

Web-Based Radio Show

Series on Learning Differences, Learning Challenges, and Learning Strengths:

Auditory Processing, Language and Reading


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This is Dr. Greenspan coming to you on our web-based radio show. We apologize for the delay, but we ran into a technical glitch with our sound system that we were fixing, so we apologize for being late today. I hope you stayed with us – I was apologizing frantically, but to no avail because the sound system wasn't working, as we discovered. So, we'll start from the beginning.


As you recall, we were doing a series on Learning Challenges and this pertains to all children – children with special needs, children with very circumscribed learning challenges, and children with learning gifts who are very talented in certain areas. As you recall, the metaphor we've used in the prior shows in this series is of a learning tree with branches that have to do with specific skills, like reading, writing, and arithmetic – the three R's. We have the tree trunk, which has to do with our core thinking skills, our core intellectual and social skills – social thinking and purely academic thinking and problem-solving; and then the root system, which is what we're going to focus on today, where we have the different ways in which we take in, comprehend, and convey information – the way we process our experiences, through sight, through sound, through movement, through touch, and so forth. As we explained when we went over the whole model in prior shows, the roots feed into the tree trunk, but then experience and how the environment nurtures that trunk with proper rain and proper nutrition in the soil is critical for that tree trunk and thinking and social skills to develop. That then leads to the branches. So, if you want to strengthen the branch we have to strengthen, often, the roots and the trunk.

Now we reviewed over the last prior weeks the stages of growth the tree trunk goes through and showed how when we strengthen the tree trunk, we also strengthen the root system without even trying. For example, when we're helping the child learn to




be reflective, to think about his own thoughts and evaluate how he feels or how good his essay was, or whether his essay was logical or not, he's using sight and sound; he's using language, as well as visual-spatial reasoning to do that. Children are often using social skills, as well, when they're being self-reflective, so they're using multiple components of their minds and brains as they use that tree trunk and as the tree trunk grows. We've already been strengthening our root system when we talked about how we strengthen the tree trunk. You'll need to listen to the prior shows, really, to get some good examples of that.

Today we're going to talk about the root system itself and the direct things we do to strengthen the root system. We're going to start off with what's probably the most common challenge in the root system – challenges in auditory processing and language, and that relates obviously to language development, directly, and also to reading, including the ability to sound out words, because that involves, like language does, understanding different sounds and how sounds fit into patterns to convey a word. It also, obviously, relates to reading comprehension because our reading comprehension can be no stronger than our language ability – than our ability to comprehend that word. We might be able to sound out a word like “idiosyncratic” or we may have a good sight memory, but to know what it means we have to have used that word in conversation or heard it in conversation and in multiple contexts to really have a good abstract meaning of what idiosyncratic means. So, reading comprehension as well as the ability to read, itself, depends heavily on our auditory processing and language, as does writing, such as writing an essay. The fine motor part, scripting the letters, is one part, but spelling the word, like reading the word, depends on understanding how sound sequences fit into a pattern and, most importantly, organizing what you want to say. Having a clear picture of what your goals are in what you're saying is very, very critical and being able to organize what you want to say, all of which depends upon your ability for language, in part. It also depends on your thinking skills because you have to, again, have a clear message in your essay or what you want to write, so that has to be logical. The more abstract you are – in the sense that the more you can fit your trees into your forest – and the more you can support your main points with vivid details, the better. So it involves logical and abstract thinking, not abstract in the obtuse sense of abstract, but abstract in the sense of seeing the big picture.



Now, let's look at how the auditory processing and language skills develop that lead to language and lead to reading because this is what will be critical and what is critical in helping children with learning challenges become good, solid learners. Now, one of the first capacities you need to have to have strong language and strong reading is the ability to decode; in other words, the ability to perceive and to hear different sounds and different sound sequences. Let's think of how that occurs and also point out, at the same time, that many children who have trouble reading – it's not just simply they haven't been exposed to books or haven't been taught to read, although there are certainly some children where that's the problem – but the far more challenging situations are where children – I confess, I was one of these, and I still am – have a “tin ear,” where we don't hear the subtleties of sounds very well, so it's hard for us to learn to spell, a little harder for us to learn to read because of our tin ear, just like the person who appreciates music very easily and has a natural gift for comprehending the different notes, versus the person for whom all the notes sound the same. There are some of us for whom all the notes sound the same and we have a harder time learning to read.

Here, with a healthy baby the first step in learning language and reading is to learn to perceive different sounds. So, we want to do the same thing to help children strengthen their root system as we do with a new baby: expose that child, as you do with a new baby, to different sounds. So, when we normally play with the baby and we talk in what's often called “motherese,” making funny sounds and funny faces, we're exposing that baby to and giving the baby an opportunity to hear different sounds: “Ooo! Aah! Aren't you sweet? Aren't you cute?” emphasizing the “kuh” of the “cute” and the “suh” of the sweet; in “Oh, boy!” we're emphasizing the “buh” of the “boy.” Notice as I'm saying these sounds, I'm putting a lot of affect into the sound because it's much easier for the children to listen if someone's reading poetry or reading a story out loud if they put a lot of affect into it. “Peter Rabbit was running!” Ruh Ruh Ruh! as opposed to “Peter Rabbit was running,” in a bland monotone. You make it easier for the child to distinguish the sounds and learn the sounds, even as a baby, by putting a lot of affect into it. The goal here, and the general principle, is to involve as many of the systems of the mind and brain as you can: affect, hearing, visual perception, and – as we'll show you later – even the child's own movement. So here in our little example of “ruh, ruh ruh” “Peter Rabbit is running,” we're combining the sound with a lot of affect and with our new baby he's seeing your face contort into a “ruh ruh ruh” face so he's seeing, too. If he's like many babies, you'll find him moving his arms and legs in rhythm




with your sounds, so he's already doing the movement part on his own. So we're getting four systems involved all together, organized around perceiving different sounds where the sound is taking the lead, but it's recruiting all the other parts of the mind and brain at the same time. Think how wonderful that is because now what we're doing is we're getting the different parts of the brain working together.

Now with children with autistic spectrum disorders that's been found to be a problem – getting all the parts of the brain to work together. But we also know the more practice we give to things that are hard for children to do in a fun, natural way where they don't even know they're practicing – they're just having fun – the better that capacity develops. We have reason to believe from animal studies that when the capacities are developing, neural pathways are forming in the brain. So, what we've learned is biology is not destiny, not just when it comes to your occupation or your gender, but biology is not destiny when it comes even to things that are hard. Even when we study a thousand children and we find PET scans later on showing differences, it doesn't mean those differences *have* to be there if we can detect them early and provide extra practice at an early age. We haven't proven that yet, but everything points in the direction that that would likely be the case when we do those research studies, which, actually, we're planning to do, by the way.


So, the first step is helping children learn to have a good ear and to decode different sounds. Now all the phonemically-based approaches to reading, for example, are based on that thesis. But the real question is, "What's the best way to enable a child to learn to perceive – to sense the differences between different sounds – so that eventually he can see patterns and see blends or hear patterns and blends? So, let's take it apart just a little bit more.

Okay, the first step is exposing the child to sounds and letting him hear different sounds, whether we're talking about a child who's four years old or five years old or eight years old or a new baby. We do that naturally, as I mentioned, with new babies. Related to that, we also want to put a lot of affect into the experience. So, whether we're doing it front of a whole class or one-on-one, we're going to have high affect as we let the children experience the different sounds. Then there's the second step with that animated affect, the "ruh ruh ruh" of the "running" or the "buh buh buh" of the "bat" – we want the child to also see something so they're visualizing the sound. Now, one of the most important things that we see is your facial expression as you're making the sound and so you want to be very animated as a teacher or a parent, or when you're




working with a new baby, and that will happen naturally if you increase your affect. So when you're affectively or emotionally involved and engaged in being dramatic, you're a good actor or actress as the mommy or daddy or teacher, and you're naturally letting the child see the animation in your face.

Then, the third step is to make the sounds reciprocal as part of interaction. Don't have it be a one-way street. We can't have our children being passive. They have to be active partners in the mastery of perceiving sounds. So, this gets back to one of the fundamental principles of developing a strong tree trunk – that is of two-way communication, sometimes technically called “reciprocal social interaction.” Now, with new babies that starts happening from the latter part of the first half of the first year, at four or five months, and reaches a crescendo by eight, nine, ten months – where we're seeing a lot of back-and-forth interaction with “ooh” “ahhs” going back-and-forth and lots of vocalizations back-and-forth, and arm movements back-and-forth, waving back-and-forth, and lots of exchanges of emotional signals back-and-forth – so we're seeing lots of two-way communication. Well, that's important for your six-year old learning to read, too, or if your seven- or eight-year old is having a hard time learning to read. So as we're working specifically on sounds *per se*, with a new baby we're working on motor gestures and sounds and emotions all together in a back-and-forth way, so the child is learning the two-way communication dance basically from all these experiences. With an older child we're more focused on the sound and we make it two-way, also. So play little games where you make sounds at each other. You go, “bee, dah dah dah,” and the children go, “Dah wah mah.” So maybe the game can be you start with the same sound, but they get to finish it in their own creative way to make it kind of fun. So you're a “dah wah” bird and they're a “dah mah hah” bird and you see how many funny sounds you can make back-and-forth and you do it in rapid succession – rapid, reciprocal interaction – so it becomes a “dah wah!” and a “dah mah” and “dah hah” and a “dah kah” and the child is not only hearing, but repeating, the sound but then getting creative with the next set of sequences. It's fun for the kids and you see how many weird sounds they can make – kids love to make weird sounds, but they've got to start with yours. You can do this in a small group or you can do it even more effectively individually and the more trouble a child has, the better it is to do it one-on-one, but sometimes it's just not possible due to numbers. These are things parents can work on just as well as teachers, where there is often the opportunity for one-on-one work.



So, what we want to do as another big step, then, after we let the child hear the sound, and do it with affect, and see our facial expression is animated and how our tongue and mouth are moving – this is something I should mention that Pat Lindamood, with her well-known Lindamood Bell approach, emphasizes – the importance of the child’s seeing how the other person produces the sound in order to perceive the sound, and then often looking in the mirror to practice those movements themselves. Pat Lindamood and part of the Lindamood Bell approach have one of the better research approaches on phonemic awareness, on the phonemic-based approach to reading. The Orton-Gilliam approach is similar, but not quite as systematic or in-depth, as the Lindamood-Bell approach.


So, here, back to our main point, we want to make it a two-way, back-and-forth communication, whether it’s a new baby or a seven-year old learning those sounds. But then we want to do something more, particularly with our older children who already have some language, particularly when it comes to the reading part of this root system, but also for full language development – to become a good speller and fine tune your language. But, we’re being systematic about it. We want the children to do some more activities motorically so that they’re doing even more – they’re not just interacting with you around the sound, but they’re beginning to animate the sound. So we might have the children make different arm movements or different body postures, and this is open to the creativity of the parent and the child to come up with something, but, again, the more we recruit the different systems – vision, movement, affect, along with simply hearing sounds – the better. So we might have the children be like an orchestra leader and you’re going “dah, dah” and the children are going, “dah, mah, kah” and have them move their arms like they’re leading an orchestra with the “dah, mah, kah” and they can look for “dah, mah, kah” dance step. Is there a “dah, mah, kah” body posture? You have some freedom here, how you want to do it. There’s one colleague who uses music, finding a note that represents the “d.” There are lots of different ways it can be done, all of which are good, as long as it involves that core element of movement also. Babies do this naturally. So when we see a four-month old baby, we’ll often see that four-month old baby rhythmically moving her arms in rhythm like an orchestra leader with Mommy’s saying, “Oh, aren’t you cute? You are my sweetheart! Ooooooh!” and the baby’s waving her arms in rhythm with Mother’s voice and there’s a synchrony and that’s what we want to get with our older kids, too, as they’re mastering the sounds – let them be orchestra leaders, let them be dancers. So, this means maybe getting up off your desk and standing in the aisle between desks. If the group isn’t too large, you can



do this in a class or, obviously, parents can do this one-on-one at home. The idea is mastering the sounds.


Now, you want to go through all the sounds in the alphabet and you do this naturally with a new baby developing language and sound, but with children who are having a hard time you want to be systematic. So you're working on the "a" and the "b" – you don't have to go through them all in order, but you want to make sure the child can hear all the different sounds in the alphabet system. So, you can have your own sequence – maybe you begin with your favorite sounds and move to your less favorite sounds. I think it's always best to start off with those sounds that have to do with the words that the child is going to use the most, like "Mama" and "Dada" and "Go" or "stop" or "juice" or "no" or "yes" – I think you want to go with the sounds that are going to come in handy first, particularly for language development, but also for reading, and then you can load the deck in that way, when you actually teach the child to connect the sounds to some visual image, particularly for reading.

So, this is the way we're going to promote the use of the sound system. Now, then, for language development, there's a fourth step. We need to be involved in what we call "shared social problem solving interactions," which normally happen with a baby right after we get two-way communication going, as we we've talked about with our tree trunk system, we get pattern recognition – we get the child involved in many back-and-forth interactions to solve problems with you, like pulling you to open the door for them, or pulling you to the refrigerator and pointing to the food they want or pointing to the toy they want you to pick them up to get closer to so they can grab it off the shelf. These shared social problems are helping the child be a pattern recognizer, and pattern recognition – seeing that there are many little pieces leading up to a pattern that solves the problem – is critical for understanding a pattern that leads to a word or understanding the sounds that fit into a pattern that allows you to understand the word or speak the word. So, before children are speaking in normal development, they're understanding patterns and they're using sounds as part of the patterns, using a lot of "oohs" and "aahs" and "ehhhs" in the child's private language while pulling you to the toy area to point to the toy they want and to get it, as well as motor gestures, as well as a lot of affect, as well as some spatial mastery to figure out how to get to that toy. So, they're really pulling us in, using all these capacities together. This ability to see the world in terms of patterns is essential for both speaking, eventually, with good language capacities, as well as for reading because both involve seeing the patterns of things. So




what we want to do just for general language development is interact with children in terms of shared social problem solving where there's pattern recognition involving two people solving a problem together. We want to create challenges where we have to work together and use sounds, as well as movement, to solve that problem with a lot of pleasure and a lot of joy so there's a lot of affect involved. Then, specifically for reading, here's where we think about blending sounds together and here, we can start off with the most familiar blends – things that often go together – “dr” and “pr” and use things the child's interested in, whether it's dogs or cats or trucks – “truh” – and when we use blends I would pick objects that the child really likes – toys the child really likes – or things the child really wants, like juice – “juh” – so the child's emotionally invested. Then we begin doing the same thing we talked about before – we have back-and-forth use of sounds, but now with blends of sounds, that the child is going to see, eventually, when he tries to read and certainly that he's going to need in terms of his language skills. So, we get back-and-forth use of blends in highly motivating, affectively meaningful situations while solving a problem together, while getting the juice or getting the “truh” truck or while getting the “Bobo” doll and so forth and so on. So we can do that very, very systematically until the child can hear and produce and interact with and problem solve with blends, as well as single sounds. So now we kind of become proficient at perceiving and decoding the sounds. Now for some children this is going to take a little longer. For some children it's going to occur real rapidly, so just like some children are natural musicians and they listen and then all the sudden they're playing the piano, other children take years and years to learn, including myself, because I am not naturally gifted when it comes to making sounds and perceiving sounds. But if someone had done this with me when I was younger, I'd probably be a decent speller now and not have to have somebody edit my books! Fortunately, I was lucky to become a decent thinker so I could compensate for some of my weak root systems.

Now, once we master the blends and the problem solving, then we can start to get into language development. That's when we can actually see children starting to put these blends together in terms of words. So, children already know what a truck is because they're playing with a truck and you're saying “truh” and they're saying “truh” and you're having all kinds of a private language and back-and-forth gesturing using complex sounds combinations around trucks, and finally their mind and brain are able to understand the pattern well enough that they can actually use the conventional term, “truck,” and we see them – all of the sudden they'll say, “truck” and eventually, “my truck” or “truck here” and we then see real words emerging in language development.




Then we can take off with that and use them in pretend play, again, in highly motivating situations and then the children are off and running, and we're simply helping them combine words together into short phrases and sentences and that's all a matter of using these same principles, which is engaging them and having sound patterns and words they use interactively. As you use them in more complex ways, they imitate you and they seem to learn very rapidly once they've opened that door to being able to perceive a whole pattern of three or four letters that make up the whole word, but they know what the word means simultaneously because they've been using it now for almost eight to twelve months as part of complex shared social problem solving.

The same thing occurs with reading, but reading requires a few additional steps. We have to match these sound patterns to some visual imagery. There's a convention here because we make letters to represent a sound, so if we have a "b" or an "r" or an "a," the child has to match what he sees with what he hears. But first we have to make sure, again, he can hear the different sounds and comprehend the sounds and understand sound blends and sound patterns, and understand how the sounds make up words, because that's the foundation. If we don't have that, there's nothing to match to the visual image. In terms of getting children to match the visual image for reading, we can go through a number of steps. One of the first steps that I like to introduce, particularly for kids who are having trouble – the kids who are naturally quick learners at reading often bypass some of these steps – but for the children who are finding it hard to learn, I like to let them get used to the visual system first in a creative way by having a crayon or a pencil or pen in their hand and as we've gotten through the orchestra game, as we've gotten through the blends, as we've made this two-way and back-and-forth, and as they've seen how your mouth works and their mouth works as they're making these sounds, then I like to have the kids actually make their own shapes that match the sound, as part of their motor activity – as part of being orchestra leaders. So now we have them be orchestra leaders on a page with something that makes a mark. So, "How would you make the 'duh' sound?" Maybe they would make it as a big arrow or a big scribble-scrabble. "How would you make a "kuh" sound?" Let them create different movements with their hand on the page to get the idea they're creating symbols. This doesn't have to be done for a very long time, but it gives them control over some visual image production, and control is very important for inspiration and motivation and also for getting that mind and brain cooking with multiple components working together like a good orchestra or a good athletic team. So, we let the child create his own kind of script, his own alphabet, so to speak, with single sounds and with blends – but not




systematically through the whole alphabet – to get the idea of it. We might do a limited number, and it will vary depending on the child, and then see if he can remember which one he made for the “kuh” or the “dah” or the “muh.” So we do just a few first so they can come back to each one on the page and scribble-scrabble one kind of set of shapes. Now, this needs some motor control, but not too much because it doesn’t have to be an organized image – it’s not like they’re drawing a person – it just needs to be a meaningful scribble-scrabble so they can make two or three or four different ones to represent different sounds. Once they have that ability and they’ve produced it, and they can use different colors and, again, my dear colleague Pat Lindamood in the Lindamood Bell approach likes to use colors to help the child visualize different sounds, which is, again, an excellent way of doing this, but I like to add more action into it. Pat Lindamood sometimes adds action into it, too, by having the children actually dramatize the actual letter, like a “d” or a “b,” but I like to allow more creativity and freedom and let the child find his mode of expression. So, here we’ll have the child do his own scribble-scrabble, and he can use colors or just use one color – I give the child a choice as long as he can distinguish his scribble-scrabbles, and they’re related to the sound and some of the sound blends they’re working on. Then, once they’ve got the idea of that, that there’s a visual image that can represent the sound they make. Now they’ve got the concept that you can connect something you see that you’ve made yourself, so you’re invested in it, with something you hear and something you produce with your own mouth. Then we begin introducing the more formal system. So, we say, “Well, you know there’s another way of showing the ‘dah dah dah’ sound and this is the way a lot of people do it” and then we make the “d” and then they can trace it over our “d” and they can practice making it. Here it’s important that their fine motor be well enough developed so they can do that. If their fine motor system isn’t well enough developed so they can do it, we can do a little bit of hand over hand with them to help them do it, or we can not insist on the step of their actually producing it, but just kind of seeing it. So they can learn without the motor piece if their motor system is delayed, because we don’t want that to hold up the reading because often children who have delayed motor development can become gifted readers. But if the motor system is cooking pretty well, then it makes it easier to learn because we’re using that. But if they’re using vision and affect and interaction and hearing and sound production, they’re getting a lot of parts of the mind and brain working together even though it may not have all the parts working, such as actually creating the letter. So, where possible we’ll have them see the conventional letter, but again they’re participating in it. So now they’re matching the



sound with the letter and we do this for individual sounds eventually through the alphabet and then for the typical sound blends we want them to master, “dr” and “br” “qu,” etc., because these sound blends are not always easy to sound out directly from the individual sound; sometimes you have to practice them as a blend.


Again we come back to our principles. When doing this we’re always making the experience affectively alive and meaningful for the child, we’re involving not just listening but doing, having both the perception of something coming in as well as the action – taking action – and doing something going out, involving vision as much as possible, along with language and sound, so there’s an active mastery of the sound and the sound system. What we find with getting all the parts of the mind and brain working together with active mastery is – and it’s very, very important – that even when there’s a relative weakness because of a processing problem, the more parts of the mind and brain are working together, the quicker we help the child master the processing problem in the area. It used to be thought that if the child had a problem in one processing area, it’s best just to focus on that processing area and then let the child compensate in other areas. But here we’re not letting the child compensate; we’re recruiting the other parts to help the part that’s a little weaker. So it’s not that when we use vision and movement and a lot of affect we’re overlooking listening and distinguishing sounds; it’s quite the opposite. By recruiting all these things we’re making it easier for children to develop that listening part of their brain and their mind and the part that helps discriminate or distinguish different sounds and different sound blends and different patterns that constitute words. So, it’s not a compensation system, it’s really a kind of cumulative system that brings more strength. The metaphor would be giving your soldier confidence by surrounding him with a good army so he’ll try things that he otherwise wouldn’t have tried before, rather than isolating in the field of battle all by himself where he’ll panic and get anxious and become an ostrich. So we’re not going to let the child simply run away from the challenge, but we’re going to give him the support of his complete nervous system to help him.

So then what we do is we have the child in this way master the formal visual system and connect the sounds to the visual image and eventually he can learn the system. So, now he’s recognizing individual letters, blends, and eventually sounding out whole words. Then we get to another very important step, which is how we build our comprehension. We want to make sure the child comprehends what he’s listening to and what he’s hearing. I’m going to take a 30-second break and tell you about




comprehension – the comprehension of language, as well as comprehension of what you’re reading. Hold on 30 seconds and I’ll be right back.

Okay, we’re back, so now to build up comprehension, as the child is sounding out the words and reading the words, and to do this also as part of language development, we want again to use our general principle of getting all the parts of the mind and brain working together and we want to use that to help the child understand what he’s hearing in terms of language development or what he’s saying, as well as what he’s reading. So, here we can read something and discuss it if the child’s already verbal. But we have other alternatives, too, for the child who’s less verbal because sometimes children’s reading skills goes ahead of their verbal skills, for example. Or if we’re just working on the language, *per se*, and not yet reading, we can kind of read something and then begin with the child to pretend it out. So we can read about the bunny rabbit running away or the little baby bunny running toward a friend of Mommy bunny’s and then have some pretend bunnies or put on bunny hats, ourselves, us and the child, and actually pretend out that part of the drama. Now if the child is already somewhat verbal, we ask the child to take the lead and she can put her own twist on it and direct you in the drama. So you read something, you either discuss it, you act it out, you can make up a song with it, but you create action around it that’s meaningfully related to the actual thing you’re reading or the thing you’re saying and the child takes the lead. If they child doesn’t have any ideas, give her some choices. Let’s say the sentence you’re reading is, “The baby is running to the mommy” and the child doesn’t know what to do, we can say, “Well, shall we have the bunny rabbit go give a hug to the mommy rabbit, or should we have the baby run this way and the mommy go that way?” and see if the child can make a choice. If she makes what you consider the “wrong” choice, say, “Oh, well, I’m going to change what I read about!” Now I’m saying, “The bunny is running away from the mommy. So what shall we have the bunny do now?” See if the child makes the same choice again, but switch the sequence. Always give the child the good choice first and the bad choice second and play with this until the child gets it. Don’t bypass it because the child’s not understanding what’s being read because only half the ball game has been mastered, the second half has not been mastered. So, what we want to do where there’s a small group in the classroom or with an individual child we’re working with, after we read something, we just don’t read what we read, but we read a few words or a sentence or a phrase and discuss it and we can pretend it out. Here we’re constrained, so it’s not totally creative pretend because we’re actually constrained by what we’re reading or a new word we’re introducing, if we’re




introducing a new word. Let's say the child has not heard the word "truck" before – "Where's the truck? What's the truck going to do?" Maybe he hasn't used the word "juice" before. So the child gets a choice between water and juice. If we want to teach the child the word "open," we hide his favorite toy outside the door and ask, "Should we open the door or close the door?" A child's going to learn pretty quickly to say "open" to get that door open to get the toy, but because there's affect and emotion involved and problem solving involved the child is going to understand what "open" means pretty quickly, and when you learn this way the new words you're learning generalize immediately. A new word you're reading has meaning immediately if you use it. If you give a child a dictionary definition to memorize – let's say you're introducing the word "idiosyncratic" or "iconoclastic" for an older child, if you give him the dictionary definition he'll memorize it but he won't understand what it means. But if use "idiosyncratic" or "iconoclastic" and he has to do something that's iconoclastic or say something iconoclastically or be idiosyncratic, you need to give him some clues how to do that. So you can use the dictionary definition to guide the pretending or guide the illustration you're going to create together, with the older child it doesn't have to be pretending, you can just illustrate it. Say, okay, "Be iconoclastic" and if the child can't do it, say, "Well, let me read the definition again. Let me give you some examples of from how Ben Franklin was iconoclastic, or how George Washington was iconoclastic in the Battle of so-and-so." So, in other words, when you're introducing new words – whether it's a written word or a new spoken word for the child to master, whether it's a simple thing like a truck or juice or whether it's an advanced word like "idiosyncratic" or "iconoclastic" or "conventional" or "unconventional," the best way to learn it is to come back to our principles: affect, meaning, movement, movement of the mouth, movement of ideas – as well as dramatization. Children won't forget when they actually *are* iconoclastic or conventional or unconventional and they have to come up with examples of it. If you just memorize it you may lose it by the next day. It's always better to introduce new concepts and new words in conjunction with things they're already familiar with or things that are part of their daily world. In other words, if the new concept or new word that you're reading or hearing is not part of your daily world, join it with something that is part of your daily world. So if you're interested in music or sports or dance, relate it to music, sports, or dance so it becomes a twist. You can be an iconoclastic soccer player or an iconoclastic poet or dancer. So relate it to something already familiar that creates the meaning, creates the stronger affect, makes it easier to



do something while you're learning it and gets the multiple systems involved. That's all part of creative mastery of new language and new concepts in reading.

We also have a formal way of systematically enhancing reading comprehension or comprehension of spoken language for the child who has a hard time understanding what he hears. Here we take each of the stages of our tree trunk and we use what's newly learned – a new word – or the passage that the child is reading and we work it through, literally work it through the different stages in our tree trunk. Remember, there are nine thinking stages involved that have to deal with our intellectual and social emotional capacities, from simply paying attention to reflective thinking. So, think about how we would apply this to understanding a passage a child is reading. If the child is reading a passage about Ben Franklin flying his kite and discovering what happens when lightning hits the kite, how do we help the child comprehend that?


Well, first we help the child pay attention. So we ask the child, "What in the passage caught your attention?" The child could say it was reading it out loud. "What caught your focus?" Then we find out what was meaningful emotionally for the child. What did she like about it? What didn't she like about it? What was her affect? While we're doing this, we're having a two-way conversation, exchanging emotional gestures and exchanging language. Then we find out what the pattern is – "What happened here in terms of the steps that Ben Franklin took? Did he do one thing in this passage or two things or three things? What were they? What was he trying to accomplish – what was his goal?" See if the child can identify the pattern and help the child with Socratic thinking. Then, you can go to the imagination part – "Let's pretend!" and you can act out what Ben Franklin did and ask, "Do we want to add any novel twists to it?" For an older child who doesn't want to act it out because it seems too childish, you can say, "How would we add something creative to it? How would we sort of amplify if we wanted to put our own creative twist in? What would we do if we were Ben Franklin at this point?" Then we can get the child to be logical about the passage, give an opinion about it, if he liked it or didn't like it and why and have him give a response that's logical. Then we'll do comparative thinking – we'll have him compare other inventors who discovered new things. Let's say he's read something about Edison or about someone else beforehand, we can do some comparative thinking. Then we'll do gray area thinking, "To what degree did you like Ben Franklin more and why?" Then we'll do reflective thinking – "Well, how would you evaluate Ben Franklin in relationship to yourself and the things that you've done?" and have the child personalize and say,



“Well, I could never do that” or “I could do that” or “I have invented certain things” or “I’ve never invented anything.”

Also, to go back to the beginning – the first step again, when we’re simply identifying what we liked or didn’t like in the passage, we can harness all the parts of the mind and brain in doing that as we’re going up the tree. So as we’re just attending to the passage we can describe in great detail what Ben Franklin would look like, we could imagine the clothes he’s wearing, what colors they are, what he’s actually doing – what kind of movements – so we can imitate the movements. We can use as many of the different parts of the mind and brain together in bringing it alive so we ask questions like, “What did he look like?” “What was he doing?” “What actions was he taking?” “What was his facial expression?” “What color were his clothes?” “Who else was in that passage?” “What were they doing together?” “What kind of interactions were they having?”

So, bring that passage alive by thinking back to our main players: sounds, vision, movement, emotions – what emotions could we see in his face – so that the child is creating a multi-sensory image. Now, again, to talk about my good colleagues, Pat Lindamood and her colleague, Nancy Bell – Nancy Bell has developed a system called Visualizing/Verbalizing where she helps children visualize what they read and that’s one step in the approach that I’m talking about here. I like to go beyond just using the visual – I want action, I want affect and texture, and I want always to go up because that’s only the first step! Then I want to have the child often use each of our levels of thinking and socializing – each of our levels in our tree trunk – to apply to that passage that he’s reading. When a child does this, he’s truly mastered that passage. As children do this slowly for a few things, what you’ll find is they’ll begin doing it automatically, on their own, and they become what I call thinking-based readers and a thinking-based reader is a great reader because he’ll automatically bring the passage alive for himself, he’s automatically seeing the pattern or the main point; he’s automatically being creative, thinking of what he might do differently from the person in the passage. He’s also thinking about what he liked and didn’t like; he does comparative thinking and gray area thinking, in terms of shades of gray, and bringing himself into it by comparing what the author is saying to what he thinks about the world. This can be with anything from a character in a novel to a novel to an essay on justice and how we developed the American Constitution.



That's all we're going to cover today. Next time we're going to go into the other systems of the root system. We're going to go into the motor planning and sequencing system of the root system; the sensory modulation system – how we keep sensations from becoming too overwhelming or under whelming; and the visual-spatial part of our root system – how we strengthen the visual-spatial thinking part. So that will be for the next few weeks and I think we'll probably be able to cover two in each of the successive weeks until we've covered the whole root system. Today we covered language and reading, and these are fundamental principles. We didn't give you a real cookbook to do it, but we gave you the principles from which you can create your cookbook. I look forward to speaking with you again next week.

Thank you.