do not fully understand; (f) that formal logic connects sentences so the ability to understand implications and make inferences is essential; (g) that, in addition to words, mathematics textbooks contain numeric and non-numeric symbols; (h) that the layout can make it easy to find and read worked examples while skipping explanatory passages; and (i) that sentences are often complex, and hence, difficult to parse (Barton & Heidema, 2002; Shuard & Rothery, 1988).

Most first-year university mathematics textbooks currently published in the U.S. contain exposition, definitions, theorems and less formal mathematical assertions, as well as graphs, figures, tables, examples (i.e., tasks, some with solutions), and end-of-section exercises. Typically there is a repeated pattern consisting of first presenting a bit of conceptual knowledge, such as a definition or theorem and perhaps some less formal mathematical assertions, followed by closely related procedural knowledge in the form of a few worked examples (tasks), and finally, as a self test, students are invited to work very similar tasks themselves. In all of these respects, the textbook passages (Barnett, Ziegler, & Byleen, 2000; Larson, Hostetler, & Edwards, 2002) read by the students in this study appeared to us to be typical.

Previous Research on Reading Mathematics Textbooks

Only a little research seems to have been done on how students read their mathematics textbooks. Osterholm (2008) surveyed 199 articles having to do with the reading of word problems, but found little about reading comprehension of more general mathematical text. He conducted several studies on secondary and university students' reading of mathematical text (Osterholm, 2005, 2008) using passages written especially for that research. In contrast, the students described here read passages from their own textbooks.

However, there *has* been an interest in, and some research on, how students read science textbooks in order to learn science. In 2010, the journal *Science* had a special section devoted to research on, and to the challenges of, reading the academic language of science. It was noted that, while students have mastered the reading of various kinds of English texts (mostly narratives), this does not suffice for science texts that are precise and concise, avoid redundancy, use sophisticated words and complex grammatical constructions, and have a high density of information-bearing words (Snow, 2010, p. 450). These are some of the same features of mathematics textbook writing noted above.

Finally, Weinberg and Weisner (2010) have introduced a framework for examining students' reading of their mathematics textbooks. A major part of their perspective is an emphasis on the richness of personal meanings that readers construct, as opposed to the proximity of those meanings to the author's meaning or the meaning in the text (as interpreted by the mathematical community). However, in this paper we take a different perspective and consider why it is that students often do not construct meanings close to those of the author and mathematical community.

THE CONDUCT OF THE STUDY

Six volunteer precalculus and five volunteer calculus students, who attended a U.S. mid-western comprehensive state university, were interviewed. According to their ACT reading comprehension and mathematics scores,[4] as well as according to their mathematics instructor, they were good at both reading and mathematics.

The interviewees each selected a 90-minute time slot during which they were asked to read aloud a new section of their respective textbooks, one selected by their instructor. These passages were selected because the students would be familiar with the notations and prior definitions used and because the students were judged to have the necessary prerequisites for reading them. The precalculus students read an introduction to trigonometry called "The Wrapping Function" from Barnett, Ziegler, and Byleen (2000, pp. 336-343). The calculus students read about "Extrema on an Interval" in Larson, Hostetler, and Edwards (2002, pp. 160-164). Along with definitions, theorems, examples, figures, and discussions, the precalculus book had "Explore/Discuss" and the calculus book had "Exploration" tasks to encourage students to become active as they read.

At the beginning of their respective courses, both the precalculus and calculus students had been provided handouts about reading mathematics, as well as reading guides for use with the first several sections of their mathematics textbooks. An example of a reading guide and additional information about the teaching practices of this instructor appeared in Shepherd (2005). In addition, the interviewees were familiar with the interview setting because all students in these classes had previously participated in a diagnostic interview as part of the instructor's normal teaching practice.

The interviewees were stopped at intervals during their reading and asked to try a task based on what they had just read, or asked to try to work a textbook example (task) without first looking at the provided solution. These were the places that the textbook authors would probably have assumed that students would independently pause for such activities. The tasks were straightforward ones based directly on the reading and required very little in the way of problem-solving skills. They were what might be called "routine exercises." For instance, in its introduction to trigonometry, after the precalculus textbook had defined the Wrapping Function, *W*, and had explained the calculation of the exact values for $W(0), W(\pi/2), W(\pi)$, and $W(3\pi/2)$, the routine exercise given was: *Find the coordinates of the circular point* $W(-\pi/2)$.

After the entire section had been read and a few final tasks were attempted, the students were questioned about how reading during the interview differed from their normal reading of their mathematics textbooks (see Appendix). All interviews were audio-recorded and transcribed. The interviewer also made notes during the interviews. The written work produced by the students during the interview was also collected. For further details, see Shepherd, Selden, and Selden (2012).

Reading Effectiveness

All of the students in our study had considerable difficulty correctly completing some of the straightforward tasks based on their reading. The percent of tasks done correctly by individual students ranged from 13% to 76%. All read the expository parts of the textbook since that was part of the interview, but upon questioning at the end, some students viewed exposition as of minor importance -- something often to be skipped or skimmed. The students stated that they normally wanted to concentrate on exercises (tasks) and find similar worked examples in the text.

4Most students in the U.S. are required to have at least minimum scores (set by each university) on a national reading comprehension and a national mathematics test, either the ACT or the SAT, as well as other qualifying materials, in order to be admitted to the university. At the university where this study took place, the ACT tests (routinely provided by American College Testing, Inc.) were required.

TABLE 1

Number of Tasks Attempted and Students' Actions in Response

Student	**sks attempted**	**# Correct (% correct)**	**# Incorrect**	**done (skipped or gave up)**	**Incomplete**	**d/ not worked**	**ed while reading solution**	**rrect" w/wrong reasons**
Precalculus								
Alicia *	19	9 (47%)	5	5				
Bryan	18	9 (50%)	4	2	1	2		
Christie	21	3 (14%)	7	7	1	2		1
Darcy	8	1 (13%)	2	2	1	2		
Ellis	17	13 (76%)	2	1	1			
Faye	20	6 (30%)	6	7		1		
Calculus								
Tara	22	8 (36%)	2	2	4	5		1
Vannie	22	12.5 (57%)	2.5	1		2	4	
Winnie	22	10.5 (48%)	1.5	3	1		6	
Yates	22	8 (36%)	4	2	2	1	5	
Zoe	23	8.5 (38%)	6.5	1	1	1	5	

*All students' names are pseudonyms.

It is perhaps one of the main goals of beginning undergraduate mathematics textbooks in the U.S. that readers should understand the content well enough to be able to work the provided tasks, or similar tasks, shortly after being shown how to do so. It is important that this can be done reliably before readers go on to later passages. However, all of the students in our study had considerable difficulty correctly completing straightforward tasks based on their reading. For example, five of the six students who read the precalculus passage did not find correct values of the Wrapping Function, *W*, in two or more instances. Also, four of the five students who read the calculus passage containing the definition of extrema of a function on an interval could not determine from its graph whether it had a minimum. Only three of our eleven students (Bryan, Ellis, and Vannie) could independently work at least half of the tasks, and only one of these, Ellis, could independently work three-fourths of them. Thus, by our task-working criterion none of our students read effectively. The number of tasks each student attempted, worked correctly, worked incorrectly, gave up or skipped over (after starting), left incomplete, read but did not work, worked while reading the book's solution, and worked "correctly" giving a wrong reason, is given in Table 1.

KINDS OF DIFFICULTIES STUDENTS ENCOUNTERED IN WORKING TASKS

The students' difficulties working tasks all seemed to arise from, or depend largely on, at least one of three main kinds of difficulty: (a) insufficient sensitivity to, or inappropriate response to, their own confusion or error; (b) inadequate or incorrect prior knowledge, and (c) insufficient attention to the detailed content of the textbook. The difficulties working tasks and their origins occurred throughout the passages read and were associated with exposition, definitions, theorems, worked examples, and explorations. Furthermore, most students exhibited all three of these difficulties usually several times.

Insensitivity to, or inappropriate response to, confusion or error

Mathematics (as it is presented in universities) "builds on itself," as opposed to being built on descriptive information from the external world. Upon noticing a confusion or error, a reader should respond by reworking tasks or rereading parts of the textbook until the difficulty is removed. However, most of our students appeared to be strikingly unconcerned about their confusion or errors and did not seem to believe they could have independently done anything about them. Ten of the students stated at some point that they did not understand something, but made no attempt to understand whatever was causing confusion. Five students, three precalculus and two calculus, gave up at some point.

Inadequate or Incorrect Prior Knowledge

For the calculus students, one difficulty appeared to come from an inadequate concept image of the word "function." For example, after correctly reading the definition of extrema, Vannie was asked to look at the graphs of eight functions and to determine whether they had minimum values. As she looked at the graph of a function with a jump discontinuity, she went back to the definition and tried to compare it with the graph. She said,

> "You're on the interval I as they designate. You're supposed to look at […] Is it c or x they use? … For all the x's, $f(c)$ is supposed to be your minimum point. Well, $f(c)$ on this portion is your minimum point, is a real number, but on this one it is not [i.e., there is no minimum] because it [i.e., the interval] is open. So, if you look at it from [...] since it's totally two different things coming in. I don't know if you say, well this one does have a minimum and this one doesn't, or if they go together, then they don't. I don't [...] that part I [...] I'm not clear on."

Vannie came to no resolution, and did not persist in attempting to find the origin of her confusion or in reworking the task.

Insufficient Attention to Details

One frequently observed misreading, that we have called *interpretive* misreading, occurred when a student, who might have enunciated the words and symbols in a passage correctly, soon thereafter used the passage as if it had said something else, or even asserted that it had said something else (Shepherd, Selden, & Selden, 2012). Such errors seemed most likely to have arisen from reduced attention or possibly from forgetting what was very recently read.

For example, Christie correctly read the passage about the Wrapping Function, which includes diagrams, and how to calculate its values for integer multiples of $\pi/2$, then orally answered two worked examples incorrectly (with the work hidden), and finally read their solutions. Next she tried to answer the first matched problem, *Find the coordinates of* $W(-\pi)$. She said, "It's going to be (1,0) because you're going . . . up π every time, every quarter of a circle…. So if we just start at the top [i.e., (0,1)] and then go down [i.e., clockwise] one π, I think we'd be at (1,0)." All of these had been explained earlier in the passage read, but she had not gone back to it to check them. Somewhat later, Christie did discover that the starting point was (1,0) instead of (0,1). However, at the end of the interview, when asked if there was any notation that had bothered her, she said, "And I still don't [...] I mean they still start you at the *y*-axis sometimes [i.e., at the top, (0, 1)] , and they start you at the *u*-axis sometimes [i.e., at (1, 0)], I think. So, I'm not real sure on that aspect of it."

Earlier we pointed out a number of ways that mathematical writing can differ from that of other text. Such differences can in some situations interfere with comprehension or effective reading. However, most of those differences did not occur in the passages our students read, and what differences there were did not cause the students to stumble in reading. For example, they could easily read equations and the notations for functions, intervals, and points. We could not trace any student difficulties to the writing style of their textbooks.

Our observations together with the psychological research on reading (Schooler, Reichle, & Halpern, 2004) suggested to us that readers are very likely to occasionally have unnoticed *cognitive gaps* where their attention has wandered and this could account for at least some of our students' difficulties (Shepherd, Selden, & Selden, 2012). Since then, however, the research on text relevance has come to our attention and may provide an additional explanation for our students' difficulties.

HOW CONCEPTS OF TEXT RELEVANCE MIGHT EXPLAIN WHY OUR STUDENTS READ THEIR TEXTBOOKS INEFFECTIVELY

Text relevance researchers have considered a number of concepts: the role of goals, working memory capacity, and standards of coherence. We will consider these, in turn, to see how they might apply to our data on undergraduate students' reading of their precalculus and calculus textbooks, and how these concepts might apply more generally to undergraduates' normal reading of their beginning mathematics textbooks. Along the way, we will provide some intriguing (researchable) questions.

The Role of Goals

Reading in instructional settings is often task-induced, and readers' goals may affect one's inferential processes while reading. Tasks can impact "how people judge information's relevance to their goals and the strategies that they enact to meet their goals." Readers' goals can also affect their online processing (e.g., their strategy use and their attention allocation) as well as, their offline products (e.g., their learning from, and memory of, the text). (McCrudden, Magliano, & Schraw, 2011, pp. 3-4).

In addition, reading goals are the outcome of a complex interaction between external and personal intentions. "Specific relevance instructions [can] prompt readers to focus on discrete text segments … whereas general relevance instructions [can] prompt readers to read for a general purpose (e.g., to read for study). Personal intentions, on the other hand are internal to the reader and consist of knowledge and beliefs about what constitutes good comprehension." (Kendeou, Bohn-Gettler, & Fulton, 2011, pp. 378-379). Furthermore, because people have limited working memory capacity, they will devote more resources to relevant stimuli and fewer resources to less relevant stimuli. Skilled readers "can achieve *optimal cognitive efficiency* [emphasis ours] by formulating reading goals and developing criteria for determining information's relevance to those goals. For instance, if a reader receives a list of focusing questions before reading a text, [he or] she may allocate more resources toward information that enables [him or] her to answer the questions and fewer resources towards information that does not." (McCrudden, Magliano, & Schraw, 2011, p. 4)

The above ideas rather naturally bring up the following potential research questions: When university mathematics instructors assign end-of-section homework exercises, what unintended message(s) do they send to their students? Do the students (implicitly) assume that the exposition at the beginning of a section, that often provides conceptual underpinnings for working the end-of-section exercises, is unimportant? Do students achieve *optimal cognitive efficiency* by looking for sample worked problems to mimic, rather than by first reading the entire section? We do not have answers to these questions, but some of our students' proffered comments are suggestive:

> Winnie: I learn by example [perhaps meaning that's what's important].
>
> Zoe: Sometimes it's just jibberish, but stuff that they mean to attempt to stand out then I read that, but usually, at the beginning of the chapter I try not to read. I just read the definition because otherwise it's just confusing.
>
> Yates: It takes quite a while to read through [the section] like that, too, maybe an hour, hour and a half [perhaps implying that's not a worthwhile use of his time].

The above comments seem to indicate that our students did not consider it worthwhile to read the entire section, especially the exposition at the beginning. If completing the exercises correctly is the instructor's goal (as perceived by the students) and students want to complete their homework assignments correctly and completely in order to get good grades, then it may seem reasonable to them to skip large sections of the textbook. Taken together, these can be viewed as a combination of external and internal intentions (i.e., goals).

Perhaps somewhat surprisingly, there has been research to suggest that readers' processing is relatively independent of assigned reading purposes. In one study (Kendeou, Bohn-Goettler, & Fulton, 2011, p. 386), 60% of the students who were randomly assigned to read for a study purpose, exhibited shallow comprehension, whereas 65% of the students who were randomly assigned to read for entertainment, exhibited deep comprehension, a finding the authors see as evidence for the (internal) goal-focusing model of reading. This result brings up the question: If individuals' reading goals are relatively independent of assigned reading purposes, how might university mathematics instructors encourage students to read their beginning mathematics textbooks for deep comprehension?

Working Memory Capacity

It has been shown that "a reader's working memory capacity (WMC) affects online processing when they read for different purposes…. Furthermore, working memory resources are important because they also allow the reader to integrate ideas across sentences, a process that involves the maintenance of previously translated [i.e, comprehended] text as attention is focused on new information that must be processed." (Linderholm, Kwon, & Wang, 2011, p. 201). In addition, it has been observed that low WMC readers engage in less effective strategies when reading for study purposes (rather than entertainment purposes), as compared to their high WMC counterparts, and that they also recalled less text information (as judged by multiple choice tests). Moreover, low WMC readers were found to be overconfident in their performance -- they believe "they are engaging in strategies to meet their goals, but fall short." (Linderholm, Kwon, & Wang, 2011, p. 207).

Although we had information on our students' ACT reading comprehension and mathematics scores, we did not have information on their working memory capacities,[5] so it is possible that knowledge of their working memory capacities might have given us some additional insights into their ineffective reading.

However, it is hard to see why our students did not reread relevant passages of their textbooks when they did not get the correct answers to example tasks. For instance, one student indicated she would ask her group for help before continuing, and another indicated she would ask the teacher about the example in the next class period. However, during the interview, they continued to read at the interviewer's request.

Standards of Coherence

Standards of coherence refer to the types and strength of coherence that an individual reader aims to maintain during reading. These can be implicit or explicit and reflect that individual's desired level of understanding for a particular reading situation, and influence "the dynamic pattern of automatic and strategic cognitive processes that take place during reading." (van den Bock, Bohn-Goettler, Kenedou, Carlson, & White, 2011, p.125).

Characteristics of the text include the "specific content of the text, the order in which the content is presented, gaps in the semantic flow, layout, [and] the presence of text signals such as titles and italics." (van den Bock, et al., 2011, p.125). We previously noted (Shepherd, Selden, & Selden, 2012), that the textbook passages read by our students were typical of those found in U.S.
precalculus and calculus textbooks. The *characteristics of the reader* include working memory capacity and inadequate or insufficient prior knowledge (discussed above).

"A reader's standards of coherence when reading a particular text are influenced by situation-specific factors such as goals and task instructions, text properties, and reader characteristics." (van den Bock, et al., 2011, p.130). Readers can adopt standards of coherence that are incomplete, but adequate (in the eyes of the reader). Such considerations prompt us to ask: What standards of coherence did our students adopt when reading for the interviews? Clearly, because they were asked to do so, they read parts of the textbook, such as the exposition, that they would not normally have read (they said so). What else was different? We asked in the final debrief (see Appendix) how their reading for the interview differed from their normal reading of the textbook.

Tara: I don't usually get the reading done before class.

Zoe: Usually I will read in between if it looks like it's important, but if it just looks like it's fluff or explaining it, and I already understood it. … so maybe I wouldn't have read in between …

Darcy: I'll like look through the section …then I'll go and start doing the problems [homework exercises], and I'll come across something I don't understand, and I'll go back to the section … and try to find what they're saying ...

Additional studies are needed to gain more insight into students' standards of coherence when reading their beginning university mathematics textbooks.

[5]One common test for WMC is the reading span task (RST) invented by Daneman and Carpenter (1980). The original RST required participants to read series of unconnected sentences aloud and to remember the final word of each sentence of a series. The number of sentences of a series was incrementally increased until a participant's reading span, or the maximum number of final words correctly recalled, was found.

DISCUSSION

It has been noted by Lithner (2004), in his study of the kinds of reasoning required to work calculus textbook tasks, that "it is possible in about 70% of the exercises to base the solution not only on searching for similar situations, but on searching only the solved examples." This, together with some of our students' proffered comments on reading the textbook exposition, suggests that an optimally efficient reading strategy for beginning university mathematics students, who are primarily interested in completing their end-of-section homework assignments in order to get good grades, is to look for similar worked examples. Furthermore, for this goal, such students may correctly see it as a waste of time to read the entirety of the preceding textbook section before attempting their homework. Perhaps university instructors need to ask more conceptual and integrative questions on assignments and tests in order to encourage students to read the exposition.

The ineffective reading we observed in our students had to do with not being able to consistently correctly work straightforward tasks, immediately after reading how to work them. It could be that our students were simply not accustomed to reading their textbooks in order to find out how to work tasks, but rather depended greatly on their instructor to illustrate such methods during class. Since the instructor of these precalculus and calculus students had provided some instruction in reading their textbooks, one might ask: Was the instruction of the right kind? Was the instruction they received sufficient?

As for why our students, unlike mathematicians, did not go back and reread portions of their textbooks upon discovering that they had worked a task incorrectly, we have a few conjectures. Perhaps this was because they did not believe they could do so. Perhaps they also did not know where to look in the passage or elsewhere in the textbook. Indeed, in the case of one calculus student who had a problem with negative exponents when taking a derivative, there was nowhere in the calculus textbook that would have helped with that incorrect prior knowledge. Finally, sometimes it seemed to the interviewer that the students did not know what was important or where to focus their attention.

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APPENDIX

Debrief Questions

1. Were there any words or terms that bothered you as you read?
2. Were there any symbols or notation that bothered you as you read?
3. Are there any other ways this passage was difficult for you to read and/or understand?
4. What things do you do when you read the textbook?
5. Have you seen the material this passage covered anywhere before? (If so, where?)
6. Did the reading help you do the task? In what way?
7. Is there anything else you would like to say?