# Going deep beneath the surface of words - with Sue Hegland

Triple R Teaching Podcast #194

Hello, this is Anna Geiger, author of *Reach All Readers* and creator of the Reach All Readers website. In this episode, I had the privilege of speaking with Sue Scibetta Hegland about her incredible book, *Beneath the Surface of Words*, which I really think every English speaker should read.

This book really helps us understand why English is spelled the way that it is. It strips away this idea that we have a language full of inconsistencies and irregularities and helps us understand where spelling came from and how it all ties together.

If you are new to morphology, I would listen to some of the episodes that come before this because in this one, we get deep into the weeds as we dig beneath the surface of words. Here we go!

**Anna Geiger:**

Welcome Sue!

**Sue Hegland:**

Thank you, Anna. It's really nice to be here.

**Anna Geiger:**

I have absolutely loved your book. I read it cover to cover and wrote lots of notes all over.

We're going to talk a lot about that today, but before we do, could you introduce us to yourself and explain your history in education, all the way up to writing your book?

**Sue Hegland:**

Great. Well, I got into this field maybe through a little bit of a different path. It was as the parent of a child with dyslexia. I was not involved in K-12 education before that, but about 20 years ago, our oldest son, who is 31, he was 11 years old, and we learned that he was dyslexic. That's another whole story.

Basically, out of that, I got very interested in learning more about dyslexia and effective writing and spelling instruction because he was one of those kids who figured out reading, kind of, but could not write and could not spell.

I got involved with the International Dyslexia Association right away. I started learning more about dyslexia and eventually I joined the board of directors for the upper Midwest branch of IDA. I spent six years on that board learning and became a member of our local school board and spent six years doing that.

Along the way I learned all kinds of things and I was hoping I could help educate people about dyslexia, about structured literacy as we call it now, effective reading instruction.

But I also realized there was a huge need for kids to be tutored because so many kids were kind of falling through cracks.

Also, I wanted to learn more about the process of teaching kids to read because I knew about it in theory, but I hadn't really done it. So I got trained in Orton-Gillingham and I spent about seven years tutoring kids with dyslexia almost exclusively. I learned a tremendous amount.

But as I was doing that, I realized… I mean, certainly it is a difficult challenge to teach a child to read, especially a child with dyslexia, but what is even more difficult is helping them become good spellers and good writers. I wanted to understand that, and I really wasn't getting a lot that was helping me do what I needed to do. Because, as you know, with our writing system, there's often more than one way to spell a given segment of pronunciation. For instance, /ă/, you can spell it a couple different ways, so how are kids supposed to know which one to use? There weren't really good answers that I was coming across.

Then in 2012, I was at an IDA conference and there was an all-day symposium that Louisa Moats had organized. It was on Common Core State Standards, and I think they talked about it as scientifically-based reading instruction because the term structured literacy hadn't really been coined at that point. Common Core was new and it was about how do these fit together?

That was an amazing symposium. Marilyn Adams was speaking, Susan Brady was speaking, and then Pete Bowers was there.

I think he was still a grad student and Dr. Moats had invited him to talk about morphology. He talked about morphology, he put up a base with a matrix. I think it was for S-T-R-U-C-T, like “construct,” “construction,” “structure.”

I was like, “Wow, I've never seen this before!” The word matrix, was so illuminating.

It took me a little while to get into this, but then I started trying to learn all I could about morphology and the other aspects of orthography, of our spelling system, that I hadn’t been learning. I spent a number of years studying and learning and applying that to the students I was working with.

Then around 2020, I was giving a lot of talks about what I was learning, and people would say, “This is so interesting. I'd love to read more about this. Is there a book I can get?”

And I would say, “No, but you can take classes.”

There are a lot of people who understand this, and I was hoping somebody else would write a book, to be honest with you.

Well, it became sort of my pandemic project. I decided I would try to write this. And so in 2020 and 2021, I spent a lot of time writing this book and rewriting it. I learned so much through the process of writing it, because I couldn't write it when I started the way I wanted it to end up. Then it was published at the end of 2021.

My focus now really is about helping people - teachers, parents, anyone who's interested - to learn more about how our amazing, coherent spelling system works. And it’s not so much about how to teach it, because there are many people who know much more about instruction than I do, but what I try to do is help people understand how the system works.

**Anna Geiger:**

Your book is called *Beneath the Surface of Words*, and I did not realize it was so new. I hadn't realized that. But anytime someone asks me about morphology and for references, your book always comes up because it explains things so clearly. There were just so many “aha” moments I had when I was reading it. It was very fun for me.

**Sue Hegland:**

Thank you.

**Anna Geiger:**

Your purpose of the book, as you just said, was to help people understand why words are spelled in a particular way. Why do you think that's so important for people to know?

**Sue Hegland:**

Well, that's a really interesting question because, for many of us, we learned how to read and spell without this knowledge, right? I learned how to read and spell; you learned how to read and spell. I'm a great speller, I'm an avid reader, so why do I need this?

First of all, why am I a good speller? I have the kind of mind that just remembers the spelling of words. I see a word a couple of times and I've pretty much got it. I'm always excited actually when I misspell a word because I'm like, "Oh, there's something there that I can dig into," but I just remember them.

I can remember students saying to me, "Why is there a W in answer?"

Well, I had no idea. There's one there and I just have always known that it's there.

"Why is the word delicious spelled the way it is?"

"Well, I don't know. That's just how you spell it."

If you have a mind like mine or like many other people's where you just can remember those spellings, then it doesn't seem like it matters.

But there are so many students who don't have that kind of a brain. It's not a particularly important… I mean, if we didn't live in a literate society, it would probably be like a party trick. It's not really something that has to do with how you think or how you reason.

I'll give you the example of my son. My oldest son is 31, he is a mechanical engineer today, and he builds things. But when he was 11 years old, he could not spell the words "says" and "does" and "been" consistently. Sometimes he would get it, but when he was tired, "says" became S-E-Z.

But if I could have said to him, "Hey, that has a structure. There's S-A-Y, that's the base. It's like "say" and "play" and "day," and it's very regular, very predictable. It has a suffix S because when we say, 'I say, he says,' we add that suffix S, just like with 'I play, he plays.' All you do is put the base, which you know how to spell, you can encode it, you can decode it, and you add the suffix S, and now you've got it!"

He would have had that overnight because it would have made sense to him.

For a student who doesn't have a strong ability to just remember the spelling of words, they need this. They look at their peers who maybe have the kind of the brains that can just remember words and think, "I'm doing it wrong. Something's got to be wrong with me because they've all got it, but I don't have it."

It also is really very freeing for kids to know that there is a logic and there is a reason for things. Even if we don't know the reason for every single word, and we don't have to dive into the reason for every word, just knowing that the system makes sense really makes a difference for them.

**Anna Geiger:**

Yeah. Speaking as someone else who learned to spell very easily, I appreciate knowing these things because it helps me explain spellings.

One of my children who's... She's doing fine, but she's not as natural of a speller. She misspells a lot of words in her worksheets, and now I can explain to her the structure of the word and why it's spelled this way.

Also, when you talked about your son being unable to spell for a while, that's a real hardship for people in our society because you're looked at as not as smart if you misspell words.

**Sue Hegland:**

Absolutely, and it limits what people do. I know people with dyslexia who have so much to say, but they don't write because it's an ordeal.

I remember asking my son how it was going in college with some projects and he was like, "Oh, it's great. It's just the way it always is where I do the math and someone else does the writing." He found a way to make it work, but it does affect people.

**Anna Geiger:**

That's one thing that Louisa Moats has said too. One of the reasons why spelling is important is because if you aren't a good speller, it limits your writing because you're afraid to try things.

**Sue Hegland:**

Yeah.

**Anna Geiger:**

In the book, you do many different things, but you start off by taking the word "comfortable" and discussing how students might spell it, assuming spelling is based only on phonology.

On this podcast I've talked a lot about how spelling is way more than just sound to letter matching, like we might see in a CVC word. But many children would spell it that way, as if they're trying to match every single sound to a letter.

How do people sometimes spell it, and how can we explain the proper spelling of that word?

**Sue Hegland:**

Well, so I'll talk to you about how we explain it, but I'll tell you a little story about that spelling because I picked that for a reason.

I found the word "comfortable" years ago when I was starting to learn about morphology and thought, "Wow, that is just such a great illustration of the kind of disconnect between the pronunciation and the spelling."

For many words, as you said, like with the CVC words or shorter words, a lot of times we can go directly from the pronunciation to the spelling and back without any trouble. But then we get into longer words and we start to get into trouble.

So I was looking at "comfortable" and was thinking, "How might a student spell that?"

We know this concept of statistical learning where kids absorb patterns, so a student who's gotten to the point of trying to write "comfortable" may have absorbed the fact that we really don't start words with a C-U-M even though it sounds that way, so they might write C-O-M.

Then we've got “table” and “marble” and “comfortable,” so that B-L-E.

Then in the middle, what do we say? I say “comfterble,” for example, so F-T-E-R would be the logical spelling. That was my little example that I was using to say, “Hey, a student might do this.”

What I thought was amazing, one of those moments, I think it was weeks or months later, I was going through some papers that I had on my desk because I hold onto examples of spelling errors. I pulled out a paper that my daughter had written in eighth grade and there on that paper was this *exact* spelling that I had thought might be a reasonable attempt by a student who had some pretty good spelling skills. There were all these other words that she had spelled correctly, but with “comfortable,” she was like, “Hmm.” That's the illustration that's in the book; it’s her writing.

What we have to do with words like that is show kids the structure. We have a prefix, C-O-N, we have a base, F-O-R-T, and we have a suffix, A-B-L-E, and all of those parts are going to be reused in other words.

They're part of the system. They're units that contribute to the meaning of words, and they show up in other words. Someone is “likable” or all these different other words that use an A-B-L-E. We could have a C-O-M prefix, and that F-O-R-T forms words like “effort,” “comfort,” and “comfortable.”

Once you see the structure, then you can understand how to spell it and you can reconstruct it bit by bit.

**Anna Geiger:**

I'm going to take a quote from your book and ask you to expand on it. You wrote, “Although morphology is often treated as a secondary or advanced aspect of reading and spelling, it is actually the foundation and framework of the entire English spelling system.”

**Sue Hegland:**

Yeah, that sounds like quite a statement, doesn't it? I'm glad to have a chance to explain it, Anna, because I think that is sometimes misunderstood.

I am *not* saying, when I say that, that we don't start with phonics. Of course we have to. We have to start by teaching children phoneme-grapheme relationships and have them have opportunities to practice and all that sort of thing.

But as teachers, as tutors, as parents, we want to keep in the back of our minds that we want them to *also* understand, at the same time, from the very, very beginning, that the phoneme-grapheme relationships are flexible. That's why we often have so many ways to pronounce a given grapheme, letter, or combination of letters.

There are so many ways to spell a given phoneme, a given segment of pronunciation that's going to differentiate one word from the other, because these morphological elements are, for the most part, spelled consistently, even though our pronunciation changes. “Fort,” “effort,” “comfortable,” they're pronounced differently, but the spelling is the same.

That is the framework. The framework is that we put these elements together to make words.

I say it's the *foundation* because it's the part that stays stable. Once kids understand that stable structure, they are much better able to use the adapting pronunciation and all the different words we form with very different meanings from these foundational units in the system.

But it really doesn't mean… I want to emphasize, I'm a big advocate for systematic, direct, explicit instruction. I think phonics is essential. I mean, obviously phonics is essential. It's just that we need to

frame that teaching in the knowledge and the understanding of where we're going. So that even as you're teaching a word like “cat,” you can say, “We're working now with words that are formed from just a single base element. We're going to talk about ‘cat’ and we'll look at ‘cats’ later, ‘dogs’ and you know…”

This comes in very early; it comes in and it's framing that foundational teaching in the idea that this is how the system is working all the way through.

**Anna Geiger:**

Right. I think if we don't get that, if we don't get that morphology plays actually a bigger role than phonology in spelling, especially as we move further along, then we say things like, “Well, the word dogs is funny because S makes a /z/ sound.”

Instead we can explain, “Pronunciations can change, but this word is perfectly regular. We've got the S at the end.” It’s the same thing of course with the E-D ending.

**Sue Hegland:**

Right, and you get into words like “mission” and “ignition” and “magician,” right? And if we're just focused on the syllable structure and the way we pronounce that last syllable in the spoken words, which sounds the same in all of them, but they're spelled differently… “Magician” is showing the connection to “magic” and “ignition” is showing the connection to “ignite.”

We can see that when we read. One of the reasons that the system has evolved this way is as people understand it, is it lets us instantly see those connections between words and comprehend when we're reading more efficiently and quickly. It's really an important part of the system, not just for spelling, but for comprehension as well.

**Anna Geiger:**

Yeah, thanks for pointing that out. I hadn't really thought about that. But yeah, when you're reading and you see how the spelling is connected to related words, it makes sense.

**Sue Hegland:**

Absolutely!

**Anna Geiger:**

I'm going to move on to the phrase “base element,” which is a word that I heard from you first. I don't know if you got it from somewhere, but you're using it to refer to the part of the word that carries the meaning for the word.

We've used all different words in the past, like “base word” or “root.” Can you explain maybe different options and why you landed on this one?

**Sue Hegland:**

Yes. So first of all, I learned this from other people and I thought that it was very fitting because there are two parts then, “base” and “element.” The “element” part is not a standard term in all of linguistics.

Although when you think about what an element is, it's sort of an elementary part, it's the basic part. We use that.

One of my mentors used that and also a gentleman named Don Cummings, who's done a lot of work on writing. He also used the term element for a *written* morpheme. Morphemes are in spoken language and they're in written language, so it's really handy to have a way to say that we're talking about a base element so you know that now we're in the realm of spelling. We're not talking about just a pronounced word, right? So, "element" is very handy.

Then I chose "base," rather than say "base word" or "root" or "combining form" or "stem," there are lots of other words that people use. I like that word because it points us directly to morphology. It makes it clear we're in the realm of morphology.

Also, if I'm looking at a word and trying to analyze it, I don't have to know, is it from Greek? Is it from Latin? I just have to know that I see a suffix I recognize, I see what looks like a base, and now I can be thinking about that word without having to have a lot of extra knowledge. That's very helpful.

When people use the term "base word," I used to think that was fine, and I didn't worry about that too much. It is fine.

One of the things I also tell people is if you're in a school or you're in a setting where everyone else is using particular terminology, it makes a lot of sense to try to not confuse the kids by having a bunch of different ways to name the same thing.

But if you can, it's really helpful to move people towards that word "base," because a base is a morphological structure. It sits below the surface of a word, right? It's this lower-level thing.

Whereas a word is a word. There's a base, C-A-T, which you notice I'm spelling, and there's a word, "cat." Those are not the same thing, and it took me a long time to understand the difference between them.

We have bases in spoken language, we have bases in written language, but they're the foundation of word. Every word has at least one base as part of its structure. Sometimes there are other elements as well, but every word has at least a base. I just find that very simple and clarifying, and it focuses us on the fact of what we're dealing with.

The other thing is that a root is often used for an etymological term, like the root of a word where it comes from, say in Latin or in Greek. I've actually seen people use the term root and I *think* they're talking about the morphological structure, but they might actually be talking about the Latin etymon because of the language and the sentence. It's not entirely clear. This makes it really clear.

**Anna Geiger:**

Yeah, I used to call it the root, and in my book I did that too. Now I've switched over to just calling it a base element so that they're all in one bucket, and then we can talk about different types of those.

**Sue Hegland:**

Right.

**Anna Geiger:**

I want to go back to something you just said a minute ago, which I hadn't really thought about too much before. You said the base C-A-T is different from the word "cat." Can you explain that?

**Sue Hegland:**

Yes. It literally took me a very long time to sort of grok that, but a base is an underlying structure in a word, and it may have a slightly different surface appearance, if you will, than the word.

For example, if we look at a word like “final,” F-I-N-A-L, right? There's a base in that and it's F-I-N-E, but there's no E in the spelling of final. Final is a word. It has a definition. It means sort of the last thing you do, right? The base F-I-N-E has a spelling that may include an E that doesn't show up in the final word.

It has what I like to call, and what I learned from others as well, an orthographic denotation, a deep sense that is different than the meaning of a word. There's some subtlety to that, but spelling a base is something that helps us differentiate. Are we talking morphology? Are we talking about words?

**Anna Geiger:**

Thank you. That's really a mind shift – a big one.

You talked in the book about orthographic denotation, which I found very refreshing because I sometimes have gotten frustrated when people take a word apart and they say, “The base means this, and so the word means this!”

And I'm like, “How on earth did you stretch to get that far?”

You were clear in your book that sometimes that meaning kind of fades away, and we're not really saying that it exactly means this, but it has something to do with it.

Can you talk more about orthographic denotation? Break those two words down first and then explain and give us some examples.

**Sue Hegland:**

Yeah. I always tell people it's really a mouthful, “orthographic denotation.” Sometimes people say “basal denotation,” but I like orthographic denotation because it's what's carried in the orthography and it's this deep sense. I don't even like to use the word meaning when I talk about it because it's so easy to confuse that with the meaning.

As you pointed out, sometimes when you try to add those units together, the meaning of a base, the meaning or the function of a prefix or suffix, you don't get the definition of a word. Then people will say, “See, morphology doesn't really work all the time.”

**Anna Geiger:**

Yeah, it doesn't make sense.

**Sue Hegland:**

It doesn't make sense. But words have stories, words have histories. What happens is they came from somewhere. They came from an older word that had a meaning in that older language, and the reason it still has often that echo or that thread is because it got shifted a little bit in how it gets used.

That happens in English today, right? My kids had to teach me that kids now use the word “salty” to mean kind of annoyed, as in you're feeling salty about something. But that comes from the idea of salt being an irritant. It has a reason that it happens.

These words have evolved and that orthographic denotation is this kind of deep sense that is carried along with the base as it has come into English.

With our word “comfortable”…. If that base F-O-R-T has the idea of strong because of where it came from, when that base forms the word “fort,” we often think of that as a strong building, right? A military fort. Comfort, strong, what does that have to do with it? Well, it came from the idea of helping strengthen someone by comforting them. And effort, you have to put out some energy. You have to be a little bit strong to put it out. But effort doesn't mean out, that E-F is an assimilated or chameleon form of an E-X prefix, out-strong. That's not what it means, but you can kind of connect it to the thread.

That is actually very helpful often with developing multiple meanings of words, because this deep sense can sometimes help us understand why a word gets used in more than one way.

**Anna Geiger:**

Yeah, thanks for explaining that.
We kind of alluded to this already, but there’s another statement from your book I wanted to talk about. “Understanding what's happening beneath the surface of words doesn't just enhance spelling, it expands vocabulary and deepens comprehension organically.”

Can you talk about that?

**Sue Hegland:**
Yes. It clearly helps with spelling because it helps kids learn why a particular grapheme, a letter or combination of letters, is in a word. It's also, though, going to help with vocabulary.

You were asking earlier about orthographic denotation and you know, transparent, not transparent, that kind of thing.

A lot of people know the base, T-R-A-C-T, like “contract” or “distracted,” has this deep sense of pull or draw. When we look at words like, “I'm feeling distracted,” it's like my brain is being pulled away, my mind is being pulled away, from what I'm trying to concentrate on. We can connect that to help us understand that.

But then we might also run into a whole lot of other words that connect to this idea of T-R-A-C-T, like a “contraction” or even the idea of the digestive “tract.” Now that's one where it's kind of gone far away from where it is, but it's an elongated sort of part of your digestive system. It can help kind of anchor that learning.

If you take a base like, let's say, F-U-S-E. It makes the word “fuse,” it has this idea of pour or melt, and we talk about being confused. We talk about “fusing” something together or something being more “diffuse.” We start to go from very common words that kids know to words that they don't know, even a word like “effusive,” which kids would not typically talk about.

Once you start to work with a base and you anchor your vocabulary instruction on here's the structure of this word, you often find related words that you can build from.

In fact, one of the things I love advising teachers to do is if you're going to work with vocabulary, start building matrices because you might only have one or two words that are formed from that base, but as you encounter new ones, you bring them in and kids are not only going to learn new words, they're going to have a way to anchor them. They're going to see how those units of meaning are reused in the system over and over again. That's going to help them in all kinds of other ways with vocabulary and comprehension because we get a deeper sense.

I remember thinking about synonyms with this because we often think of synonyms as words that mean the same thing, but they're not *exactly* the same, right? They're close and we can use them, but as someone who's written a book, I'm sure you are aware of thinking, "Should I say this word or should I use *this* word?" Often that orthographic denotation helps us get to maybe what the subtle differences are.

The word "confused" and the word "bewildered," for example. "Bewildered" is a great word because it actually is related to wilderness, and wilderness comes from where the wild deer lived, long ago in Old English. When you're bewildered, it's like you're wandering in the wilderness. You don't understand. When you're confused, it's like these ideas are maybe melted together. There are some subtle differences, but it's kind of fun to connect those. And more than fun, it can really help students who are trying to grasp this vocabulary.

**Anna Geiger:**

You mentioned word matrices, and we've talked about this in other episodes in this series. But for someone listening to this episode alone, could you explain what a word matrix is and why they're useful? And maybe when we when we might start using them?

**Sue Hegland:**

I encourage people to use a word matrix from the very beginning. A matrix is a representation of words, a collection of words, that all share the same base. In the center, you have a base element written out. You might have F-O-R-T written in the middle and then a C-O-M on the left and an A-B-L-E on the right. A C-O-M prefix on the left, and a suffix on the right, and now you have a matrix that shows you the construction, the structure, of the word comfortable. You could put an E-F in there and get "effort."

People who haven't seen them can go to a lot of different places to see them, but they're very, very useful.

You said when should we start using them? You could put a matrix… A teacher that's working with CVC words could put B-U-G up on the wall and have an S after it and say, "We've got bug, and we've got bugs."

Then we could put up C-A-T and an S, and say, "Cat and cats, dog and dogs. Notice we have both of them use an S because that tells us it's more than one. Also notice that we pronounce them differently, that suffix is pronounced differently, but it's spelled the same. That's how these elements work in English. They're going to be spelled the same, even though they're often pronounced differently."

That's all you need to do to introduce the concept.

But then as soon as you come to "says" and "does," those go up on the wall in a matrix so that kids can see that structure.

It's going to be more and more important as you go further along, but it's something you can prime kids to see. I actually think that's really important.

I remember sitting across from a third grader who was really struggling with spelling and he was trying to sound out a word that he couldn't sound out. I literally showed him the matrix, put it in front of him, and he pushed it away and said, "No, no, no, that's cheating. I can get it." He was trying so hard.

I mean, doesn't it break your heart? He was convinced that because his classmates didn't need that, it was like a crutch for him, and he wanted to do it the way everyone else was doing it.

Showing this to the entire class, even if you don't think kids need it, gives every child the permission and the freedom to use that knowledge to whatever degree they need to, and it's going to deepen their understanding no matter what.

So I would start using it from the very beginning in just very simple ways with the basic instruction that we're giving. Then as we go along, they become more and more powerful and effective in helping students develop vocabulary and learn spelling.

**Anna Geiger:**

Yeah, and for someone who's listening and is brand new to that, the idea is that you create word sums based on the word matrix. So you could say C-A-T plus suffix S. Usually it's then rewritten as C-A-T-S.

What I love about word matrices is, especially as you get further along, you've got differentiation built right in there. Kids can create very simple word sums. When I create them, I like to put the inflectional endings at the top, like S and E-D. Kids who might need something more simple can work with those, but then you can have those more complex derivational suffixes at the bottom where kids who are familiar with longer words can do that too.

Just like you, spelling came easy to me, but I find them fascinating! All these words I didn't know!

In your book, I loved when you talked about the base C-A-V-E, which means hollow or something, or the denotation of hollow? I had never thought about that, that that was related to "cavern" and "cavity." That just blew my mind. I had to tell all my kids that were sitting in the kitchen.

**Sue Hegland:**

Yeah, and I can't remember if I said this in the book or if I just talk about it in talks sometimes. I remember being younger and thinking, "Oh, 'concave,' that's like it has a little cave in it." I thought I was finding this little trick to help me remember it, but it's *really* there!

And good point about the word sums, Anna, because I really haven't explained that. A word sum, as you pointed out, is a representation of the process. It's both a representation of the structure of a word with a little plus sign in the place of the vertical line in the matrix, and then a rewrite arrow. A lot of people want to make it an equal sign because we think about it as a sum, but in fact, it's more helpful to use that rewrite arrow because that is a signal of a process. We're showing the process of synthesizing a word, or of analyzing a word, and you don't always have every single part that's on the left.

For instance, if you're doing C-A-V-E plus I-T-Y, you're going to replace that E when you write "cavity." So it's not exactly equal, but it shows the process of synthesizing, the process of analyzing.

**Anna Geiger:**

One thing I found very helpful with word matrices is showing why you drop that E from the base once you add that vowel suffix. It's so clear when you look at it that way versus trying to figure it out. I think once you teach kids the rules for adding those suffixes, a matrix is very good tool for helping them practice that.

**Sue Hegland:**

And there are only three suffixing conventions that they have to learn. Some people talk about them differently, E-convention drop, Y to I, and the doubling.

I've seen people be concerned about teaching that to kids because it seems so complicated. Certainly there is some mental effort that is required for kids to absorb those, but there are *lots* of really explicit and systematic ways to help kids learn them.

The thing is, once you know those three conventions, you can put together thousands, hundreds of thousands, of words using exactly the same procedure, so I think it's non-negotiable. You want to teach that to kids as soon as they are ready.

**Anna Geiger:**

Definitely.

You talked about the phrase, "orthographically complex." Can you explain what that means, and maybe give some examples?

**Sue Hegland:**

Yes. Orthographically complex means that it is built from more than one element. The word "cats" is orthographically complex. It's a very basic word, right? We think about complex sometimes as meaning complicated, but that's not necessarily what that means here.

When words are orthographically complex, they're built from more than one written element.

When they're simple, they're formed from a free base, because the only type of simple word that's just one element is formed from a free base. It's called a free base because it can form a word all by itself.

Take a word like "drawer" that is orthographically complex. It's D-R-A-W plus E-R. Even though it's a single syllable word, and even though "says" and "does" and "been" are single syllable words, they are orthographically complex because they're built from more than one written element.

**Anna Geiger:**

Okay. I like that distinction that complex doesn't necessarily mean complicated, just that there are multiple things we're looking at.

We're going to start getting into a little bit of the weeds here because I find this fascinating and people, hopefully if they've listened to the rest of this series, they're ready to get a little bit deeper.

I might pronounce this wrong, but can you explain what homographic base elements are and give some examples?

**Sue Hegland:**

Yep. Homographic base elements are based that H-O-M-O as part of a base there, with the idea of same, and then G-R-A-P-H with the idea of how it's written. They are spelled the same, but they are different elements.

An element can be defined by its spelling and its orthographic denotation or its function, if it's a prefix or suffix.

A homographic base element then, if we have two of them, they would be spelled the same, but they would have different deep senses, they would come from typically different origins, and they would be used in different ways.

An example might be if you look at the word “dismiss.” We've got D-I-S which you might think, “Oh, there's a prefix.” We’ve got M-I-S-S. “Is that like, ‘I missed the bus’? Is that what that means?” But it's actually a different base that’s spelled the same.

There's a free base M-I-S-S that you use for I missed the bus. I don't want to miss my plane. I miss my friend. I missed when I was hitting the ball.

Then there's the M-I-S-S that has this idea of sending. It's in words like “mission” or “dismissal.”

Kids will know the word “dismiss” from “We're going to dismiss everybody for lunch,” and they might think it's not related to the word “miss.”

The way we know the difference is we look at the etymology. Often it's just a quick look to say, “Nope, those are different elements, they have a different deep sense.”

Homographic baselines come up a lot. One of the ones I like to use as an example is G-R-A-T-E, because we have at least three different base elements in English, two of them being free. One is like a fireplace “grate” with the idea of a lattice. There's “grating” cheese, and that has this idea of scraping or scratching. Then there's the G-R-A-T-E that's in “grateful” or “congratulations.”

They all look the same on the surface, they're all G-R-A-T-E, but they all have different senses and bring different senses to the words that they form. Those come up a lot and it's good to just be aware of that and be on the lookout for it.

Etymology is what lets us quickly go, “Oh no, that's a different base.”

**Anna Geiger:**

Yeah, and it can get a little tricky when you're trying to write a word matrix because you might put the same base and think that the words you're connecting to it are all related, but actually, if you go to etymonline, they don't have the same history, correct?

**Sue Hegland:**

Yes, that's true. It's interesting, I've been thinking about this a lot because if we understand that same deep sense in the word...

In a sense, languages evolve and they grow and they change and they morph. Doug Harper uses the expression that words have gravity. As they grow and evolve, they tend to grow together.

I have at least a couple of examples of bases that are spelled the same, and if you look at the etymology, they come from different places, but they've kind of fused together in the way we think about them.

I would encourage your listeners who get interested in this to go forth bravely because it is so powerful, and isn't like there is some arbiter who's saying, “This is right, this is wrong.” We're trying to understand the language together and we're all learning and growing as we go.

I just want people to feel comfortable diving into this because it's really powerful and it's not always clear what the “answer” is, and that's okay because we're asking the right questions.

**Anna Geiger:**

In addition to sometimes confusing homographic base elements, another challenge is understanding what elements are twins, we call them twin bases. Can you talk a little bit about that and maybe give an example?

**Sue Hegland:**

Yes. I will actually suggest that people who haven't seen this could go to my website and grab a bonus chapter that I wrote for my book that talks about twin base elements and it talks about alternating bases and the formation of words.

This comes up a lot when people are trying to start doing word sums and they're like, "I can't make that word."

It's called, "Where Did That Letter Go?" I think that was what I called it because we get in these situations where we're like, "I've got this word 'include.' And then I know 'inclusive' is related to it, but 'include' has a D and 'inclusive' has an S and what happened to that D? What happened to that S?"

This is kind of an artifact of Latin because in Latin there were verbs that had four principal parts, and often words came into English from Latin words formed from the second principal part and ones formed from the fourth.

We might have a word like "include" and a word like "inclusive," and we can identify then the C-L-U-D-E and the C-L-U-S-E as what we would call twin base elements.

Now that is a colloquial term. Some people don't like to use it. I like it because it gives me the idea of when you think of a twin, it's like that same mom and they were born on the same day, and so it's very directly coming from that Latin verb. But sometimes we have a third form that comes from the same Latin verb.

Then we also have a lot of bases that have a connection at a deeper level, but they're not necessarily from the second and fourth principal parts of the Latin verb. That's a very specific origin.

You don't have to use the term "twin base," you can just say the term "associated bases," which is very similar, but it's not as specific. I like to use twin for when I know that it's coming from the second and fourth principal parts, but examples would be like the C-L-U-D-E, C-L-U-S-E that I just gave you.

In the bonus chapter, I think I show R-O-T-E and R-O-S-E, like "erode" and "erosion," "corrode" and "corrosive."

**Anna Geiger:**

"Deceive" and "deception," would that be another good example?

**Sue Hegland:**

Yes! Now, "deceive" and "deception," I am pretty confident that they would be associated bases because they're both, I think, coming from Latin capere. There are a lot of bases that come from that same word with this idea of grabbing or grasping. "Deceive," "deception," and then we also have a C-A-P-E. Those all come from the same origin. They have that same deep sense, and so sometimes they alternate as we form words.

Understanding that alternation and the fact that we sometimes have different variant spellings of bases that essentially carry the same deep sense helps us understand a lot about word formation. It makes it seem like morphology doesn't really always work.

**Anna Geiger:**

Okay. Here's something else that you wrote, "English spelling is always phonemic rather than phonetic." Could you explain that?

**Sue Hegland:**

Okay. So now we can go *really* into the weeds and we could spend another hour on this, but the idea is that phonemes… There's been some discussion, you've probably been aware of the discussion out there, about phonemes. Are they abstract? Are they even real?

Phonemes are defined as the smallest segment of a word that is distinctive for meaning. If I have the words "send" and "bend," then the /s/ and the /b/ are what? They are phonemes, right?

The reason we think about phonemes, the reason we even need to pay attention to them, is because we want to teach kids how to read and to spell. They're really not that important in spoken language because we are wired for spoken language and we process those phonemes without even realizing it when their pronunciation of them is different.

Let's take the word "car." If I say, "Let's get in the car," somebody from Boston might say, "Let's get in the car."

I don't say to them, "What's a car?" I know that they're saying the word that I would say as car.

If you're British, there are lots of different ways people pronounce things. Tomato, tomato, that old song.

The point is, we spell the words the same even though we pronounce them slightly differently. If we did spell them based on exactly the way we pronounce them, then everyone would be spelling words differently.

There was a video I came across a couple of years ago where some Australian educators were talking about the word "talk," T-A-L-K, and they're saying, "You know, that word really should be spelled T-O-R-K."

I was like, "What? Tork?! I wouldn't even know what that was!"

In fact, I know you interviewed Fiona Hamilton…

**Anna Geiger:**

We talked about this very thing! Yeah, about the name of her website!

**Sue Hegland:**

Her company is named Wordtorque, and I didn't know why for the longest time. I eventually asked her, "Why do you call it Wordtorque?" because I was thinking it was like twisting.

She's like, "Well, when I say it, you know, it's homophotic. It means I say the word 'talk' and the word 'torque' the same." I don't say that, but she does.

The point we want to be thinking about is that we all have slight variations on pronunciation. There are a couple of implications for that. One is that sometimes teachers are going to want to say, and I see this on social media, that we need to teach kids how to say the words *right* so they can learn how to spell them.

If they say the word and I understand it or you understand it, they're saying it just fine. When you said homographic, homographic, homographic, we both knew the word we were talking about. No one was saying it wrong.

There are sometimes more standard pronunciations that more people will use, but that's only going to be standard in one part of the world. It's going to be totally different in another part of the world.

We want to be careful. We're going to use kids' pronunciation and the specific phonetics, the actual articulation that they have for that phoneme, to help anchor it to the grapheme. But we want to recognize that if they say it a little bit differently, they're not saying it wrong.

Sometimes it's way more helpful to start with the spelling and then look at how you pronounce it. That's true with "says," right? Even with a word like "said," you can look at the spelling and understand the spelling of said and then say, "Oh yeah, and by the way, isn't it interesting that we pronounce that as /ĕ/?"

In the word B-E-E-N, some people pronounce it been, some people pronounce it been. If you're British, it's been. I've been to see the queen.

The fact is all of those different pronunciations, we as speakers of a language, we kind of categorize them as the same thing. They don't change the meaning of the word.

**Anna Geiger:**

Yeah, this is deep.

**Sue Hegland:**

I don't want to intimidate teachers by that. I mean, this discussion about should we even teach phonemes is really worrying to people, I think. Obviously, we have to teach kids about how to isolate the segments in a word and connect that to the written form. But if we go back to our "comfortable," we can't rely on that. We have to use that as one part of the understanding about how the system works.

If you've got a word like "sheep," it's crystal clear, it goes back and forth, no problem. That's not so with "comfortable," not so with "definitely," not so with "mission" and "ignition" and "magician." You have to do more.

When people just say, and I hear this more, and it's worrying me a little bit, "Oh, but in this word, we spell it with a C-I-A-N and that's a person word. With this word, we're going to spell it with an S-S-I-O-N."

The kids that like me, and like probably you, who just need a few exposures, we're going to go, "Okay, we've got it."

The kids that are sitting there to their left or their right going are going, "I don't got it." They're sitting there thinking there's something wrong with them.

They're going to try really hard to do that, but the morphology in this case is just going to unlock it instantly for them.

**Anna Geiger:**

So put it on a matrix versus try to get them to memorize a different way of spelling /sh/-/ŭ/-/n/.

**Sue Hegland:**

Exactly.

**Anna Geiger:**

So we're winding down here. I want to talk real briefly about etymological markers, what those are, and some examples.

**Sue Hegland:**

Okay, so this is a term that is being used a lot more and I love it. You talked about putting something in your book and then wanting to change it. There's something that I put in my book that I'm going to change when I get a chance.

I wrote in the book that etymological markers and graphemes are two separate categories, but the fact is etymological markers *are* graphemes. I just wanted to get people thinking about how not every grapheme represents a phoneme, but the truth is that they are a grapheme.

For instance, in the word T-W-O, the word "two," that W is not pronounced in any word that is formed from the base, T-W-O. There aren't a lot of them, like twoness, but that W comes from its history. It has cousins or relatives that share an etymology, share a history, that have the same idea of two, but where the W is pronounced. It's in twin and twice and twenty and twelve. But in T-W-O, in that base, it's never pronounced in any word that's formed from that base.

Another example would be "talk," T-A-L-K. That L is never pronounced, but it comes from its history and it's related to the idea of tell or tale. When you talk, you're sort of telling someone something, maybe you're telling a tale. It's never pronounced in the word in English today in the base, but we can find relatives where it is pronounced typically. That's a little bit different.

Sometimes people will talk about the G in S-I-G-N as an etymological marker, but I don't categorize it that way because it's actually a grapheme that does represent a phoneme as soon as you add an A-L suffix and you get "signal," right?

There's a difference between an unpronounced, we could call it a "zeroed grapheme," it has a zero pronunciation, and then a marker that is in a word because it comes from its history, but it's never pronounced.

**Anna Geiger:**

That makes a lot of sense.

I have just three more questions.

One is, I understand that T-I-O-N is not a suffix because that T is always connected to the base, but I also think that when teaching kids to pronounce longer words, seeing T-I-O-N and saying /sh/-/ŭ/-/n/ makes sense, right? How do you help students recognize chunks of language in reading longer words without conflicting with an understanding of morphology?

**Sue Hegland:**

Well, first of all, I know a lot of people do both. I think that there is a place for explaining to kids, "If you see a T followed by an I-O-N, it's probably going to be pronounced like a /sh/, and you're going to get /sh/-/ŭ/-/n/, like in 'action' and 'ignition.'"

But what I would do is avoid… First of all, I would not call that a suffix. It is kind of the spelling of a syllabic part of a word, but it's not a suffix. The suffix is the I-O-N.

Secondly, I would point them to the morphology first. Before they start trying to pronounce it, you could say, "If we take off the I-O-N suffix, do you see anything that you might recognize?" That's going to kind

of prime them to be looking for those structures that are going to get them closer to possibly understanding the meaning of an unfamiliar word or just reminding them that that's the meaningful part of the word.

Then you can say, “Now when we have that T-I-O-N, remember how we pronounce that, so what do you think?”

People talk about flexing vowels, I love that, all of that makes a lot of sense.

You're going to help kids to try to get to the pronunciation if you can, if you know that they already know the word.

But I think we need to keep in the back of our minds that we all read words that we are not sure how to pronounce. You had that with homographic, right? I have that with all kinds of words. I always use “equanimous” as an example.

**Anna Geiger:**

Oh, yeah. I'm not exactly sure on that one either!

**Sue Hegland:**

I don't know how to pronounce that word, E-Q-U-A-N-I-M-O-U-S, but I know what it means and I can use it, I can read it, I can write it, but I'm never sure how to pronounce it!

The T-I-O-N can be very powerful and very helpful, the S-I-O-N, the S-S-I-O-N, but I would just urge people not to put that out as the structure of the word, the written word. Because it's going to prevent them from seeing those more meaningful units that are going to come up in lots of words and help them unlock the meaning of unfamiliar words.

**Anna Geiger:**

A lot of this comes down to the teacher understanding the relationship and they can say, “We can break the word apart, we can look at the base element and the suffix, but when you read it, it'll sound like this.”

**Sue Hegland:**

Right, and that's why my focus is trying to give teachers as much of this understanding as possible so they can use it. I want to give them the understanding of how important morphology is, and then you bring that in in a way that doesn't prevent kids from starting to focus on those structures as soon as they're encountering a new word.

**Anna Geiger:**

Before we go, I sent you a list of questions and I asked you to think about three understandings you would want people to have after reading your book. There are so many, but could you distill it down to three major understandings you want people to leave with?

**Sue Hegland:**

Yes, I can. The first is that we do want to understand that morphology is this framework. We put words together by building units, and it's the foundation because it's the stable part of the system. Morphology is the framework and foundation.

The second point is that when we look at the spelling of a word, that spelling is intended to help us identify the word instantly when we are reading.

We often will think about words that sound the same, homographic or homophonic, but are spelled differently and think, "Well, that doesn't make any sense. Why don't we just spell them the same? They're pronounced the same. It would be so much simpler if we just wrote them the same." But then as soon as we saw them, we would have to think, "Well, what is that word?"

Whereas the spelling tells us exactly what it is. We often have spelling of homophonic words that have differentiated, plus there are things like that L in T-A-L-K or the W in T-W-O that gives us information about the word, that helps us understand it, that shows us relationships, that builds that kind of cognitive network of understanding of semantics if we know to look for it. The spelling of a word reveals its identity and it's more than just a representation of pronunciation.

Then the final one is that there is, of course, a very close connection between written language and spoken language, but the structures and the things that we need to pay attention to in written language are not exactly the same things as spoken language. When we try to go directly from a pronunciation of a word to its spelling without thinking about anything else, we're missing a lot of what's going on in written language.

To understand the written language, we need to look at everything that's in that word and know that some of things there are not optimized for pronunciation. They're optimized for other pieces of information that are going to help us know that word and identify that word.

**Anna Geiger:**

Thank you for that.

Another question I have is whenever people ask for more resources about morphology, I usually hear and I usually recommend *Teaching How the Written Word Works* by Pete Bowers, your book, as well as *Backpocket Words*.

Are there any other books that you would recommend in terms of helping people just really understand the depth of English, anything that you've enjoyed?

**Sue Hegland:**

If you *really* want to go deep, there's a resource that's online called The Toolbox, and that's where I learned a lot of what I know and a lot of other people who do this type of work have learned. I think it's tbox2.com, but I can double check that.

There's a brand new book that just was published a few weeks ago on structured word inquiry. I'm not necessarily a structured word inquiry person, I more teach about orthography, but a lot of what I do overlaps with Pete and his work with structured word inquiry. There's someone who created a book, and look, you're holding it up!

**Anna Geiger:**

Yes, Jennifer Constantine and Kara Lee. Yeah, I can link this in the show notes. It has some lessons breaking things down.

**Sue Hegland:**

Right. The question that we often get is how do I teach this? They wanted to give people some model lessons that are very structured and show them how to help kids learn about these kinds of things. Those are good resources too.

You know, I love David Crystal's *Spell It Out*. I mean, that book is a really great book. Richard Venezky has *The American Way of Spelling*. Those are classic books, and I know there will be more books coming out that will help people learn more about this as well.

Lyn Stone talks a lot about this kind of stuff in her work.

**Anna Geiger:**

Yeah, I will link to all those things in the show notes.

Then finally, tell us where we can find you, and do you have any other projects you're working on?

**Sue Hegland:**

You can find me at learningaboutspelling.com, and there you can find a lot of the resources that we just talked about listed as well on my further resources page. There are blog posts, and there are links to talks that I've given.

What I'm working on right now, I'm trying to get more time to work on, is a study guide to go with the book.

**Anna Geiger:**

Oh, great!

**Sue Hegland:**

I want to give people a way to go a little deeper into the things. The book was really intended to get people to understand some of the concepts, but then how do you do more of this yourself? How do you understand it? How do you work deeply and feel confident with it? Also some ideas about how to begin to introduce it to students as well.

**Anna Geiger:**

Wonderful.

**Sue Hegland:**

Hopefully that will be coming before too long.

**Anna Geiger:**

I'll keep my eye out for that.

Well, thank you so much. I learned a lot of things just talking with you in addition to reading your book and watching your workshops. Thanks for all that you do helping teachers understand how language works.

**Sue Hegland:**

Well, I appreciate that.

And I will say I picked up your book, and I haven't gotten all the way through it, but I *really* have enjoyed it. A lot of what you're writing about is very, very consistent with what I want teachers to understand. I thought it was interesting that you were talking about how the structures of spoken language and written language are different at the sentence level. When we talk about if a student were to write a sentence or write a paragraph, they need to understand the structures of how we do that in written language. That's true at the word level as well.

Yeah, you've written a really useful book, and I'm also very interested in diving into more of the references and resources that you've suggested. Thank you for the shout out to my book in there as well!

**Anna Geiger:**

Of course! Thank you so much.

**Sue Hegland:**

Thank you, Anna. It was great to talk with you.

**Anna Geiger:**

Thank you so much for listening. You can find the show notes for this episode at reachallreaders.com/episode 194. Talk to you next time!

**Closing:**

That's all for this episode of Triple R Teaching. For more educational resources, visit Anna at her home base, reachallreaders.com, and join our teaching community. We look forward to helping you reflect, refine, and recharge on the next episode of Triple R Teaching.