Web-Based Radio Show

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

Auditory Processing and Language

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Good morning. This is Dr. Greenspan welcoming you to our web-based radio show. Thank you for joining us today. For those who have been following recent shows, you know we have been talking about learning challenges, learning strengths, and learning differences, using the picture or image of a learning tree with a trunk and roots and branches, where the branches are academic skills and other applied skills; the tree is our core thinking and social capacities, systematized by our functional and emotional developmental capacities; and our root system is our ability to process auditory and language, visual-spatial, and sensory input, as well as plan our interactions. We've been focusing, after an initial discussion of the trunk, on the root system. The first root we focused on is probably one of the more essential ones, but certainly not the only one, which is our ability to process auditory information and language. I have a few more thoughts to share with you on that before we move on to how we modulate our sensations, which is another part of our root system.

The few additional thoughts on auditory processing and language I wanted to share with you have to do with the four different dimensions that we want to elaborate on. One is how we help children learn to bring together what they hear in their auditory processing and language and what they see and what they do – how we get the auditory processing and language part working with the other parts of the mental team as a smooth, organized, orchestrated unit – like a good orchestra. And, two, we want to look at, in particular, the challenge many children have of a primary language difficulty or even children who've been diagnosed with ASD who then become quite socially interactive but are left with still considerable language problems. Some children never write in with challenges, but when it comes to higher-level language functioning, like writing essays, they seem to have trouble. This has to do with difficulties of processing, of sequencing auditory, verbal information and also getting to the core issues. Children

might have difficulty interpreting questions, for example, on an exam or they may mis-write their essay because they don't hear the instructions properly. Just like some people have a "hard time" when it comes to following visual directions and diagrams, like how to put together their TV stand, and other people are gifted at it; similarly, some people have a hard time with essay directions or testing directions. Also, we'll talk a little bit about the higher-level verbal abstracting skills and how they're different from mathematical and scientific abstracting skills; and finally, we'll talk about the role of anxiety – what happens when a child or an adult feels anxious, the role of anxiety, and what typically happens when a child begins doing something hard and how anxiety makes it worse – makes it more difficult for that youngster. If we have time we'll get into sensory modulation today; if not, we'll cover that next time.

But let's begin the first one – how to integrate auditory information with other parts of the central nervous system with what we see, what we do, what we smell, what we touch. Here, we come back to our old friend, practice. Always remember this key principle: You learn what you practice. The problem with our helping children, often, is we don't practice the right things. So we want them to master something, but we haven't figured out the building blocks leading to that mastery, so we don't practice. To give a concrete example, there was a youngster who was having a hard time sight reading music and had a hard time, also, learning by reading from books, but has a much easier time listening to a lecture and has a much easier time listening to music and then following it, and actually is quite a gifted singer. But, how are we going to help this youngster? The problem had been going on for many years and my colleague, Harry Wachs, who's an expert in visual-spatial processing and thinking, weighed in. Harry pointed out the problem seemed to be in connecting what this youngster was seeing, like written notes, with what she was hearing because she could repeat a song if she heard it but she couldn't do it from the written version – she couldn't convert the written version into an inner song. Similarly, when she read text in a book, it was hard for her to understand the information, but when she heard it she was quite gifted, actually, and a very good abstract thinker. So, the problem wasn't at the higher levels of verbal abstraction or even with basic music sense, whatever that is, but with converting visual information into the other systems.

So we began a series of fun exercises where this youngster had to look at something and then do something to strengthen that visual-motor connection first. So, for example, one of the exercises was looking at a little game like you see sometimes on boardwalks, where flashing lights go off and you have to bang the light as quickly as you

can and you look at your time. So, she had just to respond to lights changing in different patterns and try to touch the light as fast as she could, and that was just getting her tracking and getting that visual system cooking on a preliminary level. Also, some basic hand-eye exercises – throwing and catching balls – got her using her vision a little bit more at the very basic level. Then we graduated and we also did things like taking a pencil and putting it through a moving loop on a string – again, which required tracking and lots of visual-motor coordination. Then we made it a little more complicated – and I should add these are all insights of Dr. Wachs, in his book *Thinking Goes to School,* which is a wonderful resource for those who want to learn more about the visual part of visual thinking or visual thinking, itself – and then there were some other exercises such as connecting different visual images with letters. So, now we reversed the sequence and she would hear a letter like "A" or "B" or "C" and then have to find it quickly on a board. Then she would hear the letter "B," but have to take the letter before or after and find it on the board very quickly. So it involved listening, taking in auditory information, which she was good at, but then connecting it to something visual, that she had to search out on the board, which was hard for her – very difficult. Then, to make it complicated, she had to transpose it –she might hear a "B" but she had to find the "C" or find the "A." She might hear an "L" and have to find the "M" or the "K." This was not easy to do. I just had to think through what comes before "L" and had to go through the whole alphabet to get at it! So, we all differ in this basic capacity. You can probably think of 10 more games that you can make up where you're training your mind to do just some tasks where you're connecting vision with something you hear with something you might read. Looking at the letters on the page was close to reading, so she was now connecting listening to reading. Then, something that's going to be next for this youngster will be seeing a note on a page and then as fast as she can, to find it on the piano and then mimic the piano – once she heard the piano, she could mimic it pretty easily, but the hard part is seeing it on the page and finding it on the piano – that's not so quick for her, again because that visual system doesn't work as well, not because she doesn't know the notes on the piano.

Then it will be looking at it and just humming it without playing the piano note, which will get directly at the part that's hard for her, but you see we're not coming directly at just drilling her by playing songs or playing scales; we're actually strengthening that visual system and that visual-motor system and that visual-auditory system. Other variations in this game have to do with something that I made up with some children, which are different versions of treasure hunts. In one version we give the

child auditory information or we make a code with different sounds where “A” means look right “B” means look left “C” means look up, “D” means look down. We do it in different ways: up, down, left, right – sort of like the old “hot/cold” game, but we make it more complicated. So they’re sequencing auditory information, like move left, right, but we may have it ABCD or east, west, north, south, and then they have to search in that direction to get the treasure, but we may have two or three children competing, so they’ve got to go fast.

Then we may convert that to visual codes with lights going off in a certain sequencing, almost like a Morse code, with one light indicating left, two lights indicating right, three lights indicating up, four lights indicating down – again, connected with the search and finding the treasure. So we’ll have verbal input with the letters or actual words in very rapid sequence. Then we’ll have visual input, like with lights or directional beams with arrows. Then we might have in our treasure hunt game, once the children get good at this routine stuff, which is more speed and just getting those systems working rapidly inside the central nervous system, then we might go to games where we actually give the child three or four directions in a row, verbally. Then we give them the same directions with a visual diagram. Then we’ll combine the two together and they have to then convert that to action. Then the actions will get more complicated – going over or under or through obstacle courses and, again, we’ll gradually make it speed-related. The key to doing the games is to make the challenge such that the child has about a 70 to 80% success rate, so you’re not making it so tough that the child gets discouraged. That’s the key. Once you get to 70 or 80% success rate, the child is motivated to go on and then you make the task a little harder, but not too much harder. Then you go up the ladder.

Now the same thing we can do with all the sensory systems. So, for example, with a child who might have a visual deficit we might use Braille in the same way and still help that child with a visual deficit get a sense of left, right, forward, backward, up, down, and create a roadmap of his room through touching the different areas and through moving around the room and through finding things using the Braille system, and also the auditory system and connecting touch, sound, and movement, focusing less on vision, directly, but creating, nevertheless, a visual roadmap of the room.

So, the key is to build up these connections between the different sensory systems by recognizing where the weak links are and then practicing. Now, some children have no weak links and some children have two or three weak links, some just one, but we

see many children with severe learning challenges with two or three – we see children with learning differences who have some strengths and vulnerabilities. We see children with learning strengths, like this little girl I mentioned to you with the music, who was an A student in school, but who had some weak links, nonetheless, but who had compensated with some very strong things, but now her weak links were interfering with her moving ahead in her musical career so we had to work on strengthening those.

Now, what I want to do is move on to our second component, where once we strengthen the connections between all the different systems and particularly our auditory processing and language and really get that cooking. We want to also strengthen – I should add before I complete that – it's very helpful also, as we're doing this in a speed way, and speed is not of the essence, it's just a training vehicle to get those systems working smoothly and quickly so they don't slow the child down and so they become routine, and then the child can devote herself to the higher-level thinking skills. In other words, certain things we do on automatic pilot, like when we're walking we're not often thinking about putting one foot in front of the other; it allows us to we think about what we're going to do later in the day. If we had to think about our legs walking, we couldn't think about what we're going to do later in the day. So, here, too, we want to get these systems smooth and operating easily and we have mentioned before about timing and rythmicity exercises and doing some of this to music and recognizing that a lot of actions that we do fast we do in a rhythmical and timed manner. Just using music or some other rhythmical support helps us sometimes get these systems working more efficiently by simply combining certain of these exercises with a a certain cadence or a certain beat.

The next part of this was the unique challenge of many youngsters who primarily have a language processing problem. We see many youngsters who initially had more pervasive developmental problems, and were maybe diagnosed on the autistic spectrum, but then do very well but are left with a language problem. There are other children who just have a language problem, who are slower to talk who have a hard time learning to read, which is an aspect of language functioning. There are other children who really showed no signs at all, but when they get to the higher levels of high school they had trouble interpreting their essays or answering exam questions because they're misreading the question. One such boy came in a few weeks ago who's name we'll change to protect the guilty. We'll call him "Jack" and he'll be a composite of a number of youngsters I've seen, so no one should try to figure how who Jack is – I can tell you it's not you if you're listening or your son, if your parents are listening! But Jack

was having the darnedest time in answering exam questions and essay questions, particularly, and as I looked over his exams I saw that when the question was straightforward, when it was basically, "What were the causes of the Revolutionary War? Discuss," he would do great. He was quite an abstract thinker and he could organize it well and elaborate. But if the question were worded in a complex way, such as, "The Revolutionary War had many causes. Some, however, have not been substantiated over the years and, therefore, should not be considered causes now, although they may have been before. Others seem more related to modern-day causes of war, although they may not have been related to the Revolutionary War. Discuss your view of causes of the Revolutionary War in the context of the above qualifying statements." Now, that threw him for a total loop because it had negatives in it and it had four or five different clauses. It was basically asking the same question, "What were the causes of the Revolutionary War?" but with adding in the twist of comparing it to modern causes of war as well as the original ones – those that have been substantiated historically, those that have not been substantiated historically, and when it came to a multi-part question like that, he got lost. Then he got anxious and he would often go on a tangent. I saw in his essay answer, he talked about the current war in Iraq, or the post-war period, and a little bit about Vietnam and made some references to the Revolutionary War in terms of it, but he didn't at all address the real question and it was just a loose, disorganized answer. In other words, the youngster actually knew a great deal, but it all came out in a kind of disorganized, fragmented way. Typically, that's what threw him for a loop. The same youngster, also, just in conversations, came across often to people as "not getting it," and yet I noticed that if you asked him something straightforward – he was a warm, engaged, interactive person who often had a fairly good intuitive sense about people and their emotions and how they were feeling – he had some insight, actually, into what made people happy or sad or excited or jealous or competitive, and he was getting pretty good grades – A's and B's – in science and math and in the very straightforward parts of English, like just defining vocabulary words, he did fine. But when it came to complex essay-writing in history or English or social studies, particularly the ones that involved either exam questions or mini-essays with double negatives or these complex, multi-part questions, he would literally "fall on his face" and get a D or sometimes he'd get an F. Also, the same thing happened in verbal discussions not only in class, but also among his friends. If something was verbally very subtle or involved complex verbal interchanges he "wouldn't get it." He, himself, was quite confused and could say, "I don't know what people are saying sometimes." I asked

him, “What do you do when you don’t know what people are saying?” He said, “I just guess the best I can.” It reminded me of someone being in France and just having a little bit of French vocabulary and kind of picking up every third or fourth word and kind of smiling and trying to respond as best he could, and the French person kind of shaking his head like, “He doesn’t get it.” We see that here, too, with people struggling with English.

Now it’s fortunate that we have some answers to help children with this challenge. Unfortunately, there are huge numbers of children with this type of auditory processing and language challenge and they receive various diagnoses, from central auditory processing disorder to pragmatic language disorder, to dyslexia – but the common features are with certain aspects of reading comprehension, certain aspects of essay writing, certain aspects of verbal interchange. When I check these youngsters out more carefully I often find that their straightforward auditory memories might be okay, although some of the children have problems when I just give them numbers forward and backward – I’ll give them six or seven numbers forward or eight or nine numbers forward, and then ask them to do the same thing backward. Typically, a well-functioning adult or older teenager should be able to do anywhere from seven to 10 numbers forward, and then maybe two or three less than that backward. But many of these children can do that; some can’t, and they have problems with auditory memory. But I think the majority can and this youngster could do that simple task. The problem seemed to be at the next level, which was not getting overwhelmed by multiple pieces of verbal information that are all connected and related to each other, and to hold in mind that whole complex sequence – that multi-part question. The same thing was true for the verbal interchanges, where the person clarifies, saying, “Well, you know, you’re a nice guy and I like you, but not when you do A, B, C; but I do like you when you F, G, H and I think that’s the way I feel about you because it reminds me of my sister when she used to do A, B, and C.” Again, that’s like a multi-part question and my guy, Jack, would get lost after two or three of these clauses as this person’s explaining why he liked him some of the time because it means holding in mind many of these verbal segments that all have a relationship to each other. So you have to hold segment one in mind until you’re hearing a qualifying statement, which may be the third or fourth segment in the sequence. You may think it’s a memory problem, but it’s not strictly memory because it’s holding little bits of information in place in your memory, but also understanding the meaning of each part. In other words, if you’re following the meaning it’s a little easier to hold it in place. If you’re just memorizing the words, it’s like memorizing a song in a foreign language, which is much harder. So if someone gives you a French or German

sequence and you don't speak French or German and you're memorizing the song, it's much more difficult. If it's English and the song is saying "I love you some of the time, but not all of the time," you can understand that language and if it makes sense to you, the sequence, "I love you some of the time but not all the time – when you're good, but not when you're bad." I just made up that song and it makes some sense. "Some, not all; when you're good, not when you're bad," but it's easy to remember. If they were just nonsense syllables or nonsense words you wouldn't be able to remember them.

So, the problem was with abstracting meanings very quickly and then holding in mind those meanings and sequences and seeing them juxtaposed with one another. Here, too, the question is what kind of practice would help the youngsters do this because it's not obvious or easy to help a child master this and it's very common for children who are good in math and science often to be weaker in English or history or literature, and vice-versa for others, who can do this verbally, but sometimes they can't do it visually, like with mathematical symbols. I'm going to give you some ideas about how to strengthen this.

The key here is, again, finding the right kind of practice. So, Jack, our example, had a tutor and I suggested to his tutor we had to practice the area that Jack was having trouble in, which was interpreting these questions, as well as in regular speech – interpreting complex, verbal information. She said, "Well, he gets at least one essay a week, so he's getting plenty of practice." I said, "Yes, but that's once a week! The problem isn't in writing the essay; the problem is interpreting questions. Why don't we give him 60 questions to interpret in an hour and a half tutoring session," and since she was tutoring him twice a week, I said, "then he'll have 120 practice opportunities each week, not just one." Reluctantly, his tutor agreed to try that, so then we asked all his teachers to give us all their back exams and essay assignments, giving us loads of questions to draw from. Then we made up a whole bunch of others, like the kind I mentioned before, so we had multiple parts to it, starting off simply with two parts and no negatives, and then two parts and one negative and then double negatives. So by the time we got to a four-part question it was, "What were the similarities and differences between the Civil War and the Revolutionary War from the point of view of the generals who were considered to be the best generals, but also from the point of view of the generals who were considered to have made big blunders?" It's a multi-part question that required holding lots of information in mind and just the thing he was having trouble with.

Then we also said, during just normal social conversation, “Tell me what I mean.” We would say things like, “I like you when . . . but not when . . .” kinds of statements or, “Gee, I noticed that you had your eye on that girl in your class, but does that mean you like her less than the person you told me you liked a whole lot yesterday? Or does that mean you like her more than the person who you told me last week you liked a little bit?” So, we just made ordinary conversation a little more complicated and he would have to say what we meant. We started simply and got more complex, but basically what we were doing was challenging him to hold more complex information in mind, starting pretty simply and then getting more complicated, but where he had to do two things at once – he had to remember what we were saying, but also very quickly interpret the meaning. Because, again, if it’s just remembering, he could do it – like remembering numbers forward and backward or when we gave him random words or even nonsense syllables he wasn’t bad at it – he could sequence those and remember those as well as most people. It was the rapid interpretation of abstract verbal meanings, and I emphasize the word “rapid” because if you gave him something that was just abstract and complicated, but in a straightforward way, he would get it. He was a decent abstract thinker, so if you said to him, “Can you tell me why so and so did something?” he could speculate as to the underlying motives in a complicated way. So, for the question, “Why do you think Mark Twain created the character of Huck Finn?” which is a fairly abstract English question, he would give you quite an elaborate answer. Actually this is a question that was asked him and he got a fairly good grade on it. He said that he thought Huck Finn represented a part of Mark Twain’s wished-for, but never actually experienced, childhood and he knew enough about Mark Twain’s history to point out the areas of Mark Twain’s childhood that were not realized in real life, but were actualized through his writings, like *Huckleberry Finn*. So he was quite sophisticated and if you asked him, again, why he thought he did something he could speculate as to his underlying motives and other people’s underlying motives. So he was a good verbal thinker in that sense of being abstract, but if you came at him with three or four things rapidly in sequence it was the sequencing and the rapidity of getting the meaning that threw him for a loop and quickly understanding the relationships between these different segments of meanings. So, it came down to a problem with sequencing verbal information that had that simultaneous challenge of remembering and attributing meaning very rapidly, which you have to do when you’re reading a question quickly and you haven’t got all day to interpret it or, particularly in a social context, when you’re trying to grasp what people are saying.

So, here the key thing was helping him practice what he had trouble with. So we started simple and got more complicated, but we made the task exactly what he had trouble with and we did it not just twice a week in normal schoolwork, or even four times a week even if he had four essays a week, but we focused on that in his tutoring sessions. Remarkably or unremarkably, as expected, he has gotten significantly better and he's still getting better and better and better and stronger and stronger and stronger in this core capacity. The key message here is practicing what you want the child to learn.

For children who have a more profound problem, if they have hard time with ordinary conversation, again, you've got to practice the things that are hard for them. So in ordinary conversation for the child who doesn't seem to get it, the idea is to figure out what they are not getting. It's easy to say he's not getting subtlety or she's just not smart or, "Gee, he just doesn't abstract well" or "She's not terribly reflective," but I find that that's often too simple an explanation and often a way that we, who are trying to be helpful, are simply unburdening ourselves from the challenge of being helpful. Most children are much smarter than we give them credit for. But they do vary in terms of their processing capacities and they're uneven, and often there are just little glitches or little hurdles that ordinary experiences – ordinary developmental experiences that are made available by parents and educators who are well-intentioned and often quite gifted – are not enough to get them over that hump because, often for biological reasons in terms of their own maturational processes, their central nervous system or their mind isn't learning this easily, just like some of us are great, natural tennis players or dancers and others are not. So, just like a person can learn to be a good dancer or good tennis player with extra practice and with good coaching, here, too, we can help them, but we have to identify where the glitch is. Sometimes a little glitch looks like a big problem. So, for example, our guy Jack – well, this would look like a major language problem and maybe people would just say, "Well, he's just not a very smart kid" or "He's okay in math and science, but he's never going to be a history professor." Well, now he may be a history professor, if he wants to, or he may be a math and science person, but he'll have the choice. A little glitch – in his case, sequencing rapidly meaningful phrases that all have meanings to them and seeing the relationships between them – was altering his social skills and his whole academic skill area and about half of his curriculum – everything that had to do with language at the higher level. He did fine at the simple level, the first four grades, because he wasn't getting these complex things thrown at him – it was mostly memory based, but now that he's

mastering this glitch, he's showing that actually his insights and his abstract thinking and his reflectiveness are allowing him to get some A's in some of his English essays and on some of his exams where before he was getting D's. It's remarkable to see because what everyone was assuming – that he was just not a very smart kid when it came to verbal material – is just not the case. He's actually a good abstract, reflective thinker.

Also, the other point to remember here is that time is on our side. There's no horse race here; you don't have to be at your peak when you're 13 or 14, or even equal to other kids by your junior year of high school. That's why some kids shine in college – they're "late bloomers," but what happens is, they finally get enough practice and also there's growth and development, that they get over some of these glitches and hurdles. Some, unfortunately, have to do it just on their own, while other kids get the help they needed earlier on, so life is a little less frustrating for them.

Now, also, for the children who have this problem in a more fundamental way, so it doesn't show up in just in normal social conversation, we've got to create little pretend scenarios where we help them practice the parts of language that are hard for them to process. Here again, we use the same principles: Start off with simple information and go to more complex information, but I believe for many of the children it's the sequencing of meaningful bits of information, as opposed to information itself. Children who just have a memory problem, we can work on that, too, and there the key is to improve their memory by having them practice remembering things that are emotionally meaningful to them, which have a lot of affect. So, listing the kind of cookies you like best is a lot easier to remember than just some random phrases or words that have no meaning or no emotional connection to you. Memory can be improved by practicing with emotionally meaningful things. "Well, you'll get as many different kinds of cookies as you can remember and I'm going to read a list to you of five and we'll see how many you can remember" and you'll be remarkably amazed at how quickly the memory improves in that circumstance versus just, "Give me back the following letters or numbers."

That same principle also operates here when we're working on abstracting meaningful bits of information and seeing sequences between them. In addition to starting simple and getting more complex with our essay-writing Jack or our children with more primary language problems, the other recommendation is always start with emotionally very meaningful kinds of information. If you're going to do an essay, write an essay about why you're better than your sibling some of the time, but not all the

time, and under what circumstances you're better and under what circumstances you're not better. That's a meaningful essay to a child who's competitive with his sibling, as opposed to comparing the Revolutionary and Civil Wars. Now, once the child can compare himself to his sibling and diagnose or take apart a complex question, then he can begin applying those same principles to the Revolutionary War and the Civil War and things that he may be intrinsically less interested in. So start with affectively meaningful subjects, whether it's your favorite foods, favorite music, family issues or issues about friends, and practice the type of thinking you need to do. So start writing an essay about you and your friends and the things you like to do, and then go to more impersonal kinds of information.

Now, I want to move to the next part that often gets in the way, which is the higher levels of reflective thinking and also the role of anxiety. Many individuals overcome the kind of challenges we've talked about by becoming very good abstract, reflective thinkers and seeing the big picture. But in the big picture, the forest is made up of many trees and it's sequencing the trees that gives some children trouble. Some of these children also need work on seeing the big picture – how all the trees fit together. So, there, too, we practice with questions and information where we're always asking, "Well, how does all this work together?" So, let's say they're describing their family and the problems Sibling A has, Sibling B has, or Mommy has or Daddy has – a subject of great interest to them because they get a chance to pick on everyone and criticize everyone. Then we might ask, "Well, what do all these have in common?" They may not be used to thinking that way but now we're encouraging reflective thinking, looking for common features and strengths that also help children with these verbal challenges. The most obvious thing is that they all have strengths and weaknesses or they all have some challenges. But it may be more specific, they may all have challenges in expressing self-centeredness in a different way – it may be a very self-centered family or maybe a very competitive family and each one has a different way of being competitive – one being more passive, one being more obstructionist, one being more directly aggressive, etc. Now I mention those not because I want everyone to be junior mental health professionals, but because the information is readily available and people are interested, usually, in their family dynamics. But it could be the same thing about music, about your favorite authors – so we look for common denominators, we look for themes, and we look for reflectiveness. The key here, and it harkens back to what we talked about with the tree trunk in looking at strengthening level nine, is the ability for reflection, the ability for saying things like, "Gee, I'm angrier than I should be under

these circumstances," or "I agree with Twain but not with Tolstoy because my experiences are more similar to Mark Twain's." The key here is when you're doing it in a personal sense, having to do with yourself or your family, it's a little easier. When you're doing it with an author or with a time period in history, the key to getting the deeper abstract thinking or reflectiveness going is to ask yourself the rhetorical question we have to ask children, "Put yourself back here in George Washington's place. What would you have thought if the British were on one side and the river was on the other side and your men were in the middle, how would you have felt? What strategies would be open to you?" In other words, try to get the person to personalize it and go back and forth from the personal and then the facts at hand – the abstract. In other words, abstract thinking is not thinking that is thinking from personal thinking, but is taking your personal thinking as an insight and then putting it into a different context, back into the abstract mode. So we see insight and then putting it into a different context back into the abstract mode. So, we see two problems with abstract thinking: One is people who just personalize. So if there's a problem they're seeing in a movie or in a character in a novel, as they're seeing that problem they just personalize it and just think about in terms of "Well, I wouldn't do that," and they give a very limited meaning to it, or "She was obviously mean to him because he had been mean to her before." Well, there's no evidence from the story that that had happened but that's why *they* got upset with other people – because people were mean to them." That's getting lost in your own personalization – making it about you, not about what the character is really about. But, on the other hand if you can say, "Well, let's see. This is what happened to her. If those things had happened to me, how would I feel? I'd feel this way." But then you have to say, "Okay, but now, is she just like me or is she different? Well, she's a little different because she doesn't get as competitive as I do, she doesn't get as angry as I do. She tends to be a person who likes to do things for other people and I tend to like to pull away from other people when I'm upset. So, under her circumstances, if I were in her shoes, I'd probably do A, B, C, D." Now you're really abstracting. See, you're comparing yourself to the other person, but also recognizing how you're different and using that insight to generate a truly abstract notion of the other person. That's not easy to do, but, again, it can be practiced. So the tutor or instructor would say, "Well, how are you similar to the person in the novel and how are you different? How would your differences lead to a different response or a different understanding of her motives or her reasons for acting the way she did in the novel? How would your similarities? Did you grow up in a different or similar time period in history? What social forces are

operating on you, i.e., what are your peers telling you to do and what were her peers likely telling her to do? What was she likely learning in school? What are you learning in school?" That way you break it down and you help the person go back and forth and that makes him a truly reflective thinker because reflection is really having a sense of who you are and being able to compare other experiences to your own, but in a logical and realistic manner. That's what we call a reflective person.

Now, also, a few comments about the role of anxiety. When we're anxious we all become more literal and concrete. It's hard to be reflective thinkers. It's hard to do things rapidly because we're almost paralyzed with anxiety and, typically, children who have trouble sequencing verbal or auditory information, if you put them in that kind of a situation and they're overloaded – particularly if it's a timed test – they're paralyzed and they're sitting there, getting more and more fragmented, more and more disorganized, so everything they read is a total mish-mosh. So, part of the work of the tutor or the educator or the school counselor or the parent is to help the child relax. It's just like tightening up when you're trying to hit a note in singing or hit a stroke in tennis or in golf – you know it sabotages your best efforts. It's not easy to relax when you're overloaded and overwhelmed, so doing the kind of practice things we've talked about is one part of being unanxious because the better you get at something, the less anxious you feel, the less overwhelmed you feel. But the second part is to help your child appreciate how he feels when he gets overloaded, when he gets confused. All anxiety has fantasies associated with it – "I'm going to fail," or "I just don't know who I am when I'm overloaded," or "I lose my sense of self," or "I get panicked because I can't think and I worry." Just verbalizing the associated fears – whether it's fear of failure or fear of letting your parents down or just fear of losing your mind or as one child expressed, "My brain just doesn't work and I worry it'll never work." It's like the moment when we can't think of something obvious, like someone's telephone number and you say, "Oh my God! Am I aging? Do I have an early form of memory loss?" That's how children feel – "My brain doesn't work, there's something's wrong with my brain." So saying those words – just verbalizing them to an empathetic adult – makes it easier and makes the anxiety less. Then, also, there are calming strategies, relaxation strategies, learning how to go with your fears and be aware of them, rather than fighting them, learning how to breathe slowly and deeply during the exam – taking a 30-second break, rather than getting more and more anxious, coupled with understanding your fears, really helps in that situation. Then the other part of that is you strengthen the underlying abilities so you're not so overwhelmed. For some children who have these sorts of processing

problems we often recommend untimed essays and untimed tests because simply intelligence has nothing to do with speed and there's no good gain to doing something in a limited period of time. A lot of children need untimed tests because of performance problems because their motor system is slow – they can't translate and write anything quickly. Children with "nonverbal learning disabilities" often get untimed college boards and untimed tests, but it's easy to justify because they have motor planning or outflow problems. But here we're talking about another part of planning and sequencing and the verbal, meaningful sequencing that's involved in sequencing meaningful phrases and that, too, requires patience and sometimes untimed approaches.

This takes us to our conclusion for today. We've covered a great deal of material and next week we will get into how to help children who are sensory over reactive or sensory under reactive or sensory craving, because that, too, is part of our root system. So, we will speak to you next week. Thank you very much.