DR. O'CONNOR: I feel I should also just make a mention of my middle name, only I don't know if any of you have come across the story of my great-grandmother who was the first woman to walk across the United States, unaided by a man. I am happily married. Nevertheless, a book came out of that called *Bold Spirit*. It's being picked up by women's studies programs across the country. And so, well, for decades, I went by Rollanda E. O'Connor. I am now proudly using my full middle name for the Helga Estby story.

There's a young adult fiction, which sort of fits into what we're talking about this afternoon, that my sister, Carole Estby Dagg, wrote about Clara, her daughter's experience of walking across the country with her mother. This all took place in the 1890s, so just a point of interest that I didn't mention this morning. I notice many of you are here again, and I thank you very much. You may or may not know that the hour after lunch is considered the kiss of death for a speaker. So we'll see how well we can all do in keeping awake and lively.

When we think about the issues of younger children, which was the notions of reading acquisition that we're covering this morning, we think about reading as being developmental, one thing leading to the next, the next thing leading to the next, and building gradually over time.

But as we think about improving reading from the middle elementary grades and on through middle and high school, reading takes a different take. The kinds of mutual facilitation from one skill to another become predominant. So we can't really think about just reading words for these older students. We can't think about just vocabulary for these older students. We can't think about just fluency, because none of those things really do the job for building the kind of complex reading comprehension that are important for successful life outcomes for the students that we're most worried about.

So we need to think about how reading words assists reading comprehension, but also, for older students, their reading comprehension assists word recognition. And particularly when words are complex, when they have many syllables or when they are irregularly spelled, or when they are unusual words that only occur in particular contexts, children's reading comprehension facilitates their ability to get an unusual word off the page correctly.

So we can't isolate what we're talking about today. We really need to integrate it. And even though I'll be thinking about and discussing with you one feature of reading at a time, we'll be coming back and back to this notion of mutual facilitation, which is so important.

I'm going to ask you to do one other thing that will help anybody seeing this videotape down the line. I was reminded that I just don't stay in one place, which is true. I'm a pacer. One of the things I like to do is get close to my audience, and I am not to go there. If I go there, it lights up the screen and makes me look like an angel with a halo around, which I think would be just fabulous. But I've been informed by our videographer that's not a good idea. So if I start to approach you, warn me off.

Now the word study strategies that we were covering this morning were primarily those in this first couple of areas, the notions around phonemic awareness and the

alphabetic principle, the notion around teaching phonics and phonic patterns to children, but where we'll be spending the most time this afternoon is in these last three areas.

We just touched this morning on multisyllable word strategies, but we'll be moving into more elaborated strategies for those very long words that tend to stop older poor readers in their tracks. We'll also be thinking about morphemic analysis. And this morning, we were calling it mainly affixes, the prefixes and the suffixes. But the meaningful parts of words do triple duty for older students. They are old enough to understand that words aren't just collections of letters, but they're also collections of meanings.

And so, if we teach older students to use the morphemic parts of words to read, and I'll be demonstrating how we go about doing that, we teach them not only a strategy for decoding a multisyllable word, but also for inferring its meaning, and also for inferring why it might be spelled in one way over another. And so, the mutual facilitation between reading and spelling becomes more complex and more sophisticated with older students. And this is whether they're good spellers or bad, whether they're good readers or bad.

The important thing about morphemic analysis with older students is it gives them yet one more tool. And we don't use morphemic analysis with kindergarteners or first graders or second graders because it carries a metacognitive load. And if you think about Vygotsky's notions of cognitive development, you'll know that what an 11 year old or a 15 year old is capable of thinking about is different from what a little short person can think about. And so, we're going to take advantage of this higher cognition that is available to older students to also help them to read words and infer their meanings.

Now fluency is insufficient. That will not surprise you. How many of you work currently with students who are 12 years old or older? Are any of those students disfluent? Oftentimes, many of them still are. And so, we can fall into the notion of, well, we know that fluency now improves reading comprehension. And so, we should be working on fluency because it gives them lots of wide exposure to words, that's a good thing, and if we can improve their rate of reading, it's like we do improve their reading comprehension, that's an excellent thing.

But we need to know that just the experiments, in just the last four years, have shown quite consistently that if we improve fluency without also working on multisyllable decoding and also working on vocabulary, we're not going to get the impact on reading comprehension that we would get if we, I started to say married, but we normally think about married as being two things. I don't know if we can marry all three, but we'll try. We'll make a usual marriage and put all three of those things together.

So in our current work, when we're working with older students on improving their decoding and their reading rate, we are also folding in about five minutes daily of decoding instruction, if their decoding is below average. And that's often true, even of older students. We're also including about five minutes of direct teaching in vocabulary. Whether it's nested in the reading material that they'll be using for that day or for that week, or whether it's vocabulary for its own sake. And as we move into vocabulary, I'll show you the differences between those two and why we might want to consider both with older poor readers.

So decoding, vocabulary, and comprehension in little five minute hits is what we're adding to our intervention time with older students to build reading comprehension. So it's these short hits that I'll be demonstrating this afternoon.

Now first, when I walk into classrooms and give feedback to teachers, one of the things that I hear, to my mind too often, is the notion that English spellings have no rhyme nor reason to them. So it's quite clear why you're having trouble, it's because English is such an irregular language. So true, false, somewhere in between? It depends. It depends on whether we're talking about reading or talking about spelling.

If we're talking about spelling, English is irregular. It takes its spellings from all of the languages that have contributed to the language that we now call English. But for reading, it's regular about 90% of the time. Think about the words that you see on the screen right now. Can you read this first one any other way? How about this one? Only one way to read it. This one? Only one way to read it. This one? Only one way to read it. Highly regular.

But if you're going to spell right, you could spell it in so many different ways because there are lots of ways to spell the long I pattern. There's only one way to read i-g-h. So for spelling, it is highly irregular, and that's why it's been estimated that over 30% of the population is a poor speller. That's why we don't include spelling, by itself, as an area for learning disability. There are just too many of us who spell poorly. But on the other hand, if we can teach children to recognize those high frequency patterns, then English becomes highly regular as a reading activity.

I'm not going to go over these, because I did this morning. I'm just curious. How many of you were here this morning? Wow, lots. Okay. This is not going to be redundant with that. What I wanted to show you here is, these are the most regular patterns. So if you're working with an older poor reader and want to know where to start or want to know what to shore up while you're working on things that are also age and grade appropriate regarding vocabulary and multisyllable word structures, think about using this list as a pre-test. And it can let you know which sounds the child already knows, which ones would be highly useful.

The purpose of a list like that is that, if you teach students the way these letter pairs are most commonly pronounced, the student will be right about 90% of the time if they use those patterns in trying to read a word. So it will not clear out the student's spelling problems, which are beyond what we have time to talk about today, but it can make great strides towards a child's decoding ability.

Now for general considerations, when we think about moving into the multisyllable word strategies we are using with these older students, there are two major features to keep in mind. The first is that every syllable in English, in an English word, has at least one vowel. Now if you've taught children those two and three letter patterns that function as a single vowel, then students will know whether that vowel is likely to represent a syllable or whether there are two or three vowels that go together to represent the syllable sound. That gives students a tool.

Syllabication is extremely difficult. If you've tried to teach it, you know that the rules go on, and on, and on, and on. And it's, when you think about what a student has to do as an adult or a person in the workforce, it is not syllabicate. Reading is important. Syllabication is not. So if we were looking toward the long haul, we want to

teach the couple of rules that tend to help students know how many syllables they're looking for, which provides great guidance in reading very long words.

For example, I've met fifth and sixth graders who would see a word like this first one and either get extremely quiet in their reading at that point, so you couldn't quite hear them, or just stop dead and look at me, waiting for me to supply a word. But if we give students a tool like this, we can have them take that long word and treat it analytically. That's what we can do with older students that we can't do with little tiny kids is have them bring their analytical skills to bear.

So start with having them underline the vowels, decide whether they're single vowels or vowel teams, and then, make an accurate estimate of how many syllables they're looking for. That, in and of themselves, gets them into that very difficult, very long word, and gives them more grist to support their attempt to decode it.

The second is that when we divide, when you see a word that has two consonants anywhere in the middle, unless those two consonants is a blend, like b-l or n-t, which they already recognize because they're older kids, that's a good place to divide, between two consonants that are not blends. Just teaching them those two syllabication rules will get them a long way and they're easy to teach.

Now I mentioned this morning, but because many of you are fresh this afternoon, I want to mention that any time you want to teach students to do something new, underline all the vowels in a long word or divide between a pair of consonants that aren't blends, any time you teach them to do that, stick with it for at least two instructional weeks.

So you're giving students eight to ten instructional sessions and practice sessions on doing that, before you move on to something else. If we move on to something else before it's thoroughly learned, then it becomes just part of that whole litany of instruction that lead them to be poor readers in the first place. We want to give them the tools that they can move forward with, because they have a lot of ground to catch up on.

Incidentally, anytime I suggest doing a decoding strategy or a comprehension strategy or a vocabulary lesson, I'm talking about short sessions. For decoding, we want to spend about five minutes. So when I talk about sticking with it for two weeks, it's five minutes a day over about a two week period. And for most students, you'll see them start to generalize this new learning in four to five sessions. And providing that extra week of five minute hits makes them feel very strong and it becomes independent at that point.

Now this is the strategy we've been working with in our research team for about 15 years now, and I want to give credit where it's due. The credit really belongs with the team of Lenz and Hughes. And this team developed a strategy for middle school poor readers called Dissect, D-i-s-s-e-c-t. Excellent strategy, takes about eight weeks for children to learn to do it well.

We found that when we were working with students younger than middle school, like fourth, fifth, sixth graders, in our school district the middle school was seventh and eighth, that at that slightly younger age, remembering what the D, the i, the s, the s, the e, the c, the t stood for was a very big memory burden in the first place. So we did a few years of analysis with that strategy and found that there were really four of the steps, not all eight, that were carrying most of the effectiveness load.

So we shortened it to just these four steps that you see here, and we teach it to students not in first, second, third grade. We don't start teaching this to poor readers until fourth grade, and most of our work has been with students who are older than that. So it's just a four step strategy. It starts though, as with any pneumonic strategy, with learning what those steps are and being able to remember them. So B stands for break it apart. What does B stand for?

GROUP: Break it apart.

DR. O'CONNOR: E stands for examine the root. Give me an e.

GROUP: Examine the root.

DR. O'CONNOR: Now do you use root word, stem word, base word? What do you use?

GROUP: (inaudible)

DR. O'CONNOR: Root? Okay. If you use a different word like base or stem, cross out root and write base or stem or whatever language you normally use with children so that they're with you. That part doesn't matter, but you understand what I'm talking about, okay. S stands for say the parts. Give me an S.

GROUP: Say the parts.

DR. O'CONNOR: T stands for try the whole thing.

GROUP: Try the whole thing.

DR. O'CONNOR: That's right. Now you'd work, just by memorizing the acronym will take you maybe three, four minutes. When you come back on day two, it's going to take you about one minute. When you come back on day three, it might take one learning trial. Come back on day four, they're just going to give it to you. That's what you want. But on the first day, take that extra couple of minutes for them to memorize it, and then, immediately jump in to what it looks like to use the strategy. Here's a long word. What's the B?

GROUP: Break it apart.

DR. O'CONNOR: Break it apart, okay. So let's break it apart. What parts of this word do you see that you already know? Give me one.

WOMAN: (inaudible) and why.

DR. O'CONNOR: Okay, she already knows the ly. Good, that one's down. We'll take off the ly. Look at the rest of the word. What's a part that you recognize, Paula?

PAULA: Ing.

DR. O'CONNOR: She recognizes ing, okay. So we have ing and ly. We know those parts, right? Let's look at the rest. Is there a part there that you recognize?

WOMAN: Un.

DR. O'CONNOR: Un. She recognizes un, because we've been working on the prefixes. Let's look and see what's next.

WOMAN: Stand.

DR. O'CONNOR: Stand? Okay, so you recognize the word stand. Can you pronounce that d-e-r part?

GROUP: Der.

DR. O'CONNOR: Der? That's right. So let's look at those first two hearts. What do we have now?

GROUP: Under.

DR. O'CONNOR: Okay, so we know the word under. And you know the next word?

GROUP: Stand.

DR. O'CONNOR: And then, know the next part?

GROUP: Ing.

DR. O'CONNOR: And you know the next part?

GROUP: Ly.

DR. O'CONNOR: That's right. Let's try to say the whole thing.

GROUP: Understandingly.

DR. O'CONNOR: She smiled understandingly at her students. Move on to the next word. Do you see something that you recognize? She sees the ly again. That's great. What else do you recognize? Yes?

WOMAN: Al.

DR. O'CONNOR: An. You know how to pronounce that too, okay. Let's take that an that she already knows how to say . . .

GROUP: Al.

DR. O'CONNOR: Oh, al, okay. I thought I heard an. Al, okay, so she knows that part. And we can put those two parts together. Other parts that you recognize? Let's say that someone did say the an, because an is a little word that most kids know. So we'll take the an. Let's put the first part with it. What do we have now?

GROUP: Fran.

DR. O'CONNOR: Fran. Now fran can be somebody's name, but it's not in this case. We have fran. What are the next few letters here?

GROUP: T-i-c.

DR. O'CONNOR: Can you pronounce those?

WOMAN: That's tic.

DR. O'CONNOR: Tic, okay. Let's put those two together.

GROUP: Frantic.

DR. O'CONNOR: Good. Say the whole thing, frantic. Now let's add that ending.

GROUP: Ally.

DR. O'CONNOR: Okay, put the whole thing together.

GROUP: Frantically.

DR. O'CONNOR: Okay. So what you might notice here is we're engaging the children in an analytic process. You can do it one-on-one, but it works very well with a group. Now I wasn't really working with a group of 100 here, I was working with a group of about 10 who were actively participating. Probably you in the back were actively participating also, but I've been forbidden to go back and see. So what I want you to notice here is this is a group analytic project. And because of that, it's very involving.

On the one hand, you're teaching directly, because you taught the best strategy. But you're interfacing this with the kind of problem solving and analytic ability that we get from older students that younger students just aren't able to participate in as well as these older students. You allow them to point out things that they know. And they're being told all the time, if they're poor readers, that they don't know. So allowing them to contribute actively to this word building process is important for their self-esteem and their standing within a group.

As we move on, there are other processes that I also want to mention. And I don't know if the woman who came up and talked with me about glass analysis this morning is in the audience this afternoon. But glass analysis is a procedure that's been around for a long time. We don't use it with little kids because, again, it's analytical. What we're teaching children to do in this case is to read by analogy. There's something that older students bring to the reading act that young students do not, and that's an imbalanced and relatively higher sight word vocabulary, related to their reading overall.

Because sight words occur so frequently in text, many older students with reading difficulties have learned a lot of sight words, but they haven't learned to break apart a long word. That's where they stumble, it's where they fall. Some of them have also learned to decode little short words. You can show them a three letter word, they're fine if it's regularly spelled. But it's the long ones that keep them from moving forward.

And what glass analysis allows is for students to use what they already know about reading high-frequency words and apply it to reading words that look more age and grade appropriate. So what I want you to notice is, even if you're working with a seventh grader whose total reading ability is all about a 2.5, we're not taking them back to second grade phonics. We're doing different things that allow them to think more analytically about these long words. So glass analysis looks like this. You know the word at the top. What word is that?

GROUP: May.

DR. O'CONNOR: May, that's right. And which letters say /mm/?

GROUP: M.

DR. O'CONNOR: Which letters say /ay/?

GROUP: A and y.

DR. O'CONNOR: That's right, a-y. What sound does that make?

GROUP: A.

DR. O'CONNOR: M, what sound does that make?

GROUP: M.

DR. O'CONNOR: That's right. And you can put your hand over the m, what's left?

GROUP: A.

DR. O'CONNOR: Put your hand over the a-y, what's left?

GROUP: M.

DR. O'CONNOR: That's right. Now let's take a look at the next word. Now chances are they already know how to read the word way as well. But if they didn't, you had just taught them, taking what they already gave you, that a-y goes together and it makes the a sound. That's different from saying, here's a-y. It goes together and it says a. What sound?

GROUP: A.

DR. O'CONNOR: That's right. So I show you a-y and it makes?

GROUP: A.

DR. O'CONNOR: That's right. That's what we would do with a real young child, right? In this case, we're working with older students, and so, we want them to contribute to the learning process and show them that they do know some things about reading words. As we continue on, you'll notice that the words get more difficult. If you're working with a seventh grader, yeah, they know may, yeah, they know way, yeah, they know day. We're getting one step harder here. What word?

GROUP: X-rays.

DR. O'CONNOR: Okay, you know this pattern. So put it all together?

GROUP: Layer.

DR. O'CONNOR: That's right. You know this pattern.

GROUP: (inaudible)

DR. O'CONNOR: Put it all together.

GROUP: Paying.

DR. O'CONNOR: You know this part.

GROUP: (inaudible)

DR. O'CONNOR: Put it together.

GROUP: Mayor.

DR. O'CONNOR: And you can see, we're getting now into longer words that look more like the words that the children's peers are reading. We're teaching them to be analytic. It's sometimes called reading by analogy, and some of the big proponents of this, if

you're interested in following up on it, are Elizabeth Gaskins and her team at the Benchmark School, which is here in Pennsylvania. And she's been working with Maureen Lovett in Toronto and some others to extend this kind of teaching to older students who have severe reading difficulties. You can see how it builds. This is glass analysis. Yes?

WOMAN: (inaudible) Gaskins?

DR. O'CONNOR: Gaskins, G-a-s-k-i-n-s.

WOMAN: (inaudible)

DR. O'CONNOR: That's right.

WOMAN: In Media, Pennsylvania.

DR. O'CONNOR: Yes, in Media, Pennsylvania, okay. She's been working, I think the first paper she published on this was in 1988, and she's continuing to publish well into the 2000s with it. So it's an ongoing strategy she's been using for a long time.

But what the students like about it when they're older is, we're not staying with the little, tiny words that make them feel and reinforces the fact that they are poor readers. But rather, we're building their confidence to decode increasingly more difficult words by using the word parts that they already know. The instructional routine then is just showing them that they do know these things and that they can use what they know toward decoding increasingly lengthy words.

So there are a couple of independent rules for reading and spelling that are very important for these older students. We sometimes call them reading spelling generalizations. Because you teach one thing, and you teach it really well, and then it generalizes to thousands and thousands of words. One of these we went over this morning, so I'm not going to do too much with it.

But students need to realize when an e has been dropped from a word. Because it's, they've already learned the silent e rule, they know that if the e is there, they are to be reading the long sound of the word, rather than the short sound. But what we're teaching them here is to identify when a word might have been dropped. And again, it's by analyzing the parts to the word. So you drop the e when you add a part with a vowel letter. Now you can teach that as a spelling rule, take a look at the first word, the word close. Is there an e at the end?

MAN: Yes.

DR. O'CONNOR: Does the next part start with a vowel letter?

GROUP: Yes.

DR. O'CONNOR: So will you drop the e?

GROUP: Yes.

DR. O'CONNOR: Yes. Write closing. Look at closely. Is there an e at the end?

GROUP: (inaudible)

DR. O'CONNOR: Does the next part start with a vowel letter?

GROUP: No.

DR. O'CONNOR: No. So will you drop the e?

GROUP: No.

DR. O'CONNOR: No. Write closely. And you build that through a spelling rule, but then, you show children a mix of words and ask them to best(?) it. Is there an ending? Does that ending start with a vowel letter? If so, maybe an e has been dropped. So let's look at that base word, root word, stem word, whatever you like to call it. Do you think there was once an e at the end of that? Let's look at it with and without, because that's going to signal how to read that base word or root word.

So these kinds of rules that we taught as spelling rules around the third or fourth grade for developing readers can be used with older readers to show them why you might drop an e before adding an ending, and to identify a printed word and analyze whether an e might have been dropped. So in teaching these kinds of rules, we're getting at least twice the learning opportunity out of it. We're getting the opportunity that's going to show children how to read words and the opportunity that is also going to show them how to spell words. So you can see there's more analytic in nature.

The next one, which I did not talk about this morning, is an extension of that, and that's the doubling rule. Children need to know, when do you double that final consonant in a short word? It is rule-based. We used to teach children, you double the consonant sometimes when you're adding ing, but not always. Well, what does that mean? It's not even really a rule, is it? And yet, that's how it was worded. Sometimes we have to double the final consonant. Well, gosh, wouldn't it be nice to know when? And there is a rule that covers it.

You know, I was working with these rules, oh, gosh, in the mid-'80s and –'90s, working with youngsters in school. I think one of the things that maybe wasn't mentioned is that I taught school, children, for 16 years, before I got my doctorate and went on into the research field.

But some of these rules that I was working with as both a teacher and a researcher through the 1980s are rules that I still internalize when I am writing words today. I think, well, am I going to have to double that consonant? Well, let's see. When do you double the consonant in a short word? When the word ends in -cvc and the next part begins with a vowel. When do you double the consonant in a short word?

DR. O'CONNOR AND GROUP: When the word ends in -cvc and the next part begins with a vowel.

DR. O'CONNOR: Now I'm giving it a little bit of a swing because it makes it more memorable. It is part of the kinesthetic aspect of teaching. So let's take a look at that first word. Underline the last three letters. Does that end in consonant, vowel, consonant? Yes. Are you adding a part that begins with a vowel? Yes. So will you double the final consonant?

GROUP: Yes.

DR. O'CONNOR: Yes. Right? Dripping. Take a look at the next word. Does that word end in –cvc?

GROUP: Yes.

DR. O'CONNOR: Are you adding a part that begins with a vowel?

GROUP: No.

DR. O'CONNOR: So will you double the final consonant?

GROUP: No.

DR. O'CONNOR: Right, dripless. Take a look at the next. Does it end with –cvc?

GROUP: Yes.

DR. O'CONNOR: Are you adding a vowel?

GROUP: Yes.

DR. O'CONNOR: Will you double the final consonant?

GROUP: Yes.

DR. O'CONNOR: Right, winning. Does flat end with –cvc?

GROUP: Yes.

DR. O'CONNOR: Okay. Are we adding a vowel?

GROUP: No.

DR. O'CONNOR: Will you double the t?

GROUP: No.

DR. O'CONNOR: Right, flatly. You can see how it works. In this list, by the second or third day, you'll also want to start adding some short words that do not end in –cvc, because that will help them discriminate when to use the rule and when not to. Now again, we're introducing a new rule, so how long should we teach it?

GROUP: Two weeks.

DR. O'CONNOR: At least two weeks. And watch for when children are starting to master it and use it independently, and then, you'll know you can put it aside for a while. When you put it aside for a while, it's still good to bring it back at least once a month, and make sure the students remember it, and are continuing to use it as you introduce the next thing. That's part of the notion of cumulative introduction, which will were also using this morning. Once you teach something, you want to keep it fresh as much as you can, so that students continue to use it.

Now I mentioned this interaction between vocabulary and decoding. This is a relatively new piece of information. You've probably, if you've been teaching, you've probably sort of imagined it most likely does sort of go together.

But the work of ARI, quite recently, has found that children who have a larger speaking and listening vocabulary find it easier to decode an irregularly spelled or difficult word, even if their reading ability is the same as somebody else's.

So you can take two children who both have trouble with decoding. If one of them has a high vocabulary and the other has a low, the child with the higher vocabulary is doing to decode more easily, even though their decoding level is the same.

So we want to keep working on vocabulary, because it's building that vocabulary that gives children the mental field to search as they try to generate a pronunciation for a word. They generate a pronunciation using BEST, peeling off the affixes, putting them back together again or by using glass, reading by analogy. They use these tools to try to generate a plausible pronunciation of a word.

And then, they ask themselves, is this a word that I've heard before? If they have a broad enough vocabulary to have heard the word before, then they're going to give it a go, and put it back into context, and see if it makes sense. If they've never heard that word before, they're going to try something else, even if that something else is wrong or that something else really can't be done, given those letters that are on the page.

So that's why a larger vocabulary, especially for older students, is facilitating their decoding ability. We've often known that vocabulary facilitates comprehension. We know that. What's news is that it also facilitates decoding and particularly for students beyond fourth grade.

So here's the problem. Most of the vocabulary that we teach uses a curricula. And some of the curricula that we use are not very well structured. If we think about going back to material you read now a decade ago, *The National Reading Panel Report*, and that section on vocabulary, well, they identified a handful of principles around teaching vocabulary that seemed consistent across the effective studies. They also generated a set of attributes that almost always bomb when we are trying to teach vocabulary.

And unfortunately, we have to be very careful with our vocabulary curricula today because of the most recent analysis. Many of the things that don't work are still the strategies that they're recommending that we use.

Now I would like to be the first to assure you that I'm not saying don't use the dictionary. The dictionary is a wonderful tool. I use it, personally, more than once a week. I keep it up center on my desk. Part of that is because I read a lot of material that has difficult words in it written by academics who are smarter than I am. And so, I don't know their vocabulary.

The other is that I often read a word and the context doesn't seem quite right to me. And so, I will look it up to see if there's an extension of the word that I didn't know about. Or I'm reading my students' papers and they misuse words. And before I write that they're misusing it, I want to make sure I'm right. So there are lots of reasons to use a dictionary, whether you're a skilled speller or not.

But the most important part for now is, think about the time it takes to look up a word in a dictionary. How much time do you think it takes? I hear sighs. Yes, because it takes a long time. Now imagine that you're asking a poor reader with a low vocabulary to look up a word in a dictionary. Now you've just multiplied that time. When they see the definition in the dictionary, what do they see?

WOMAN: (inaudible)

DR. O'CONNOR: They see, now this happens to me all the time. I see the word that I've just looked up. And that makes me really annoyed, because now, I have to look up a second word because the word that I wasn't quite sure of is being used within the definition. Doggone it, it's not fair. But I'm persistent. I'm a good reader. If the child is not persistent or if the child is a poor reader, that's going to defeat him or her right there. Which is the right definition? Maybe number one. If you're asking children to write the definition, which one are they going to write?

GROUP: The first one.

DR. O'CONNOR: It will either be the first one or it will be . . .

GROUP: The shortest one.

DR. O'CONNOR: (inaudible) the shortest one. That's right. And neither of those definitions may be appropriate, given the context that you're asking the child to explore. So when you consider the layers of digging that you're asking a poor reader to do by using the dictionary, you can see why maybe it shouldn't be our first means of teaching vocabulary.

The next is choosing the best meaning. So, okay, you don't have to look it up, I will give you the dictionary definition. There are four meanings here. Which one is correct? Well, if they know the definition, they will probably get it correct. If they don't know it, then what's going to help them learn it? It's one of the four, but which? It's a pretty good test of whether they understand the definition of a word, but it's not a very good teaching tool. That's the problem with it. And last is the fill in the sentence. You

know, here are nine words that you don't know, and here are nine sentences you can't read very well. Mash them up.

GROUP: Oh, yes.

DR. O'CONNOR: But that's what we see, isn't it? I mean, this is not an unusual task. These are the three most used by our curricula, so we need to think about what does work.

And what does work quite consistently is when we directly teach children the meaning of a word, when we ask students to use production responses, actually speak the word and listen to the word, and use it interactively with the teacher, when we give them frequent possibilities to use that word, lots of repetition, when we come back and review those words frequently, so they have an opportunity to internalize the meanings of those words. And so, I'm going to show you what some of those activities look like that differ from looking it up in the dictionary and a word bank, and which is the best meaning.

And I'll get to that in a moment, because I want to get to morphemes first, because these things also play into teaching vocabulary. When we think about the meaningful parts of words, these are some of the morphemes that are used across secondary materials, which, if the student knew how to read that morpheme and knew what it meant, it would create great opportunities for self-teaching.

And that's one of the duties that teaching morphemes gives students. It gives them a decoding unit, like un, gives them a meaning, un means not or the opposite, in other words, it negates whatever that root word is, and it also gives them a self-teaching mechanism. Because when they see a word they've never seen before or maybe never heard before and come across it in their silent reading, they can pull that un off, know that it means the opposite or not what the other word means, and it gives them a self-teaching mechanism as well.

Just a second. I think I, did I skip one? No, okay. So this is mainly a list, just for your own reference. When we teach using morphemes, we're going to use production responses, we're going to use frequent review, we're going to use direct teaching, because those are the things around teaching vocabulary that tend to work most frequently. So inter means between. What does inter mean?

GROUP: Between.

DR. O'CONNOR: Between, that's right. So what does interstate mean?

GROUP: Between states.

DR. O'CONNOR: That's right. What would you call a highway between states?

GROUP: An interstate.

DR. O'CONNOR: That's right. And what would interperson mean?

GROUP: Between people.

DR. O'CONNOR: That's right, between people, between persons. So what are interpersonal skills?

GROUP: Skills between people.

DR. O'CONNOR: Skills between people. Now if I had started with interpersonal skills, that might have just bowled the child over backward. But if we teach the morpheme inter, meaning between, then all the rest begins to make sense. I didn't ask students, what does inter mean? What does timbrel mean? What does it mean? Okay, she's unsure. Can somebody help her? Timbrel. It's related to something maybe, like what? What might timbrel mean?

MAN: (inaudible)

WOMAN: All I'm thinking of with wood.

DR. O'CONNOR: Something with wood, because timber, timbrel, could be related to wood, maybe. Sure. What else might it be related to?

WOMAN: (inaudible)

WOMAN: Sound.

WOMAN: Sound.

DR. O'CONNOR: It could be related to sound, like timbre, timbre with bre. That's a little sophisticated for kids, but, okay. So what do you suppose timbrel means?

WOMAN: (inaudible)

DR. O'CONNOR: Okay, so something around sound or something around lumber, one or the other, right? Or I could say, a timbrel is a medieval instrument, and it looks a lot like a tambourine. In fact, it's the precursor of the modern tambourine. So what's a timbrel?

GROUP: An instrument.

DR. O'CONNOR: That's right, it's an instrument a lot like a tambourine. That's right. Now which took the more time?

GROUP: (inaudible)

DR. O'CONNOR: The direct teaching, the model that was maybe easier than trying to elicit? Sometimes eliciting a meaning is like pulling teeth, especially if you have

low-skilled children. And, in fact, the lowest skills among you might walk out thinking, timbrel. Yeah, that has something to do with logging.

WOMAN: (inaudible)

DR. O'CONNOR: Even though it's completely wrong, because children heard as many wrong responses as right responses. So that's where direct teaching comes in. We want to think about a user-friendly vocabulary. An instrument, you shake it, looks a lot like a tambourine, so I was giving a user-friendly vocabulary way to understand timbrel, in the same way, we're directly teaching the meaning of inter. It means between. Yes?

WOMAN: So are you actually . . . with the child that you would emphasize the meaning of the word timber in that example . . .

DR. O'CONNOR: Absolutely not. She's asking, would I emphasize the word timber? The problem is when we walk into classes and what the directions in the teacher manual say is elicit the meaning of the word. Have you seen that?

GROUP: Yes.

DR. O'CONNOR: Yeah. But that's what we see is, teachers really do try to elicit, and they elicit all kinds of stuff, about half of which tends to be incorrect. So I was modeling the bad, old way, eliciting from kids who really don't know. And I tried to, timbrel is a real instrument. In fact, there was a timbrel in my wedding. But I didn't expect you, necessarily, to know the word because it's archaic, and it's not something we come across, unless you read medieval literature. In which case, you'll come across timbrels all the time.

So what I'm suggesting is that before you teach the meaning of a word to your students that you think about a user-friendly definition for that word or for the morpheme that you're trying to teach, and start out not by eliciting, but by providing the definition that you want them to learn. And then, give them lots of opportunities to play with it and try it out.

If you look at this example, I told you the meaning, and then, I elicited only what I've already told you it meant. So what does inter mean? Between. Now you've interchanged the word with its definition. So what does interstate mean? Now you're bringing that between and state, which is a word you already know, to elicit the meaning of that. But I'm giving you all the groundwork. I'm giving you everything you know to respond correctly.

What that means is that in about 30 seconds to 60 seconds, you elicit from your group, with production responses, because you told me. I gave you the grist, you told me back. That's the production. You actually produced the word. You produced the definition. And I gave you four to seven hits in 30 to 60 seconds.

If you look it up in the dictionary, you will not find it in 30 seconds, and it will take you longer to read the multiple definitions, and it's likely to be pure luck if you happen upon the right one. And even so, you only wrote it down, you didn't use the word. So it's why this procedure of a user-friendly definition, interplayed with lots of opportunities

for children to produce it, to think about it, to play with it, interchange the word and its definition, that tends to generate more powerful instruction.

This is just a quote from Isabelle Beck that I thought was interesting because the question from the audience was, if we're supposed to be teaching 10,000 words over the next four years, I mean, that simply isn't possible. Why bother? And her response was, it's true that not all of the words that appear in students' environments will be learned. But then again, if students do not encounter new words, there's no possibility of learning them. So what she suggests in her work, and some of you might have come across *Bringing Words to Life* . . .

MAN: Yeah.

DR. O'CONNOR: (inaudible) or *Robust Vocabulary Instruction*? She has a pair of books that I think is very useful for teachers and for professional developments, agencies, and for reading coaches. That pair of books does a very nice job of developing this kind of elaborated instruction with kids.

Just as a model, here is a word, prodigy. Now I could start eliciting what it means, but I know you already know what it means. That fifth grader, seventh grader, tenth grader that you're working with who's a poor reader might not have come across this word before. So I'm going to start by providing a user-friendly definition. A prodigy is a person with wonderful talent. What's a prodigy?

GROUP: A person with wonderful talent.

DR. O'CONNOR: And what do we call a person with wonderful talent?

GROUP: A prodigy.

DR. O'CONNOR: That's right. Is Harry Potter a prodigy?

GROUP: Yes.

DR. O'CONNOR: How do you know?

GROUP: (inaudible)

DR. O'CONNOR: He seems to have wonderful talent. Michael Smith has no special skills. Is he a prodigy?

GROUP: No.

DR. O'CONNOR: How do you know?

GROUP: No special skills.

DR. O'CONNOR: He doesn't have wonderful talent, that's right. So what does prodigy mean?

GROUP: A person with wonderful talent.

DR. O'CONNOR: Now Mozart was a child prodigy. What do you know about Mozart?

GROUP: Music . . .

DR. O'CONNOR: That's right. That was eight times, eight times producing the word, interacting with it, deciding whether it was a good definition or not, using that definition, eight times. And because, obviously, this is not a new routine for me, I know that it takes just under one minute, eight interactions with the word.

Now if you think about when we were trying to elicit also, how many children were involved in that elicitation? Mm-hmm. First it was one at a time, probably it was children who already had some notion of maybe what it might mean, or it could have been the child who is about to tell you what he had for lunch, hand always in the air, always off-task. But what I want to show you is that you can get more done in less time.

And because all of the children in your group, and it can be a group of 3, it can be a group of 30, are responding at the same time, it gives all of those students that eight hits on a new vocabulary word. Whereas, if you give them a paper and pencil test, they might have one, and still never have produced the word in an understandable way. Now an expedition means a long trip or a journey. So what's an expedition?

GROUP: A long trip or a journey.

DR. O'CONNOR: What does expedition mean?

GROUP: A long trip or a journey.

DR. O'CONNOR: And what word means a long trip or a journey?

GROUP: Expedition.

DR. O'CONNOR: What's another way to say Shackleton took a long trip to Antarctica? Shackleton took . . .

GROUP: An expedition to Antarctica.

DR. O'CONNOR: That's right. Now Lewis and Clark took canoes from Washington, D.C. to Washington State. Was that an expedition?

GROUP: Yes.

DR. O'CONNOR: How do you know?

GROUP: It was a long trip or journey.

DR. O'CONNOR: It certainly was. Now I walked next door. Did I take an expedition?

GROUP: No.

DR. O'CONNOR: How do you know?

GROUP: (inaudible)

DR. O'CONNOR: I wouldn't call that a long trip either. What would you call a hike from Baltimore to LA?

GROUP: An expedition.

DR. O'CONNOR: I think it would be, yes. All right. And then, at this point, you can start eliciting. Have you ever taken an expedition? Now then children can use their knowledge of expedition to say why the trip they're going to tell you about was an expedition. That's an effective use of elicitation. You've already taught them the meaning of the word. Now they can use it and apply it to their own context, supply it to their own experience, apply it to something that they read last week, apply it when they get home tonight to something they hear on the news, tell their parents about it, because they know what it means and they can actually use it.

So the features of vocabulary instruction that carry the weight of effectiveness are telling children the definition or the synonym. It's efficient, and you're building on their knowledge, using words that are friendly in their own vocabulary. And frankly, nobody knows that but you, as their teacher. You know what their current vocabulary is like. So it will be easier for you to build a user-friendly definition than a dictionary or a curriculum developer.

Have the children repeat that definition, go in and out of the definition or the synonym and the word itself. Have children use the word in their definition at least seven times during your instruction, and you saw how fast that went, less than a minute on a word, but so many times, so many repetitions in that short period of time.

And when we try to construct our examples for times when it is a good example of the word you're teaching and times when it is not. Those are the positive and negative examples. Positive example, Baltimore to LA. A negative example, next door. So have children think about that definition, and then, whether the twenty-five cent word that you're trying to teach applies.

Now I'm going to ask you to take a couple minutes to try it. Work with one or two people sitting next to you, choose one of these words, dissect, ambiguous, dwelling, or license, and go back to these features. First try to develop a user-friendly definition, then try to build some examples. We'll take only about three minutes for this. If you'd rather do it by yourself, that's okay, but I thought you might like to talk to your friends. Okay, let's come back together. Okay, it's too much fun, but you have to come back together anyway. More stuff to talk about. There's a question back here. Yes?

WOMAN: (inaudible)

DR. O'CONNOR: Oh, she was volunteering. You wanted to give us your routine?

WOMAN: (inaudible) police officers have a license, and we use license as a document . . . then we reverted to the purpose, which gives you permission, in the sense of a license, a . . . permission to operate . . . to act in the form of a dentist . . .

DR. O'CONNOR: And so, where we might take this kind of, they were talking about license and permit, as related and also distinct. So if you think about words in that way once you've taught children the definition with an appropriate usage in one context, you can shift that on a subsequent day into the usage of the word in a different context. And later on this afternoon, we're going to be moving into more elaborated structures, like concept mapping, and drawing both of those words out into a concept map or a semantic map makes all the sense in the world.

Now I'm not going to call on individuals because I know that will take a really long time. But I can just have a show of hands, what I gave you was about three and a half minutes. How many groups were able to pretty much come up with a routine in that amount of time? That's faster than average.

What we find when we use reading teachers in professional development contexts is it tends to take about five to six minutes for the first one. And then, if I have them choose the next one, they cut that time down considerably. And they usually get down to, by the time they've tried developing these routines for about four words, they get down to about two minutes, two and a half minutes per word, which is about what it will take you. And it's mainly generating those good examples.

And if you're using it in context, you're using the word because it's going to be in a reading material, for example, and it carries the weight of the meaning of what you're about to read, then one of your examples can be the direct example that is from your reading material. And then, you develop additional examples around that, especially if you're teaching vocabulary before you actually get into the reading of the connected text.

Now I mentioned as we were doing our setup for this afternoon that sometimes we want to teach vocabulary because it's in what we're using today. You know, the children are going to read that word. They better know what it means because it carries everything.

But sometimes you might want to teach the meaning of a word which is not in a child's reading material for that day. I'm thinking of words that perhaps are going to be important in upcoming content areas, in social studies or science or words that are going to carry the thematic elements of a language arts class over the next month. Or you might come up with a word that is age and grade appropriate, but you're using a simplified material to read with these older, very poor readers. And so, they're not going to come across that word, even though they're going to learn an easier word that has the same meaning.

And in that case, you can show children how to bridge from the easier level. Let's imagine, for example, you're teaching Romeo and Juliet in one of those third grade versions. So the children get the plot, the storyline. When they hear Romeo and Juliet

as adults, they know exactly what the problem was and how it was solved, so to speak, or not, depending on your point of view. But in those simplified materials, they don't necessarily come across the very long, enriched words, even though they're part of mainstream knowledge for intelligent adults.

So in those cases, we would want to bridge from the lower level to the higher level vocabulary word and teach that higher level vocabulary word because tenth graders ought to know it, even if it's not directly going to appear in the text materials they're using. By teaching elevated vocabulary words to children with a poor reading ability, you are increasing their ability to engage in general class instruction, in discussions, in world events.

And if you think about that decline, that slump in IQ that you read about sometimes, kids that looked strong when they were little and look like their IQ is actually decreasing when they get older, it's because IQ tests weigh so heavily on vocabulary. And most good readers pick up their learning of new words through the wide reading that they do. Poor readers don't do that kind of wide reading. They don't choose it. And when they do choose it, what they read is not at that high level that includes those twenty-five cent and fifty cent words that are important for literate adults to know.

So we need to think about what's important for their reading, but also, what's going to be important in the long haul? When students are older, we want to think about taking all of our instructional time, teaching them things that will be of benefit when they leave us, when they go out into the world. And vocabulary is one of those things we can give them, whether it's through reading or not, that keeps them smart and able when they go out into the world.

So I think that there's a very strong push and need for teaching vocabulary all the way through schooling, and that's especially true in families that operate on the day-to-day with the lower level of vocabulary than what is typical in a middleclass household.

Now I apologize for the extra s on word, I just noticed that as I was sitting down for lunch, reviewing my notes. I guess I'm allowed one mistake today. What I want to bring in is, I've been showing you, thus far, a method of teaching vocabulary that we call direct instruction, small d, small i, direct instruction. Teachers doing the instruction, involving the children, monitoring their progress because it's production responses, so we know whether kids are getting it or not because they're feeding us back that information.

Well, Isabelle Beck also uses direct instruction but in a softer tone, I would say, and that's thinking first about vocabulary broadly, in terms of, if we can't teach all 10,000 words that our students ought to have known, how to have learned by the end of eighth grade, what should we do? We know 10,000 is too many. She thinks about words, in terms of tiers, and some of you will be familiar with this already. But she thinks about three tiers of vocabulary.

And the first tier are words that children probably already know. Therefore, you don't need to work with them in vocabulary. You can see this list. Unless children are English learners, they know these words. You don't have to work with them.

What she suggests is we spend most of our time on are the tier 2 words, and those are words that children might not know the meanings of, but they're going to occur in multiple contexts. Not just in today's story, but if they learn it for today's story, it's likely to occur in a story next month, the month after that. It's likely to show up, not

just in their reading class, but in their broader language arts studies throughout secondary schooling. It's bound to show up, perhaps even in math instruction, social studies, science. It's a word that they're likely to hear if they listen to NPR. It's a word that they're likely to engage in with conversation, if they only knew the meaning.

And if we used production responses, gave children enough opportunity to play with the word, actually saying it, hearing it, saying it, using it, that it would be folded into their vocabulary and give them a better stance in life because they have this level of vocabulary.

You can see the examples here, balcony, murmur, required, benevolent, maintain, examine. These are words that are not unique, they're not rare, but they're not words that children use in their everyday vocabulary. If you think about it, most kindergarteners come through the kindergarten door knowing about 2,500 unique words, and they've learned that through speaking and listening. The speaking vocabulary of a senior in high school is only about 6,000 words, not much different from coming in the schoolhouse door.

Now the graduating senior knows the meanings of about three times that many words, but they don't use it in everyday speech. So if we were to limit our vocabulary instruction to everyday speech, we wouldn't be teaching very many words. The words that we're teaching are literate words. They're words that show up in print, which children probably don't use in the day to day. But if we taught them the meanings, they could.

So it would enrich their speaking and listening vocabularies in ways that make them appear more literate, but that also then give them the grist to, when they see some of these words in print, in unknown contexts, in areas where they're having to decode, if this word is already in their speaking and listening vocabulary, then we've greatly increased the likelihood that they will be able to read the word when they see it in print. So you see the ways in which vocabulary instruction and decoding instruction interface with these older students. It becomes critically important.

Now she also mentions tier 3 words, and those words tend to be context-specific. For example, when was the last time you used the word hypotenuse in your everyday speech? If you were taking geometry, you'd use that word in your everyday speech, but maybe only in that class. So these are words that are rare enough or content-specific enough that we tend to leave the instruction of tier 3 words to the content area teachers.

But then, these days, we also hear from secondary teachers, it's not my job to teach vocabulary. It's the job of, well, who cares whose job it is? You know, we want to get the job done, right? So as reading teachers, we step in wherever we're needed. But it can be helpful if you provide collaboration with content area teachers, especially in social studies and science, that you could share some of these instructional techniques.

Because rather than have the students in a math class or a social studies class look up the word in the dictionary or look it up only in that single context in the little dictionary that's at the end, the glossary at the end of those materials, we could teach those words in a much richer way that would make them both more functional.

And we have documented that by doing so, we increase their test performance. And these days, test performance relates to children's opportunity to go on in continuing education, whether to a community college or a four year institution. And if by not

teaching vocabulary we're denying our children access, that's a real issue that we should be thinking about.

So the rule of thumb is to think about words, in terms of words that, you know the vocabulary of your students, words that they don't know, but words that they'd be able to use in multiple contexts over time, words that they could conceivably use if they were having dinner out with their families. So those kinds of words that would make everybody feel proud are the words that we want to teach students.

So just as an example, you have these printed out in your, if you have reading glasses, it's very small, okay. What I'd like you to do is just read this to yourself and underline what you might consider some tier 2 words in this paragraph. Now take a look at the words that you've either underlined or written down. And the test of a tier 2 word would be, first, do you think the kids already know the word? If so, it's a tier 1, not a tier 2.

And secondly, because you may not be able to teach, you might not have the time to teach all of them, which words could be used in more than one context? It's going to be in this little section on Darwin. It might come up again. But can you imagine other things children might read or hear about or come across where they could use the word, if they knew its meaning? And if you can answer yes to that second question, you've got a great instructional target. Now I'm not going to elicit what all of those words are because you can do that yourself, and we're short on time. Actually, we have exactly the right amount of time, but not enough time to have that discussion right now.

Let's move into then the principles around teaching vocabulary. First, be very deliberate about which words you decide to teach. When we review curricular materials that are offered to teachers, oftentimes some of the words on those vocabulary words are really nice targets and some of them clearly are not. And the only person who can really determine which are idyllic and which are not would be words that you know the child's current level of vocabulary. The curriculum developers never met that child. So using the students that you work with on the day to day, you'll know. You'll have a better idea of which words are the best targets than any curriculum can ever have.

So choose a core of words to teach. If some of those words are related semantically, like permit and license, then think about clustering those words together. As a rule of thumb, you can usually teach five to ten new words in a week. And the more related they are, you can move toward the higher number. If each word is completely distinct from the other, then five may be enough. And you'll know how many by whether the children can retain them.

The next notion is providing that student-friendly definition. You can go ahead and consult a dictionary, but usually, the dictionary is going to have a meaning that is not as clear as what you could generate yourself. There are also some excellent online sources.

Are any of you familiar with the Longman dictionary? There are about half a dozen dictionaries that have just been generated online in the last five years or so. Longman has been around longer than that, but there are several spinoffs on that that will give you a student-friendly definition, one that's more likely to be in the child's vernacular. The definition should not have any words at all in it that the child does not understand. That's what we mean by student-friendly. The only thing that is new is the word that you're teaching. Everything else should already be known.

Now next, make the most of sentence writing. Too often, we see the assignment, look it up in the dictionary and use it in a sentence, but that's too fast a shift. Teach the word first, whether you go through the routines we just did around license or ambiguous, or whether you go back to Beck's book, where she has a much more elaborated routine for teaching the meanings of words, but spend a day teaching it first. And by a day, I mean, that five minutes.

Teach the meaning of the word first, then start eliciting from students, has there ever been a time when you needed a license? Has there ever been a time when, have you ever come across this word before and what was that context?

And once you've had a discussion around the word, now it's fair game to say, now write a sentence with the word. And the likelihood now is the sentence will be a good one. Oh, what a relief. So often, those sentences you read are just, you know, oh, no, no, no, no. They just spent 20 minutes on this and they're all terrible. That's not a good learning experience for the kids, and it's certainly a punishing experience for teachers. So start by teaching it, use the sentence as the last thing they do.

The other spinoff that has been very useful in teaching vocabulary is once students then generate their sentence, have them do a small group discussion around the sentences that the two, three, or four students generated, and talk about, as a group, whether the contexts and the meanings of the word are clear in those sentences.

What you can do next, if you want to build a vocabulary dictionary of their own, is have students keep a loose-leaf dictionary, so they can continually reshuffle, in alphabetical order, of the words that they're learning and have them put their sentence, and they can choose one or two other sentences from their group members to also write that help to clarify and extend the meaning of the word. Now if they forget the meaning, they go back and they have two or three or four excellent sentences versus the one where they had to write a sentence for each of 20 words and they were all terrible.

So be judicious, is what I'm suggesting, and use it as a culminating task, rather than the first one. And if you can link a core of words around a theme or a context, those words become more memorable, and you can increase the number of them as well. You can teach 15 meanings for sad, for example, within a single week. And over time, you can start to think, well, which words are more sad than others? Which ones are just a little bit? Which ones are terribly, terribly sad? And students can learn a bigger core if their meanings are similar. So that's where you could start to link across vocabulary words.

If you're interested in pursuing vocabulary more carefully, I would recommend either of Isabel Beck's books. *Bringing Words to Life* was her first one, and then, she has recently generated a second book that's in collaboration with McKeown and Kucan, really excellent. And then, B. Miller has spent about 30 years of his life working around vocabulary, and he's come up with a book that is, unfortunately, at the moment, quite expensive, but I'm finding it, as a researcher, just invaluable. It costs about $100, I think.

But to have one in the school or one owned by the professional development group can be very useful because he's bringing his whole research background of when do children learn particular words, and he's been able to order, he's found quite consistent ordering, you know, in blocks, of words that young kids learn first, the words

they learn next, the words they learn next, the words they learn next. And if any of you work with English learners that order is the same, it's just at a slower pace.

So if you're wondering what core of words next, you can pre-test and know where children are, right now, and know what's the next 100 words it would be useful to target, in terms of tier 2. So it's not a resource for the classroom teacher, but it's an excellent resource for whoever shapes curriculum within your school or your district around vocabulary instruction.

So when we think about moving beyond direct teaching of individual words and more into teaching words thematically, we're thinking about clarifying tables, what it is, what it isn't. And in semantically related words through a concept map, here are a whole lot of words that have a similar meaning. How do they relate to one another? And I can give you a couple of examples of this.

Here's an example of a clarifying table, and we could take any word. Okay, next week in one of our sites, we're working with the word fossil, because there are three books that are related to dinosaur hunting, which, of course, is exactly the right target because that's what my husband spent his summer doing was dinosaur hunting. Specifically, he was working on a paleontology site in eastern Montana and helping to cast fossils. He found it just fascinating. See, old retired guys can have a lot of fun. But the word fossil, so let's take that as our target. We need to come up with a user-friendly definition. Remains, I hear. Remains is a really important part of that definition.

WOMAN: (inaudible)

DR. O'CONNOR: So it's the remains of something . . .

WOMAN: (inaudible)

DR. O'CONNOR: (inaudible) that is old, the old remains of something . . .

GROUP: (inaudible)

DR. O'CONNOR: (inaudible) which was once alive or which used to be alive. So once upon a time, to be a fossil, it had to be alive at one time. So what we're doing is, we're making a clarifying table to establish what is a fossil always? What's something that a fossil always is?

WOMAN: (inaudible)

DR. O'CONNOR: Old. Dead. Remains. If the remains aren't there, we don't have a fossil, okay?

WOMAN: (inaudible)

DR. O'CONNOR: How about some things that a fossil never is?

WOMAN: Alive.

DR. O'CONNOR: It's never alive.

WOMAN: (inaudible)

DR. O'CONNOR: It's never new. It's never soft, yeah, because we usually think of fossils as having some kind of a hardened remain. Okay, so now we're beginning to get it formed, aren't we? Some things that it always is, some things that it never is. We have sort of a user-friendly definition. Give me some examples of fossils. Bones?

WOMAN: (inaudible)

DR. O'CONNOR: Plant, an imprint?

WOMAN: Yeah.

DR. O'CONNOR: Yeah, an imprint of plants.

WOMAN: Shell imprints.

DR. O'CONNOR: Shell imprints? This trilobite that you see, the fossilized ginkgo trees in Washington State. Okay, how about some things that are not fossils, some non-examples? Kids will always say my cat or my dog. That's the first thing they say. It's always a pet. My fish is not a fossil. Not yet, not yet.

WOMAN: (inaudible)

DR. O'CONNOR: What you want to try to work toward is, because we know some examples, we want to see how could those examples be not a fossil? It could be the bone in a living animal. It could not be the bone in an animal that died last week because it has to be old, right? It has to be preserved somehow. It has to be remains. We could take that plant imprint. But if that plant were alive, is it a fossil? No, it cannot be alive. It has to be old, it has to be an imprint that's retained somehow over time. It has to be very old.

So now, we're getting at the nuances of a definition. This is not the same as, go look it up in the dictionary. It's creating what it is, what it isn't. It's creating that border between the two. It's much more engaging for children. And because they're more engaged and they now are getting a mental picture of what this new word means and what it doesn't mean, they're likely to retain all of that and be much more involved in it than a paper and pencil test. Now it doesn't mean you might not want to move into a paper and pencil task at some time around the notion of fossils, but you want to start with this active engagement around meanings.

Around a concept map, you create a key concept. Sometimes we see it as spokes around a wheel. Within the wheel, you write what the concept is, and then, you create spokes. So the notion of a peninsula. What things come to mind when you think of peninsula?

WOMAN: Water and land.

DR. O'CONNOR: Okay, water and land. So we can have that kind of a bordering concept. Anyway, what you're doing here is eliciting from kids notions, and then, you show them where it fits into a concept map. And if it doesn't, you can put it off to the sides. You're just taking their suggestions. We'll come back to this one and show where it fits later.

So it's the notion of building, creating categories, creating generalities. And this is where you can link multiple words, multiple new vocabulary words to the concept that you're starting to build.

Here is an example, we could take ecosystems, for example, as our concept map. What words come to mind when you think of ecosystems? So we could spin off on that as a brainstorming activity for a while, and the teacher can show how that all links together. Now we can move into a map that is much more regimented. When we think of ecosystems around the world, we think of lots of different things. We think of the climate, the plants and the animals within each ecosystem, and here are some ecosystems, tundra, grassland, rainforest, and desert. So if we think about the tundra, what comes to mind around the climate?

MAN: (inaudible)

DR. O'CONNOR: It's very cold. And you can see, I've actually filled some of this in. If you think about the grassland, what do you know about climate?

WOMAN: (inaudible)

DR. O'CONNOR: It can be warm . . .

WOMAN: (inaudible)

DR. O'CONNOR: (inaudible) and it can be cold. Now we're talking about extremes, one to the other. Think about Nebraska. How about plants in the grassland? Hey, how about grass? And there will be others as well. You think, at least in the grasslands near where I live during my summer, which is in Washington state, in the grasslands we also have a lot of sage. So you can think of other plants that are linked to grasslands. You probably will not see black cherry trees in the grasslands, the way you have them here in Pennsylvania. So you want to think about making these distinctions. How about the rainforest? The climate?

WOMAN: (inaudible)

DR. O'CONNOR: It will be hot. It will be tropical. It will be moist. You can think about words that relate to grasslands and the more, like wet is what would often come to mind. You might try to elicit something like moist because it's a more elevated word for

the same type of term, and it's actually more accurate. We think about wet, we think about dripping. Moist is just sort of burgeoning, which is what a rainforest oftentimes is.

So through these kinds of activities, we show how one word links to another, how one word may be specific within a single context, other words may generate across contexts. And you allow children more play. Notice the way these older students are drawing more of their personal experience and background into the act of teaching reading, into the act of teaching vocabulary.

Now that doesn't mean that we don't do that with little children, we often do. But oftentimes what they come up with is sort of way off to left field of what we're trying to actually teach. In this case, we're taking advantage of students' background knowledge and allowing them to share their background knowledge, so that you build background knowledge within a group through these kinds of oral activities around teaching vocabulary.

And I want to come back to emphasize the oral language nature, because, for those of you who were with me this morning, that's where we started. Oral language is the foundation for reading and writing. It's what they come to us, prior to any schooling. It's what they bring into the act of reading and writing. The problem is that oral language that they came with is going to stay right about there, unless we also give children opportunities to read and write. And for students who struggle with reading and writing, their oral language is unlikely to improve, unless we take it dead-on and take a primary role in teaching the meanings of words.

Now there are a few key comprehension activities that I want to bring up also. Because while we're enriching the word reading ability of these older students, some of those students also need assistance with reading comprehension. Younger children are reading text that is not very complicated. So for those children, their oral language is oftentimes enough. If they can get the words off the page, they understand what they're reading. That becomes less and less true as the students get older, especially if what they're reading is getting more difficult and their oral language is the same as what they came to us with initially.

So for older students, teaching a few key comprehension skills is really important. And probably the single most important comprehension skill that we can teach is the main idea. Sometimes it's also called the gist. Now again, I'm going to sound like, and I don't mean to be, I'm going to sound like I'm panning curricula, and I'm not. What I'm suggesting is curricula changes, almost upon a whim. And we need to get strong as teachers, so that we know how to teach what children need to know, in order to learn to read well, regardless of what our curricula are suggesting we do.

A colleague of mine at the University of Washington, Marcy Stein, did an analysis of the reading curricula for fourth, fifth, and sixth grade. Now it's been about ten years now, but what she found under main idea is almost every main idea task was a test. It was not instructional. So there were tasks like, here's a paragraph. Usually, the main idea is the first sentence or the last sentence. Underline the main idea. Here's a paragraph. Here are four possible main ideas. Circle the letter that is the best main idea statement for this paragraph. If they can do those things, they don't need us to teach them the main idea. They already know.

But if they don't know the main idea, none of those tasks, even though we use them with kids as tests, teach them the main idea. When was the last time a friend

came in and said, I just heard the greatest news story. And you said, gosh, would you circle the main idea? It's not a realistic task. Or if they start to talk and you just say, oh, cut to the chase. Just tell me the sentence that was at the beginning or the end. It's not how main ideas work.

Main ideas are categorizations. They're categorizations and they're generalizations. Children need to hear a lot of things and decide, what is the main idea? Can we come up with a category for all of those people that were mentioned? Can we come up with a category for all of those activities that went on in that paragraph? It's a generative, it is, again, a production task. Main idea is not circle or underline. It's generative.

So I have to tell you just a, this is a very brief digression. But the strategy that I'm going to show you now was generated by Joe Jenkins and Jim Heliotis awhile back now. And the reason that I'm standing here today is that I was a teacher of reading, back at the time that this was being tested experimentally. And Joe Jenkins came and talked to a whole group of us reading specialists and were looking for experimental classrooms to either be in the experiment or the control, randomized design, all of that kind of stuff.

And I raised my hand, sure, that sounds fun. I got to be in the experimental group. And I was working at the time with fourth, fifth, and sixth graders in an elementary school. About half of these students had a diagnosis of learning disability, about one-fourth of them a diagnosis of mild cognitive disability, and about one-fourth of them behavior disabilities. All of them were lousy comprehenders, which was why we were invited to be part of the study.

And this was the instruction routine that they used. And we used it every day for 15 minutes, 15 minutes every day, for an eight week period of time. And on standardized achievement tests, the students in my class jumped over two years in reading comprehension in eight weeks. I mean, it's still one of the more powerful techniques around.

It has since been picked up by Joanna Williams and her group at Columbia. It's been picked up by Asha Jitendra and her group at Lehigh here. I know she just moved on, but she worked at Lehigh for about a decade. And so, I want to show you how it works, because it's pretty easy to implement, and the results can be quite outstanding.

So it goes like this. You start by using controlled paragraphs. You choose paragraphs that are easy for children to read. So if you're working with middle schoolers, for example, and they're reading on about a third, fourth grade level, don't choose their social studies book yet. Choose instead some reading material that's at about a third grade level, so that the reading is not going to be the issue. Generating the main idea is the issue. So children read it. Tom cooked two eggs. He poured orange juice into a glass. He put cereal into a bowl. He poured milk in the bowl. Who or what is this about?

GROUP: Tom.

DR. O'CONNOR: And what happened?

GROUP: He made breakfast.

DR. O'CONNOR: Okay, he's making breakfast. Now does Tom is making breakfast tell about him cooking the eggs? Think about it. Does it?

GROUP: Yeah.

DR. O'CONNOR: Is cooking eggs part of breakfast?

GROUP: Yes.

DR. O'CONNOR: Sure. Is orange juice part of breakfast?

GROUP: Yes.

DR. O'CONNOR: Pouring cereal in a bowl?

GROUP: Yes.

DR. O'CONNOR: Milk into the bowl?

GROUP: Yes.

DR. O'CONNOR: Yeah. So did you tell about the whole thing?

GROUP: (inaudible)

DR. O'CONNOR: Ten words or less? Excellent. You just generated a main idea statement. Notice that if you underlined the first sentence, that is not the main idea. It doesn't tell about the whole thing, nor is the last sentence. Maybe I could have generated an A, B, C, D, but it's not a production task at that point. We need children to be able to generate it.

We want them to be able to tell you the main idea, whether it's telling you about the soccer game, whether it's telling you about the movie they saw on Saturday. If they start at the beginning and go all the way through the whole thing, it takes as long as watching the movie. So the main idea condenses. It pulls things together. That's what this strategy does. Robert threw fish to a seal, poured milk in a bowl for the cat, put hay in the barn for the cows. Who or what is this about?

GROUP: Robert.

DR. O'CONNOR: And what happened?

GROUP: (inaudible)

DR. O'CONNOR: He fed the animals, didn't he? Does that tell about all of those separate actions? And ten words or less? You've got the main idea. Now this next one

is a little bit more difficult. A dog walked on its back legs, a bear rode on a bicycle, a seal balanced a ball on its nose. Who or what is this about?

GROUP: Being at a circus.

DR. O'CONNOR: So see how this time you had to generate a category that incorporated the subject of all of those sentences? And what did the animals do?

GROUP: (inaudible)

DR. O'CONNOR: Yeah, they performed tricks, they performed circus tricks, whatever you might think. And every student's main idea does not have to be the same, but it has to capture the gist. And you give them a checking strategy. Does it tell about the whole thing? Now you can get more sophisticated than this.

If you're interested in more sophisticated strategies for teaching main idea, you might also consider the work of Jeanette Klingner. She wrote an excellent book on teaching reading comprehension, and she also walks through some of the routines, and that book is for teachers as well. So it captures the research, but in a very teacher-friendly way.

She captures some of the work of Joanna Williams, where she was teaching theme, and some of the work of Jitendra, where she's also teaching children to cross out irrelevant pieces. And as you work more and more with students at the secondary level, you will want to get more sophisticated because their materials get more sophisticated. But this is an excellent way to start.

WOMAN: (inaudible)

DR. O'CONNOR: Pardon?

WOMAN: The title? Is it . . .

DR. O'CONNOR: It's a book. Klingner is spelled K-l-i-n-g-n-e-r. That extra n is a little, it's Klingner, a little bit tricky. That book on teaching reading comprehensions is in the same series as my word recognition book. There are about eight books now in that series, and they're all geared on translating research to practice for teachers. The publisher is Guilford, G-u-i-l-f-o-r-d. Particularly if you're trying to build a professional development library, they're all very teacher-friendly materials.

The next sort of big comprehension strategy that you can, again, teach in about five minutes a day is the notion of question, answer, relationships. And this was first developed by Raphael and her team in Minnesota. But what question, answer, relationships helped students to do at the secondary level, and I say secondary, but really, from fifth grade on, is to develop a strategy for thinking about the questions that they're going to have to answer at the end of the chapter.

Answering the questions at the ends of the chapters is probably the most used instructional, not necessarily instructional, but testing strategy in the secondary grades. So if you can teach students early on how to attack those questions, then they can use

their reading time more efficiently in concentrating on what the instructor thinks is relevant in what can be relatively dense material that they're asked to read in secondary settings.

So students are asked to read the questions before they read the text, so that they know what they're looking for. And for each question, they have a little discussion. So if you're able to teach in small groups or even to prep students for content areas in small groups, QARs is a great way to get them ready for what they're going to be reading in the general ed classroom.

So they read each question, and the first notion is, is the answer going to be in the book or in my head? Some questions are really asking for the reader's opinion. Some are really asking for what was in there. Sometimes a question is asking for a specific fact, something that's going to be right there, probably within one particular sentence in the text. So that's a in the book, right there-kind of a question. Some is asking students for something that is going to be in the book, but they're going to have to combine information from multiple sources.

So you're prepping them for what's the strategy here? Am I looking for a fact? Am I looking for lots of instances of this thing? Or am I going to be asked to come up with an opinion, based on what I read? What do I think about this? And, if so, can I do that by myself, after I'm done reading, or do I need to involve the author of this particular text in figuring out my answer? So it's strategic.

When children have these discussions, they might not all agree. That's okay. You've just elicited now multiple strategies for how they might attack that question. I would like to suggest that one of those concept maps that we can use with children are also physical maps, setting the stage.

I mentioned Shackleton earlier. Have any of you read about Aaron Shackleton? If you're looking for material that is going to grip those eighth grade boys who are poor readers, Shackleton is just about the best thing you could find. Shackleton, just before the start of the First World War, for those of you who are not familiar with it, sails off to conquer Antarctica. Now by conquering Antarctica, what he means is finding the South Pole. So he's one of multiple teams to try that. The problem was 1913, 1914 was the worst winter in over 100 years. And when he gets to Antarctica, his ship starts to ice up, and it becomes iced in. This was before metal hulled ships. What happens to ice? Does it get smaller or larger?

MAN: Larger.

DR. O'CONNOR: It gets, ice expands, doesn't it? So it was starting to crack the timbers of the ship that they were ice locked in. Even if they could make it through the winter, their ship would sink with the spring. So he's having to go into unchartered territory. He's got this group, he's got to keep their morale up. He hopes to get them out alive. They're looking for rescue, but the First World War is just starting, and they don't even know it. There is no rescue in sight for these men. Oh, gripping.

Now I don't want to give away the plot, because I know you're all going to want to at least look him up online and see what happened. But in terms of QARs, if you think about the Shackleton story, and, incidentally, the autobiography has been given a readability of about grade 17.

However, there are many biographies that are written at much lower levels. The lowest level that I found that was still coherent and a pretty good story was about a mid-second grade level. And there's a really excellent version out that's about a fourth grade level, which is great to use with middle or high school students who are poor readers. Girls like it too, but you know how hard it is to grip those eighth grade boys, right? So how did Shackleton save the lives of his crew? Is that going to be in the book or in your head?

GROUP: Book . . .

DR. O'CONNOR: It's going to be in the book, isn't it? Okay. Do you think it's going to be a one little detail or do you think it's going to be spread across?

GROUP: Spread across.

DR. O'CONNOR: And are there clues? Yeah. Are there clues for why it's going to be spread across?

GROUP: (inaudible)

DR. O'CONNOR: Hardships, that's right. Some s at the ends. It was going to be multiple times. So as we read through this story, I beg your pardon? I am not getting a virus. All right. So what you've just done then is given students something to look for. How did Shackleton save the lives, excuse me, I was on to the next question, the lives of his crew? There are probably going to be several instances. This is something that we might want to keep a list as we read.

So when we come across a place where it looks like Shackleton is saving the life, why don't we all shout out about it and take a little note? It's going to help us answer the question. Describe some of the hardships faced by Shackleton's crew. In the book, in your head?

GROUP: In the book.

DR. O'CONNOR: In the book. One place or multiples?

GROUP: Multiples.

DR. O'CONNOR: Multiples. So every time we come across a hardship, we're going to make a little note. It's going to help us answer the question. What kind of leader was Shackleton? In the book, in your head?

GROUP: In your head.

DR. O'CONNOR: Probably in your head. It could be in the book. I mean, there could be a statement overtly, so we'll watch, just in case. That's why I'm saying that your group may disagree, and that's all right. That's all right. You're just eliciting where it

might be, how they might go about answering it. So if it is going to be in your head, do you think you can answer it, right now?

GROUP: (inaudible)

DR. O'CONNOR: So probably you're going to have to answer it, in relationship with what the author's actually writing about, and then, come up with an informed opinion, based on your reading of this text. What thoughts do you imagine went through Shackleton's mind before he set off with just five of his crew? In the book, in your head?

GROUP: In your head.

DR. O'CONNOR: In your head. What thoughts do you imagine? Is this going to be you coming up with this or are you going to have to be consulting with the author?

GROUP: (inaudible)

DR. O'CONNOR: You're probably going to have to come up with this yourself. So when we get to the part when Shackleton is setting off with just five of his crew, leaving those others behind on the landlocked ice floe, we're going to have to think what might have been going through his head. So QARs work quite differently from what we often do with poor readers, before setting off with the text, which is, what do you think this story is going to be about?

GROUP: (inaudible)

DR. O'CONNOR: That's not a bad idea. I shouldn't have done that. It's not a bad idea, but this is a better idea. It's so much more focused. It elicits some of the vocabulary that children are going to be coming across, it gives them a strategy, a very specific strategy for what's going to be important and what's less important. These questions are going to be the main ideas.

So by taking notes as we go, by looking for instances where we could add to our knowledge in answering each of those questions, we're going to end up with something that is very like the grist for writing a written summary. And after answering the questions at the end of the chapter, the second most common assignment through the secondary years is generating a summary over what they've read. So this gives them the grist for doing that.

Now we use graphic organizers, often with young children. We think about, for example, the characters, and the setting, the main problem, and the solution. In this case, you can also think about using graphics for secondary students, as long as what you put in the categories is going to be of use to them later.

In this case, these particular categories, setting and characters, problem, events, and hardships, and the resolution or the ending, are going to give students a note-taking device for generating a written summary of this story that they're about to read. So by taking notes, and when we define taking notes to secondary students, we say, a note is

something that is no more than three or four words. It can be one word or two. If you need a phrase of three or four, that's okay. We're not generating sentences. That comes later. So write only enough words to remember.

If we don't do this, we have seen instances of students, even into secondary grades, opening the book, and setting and characters. They're going to write the three sentences that had the setting in them. What that means is, when they come to write their summary, it will be plagiarized. This is not a good precedent to set in secondary school. So by encouraging to only take notes, a word, two, three, four, no more than four, you give them the grist where they can write a summary that truly is in their own words and doesn't run the risk of plagiarism.

So the five minute additions that we are currently researching for secondary students are how closely can we cut to the chase? Because the other problem that we have with secondary students in our research sites is their schedules are highly regimented. They need to complete particular courses in order to graduate. For some poor readers who still may be going on to secondary school, I mean, to schooling beyond the K-12 years, they also need to complete the kinds of requirements that would enable them for college entrance.

So if we pull them out into the 90 minute reading block that we had the luxury of having with these young children, then they don't get their math units or they don't get their social studies units or they don't get something that they need to graduate. And so, what we're trying to do is compress reading instruction into areas where we work with our secondary students for no more than 40 to 45 minutes or one class period. And it's still difficult to arrange, because sometimes that one class period is taking place of an elective, which might be the only thing that's keeping them in school. So anytime we do intervention with secondary students, it's tricky.

So what we're trying to do right now is compress into five minute hits some of the aspects of reading that we know carry a lot of the weight of reading comprehension, are highly transferable across subject areas, and will generate an overall level of reading improvement that is likely to be useful to them, in terms of a long-term life outcome. In all, we need to think about keeping kids in school. As you know, the dropout rates are horrific in this country, right now. And poor reading is a major cause, a contributing cause, to dropping out of high school. And once they drop out of high school, it's extremely difficult for students to have an optimal life outcome, which is what we're supposed to be preparing them to do.

So let me end with a notion around reading fluency that just came out of our work from last year, and then, we'll take questions. I hope there will be some. What you're looking at here is a dot plot. And what is along the bottom axis is children's reading comprehension, and what's on the vertical axis is how fast they read. And these are not children overall. We're not looking at the Bell curve here. We're looking only at the lower 25%, the children that, as reading specialists, are the kids we work with the most. And what I want to show you here is, if you follow up this way, it almost looks like a line of dots, doesn't it? What this suggests is, up to a point, the faster children read, the better their reading comprehension will be.

Now if you follow it up to about 80 words per minute, we begin to see that line break apart. It becomes almost as if those dots were random. What we're finding is, what we're currently hypothesizing, is the 80 word per minute slump. And we don't

know how far it will replicate, but what our work is tending to show us right now is, for children who are reading less than 80 words per minute, the likelihood, as they move into fourth grade and beyond, that they will continue to grow in reading comprehension is very slim, but we might not have to get them to the 120, 140, 150 word per minute mark.

Many of our students who are reading at about the 80 word per minute mark, and you can see where that is, follow that across, 80 words per minute are still reading with very good comprehension. Now this is not the same phenomenon that we find in the Bell curve. In the Bell curve, we find that faster is better for comprehension, up through about 120 words per minute, and we currently don't have evidence that students need to read faster than that.

I think that's good news, if you work with kids who are slow, plodding readers. Getting them past 120 words per minute is like pulling teeth. What our research is suggesting is we might not have to get them quite that fast, that if we can get them beyond 80 words per minute, many of the students can understand all that they are reading within that amount of time. So we're going to be following students over the next five years of fluency and comprehension work to see whether we can set some guidelines, not for children overall, but for children who are struggling readers.

At what point, just like we've found clear-cut points with phonemic awareness and letter knowledge, once they get over 30 phonemes, drop it. Move on to something else. Once they get past 50 letters in a minute, drop it. Move on to something else. We don't have those kinds of guidelines yet for fluency.

But I think within the next three or four years, we'll be able to say, you know, push them up toward 100 words per minute. We might not have to get faster than that. We should be working, perhaps, instead at that point on vocabulary, comprehension strategies, multisyllable word strategies, the kinds of activities that will help them get the words off the page.

So, in terms of keys to successful intervention for these older students, we need to determine where students are across all of these relevant dimensions. Where are they in their decoding ability? How is their vocabulary faring? What is their current rate of reading when they're reading, you know, within their word identification ability? What kinds of comprehension strategies can they already use? What would be good instructional targets?

Once we find, across all of those dimensions, what they can do and where they begin to fall down, we can think about combining five minute hits of these kinds of activities that we've been doing this afternoon and linking those into as much available time as we're given by our schools and school districts to make optimal use of students' progress over time in reading.

It's key, when you choose a new strategy, to keep with it. Keep doing that same strategy every day, until you see clear evidence that students have learned it. And for most students, it takes roughly two weeks of daily instruction in short hits before students are using those strategies independently. We stop too soon, students will forget. And if they forget, we've just wasted the last six days.

So keep with it long enough. Don't jump around too much. Concentrate on those particular activities, whether it's in decoding or vocabulary or comprehension or fluency building, concentrate on the activities that have a strong research base that

increases the likelihood that you're spending your time wisely. And because the time is so sparse with these older students, we just can't waste any more of it.

The other is, think about strategies that are age and grade appropriate, to the extent that we can. It increases students' motivation, and that increases their willingness and participation. So that's all I know, but I am willing to take questions. Yes? Oh, thank you. First question?

WOMAN: I had a question about the graphic . . . what's accurate . . .

DR. O'CONNOR: Okay, we're looking at accuracy above 90%.

WOMAN: Above a 90%?

DR. O'CONNOR: Yeah. Yes?

WOMAN: (inaudible)

DR. O'CONNOR: Okay, she's asking how do we assess comprehension. That is the mother question of the century. We have such good progress monitoring measures for isolated skills, excuse me, and we have very little for reading comprehension. What you were seeing on the graph were standardized assessments, but we can't use standardized assessments, like the Woodcock Reading Mastery Test or the Gray Oral Reading Test, for progress monitoring, because you can't give them that often.

WOMAN: (inaudible)

WOMAN: (inaudible)

WOMAN: (inaudible) it's so hard . . .

DR. O'CONNOR: Right. She's suggesting that she's not seeing the value of that AIMSweb measure, where they're all together, and the students are seeing how many words they can separate.

WOMAN: No.

WOMAN: No.

DR. O'CONNOR: And the . . .

WOMAN: (inaudible) every . . . word . . .

DR. O'CONNOR: Oh, the MAZE, sure, yeah.

WOMAN: (inaudible)

DR. O'CONNOR: Yeah. The problem with the MAZE is it is highly literal. It's supposed to be, of the three word choices, only one is supposed to be even really possible, and the others are very far distracters. So what you're really monitoring is whether students are attending. You're not monitoring comprehension. Those two things are related, but students' abilities are so variable as they get older as poor readers.

It has been, the MAZE task has been used as a good post-measure, but it is absolutely irrelevant, in terms of what should you then be teaching, because MAZE is not all we teach. We're teaching comprehension. So think about teaching the comprehension strategies that we've talked about today. And you can go back to the *National Reading Panel Report*, that's where these came from, and they've since been validated by many teams since that document was published. But for monitoring progress, we just don't have measures that get into inferential thinking, which is pretty much what comprehension is by secondary.

We've been, actually, one of my doctoral students last year, who just finished her dissertation, did a dissertation on various ways of scoring retells, because retells are also unreliable. And so, there are some measures out there. But frankly, they're not very good. And the measure that she found was the best among three different types of scoring was, when they had finished retelling, can they state a main idea, over as far as they read? And the students that could generate a viable main idea statement were showing the progress that we were looking for.

But this is just one study, and so, I don't recommend that you do that yet. And that's because what we look for in research is convergence, not just a single study that found a particular thing, but a convergence of studies, all of which found the same powerful thing. That's when we start recommending it to teachers. But frankly, if your students can read a paragraph at their current reading ability and generate a main idea, they probably pretty much got it. And that might not be a bad way to go. Yes?

WOMAN: Would the same hold true then for a vocabulary measure? Because when you think about students who have IEPs, we do have to, in some way, measure their progress. So for lack of anything better, one of us had defaulted to use the MAZE because at least there are standards, whether . . . or not. The same thing holds true with vocabulary. Do you have any suggestions on measuring progress, related to vocabulary knowledge? Even though we are using the new . . . and that part is great. The depth of knowledge, we have a little group where I . . . but is there anything else that . . .

DR. O'CONNOR: The problem is, for monitoring progress, about all we can do is assess whether they're learning what we're teaching. So we're basically getting back to curriculum-based measurement, with a little c.

WOMAN: Yeah.

DR. O'CONNOR: The small c of, we have taught ten words this week. Can they use those ten words? And then, on a monthly basis, we've taught 40 words. Select 10 of those 40. Are they retaining them? And continue to build. Because the vocabulary

measures that are valid and reliable are really only meant to be given once a year. So we can use those for documenting growth on an IEP once a year, but we can't really monitor progress with them.

We're just pretty much going to have to rely on curriculum-based measures, until researchers come up with something that's better. Now Coyne's team is working on a measure. It's not out yet, and I think they're having some reliability problems with it as well. So I think we're a few years out, before we're going to have a viable measure that we can recommend with any strength behind it.

WOMAN: Thank you.

DR. O'CONNOR: Yes?

WOMAN: (inaudible) or . . .

DR. O'CONNOR: Exactly. In this particular case, we were measuring students at their current instructional level, which is not their grade level. So, for example, if we were working, some of the students here were sixth graders who were reading on a third grade level. And we were using not their independent, but their instructional level, so the level at which they were reading with about 90% accuracy.

And as they were reading with 90% accuracy, above 90% accuracy, we would push them to a higher level of text and keep them moving up in grade level, so that they would be exposed to a wider range of vocabulary. Yeah. So the notion is, can they understand what they read? So they have to be reading with sufficient accuracy or they're making so many mistakes, there is no comprehension occurring anyway. Or not enough, I shouldn't say none, but not what we would hope for.

WOMAN: (inaudible) instructional . . .

DR. O'CONNOR: Okay. She's asking what we're using for an instructional level? We're using, in our research, and I don't know that you want to do this, but in our research, we're using a function of two things. We first give them a standardized word identification test, something like the Woodcock or the Woodcock-Johnson, which generates a grade level. And then, we test them on running text passages at and a little above that grade level that was generated, and look for the point at which they're achieving at about 90% accuracy.

WOMAN: From where . . .

WOMAN: So the passages are from where . . . Woodcock?

DR. O'CONNOR: They can be from any of the packages that are currently available. We're not finding a lot of difference between AIMSweb and DIBELS, but those are for measurement. We're instructing using materials that are at around the 90% accuracy.

And if we have students working in very small groups guided by an adult and a skilled reading teacher, we drop it down to about 85% accuracy, with the notion that we

give them multiple opportunities and a lot of feedback. So that, by the time they've read this material a couple of times, they're up above the 80% and more into the 90-odd% accuracy. And it exposes them to a wider range of vocabulary, which we think is really critical for these older students. Yes?

WOMAN: (inaudible)

DR. O'CONNOR: Eighty-five percent, if they're working with a skilled adult, a reading teacher, reading specialist, special educator. Really well-trained adults can work with material that's more difficult. They know how to scaffold in ways that you wouldn't expect, necessarily. I mean, I've seen some very skilled teaching assistants, but you wouldn't necessarily expect that level of scaffolding that a well-trained reading teacher can do. Yes?

WOMAN: (inaudible) (inaudible)

DR. O'CONNOR: She's asking about that 80 to 120 that I was discussing earlier around fluency. That's words correctly in a minute, not total words. Okay? I guess we're out of time. Thank you.