Fears that the multimedia electronic age would make reading less important have been totally unfounded. Not only is reading, in the traditional sense of reading printed text still of central importance but reading is even more complicated. We now need to learn to read multiple media, including the kind of dynamic visuals and graphics that Roger Azevedo had up on the screen during his talk. And, we have to relate these multiple textual forms; this highlights the inter-textual aspects of reading to learn. So, in terms of setting the stage, that’s the kind of literacy environment we’re in: Multiple forms of media. Now more than ever before, we’re combining not only traditional skills, like comprehension, but a new one.

There are two parts to my comments. First, I want to give you my theoretical orientation to learning from text, and then I’ll talk about four big ideas on what matters in learning from text. I’m going to use ‘text’ in a very broad sense to refer to both traditional print-based text and new media forms.

Theoretical Orientation
Four principles:
1. Learning from text is a cognitive, social, and situated phenomenon
2. Involves intertextual and multimodal processes
3. Processing results in some sort of an internal representation
4. Discourse and gesture analysis are useful methods of looking at learning from text, at how people are making sense - individually or together

Learning from text is a cognitive, social, and situated phenomenon

Had I given this talk 20 years ago, I would have stopped at cognitive. In terms of being cognitive, social and situated, processing occurs in certain situations that have conditions that create accordances that learners may or may not take advantage of. In Roger Azevedo’s presentation, you saw a variety of different forms of information that learners could have learned from. All of those things create affordances. Whether learners can actually use those affordances to enhance their understanding and knowledge, is what’s at issue here. Information sources also come out of the particular socio-cultural communities that created them. Different disciplinary communities (e.g., communities of scientists, of psychologists), each one establishes norms and genres for their communications among members of the discipline. As students, we’re often trying to learn what goes on, how we do it ourselves, and, how we understand material that’s been prepared for an in-group that we’re not really part of yet. And that requires some very sophisticated strategies that we also may not have yet. We also need to understand the basis of the claims that the people in that community make, so that we can understand and evaluate information that we’ve come across. These are just sort of ‘tips of the iceberg’ that I’m going to drop in here, because in 15 minutes that’s about all I can do.
communities sets up its norms as well for communicating, and there are power relations within that classroom that determine what texts are valued in the classroom, what texts can be brought into the classroom, and what’s a legitimate text. Who can introduce it? Who can bring it in? There are set defined limits on what we can learn from.

Learning from text involves intertextual and multimodal processes

When we look at inter-textuality...by inter-textuality we’re talking about the bringing together of different texts. Sometimes we do this sequentially, sometimes we do this simultaneously. **Sequential** intertextuality looks like single-text reading, but what we have to realize is that meaning depends on prior knowledge, which comes from other texts that you’ve read. So I happened to see this yesterday in the New York Times. The article starts: ‘Democrats pull deadline from Iraq bill.’ The first couple of sentences talk about how the Democrats will insist on Tuesday that war spending measures set a date to withdraw American combat troops. My point here is that you don’t understand that the same way, if you haven’t also understood everything that led up to what happened when they did this. So, for example, there have been a whole host of articles that we can trace back in history, and relate to what happened yesterday, or with everything that the same actual reporter had talked about over the past couple of weeks. And so, we have intertextuality in the sense that we’re relating yesterday’s news story to what we knew from prior news stories. **Simultaneous** inter-textuality also occurs frequently, for example, we could be comparing two opinion pieces on the Iraq war. One could be written by a proponent, and one by a war protestor. Everything we know about proponents and the whole socio-cultural context out of which that person comes is part of what we bring to bear as we try to understand and interpret the meaning of what that person says. Likewise with a protestor of the war. And finally, the point I want to make is that we can be said to ‘read’ pictures, videos, graphics, as well as print. They all have a text so to speak. We can talk much more about what we know when we talk about traditional print than other media sources.

The other two parts of my theoretical framework have to do with the fact that I believe that processing results in some sort of internal representation. Finally, gesture and discourse analysis are useful methods of looking at learning from text; they often reflect the process of meaning making and learning.

Learning from Text: Four Big Ideas about What Matters
So that’s kind of where I’m coming from. I want to share with you in the remainder of the time I have today, four big ideas about what matters in learning from text.

1. The text,
2. Knowledge matters - both knowledge of topic and the way text is structured, and the different way genres use information and convey information.
3. The way you process that material matters; are you trying to meaning or sense, or are you just memorizing? As well, the degree to which you are engaged in the evaluative, meta-cognitive and self-regulating processes matters a lot.
4. Purpose, task, and content-matter.
Let me elaborate a little on a couple of these things. As far as text and knowledge, we know that text structure and organization make a big difference in what people get out of the text. Is the organization cued by the way the text is written, and does the learner understand the value of the cues that are in the text? Do you understand that, when a new paragraph starts, that it’s supposed to mark some kind of shift in focus? Do you understand, that when somebody says, ‘first, second, third,’ and you get to the third and you don’t remember what the second was, that you should go back and try to figure that out? In research that I’ve done, we find that school children, fourth graders, fifth graders, sixth graders, just read right over those enumeration markers. In one study, we had ‘first’ and ‘third,’ and deleted ‘second,’ and very few of them noticed, that when they got to ‘third,’ that there had not been a ‘second.’ It’s this kind of use of things that authors might build in that we need to be looking at. Do learners understand the significance of them? (e.g., What does bold font mean? What does a box mean? What do you do with stuff that’s in a box?) This isn’t knowledge that people necessarily bring to a task. It needs to be instructed, and it matters. If it’s in the text and they don’t use it, it might as well not be there; it’s not going to affect their learning.

Also, text content assumes certain kinds of topic-related knowledge. There’s a very interesting set of findings from a variety of researchers that leads to this conclusion: learning is easier for those who have little prior topic knowledge, if the relations among concepts in a text are explicit, and if the intratextual relationships are explicit. An example of how people have investigated this, comes from some work by Isabelle Beck, Moddy McKeown, and Nancy Loxterman. On the left side you have an original text; on the right side, you have revisions they made to that text to make everything much more explicit (slide 10 in Powerpoint). They found that the students who had little knowledge, getting the revised text did much better.

The key here though, is processing. For those with the prior knowledge needed to fill in the gaps in the original text, revisions for explicitness either do not help or sometimes negatively impact performance. The theory of this is because those with prior knowledge don’t expend the effort involved in making meaning out of what’s in the text, because it all seems like, ‘yeah, yeah, yeah, I get it, I get it, I get it.’ So what makes the difference for learning is the kind of processing that learners do. There’s very strong evidence for this across a variety of studies. Better learning is associated with metacognitive monitoring and regulatory processing. There’s emerging research for this. And, I just want to point out that we know this for traditional text forms, and we’re beginning to know what it’s like, with other forms of the media. What does processing for meaning, and therefore learning, look like? Meaning is made when learners are actively engaged, questioning, explaining, and connecting ideas, by reasoning, in and across texts, both with and about the content. In this process, they integrate with relevant prior knowledge, not with just any old free association. Often, if they bring in irrelevant knowledge, it sidetracks them and it does not benefit learning. We also need learners to adopt a critical stance towards the text. They need to ask deep as opposed to shallow questions; that is, they need to ask ‘why,’ and ‘how’ questions. Questions that seek underlying puzzle mechanisms, versus what we would refer to as ‘cut and paste’ questions, where it’s right there in the text and you just have to go and match words. Critical stance means you analyze and compare across sources to determine what the consistencies and inconsistencies are in the information. Paraphrasing information that is
presented, just moving words around and using synonyms, is not associated with better learning. It does sometimes enhance memory, but it is not associated with better learning. We have very good evidence of this from a collaborative project I did with Jenny Wiley and Art Graesser. Students were learning from multiple websites about volcanoes. The most interesting difference we found is that good learners differentiated how they allocated their time and thinking across reliable and unreliable sites, whereas poor learners did not. They engaged in more self-explaining on reliable sites than they did on unreliable sites, whereas poor learners showed no differentiation.

I have a short video, and I will try and show this. Now, what the guy first does, is he reads the text, and then he goes into explanation where he uses his hands a lot. You might not be able to hear the text, but you can see the gestures.

(video in background)
So, he’s just finished reading.

So what he’s doing, is he’s integrating, he’s using his hands to show that -- what’s in the text, and what he read -- and is creating an elaborate explanation for how these volcanoes could have formed, and it’s very much captured in his hand movements.

The final point I wanted to make has to do with purpose - task - context; why you are reading matters. The tasks you’re given; you’re asked to read a story or a novel and relate the plot, prepare to describe the characters, you’re going to have different information that is important to those different tasks. If you don’t allocate your attention differently in the circumstances of those two tasks, then you’re not going to be able to perform as well as you ought to. If you read a text the same way, regardless of whether you’re summarizing the plot or describing the characters, you’re not going to understand the text in an appropriate way. Reasoning from evidence is a wonderful example of what we’ve seen from my research; of having students read a text differently at first and then on subsequent readings. (slide 15 in the Powerpoint) So, they first read it to get the plot. But then they’re asked questions where they actually have to use the text differently because they’re actually asked inference questions. They’re asked to draw conclusions about the characters, and they’re asked to tie those conclusions to specific words, to specific actions, to specific sentences in the text. This is not something that they do matter-of-factly. What they tend to do is give their opinions without tying them to the text. And what they’re doing, what this teacher is doing, is very, very importantly, pointing out to them that they need to show evidence; the student answers and the teacher says ‘how do you know? Give me evidence; I want quotes from the text.’ And what’s important there, is that she repeats this over and over again, in the course of several lessons, and after about four or five days of this, the kids finally get it, and they’re starting to say things with, ‘and the reason I know that is because…’ and they point to the text. That’s the kind of support that needs to happen for good learning.

Two take-away messages
Learning from text is a cognitive, social, and situated phenomenon that is inherently intertextual.
Text, knowledge, and task/purpose matter in so far as they create affordances (or set constraints) on meaning-making and metacognitive processes.