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Podcasts Episode 04: Dr. Sandra Rosen

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Interview with Dr. Sandra Rosen, San Francisco State University conducted by Dr. Amy Parker, Portland State University for Orientation and Mobility Methods

October 6, 2017

Dr. Amy Parker: Good morning Sandra, are you there?

Dr. Rosen: I am here. Good morning, Amy.

Amy: Good morning. Well, welcome class to another podcast in our foundations of orientation and mobility course, and today we are so honored to have Dr. Sandra Rosen with us, who has been a huge contributor to the field of orientation and mobility over the years in sensory motor development, in kinesiology, and in thinking about movement in some innovative ways. As you know, class, Dr. Rosen is also the author of one of our textbooks, "The Step by Step Curriculum," which was developed in partnership with the American Printing House for the Blind. So, we're honored to get to know Dr. Rosen a little bit more personally about her work and her interest in orientation and mobility and why she thinks sensory motor development and thinking is so important for our profession.

Welcome. Welcome, Sandra.

Dr. Rosen: Well, thank you. It's a delight and an honor to be here, and hello to everyone in your class.

Amy: Great. Well, we have some people listening in from the great state of Alaska, we have people in Washington state and Oregon and in California too, down south in California. But we're very pleased Dr. Rosen from San Francisco State University has a well respected face to face program that she's developed over the years and is deeply respected in the field.

So Sandra, tell us a little bit about how did you get started and what drew you to the profession of orientation and mobility?

Dr. Rosen: I guess I would have to say that I actually started my college preparation and career plans to go into the area of physical therapy. I was in physical therapy school when we had to do a paper on a PT for a non-physically impaired population, and there was a LightHouse for the Blind down the block from the dorm, so I went to visit and I learned about the field of orientation and mobility. It was a light bulb moment. I knew that's what I wanted to do.

In that interview, they told me that physical therapy was a really good background to be an orientation and mobility specialist, so finished my PT program at the university. I worked as a PT, because I felt I needed some definite experience, not just book learning, and I did all of that in preparation to be an O&M specialist. So after finishing a career working as a PT, I applied to San Francisco State, where I got my O&M master's. I think

worked in O&M, I'm also a vision rehab therapist, and it's been just a great experience in this field ever since.

Amy: That is wonderful. One of the things we've been learning, not only from our books but just from some of these interviews, is the varied background, kind of the intersectionality that we're seeing when people do bring experiences in audiology or perhaps even in social work and rehabilitation and bringing that into the field. Physical therapy, amazing, and the wonderful things you've been able to contribute because of that not only book learning, but your lived experience, your profession as a physical therapist. That's wonderful.

Dr. Rosen: I found it to be an incredibly handy background because it enabled me to look at the clients or students that I would serve, and I've worked with all ages, birth through the senior years, when I was doing direct service. But I could look at them not just in terms of mobility skills, but at the foundation for movement, which with a physical therapy eye, I was able to analyze why people had difficulty walking across the street in a straight line, or why the posture and gait were different, and it's been really nice to be able to use the sensory motor understanding to look at the source of struggles or difficulties that my students had in making mobility easy and efficient and graceful, and address the issues at the problem level, not the symptom level.

Amy: Exactly. Go a little bit deeper with us, if you will Sandra. If you could tell us, perhaps even a story or a reflection of someone that you served where you noticed those challenges at the foundation level, and then perhaps how you were able to apply some practical strategies to help them overcome those root challenges.

Dr. Rosen: Well, I guess a few different situations with students over the years come to mind. For example, one student had ... Let me sort of back up and talk about the building blocks of all the sensory motor, the posture, the gait, the ability to walk without veering, balance, all of those higher level skills. They're rooted in some of the early neurological reflexes that don't integrate without vision in the first year of life, and low muscle tone and that type of thing.

So, for example, I had one student who when she was under stress especially, but somewhat on a regular basis, she tended to hold her cane arm forward with the hand centered, but she always had the opposite shoulder pulled backward. No amount of reminding her to walk straight had ever worked for years by O&M specialists who had struggled with that. It just wasn't her way. And she always veered in street crossing, and it was a really pretty simple fix. Understanding that the problem wasn't just learning to hold the shoulder forward, because the problem was that under stress, there's a reflex called the ATNR that comes into play for all of us. All we needed to do was to have her bring her non cane hand to midline, which breaks up that reflex. Suddenly she could walk straight from corner to corner, her shoulder was forward, and after a month of practicing that, the reflex integrated and she was just fine. She [inaudible 00:06:55] hand swinging by her side.

But so, looking at things at these problem, the source level, not the symptom.

Amy: That's outstanding. That's really an outstanding example. And with the repeated practice and the strategies for looking at that challenge when she was under stress, how would you say did her brain become more adjusted to an automatic response? You were talking about neurological reflexes. Could you talk a little bit more about that?

Dr. Rosen: Well, there's some early reflexes that occur in normal development from infancy on, and normally these reflexes come and disappear during the first year of life. They sort of set the stage for muscle tone to develop and later coordination, and later neurological reactions that we like to keep, like balance reactions, for all of those to develop. But reflexes have to disappear before coordination, real voluntary quality coordination can come in. It's a fact that all of us, when we're under stress, sometimes these little reflexes that integrate, they kind of come back to give us that extra oomph.

So, without vision in your first year of life, and I'm talking this really only pertains to students who were born totally blind, as any amount of vision is wonderfully helpful in the neurological integration that doesn't happen for students that are born totally blind. It doesn't happen fully.

And so, these reflexes kind of kick in and give us problems. But the way to help a reflex integrate is to simply practice doing something other than the reflex. For example, the ATNR reflex, and I don't know if people are familiar with it, it's sort of like a fencing posture. You see it in infants where whatever direction the head faces, the arm and leg on that side straighten, the arm and leg on the other side get a little more bent. And that's why when you hold your cane arm too far forward or just plain forward for some folks, it's looking forward, your head is forward, the other shoulder pulls back. It's that fencing posture. And by practicing anything that breaks up that pattern, it helps neurologically for things to integrate, the body to learn new movement patterns without relying on the extra oomph from that reflex.

Amy: That is so helpful in terms of you bringing that from your experience in physical therapy into orientation and mobility. I'm so thankful that at the LightHouse, when you went to do that one assignment and that interview that they said that's a great background to have, because it's obviously contributed so significantly to our field and the writings that you've done.

Stress. You mentioned being under stress, and we certainly know that when someone is learning to travel and perhaps is experiencing stress of any kind, maybe they're straining to use their low vision in their travel and they're tired. Maybe they're nervous about performing a skill correctly or getting somewhere on time. Can you reflect a little bit more on the impact of stress on those early neurological reflexes?

Dr. Rosen: I think it's something probably that we all experience. Travel without vision is stressful. There's no doubt about it. All of the university students who have done their methods coursework can attest to that, and every traveler who's trying to travel without visual feedback can attest to it. It takes a lot of concentration and effort, mental effort, to keep track of where you are and perform the same techniques as they should be, et cetera. But it's just a fact of life for all of us that when we are working hard to do something, like riding a bike for the first time, or playing baseball, or doing some sort of,

learning how to swing a golf club. There is an amount of stress, concentration and effort until it gets to be natural, until it gets to be a habit, which is what eventually we hope happens to all of our students in terms of the cane techniques.

But there's always that extra effort needed to be monitoring the environment auditorily and keeping track of your mental map on traveling, things without the visual feedback to say, "Okay, here's this landmark, I know where I am," and verify where you are along the route instantly and visually. It's an underlying level of stress for all travelers.

That's why I've always thought, and found in my own work, that if we can work on the sensory motor skills and foundations first, we're more likely to help students develop more efficient motor patterns and not only relieve an extra element of stress, which is trying to walk without good motor skills for example, or move a cane without good [inaudible 00:12:10], body awareness and motor skills. If we can relieve that stress, we not only make their travel more comfortable, but more efficient because their neurological effort is now going towards orientation, not toward movement. Even though it would be at a subliminal level, it's still there.

Amy: Right. I've read about automaticity, and we know that from our foundations textbook that specialists often segregate the movement skills, those techniques and skills and that repeated practice, to take away some of the stress and not try to learn orientation and mental mapping at the exact same time when you're working on those basic techniques and motor skills. Would you say that that is supportive, the brain is these habits becoming automatic, to reduce that level of stress?

Dr. Rosen: Oh, absolutely. We all know the benefits of doing this repeated motor practice before we add on the challenges of orientation, et cetera, to travel. So, of course that's why we as O&M specialists always spend a nice amount of time giving students just that physical experience to build in that motor memory. From a sensory motor aspect, that's exactly what needs to be done. When people don't have a good neurological motor foundation to support that, there's always gonna be the extra effort of demand at a subliminal level to perform motor skills that are not supported by the neurological system automatically at the highest quality that makes sense.

So, the practice is good. It helps, and it's necessary. It's vital. I've found from my experience that giving them a good motor foundation first just makes that whole process more efficient in the long run.

Amy: Beautiful. Sandra, would you reflect also a little bit on, you were talking about different ages, different populations that you serve. We know that the population of people with visual impairments and deaf-blindness is quite diverse in terms of ability and experiences, constellations of other needs that they may have. Would you talk a little bit about brain development and age, and the different ages of clients and students that you have served?

Dr. Rosen: I think there are a number of ways to look at that. Most of the primary building block level of neurological developments in the sensory motor system really happens in the

first year of life. That's the foundation. But throughout life, the brain and the neurological support systems and processes continue to develop. For example, the child will continue to develop basic balance to support walking in a mature, normal gait pattern, up until about age six or seven, when gait patterns sort of stabilize. The way you walk at age six or seven is that for life.

Now having said that, any habit can be changed if you work hard enough, but it takes a lot more effort and concentrated effort to change a gait pattern after it stabilizes, than if a child develops and has the opportunity to improve gait patterns before that point where they stabilize, before age six or seven.

Now, if you move into the school age or the working age adult, you move into things such as posture development can go on throughout life. A big window for it is up until the end of the growth spurt in the teenage years, and supporting good posture in those years is very critical.

I can go into a whole bunch of stories and examples. Let me give you one real quick for that age group is many students who have a little [inaudible 00:16:37] in their trunk, which is very typical of many of our students who are congenitally blind, is the spinal cord doesn't always develop straight. You get a little bit of a sideways curve up and down called a scoliosis. Some of my very informal research [inaudible 00:16:54] having it published, shows that if the folks with a marked scoliosis, they tend to veer in the direction of their uppermost curve. You can often see that in their back, when you look at their back. So, one shoulder may be lower as giveaway, and the head if often down, forward. Rather than letting that go or just trying to over and over give the person the feeling of walking without veering and just spending months and years working on that, it helps especially during those first years to work on standing up straight, holding your head up, and working on that sort of symmetrical posture while it's developing.

If you move into working with the elderly, there are many different motor skills that just through the aging process, they start to decrease. Balance or recovery decreases, the neurological reflexes that kick in to help a person maintain their balance get more difficult to go into effect as you get to be very older, we're talking about the old old, not the early old, if you understand or have that terminology.

Amy: Right, right. [crosstalk 00:18:11]-

Dr. Rosen: And there are other-

Amy: Talking about people in their 80s and 90s, people are living longer, so there's certainly the younger older population, maybe in their even late 50s, early 60s. But beyond that, sure.

Dr. Rosen: Exactly. Exactly. You also have the issue of so many multiple disabilities that occur in old age, or we're seeing more brain based visual impairment and other medical issues like cerebral palsy or neurologically based problems happening in all age groups, so that's a

new area in which sensory motor functioning can be affected and we as O&M specialists may see that we need to work around those issues as well.

Amy: Mm-hmm (affirmative). Mm-hmm (affirmative). And people with multiple disabilities aging, you know, I will say one of the things that drew me into the field, Sandra, is I have an older sister with multiple disabilities, as she happens to have cortical visual impairment as well. The way my sister Melody moves as she's getting older, we're looking at a whole constellation of things related to her movement pattern because she does have CP. So, it really does become a complex puzzle and a support system and series of strategies that can help someone be as mobile and as independent as they can.

Dr. Rosen: And I think that's understanding of sensory motor background and foundation for movement, is just as critical as when working with kids that are developing with just congenital blindness. Because for example, a lot of the movement problems and coordination problems that come in cerebral palsy or with certain brain injuries for example, have symptoms that affect a student's ability to use a cane or to move easily, but by understanding the source of the problems at their fundamental level, whether it's reflexes or muscle tone, and addressing the issues at that level. Many of the coordination issues of conditions like cerebral palsy won't be cured, but they can be temporarily alleviated to enable a person to travel more easily with the motor skills of using a cane or whatever they're doing.

Amy: Exactly. Well, this is a rich and fascinating topic, and I wanted to say if you were giving some advice to newly minted orientation mobility specialists, obviously we're talking with students today, graduate students, who are exploring the field. Some have a background in visual impairment in different areas of education. What advice would you give folks who maybe are feeling a little bit overwhelmed by this body of knowledge, the sensory motor and brain development? How would you advise someone to work collaboratively or to understand these systems?

Dr. Rosen: I think it is really not as mysterious and hard as it seems once you look into it. I would just sort of encourage folks to first of all, collaborate with your local PT or OT. They can be a wealth of knowledge and tell you many different techniques for directing specific movement problems that students have. And also, read and there are many sources of information that talk about sensory motor development in young kids. Our kids are no different than all preschoolers and all young children in the sensory motor development areas. What happens if they don't necessarily finish or fine tune process without that visual input. But [inaudible 00:22:22] and everything are the same.

So, just don't be afraid. You can't break the kids. You can't hurt them. Read up. Collaborate with your PTs and OTs. Don't be afraid to ask questions, and just know that once you get into looking at the sensory motor issues, it's a world of fun and excitement and games and activities that make O&M just a delightful experience for both you and the student.

Amy: So empowering. That's such an empowering message. Thank you so much Sandra, for that.

Let's shift now a little bit and talk about your textbook that you've written, "The Curriculum Step by Step." How did that come into being? Tell us a little bit about that process.

Dr. Rosen: That was sort of an interesting situation that as I did it as a result of my own O&M training. I took a job here at San Francisco State back in the late '80s, and in reflecting how I was trained myself as I planned for how I would run classes and train the future teachers that we were producing here, I remembered my experience of standing on busy street corners, having the teacher give instructions, talking louder and louder above the din of traffic and I was standing there with a [inaudible 00:23:49] on, thinking, "I'm not listening to a thing you say, because I know that in 10 minutes, I'm gonna be out among those cars."

And I remembered the stress level of trying to as you say, multitask. Learn the motor skills and all the other things you need to know to travel, plus listening to a teacher's instructions. And I wanted to reduce the stress for our students and let them acquire some of the skills as teachers before they hit the street corner, so that when we got to the street corner, they weren't learning to do a skill. They were learning how to teach, and we could move the focus of our program to how to teach O&M, not just how to be a traveler.

Now, things are changing in our field from what they were 30 years ago, but I think a big emphasis in our field is we need to put more attention to teaching. So, I developed "Step by Step" as a way of having students get the ability and the resources to learn the techniques. They knew the mechanics. They knew what needed to be done long before they found themselves under sleep shade, trying to get ready to help to cross a busy street or in the future [inaudible 00:25:05] cross the street. And they could take that level of stress away.

I also had, in reflecting on all this plan that I had, I realized there's no visual database. We're teaching people to visually assess motor performance, and there's no visual database by which they can really learn it. So, one reason for doing "Step by Step" was to develop the first visual database of mobility skills for students to learn from.

Amy: Well, I love the book. I love the curriculum and how that is so helpful that you did create a visual database. We are integrating it into our very first foundations class to have as a [resource as people get ready to take the summer cane class. They have some other classes to take and things to think about, but just exactly what you said in your own deep experience with motor development and breaking out those skills, learning the techniques and being exposed to those techniques first, and then slowly being able to learn those other skills that are involved in actual travel across streets and in busy, noisy, somewhat stress inducing environments.

Dr. Rosen: Right. Well, thank you. It was definitely a labor of love, and it was a wonderful experience, for our students had quite of input of what they wanted. The review guide is a student recommendation, where it has just the key phrases and a very simplified version. Students wanted something they could brush up on or study on the bus on the

way into class, or photocopy pages and give to a parent to reinforce the steps and human guide. That type of thing.

Amy: Very helpful.

Dr. Rosen: So, helpful to all our students, too.

Amy: Very helpful. And as you said, there is a value, even in other disability groups where people can practice skills, I'm thinking perhaps even this is a far, far field, but people with autism learning some skills in virtual environments first before integrating and practicing them. But so much more complex is this motor travel, these techniques, learning them first, learning the terminology over time and then gradually learning and traveling in real environments. I think there's even a value there for good orientation and mobility, learning orientation and mobility throughout the day, throughout routines, throughout life, and not just simply when the O&M specialist shows up.

Dr. Rosen: Oh, I absolutely agree.

Amy: Well, Dr. Rosen, thank you so much for your time. Do you have any closing words of advice for our class, or for me as a new university instructor?

Dr. Rosen: I just want to say to your students, you're in for the most wonderful career in the world, and you've got a great program at Portland State, and I wish you all the best and to you Amy, keep up the good work.

Amy: Thank you Dr. Rosen, thank you Sandra for all that you've done and for making time to talk with us today. We'll talk again real soon.

Dr. Rosen: Thank you.

Dr. Amy Parker: All righty. Bye bye.