# Anything but boring: The power of direct instruction - with Dr. Zach Groshell

Triple R Teaching Podcast #215

Hello, this is Anna Geiger, author of *Reach All Readers* and creator of The Measured Mom website. Today I'm welcoming Dr. Zach Groshell to the podcast. He is the director of Steplab North America, which we'll talk about at the end of the episode. He's a former elementary teacher and now an instructional coach who helps teachers in the United States and Canada. He's also a published author, holds a PhD in education, and hosts the podcast, Progressively Incorrect. In this episode, we dive into the science of learning. Here we go!

**Anna Geiger:**

Welcome Dr. Groshell!

**Zach Groshell:**

How are you doing Anna? It's so great to be here!

**Anna Geiger:**

It's great to hear you speaking on my podcast because I've listened to many of your podcast episodes and watched all the things you have to say on X about the science of reading, but particularly the science of learning. I really enjoyed your quick, very accessible book, *Just Tell Them*.

We're going to talk more about that today, but before we do, could you introduce us to yourself? I'd love to know more about your history in education and also a little bit about your timeline because I connected a lot to what you said in your book, but I think I'm significantly older. Talk to me about when you learned these things in college and so on.

**Zach Groshell:**

Yeah. I mean I started by not knowing what I wanted to do with my life in college, like so many people. I got a job working at a pizza place and doing summer camp, and somewhere along the way with working with kids I realized I want to be a teacher. I want to go out and change the world. I want to help kids who often struggle or are underserved.

My first job was at Chief Leschi, a Native American school in Washington, in the Puyallup Tribal Reservation. I since have been to different countries teaching, mostly third grade, fourth grade, and fifth grade.

Along the way, I encountered that there's a lot of great research and insights that have been around for decades that were essentially withheld from me or weren't shared with me in the time that I needed it. I was just discovery-learning my way into being a good teacher. I intuited a lot of these principles, but I wished I'd had them earlier.

Just recently in August, I decided I want to get my book out there that I just wrote, and I want to go meet with schools. I've been on a whirlwind journey going to schools and conferences and places as a

consultant trying to help schools to embed the science of learning alongside science of reading/science of math type principles so that instruction works for all kids.

**Anna Geiger:**

So that's your full-time job now is being a consultant for schools?

**Zach Groshell:**

As of August! I just left the building, yeah.

**Anna Geiger:**

Okay. When did you get your PhD and what was that in?

**Zach Groshell:**

I got my PhD in instructional design, which not everybody is necessarily familiar with what that entails, but it's the idea of putting together programs or full curricula through a sophisticated and systematic design approach. That's what I got my PhD in. I got it because I actually happened to be living in Sudan at the time.

**Anna Geiger:**

Wow! Wow, you've been all over the place.

**Zach Groshell:**

Yes, I know. I was teaching in Sudan for three years doing fourth grade, and I had nothing to do there. I just I wanted something to do in the afternoons after school, and I found a lot of enjoyment in being able to sit in my thoughts and to read articles.

I don't necessarily think a PhD is going to make you super good at teaching, but it certainly gave me an opportunity to understand what the research is about, how to read articles, and how to try to translate this stuff to teacher audiences. That's what I'd say it kind of gave me.

**Anna Geiger:**

Yeah, yeah. In your book, you talked about how you were not always on the side of explicit instruction. I really resonated with this part. You said, "I especially took pride in my ability to resist explaining the material to students. When a student needed help, I would ask lots of probing questions to try to get them to arrive at the solution on their own."

It reminds me so much of three-queuing which is what I used when helping kids to read. It was like I couldn't just tell them to sound it out. There are so many strategies they could use to figure this out and I'm helping them be a better thinker.

**Zach Groshell:**

Yeah, there are so many parallels with reading and the science of learning. I actually think we simplified something or we made it too easy on ourselves in some ways, to sort of silo the science of reading from the science of learning.

Because, like you just said, with three-queuing, I'm going to give you lots of sort of probing questions. I'm going to try to direct your attention away from the thing you should be focused on, which is how to sound out the words, right?

We could go into so many parallels, but this is basically just kind of a constructivist approach to learning something, where the philosophy is that it's best for it to come from within you, and my job is to draw out that knowledge.

But immediately, if you just think about it, it doesn't make any sense. If that knowledge is within you, then the stimulus in front of you should trigger it to come out, and you should be able to do it. If you already knew how to do it, you would do it, right? Maybe you need some encouragement or maybe you need the room to be quiet and productive for attention. But other than that, you should be able to just do it.

If you can't do it, if you're struggling, if you're showing signs of cognitive overload, it's best to just tell them. And maybe don't even do that at the beginning. Maybe just anticipate that that might happen, and tell them right in advance, and then get them applying it through lots of practice.

So I hope this book is kind of a course correction in a lot of ways from this feeling that I'm being innovative or I'm being a good teacher, or I'm expressing my values by asking questions, by kind of being in that inquisitive space.

That's confusing kids in a lot of ways. It's almost coercive in a sense because the student might even infer that you know this, and they need that support in that scaffold to feel like they can do it, and that might degrade their self-concept or their self-esteem.

You want to be the support for them by using modeling, giving them an explanation when they need it, and often in anticipation or pre-correction of an error they're about to make.

**Anna Geiger:**

In your book, you talked about how it was ironic that your professors in college were telling you to teach in this constructivist way via lecture, right? I don't know if that's still being taught now in colleges of education.

**Zach Groshell:**

I think it is. I work with lot of principals, and they're getting teachers who come in knowing nothing about any of this stuff. In fact, they have a lot of misconceptions about how kids learn. In the interview, the principal has to sit through really bad answers knowing that we have a teacher shortage. We have to hire this person, but they're regurgitating a lot of this same stuff. I think it's still going on.

My program, I think, was especially bad because we focused a lot on excuses - kids' backgrounds, kids' identities. These are things that are really important to learn if you took a different degree, maybe in sociology or… If you wanted an explanation for why there are so many disparities in student achievement, that would be a great course to take.

As a teacher, that's not helpful. That's not useful. It's actually counterproductive to think that the problem lies in the student's background or what came before me. I've got to change what *I'm* going to do. I've got to teach the heck out of this material.

We didn't learn how to teach in my program. We learned about education, the history of it. We didn't learn the skills, and we didn't practice anything in those that very expensive program I was in.

**Anna Geiger:**

It's so interesting.

We're going to move into now some definitions, which some people may or may not be familiar with. I know people that really dig into this know these terms, but some people may not have heard of it. There's something called Big DI, Little di, and explicit instruction. Can you walk us through those?

**Zach Groshell:**

Love it. In general, I just flip-flop between the words direct instruction and explicit instruction. They come from a similar history. There's a paper by Charles Hughes that looks into a historical analysis of these different terms, and they essentially come from the same bodies of evidence.

Explicit instruction or direct instruction with lowercase, is essentially a teaching system that is teacher-led. The teacher's going to start by fully guiding or working the material for the students when they don't know it.

We have to make sure we remember what the student knows is going to tell us what to do next. If the child doesn't know it, which is usually the beginning of any new topic, we're just going to work it for them. We're going to teach it to them. And as the students acquire this information, we are going to remove those scaffolds. We're going to remove those supports by replacing explanations and models with questions and with practice opportunities. Back and forth we go.

The other part of this is it's very interactive, because how do I know when to remove the scaffolds? I can only know based on student performance. As the students go back and forth, maybe in a nice phonics lesson, we're seeing the answers are correct. In a choral response, the answers are correct. I'm then going to incorporate that skill into a task or into a practice, or maybe I'm going to make it harder. I'm going to change it. Eventually students are doing it all entirely by themselves.

Anita Archer has a simplification, which some people take issue with, but I think it's easy to explain this. She says it's an "I Do" phase where I start. Then we go to a "We Do" phase where we're all doing it together. You're not by yourselves yet; it's still me directing the practice in a guided format. Finally, "You Do" where you're doing it in your notebook. You're doing it in your worksheet.

You mentioned Big DI, and that's an important part of the history of all this. I wish more people knew about it. Starting just in the 60s, going through the 70s, there was a huge experiment in the United States that tested these methods. It tested what method would be most effective for students in K-3 settings, mostly in impoverished schools. Which method really helps kids and accelerates them? This project was called Project Follow Through.

The method that clearly outperformed all the rest of them was Direct Instruction. They used a capital "D" and a capital "I" to distinguish it from regular teacher-led explicit teaching because there were programs and the kids were put into homogeneous groups.

The design of the materials was based on rules the kids are going to learn, general case rules that apply to most situations, and a lot of other elements.

I feel today we should be learning about Capital DI and Lowercase di in tandem, because Lowercase di is derivative of Capital DI, and they both have something to offer. These are things that should be part of our professional development.

**Anna Geiger:**

Yeah, and Project Follow Through, I learned about that in some classes I took through Mount St. Joseph. I'd never heard about that, but like you said, it was like the largest experimental education study and it lasted for years. Even though the outcome of that study tells us that Big DI outperformed the other methods, we can draw from that a conclusion that direct instruction, Lowercase di, is effective.

Most teachers aren't going to be able to use a Big DI program. Could you list a few of those just for people's reference?

**Zach Groshell:**

Love it. The number one that everybody knows is *Teach Your Child to Read in 100 Easy Lessons*. I wouldn't say it is a program for the most challenging kids either. It is a sped-up version of a program called Reading Mastery, which is at-level for all kids, including students with dyslexia, students with cognitive disabilities, or whatever. Most people know this one book, called *Teach Your Child to Read*, which has been used by homeschool parents and so on for many, many years to teach the phonetic code.

There are other things, math intervention programs like Corrective Math and Connecting Math Concepts. These programs are awesome, and I'm not paid by anyone to say that. If you wanted to see a really intricate design where that goes step-by-step in a scripted fashion, with way more practice than you would ever expect, that keeps coming back around in a spiral, interleave fashion, then this is a great opportunity to kind of see and dig in to what really great programming can look like.

**Anna Geiger:**

For anybody listening who's interested in learning more about that, I do recommend Kurt Engelmann's book, *Direct Instruction*. He's the son of Zig Engelmann, who was the creator of all these programs way back when. It's super interesting and a very easy read. It's long, but a good, easy read.

However, the focus of our conversation today is going to be about how to incorporate direct instruction principles no matter what program you're using.

Before we do that, can we talk a little bit about working memory and long-term memory? I know teachers hear a lot about cognitive overload, but they may not be 100% sure what that means, or how they can even tell if a student has reached that point.

**Zach Groshell:**

Yeah, so cognitive load theory is another one of those things that I think every teacher should know about. It should form the basis of how we talk to each other, how we make predictions, and explain why things are working or not working in our classrooms. The basic tenets of cognitive load theory are not controversial. They're the first pages of a cognitive science textbook, right? In education, we don't always draw from psychology or other departments of learning. We draw on this other stuff I was telling you about.

Here are the basic tenets. Every child or every learner is endowed with a working memory, and that working memory is their thinking system. It's where conscious thought is taking place. Essentially right now you're using your working memory to listen to me, and you're thinking about what I'm saying. That's your working memory.

Now there's another box in the mind and that is long-term memory. Long-term memory is different in that it contains all the thoughts and memories and knowledge and skills that you have acquired over time and that has stuck with you.

When I say a cue, like what's your favorite song from when you were in high school, you were not thinking about that in your working memory, that was in your long-term memory. But when I gave you that cue in your environment, you then start digging it up and you went, "Oh yeah, it was Yeah! by Usher," or whatever it was, and you pull it into working memory.

The problem with a lot of teaching is it doesn't appreciate that working memory is very, very limited. You can only process a few things at a time. So when I give you a big discovery task, or I do that probing thing, or can you figure it out, or can you try it out… You're using a process called means-ends analysis which is very overloading. You're trying to figure something out, and you don't have the prior knowledge and long-term memory to bring to bear to solve that problem. There's too much on your plate, and basically you're not able to learn anything from that experience.

It's why if you're listening to this podcast now, I recommend you pause it, write down some notes, do some flashcards on the notes, and then restart the podcast because I'm giving you the fire hose right now with lots of information.

What we need to do in teaching is design instruction in a way that honors the fact that kids mostly forget everything we tell them unless we break it down, we sequence our examples, we give them practice between each of our examples, and we bring stuff back so that kids will start to remember it. All of these things leverage long-term memory and the limited working memory so that teaching is possible and learning is possible.

**Anna Geiger:**

Right, because what's in that long-term memory doesn't take up space in your working memory.

I think sometimes it can be helpful for adults to think about when their working memory is overtaxed. I think about in everyday life, like when I'm driving the kids home from school, I'm driving our big 12 passenger van next to our other small car in our small garage. I have to be extremely careful not to hit anything, and when they're talking or fighting or whatever, I cannot focus. I'm always like, "Everyone has to be quiet so I can hear the beeps in case I'm going to hit the side of the car!"

I think it's easy to forget that we're asking our students to hold a lot of things in one space.

Can you give a specific example, maybe in a specific subject like math or reading, where we could tell they're overloaded and I've got to break this down?

**Zach Groshell:**

Right. I mean, we see it all the time.

Unfortunately, when it comes to working memory, we all sort of have what we have. It's sort of a fixed thing. The kids who are going to suffer from poorly broken down teaching, teaching this kind of whole task based idea, with big projects, big tasks… The kids who are going to suffer most from that are the

kids that have the least prior knowledge or the weakest processing system, the weakest working memory.

As examples go, in math it's easy to explain. I go and I write up a bunch of problems, and it's a bunch of step-by-step, and I say “Okay, go to your desk. Go solve it.”

What do you see? You see a performance issue where most of the answers are wrong, most of the papers are incomplete, and kids are raising their hands.

The funny thing is because we're all different to some degree, we all express our inability to perform or our working memory being overloaded in different ways. You'll see kids who just give up. You'll see kids that keep persisting, but they're getting frustrated.

What I really would encourage you as a teacher to do is to target success rate. Are the kids *all* successful? Is it just above their so-called ZPD? Is it just above what they're capable of doing yesterday. Look at their responses, are they correct? Are they going in the right direction? In so many classrooms, only the three or four kids who already knew the material are getting the answers correct. That's a good sign that their working memory was overloaded by the task.

**Anna Geiger:**

I think looking back to my days as a teacher, I'm sure there were times where I thought they just weren't listening or they just weren't paying attention. What should I have said to myself differently?

**Zach Groshell:**

You should have said, “Hey everybody, get back to the board! Let's stop what we're doing right now. I didn't explain it right. I didn't go slow enough. This is going to take more time than I realized. I should have planned better.”

I always was saying that to my students. I would say, “Oops, oops, oops, oops, oops, come on back.” We had one minute of mistake because I set them off too quickly. “Come on back to the board. Let’s do some power teaching.”

Then, “So why did I do this? It's because of this. Everybody, it's because of this. That's right. All right. Now *this* is the next step. This is where I see everybody's wrong. Let's get out our mini whiteboards. Here's how I do it. Three, two, one, show me!” Oh, nope. Sam's wrong. Anna's wrong. “Just fix it up, fix it up. Okay. One more time. I can't let you go on and do it by yourself until I can see that you're getting it right in front of me.” That's how I would have addressed that.

**Anna Geiger:**

Yeah, excellent. I think you also brought up the important point of the “We Do” practice, which definitely is something I neglected a lot of times. I just kind of assumed that once I show you how to do it, you're ready to do it!

That might be just an extra thing for teachers to remember. If they're getting started and this is not going well, we just have to stop and I have to walk you through it however many times it takes.

**Zach Groshell:**

Absolutely, and as a teacher, the biggest thing you can take from a design perspective is thinking about decomposition. If you have this big task, what are the parts inside of that task? Sometimes it's much smaller than you think.

I know with the example of adding fractions, if you're going to have the kids do them, there's another skill in there of just reading fractions that…

By the way, 1 fourth, 1 fifth, 1 sixth, these all follow a predictable pattern of adding the TH, but 1 half and 1 third are different ones. If you want them to talk about the math, they need to be able to say that. That's a separate lesson.

If you want them to add the math, that requires finding the least common denominator, it means you need to know your division, it means you need to be able to add quickly, you need to know the procedure. These are different lessons.

These are different parts of a teaching sequence, and we don't just spring the whole thing on them. We teach the components in isolation as kind of pre-training, and then we get to that problem. That is all a process of decomposing the bigger task.

Teachers have not been trained to do this and when they're first teaching something, they assume too much. There's a curse of expertise where I think you just must know this already because you're past… They don't know it. You have to be the designer and you have to teach it properly.

**Anna Geiger:**

What you're saying makes me think about how we often refer to the science of learning as the art of teaching.

People will say, "I heard someone give a presentation, but they're just so smart, I didn't get it." Sometimes people are very intelligent, which we hope our teachers are, but that's not what makes a good teacher. Like you said, getting a PhD doesn't necessarily make you a good teacher. It's about learning how to break it down into smaller parts.

We're going to move into some other things, but first I'd like to talk a little bit about distractions and how they get in the way of learning. You talk a little bit about classroom design. I know Nathaniel Swain has talked about that as well. Can you talk about distractions and what we can do about it?

**Zach Groshell:**

Yeah. I mean, we fooled ourselves into thinking that whatever the classroom looks like, that is how good the learning is. We have this kind of arms race in some schools where we make sure the environment in the classroom as pretty as possible and aesthetically pleasing. Let's make sure that there's lots of busyness in the classroom.

Also with the tasks, if the kids are engaged, if they're moving about, if they're using their hands, there's lots of noise spilling out into the corridors, we've said that this is a good proxy that this is a productive learning environment.

It's just not usually. Some elements of those are going to happen depending on what the task is, of course. But often enough, classrooms are just noisy, and we shouldn't celebrate noise.

Noise, as it goes back… One of those very strongly discovered facts of cognition is that noise destroys learning. A lot of the classrooms where they might say, "Yeah, they must be learning because they're talking." Talking about what, and talking over whom, and who's doing the talking?

It's also about the environment itself of how we face kids, how we orient them towards the source of information. In sort of a constructivist-style classroom or discovery-based classroom, the idea is that they're teaching each other. Novices teaching each other things that they don't know makes no sense. They need to be looking towards the teacher.

It's separating them from their friends, pointing them towards the information, and making sure that the walls are pretty sparse and plain, but of course warm and inviting. It's making sure that the kids aren't talking over each other, and that they're listening when the teacher's giving an explanation.

This sounds like common sense, of course, but it's not. Some teachers feel the need to impress other people by saying, "Come on into my room. Cardboard's on the ground. There's yarn going this way. We're pasting. We're gluing. We're getting our hands-on," and there's no real substantial content being taught. There's a lot of distracting noise. Just try to sit in there as an adult for more than ten minutes and you'll want to leave to go to the classroom where kids are actually learning.

**Anna Geiger:**

I think it was in your book that I read a really sad story, a good story/sad story. I think was a librarian where the principal had visited her, and she was not reading with the kids the same as the previous librarian. He had a lot of criticisms about how she needed to be more engaging. Then you went and watched her, and the kids were totally with her. She read with expression, they were very engaged in the story, but it wasn't what the principal would say was engaged. Can you talk about that a little bit?

**Zach Groshell:**

Yeah, and I don't think any of us, me or the librarian, knew what the principal meant when he said to be more engaging. She thought, as I did, that the important part was to use a strong tone of voice, an expressive tone of voice, use facial expressions, use gestures, and get every kid responding together.

No, actually we found out he just wanted her to do what the previous librarian did, which was put Legos out and put toys out and have the kids touching the toys.

This word engagement is a bit of a weasel word in education, because while there's a research-based definition around cognitive engagement, behavioral engagement, and emotional engagement, it often just means entertainment. Let's get the kids having fun. Let's make school like an after-school club or like a summer camp. Let's get rid of that boring old stuff that the kids need to learn and let's replace it with activities that come from Pinterest or that you can Google.

It's sort of saying instruction is bad and activity-based learning and fun are what will somehow motivate kids to be successful. That just doesn't make any sense.

**Anna Geiger:**

One thing about direct instruction that's different from what many people might perceive it to be, which was certainly the situation with me, was that it's this back and forth. When you listen to Anita Archer, she'll say, "Too many programs are teacher talks, teacher talks, teacher talk, *then* students talk. But this is, I say something, you say something, I say something." I see that in the examples that you provided in your book.

Do you think students enjoy this? And does that matter?

**Zach Groshell:**

Do they enjoy the Anita Archer type of lesson? That's exactly how I teach, right? Or a Doug Lemov type of lesson with the back and forth. Yes, they do, but they enjoy it for the best reasons, right?

I was a big cross country runner, and I liken it to how I hated coming to practice. I would sometimes even make excuses to not come. I was sore all the time. I was sore and dehydrated and tired. But some of my best memories and some of my best camaraderie and the success and the feeling of accomplishment of just besting my time came from that. Those things have stuck with me for life, and they've gone on to influence other things because I became more disciplined as a person for doing this.

That's how I see explicit instruction. Sometimes it feels like drudgery to answer one more question, to do one more thing.

If we have one minute, I'm not going to let you talk amongst yourselves. We don't have a moment to waste. One more minute and we're going to do one more problem. “Oh goodness, can we just get to recess?”

But the feeling of seeing in front of you your progress, looking at your notebook and watching the problems get harder and harder, or being able to have a Socratic discussion with your class that is sophisticated, and I'm using knowledge I never knew… And your parent comes and sees your science fair board and you're describing the science behind the experiment, not just showing them some sort of magic trick experiment.

This makes you feel purpose, and being a disciplined person as a result of this, and learning and being smarter, those things are the fruits of all that labor. So I find yes, kids do enjoy it, but for a different reason than they would enjoy playing with Legos.

**Anna Geiger:**

Well, the thing about this direct instruction, the way that you talk about it, is it really doesn't let anyone check out. And you might *want* to check out!

Sometimes I'll go to a conference, and right away I can say that this instructor… Like Anita Archer, she runs her workshops like she would teach in a classroom. You might get there and say, “Oh, it's been a long day. I was just hoping to sit here and flick through my phone,” but you always come out better in the end. Maybe that's the same thing a little bit for students.

You've talked a lot about different ways to increase engagement. Can you walk us through some of those just as a way of keeping it going back and forth?

**Zach Groshell:**

Yeah, and again, I'm talking about a different type of engagement than playing around. One of the things you really want them to do is re-voice the thing you just said. You want to know if they're listening to what you just said.

The biggest tool in your arsenal, in my view, is low-tech, and it takes a half a second. It just takes memorizing a procedure and teaching it. It’s choral response. Every time I'm going to teach something, I want you to be listening and revoicing that thing.

I want you to say five plus one is six, “Five plus one. What is it?” Everybody says, “Six!”

I could say, “I lived in Khartoum, Sudan. Khartoum sounds like cartoon, but with an M. Everybody say Khartoum,” and I put my hands down in a drop or I snap my fingers, and at that point everybody says the word.

The feeling, the buzz, and the amount of leaning forward on that alone is hard to describe for someone who hasn't done it as much. But now we're talking every 12 seconds there's a choral response.

There are other tools that are very useful. If you want an elaborative response, a turn and talk would be important. But I do these in a very strict way. A's cannot talk over B's, and B's cannot talk over A's, so I have to say, “A's you go first. B’s you go second and elaborate on what they said.”

I want to make sure that the kids practice this over and over because what happens is kids stop doing things because they want to start checking out. It’s revisiting that procedure with them and getting them to…

You wouldn't say, “Turn and talk, what is Khartoum?” because that's a choral response type of thing. But you would say, after the story, “What are some of the challenges that are happening in Sudan after the civil war? Turn to your partner. A’s you start. B’s you’re next.” Now they're processing, self-explaining, producing, and constructing a new response based off of the information they've just learned.

I'll say one more here because there are other ones. There's stop and jot in your notebook. One of the things that I do a lot of times is cold-calling around the room, making sure everybody knows I'll call on you.

But I *really* like mini whiteboards. I know some teachers do not like them because of the markers and the organization, but buy a ton of markers or get them funded, and put them in a caddy, and teach the kids explicitly what they're for. You will see the difference because now all my choral responses, all my turn and talks, all of that can then be shown visually on a mini whiteboard.

“Everybody, three, two, one, show me!” I scan the room, and I do a very exaggerated neck-craning to see. Then I can see who knows it and who doesn't, and I can make sure my response rate is about 90% correct so everything is successful.

“Okay, we didn't get that one again. Boards down. Let me reteach you.” It's a formative tool and an engagement tool that is very, effective.

**Anna Geiger:**

Yeah, and I'm not in the classroom anymore, but I have visited classrooms and used them and loved it. Even when I give presentations to teachers, I find it very helpful. I'll say, “Rate your knowledge on something.” They could just do fingers, which is another thing you can do, but sometimes it’s choosing an answer. Not only is it keeping people awake and participating, but it also, like you said, helps you know what to say next.

I think people sometimes are afraid of these scripted programs. This is what I used to think, that it takes away everything from the teacher, that anybody could just do this. But that's not true. It's helping you know how to frame your questions for learning, but it also requires you to be very aware of what's happening in front of you, and that's one tool to figure that out quickly.

**Zach Groshell:**

Yeah, if I could talk about that for just a second. With the scripted programs, or at least the good ones, they usually have a thing right there that says “Repeat until firm.” It says it right there. What that means with your training is that…

Let's say they get five plus one, and they say seven. You go, "Listen, five plus one equals six. Everybody. Five plus one equals?" Then I go, "So five plus one is six, one plus five is six. I'm going to give you a delayed test in just a few minutes that will test if you remember five plus one equals six. We cannot forget that five plus one equals six." Then you test them again.

A misconception from people who don't use these programs, by the way, is that there is no procedure that is embedded in the script that would allow you to revisit or to move forward or to skip lessons and so on. The best ones have those in there. You just need to understand how to use the program.

**Anna Geiger:**

Exactly, and it's very clear in that book that I mentioned earlier about how all that works. It tells you what to do if their answers are wrong and so on. It helps you move forward.

One thing you talked about in your book which I think...

I was recently at, I think it was Plain Talk, and I went to Devin Kearns' presentation about teacher knowledge and student knowledge, and what's important. He also talked about this very thing, which was, "Say only the words that need to be said. Don't overtalk. Don't overexplain."

He had a presentation of a teacher doing a phonemic awareness lesson with students, and it was actually a little tough for me to figure out what she said that was extra, because to me, it didn't really feel like that because I'm used to overtalking.

Can you explain what that even means? Say only the words that need to be said. How do teachers know what's too much and what's the right amount?

**Zach Groshell:**

Yeah, it's one of these things where maybe we need to use video, we need to model to teachers, or we need to have them script out what they're going to say... When you write down with the teacher...

I do a lot of coaching, so this is where I'm sitting knee-to-knee and we're partnering in this, and I want you to script out how you're going to explain that. Then now, look at this, and let's take out everything that doesn't need to be said. You cross that out, you rewrite it, and then we practice it together.

You realize that instruction is not like informal talk with your friends or in the regular world. It feels a lot more artificial if you're not used to this.

It feels like what I would say is a minimal statement, "This is this, or this is a rule about this. Now, what is the rule?" Everybody responds, and now you move on to the next minimal statement. Here's another rule about this. Something that you may not know is this. What do you not know? This!"

Minimal statements are the best way to say it. It's an economy of language principle. I'm going to say just a little bit, enough for you to put it into your working memory, and I'm going to ask you a question to process it, and then I'm going to move on to the next statement.

It's just part of our human nature to want to go off and talk about things. I have a whole chapter about storytelling, which is really that. It is actually much more wordy because we're immersing them in a situation, putting them in someone else's shoes maybe, or making them think about conflict in the characters. This is much more wordy.

What I'm doing right now to you listeners is a bit more in the storytelling realm, but with instruction, especially with foundational skills, it's more like da da da, da da, question, da da, da da, question. You

save a lot of time that way. And your scaffolding, if your questions are right, makes it so everybody's successful.

**Anna Geiger:**

Once the teacher has this down, whatever format they want to use for this back and forth, it makes things simpler for the teacher when they're instructing as well.

**Zach Groshell:**

It does. It makes it simpler. It makes you cover more. It makes it so that you can get to the practice faster. You don't need to belabor the point because we can get kids working on things when we just take out the lecture and we replace it with explicit teaching

**Anna Geiger:**

One side effect of overtalking is losing the time. What are some other disadvantages or problems with saying too many words when you're trying to explain something?

**Zach Groshell:**

It has to do with working memory in that we can only handle four elements or so in mind at a time, but they start to slip out. That's why we have that saying, in one ear and out the other, right? You're just forgetting it.

When you just put a couple of things on the board or on your document camera, and you just point to them and you say, “This is this, and this is why this is important. Turn to the person next to you. Why is this important?” We're only having to think about those few elements I just presented. Then the turn and talk, it serves as rehearsal, as repetition, as an opportunity to recruit them to think about it.

However, if you do it differently and you go, “This is this, and this is that,” and you're writing and talking and explaining. The first thing you started explaining is already gone. The things in the middle, they're starting to tune out. Maybe they remember the last thing you said.

If we all acknowledge that learning is a change in long-term memory, then if they have not changed their long-term memory, they didn't learn! Then we're going to design instruction differently because we're not there to cover things. We're not there to expose them to things. We're there to get them to be a different human being who performs in a different way as a result of our teaching.

**Anna Geiger:**

What you said really hit home for me. I don't think I would have said that straight out, but that is what I thought sometimes, “I have to cover it. I taught it. Why didn't they learn it?” And maybe I said it, but I didn't actually teach it.

I think your book is an excellent example for people who want to see how this looks because we're giving a lot of examples. For someone who might be new to this idea, understanding exactly what this sounds like with the back and forth, you have some really great examples written out in your book. I would definitely recommend it to people.

In general, what would you say to someone who wants to be more of an explicit teacher. They want to provide more direct instruction, and they're just kind of getting started, but they don't have a program that does this for them like a Big DI program. What would be some small ways to get started?

**Zach Groshell:**

Yeah, let's do two different things. That's probably the easiest.

The first would be that I would convert my classroom into a space where putting hands up or kids volunteering is just gone. This is a big challenge for you, which I did too late, four years or so into my career of 14 years. I stopped prioritizing the kids that are confident, that respond, that put their hands up.

I would say to students, "Thank you for all these great hands up!" I wouldn't tell them to put them down. "Awesome! All of our hands are up. Excellent. Corey. Sally."

I would cold call around, and I slowly then started adding in choral response, mini whiteboards, turn and talks, stop and jots, all of these kind of engagement strategies we've talked about.

But not hands up because hands up stops the flow of that. It prioritizes the kids that know the information or are very confident. It doesn't involve everyone. That would be the first thing I do.

And you need to explain this to kids. You need to give them the rationale. You need to explain why I cold call. It's not to catch you. I'm only going to cold call you if you know the answer, but I need everyone sitting up. I need everyone paying attention.

Then I guess the other one would have to do with lesson design or lesson planning. We overestimate how much kids can learn in a period because we think covering is the solution. We often talk far too long without getting a response, so add in those responses.

When we are teaching, we really have to get down to the level of a novice. We are the experts. We understand what it is, but we assume too much. What is the most intellectually honest place to start in the smallest place? How do I teach that to mastery, and then add just one more thing to your repertoire so that by the end, these kids are putting this all together? They're showing you with their mini whiteboards or in their notebooks.

We really have to rethink those things, the interactivity and the lesson design that is much more scaffolded than we typically assume is needed.

**Anna Geiger:**

I think one of the good places to start for teachers who want to see this in action is to go to the explicit instruction website with Anita Archer. She has classroom videos where she actually walks through a whole lesson about teaching kids that she's not going have them raise their hands. She's visiting a classroom, but she talks about what she's going to do instead, and they practice the choral response on very easy, basic questions. That would show teachers how to get started with that.

Do you have any other resources that you would recommend for teachers who want to see this in action or learn how to do it?

**Zach Groshell:**

Yeah, and this is bit of a plug for myself, but one of the things that I do is I'm the director of Steplab North America. Steplab is a company that has a video for every step. We're talking about choral response, mini whiteboards, but even more granular than that, how do you explain the rationale of cold calling?

How do you have mini whiteboards for little kids versus older kids? How do you get them to put their pens away? We have a video in HD with mic'd up things in real classrooms that really demonstrate all of these things. If you're interested, go check out Steplab. It gets its name because we have a video for every step of teaching.

**Anna Geiger:**

That's great. I hadn't heard of that. That's wonderful. I'll definitely link to that in the show notes.

I thought we could finish out with a little rapid fire of criticisms of direct instruction and you could respond. How does that sound?

**Zach Groshell:**

Sounds great.

**Anna Geiger:**

Okay, and a lot of these are things that I would have said back in the day. People will say, this kind of instruction is boring.

**Zach Groshell:**

Fast-paced is not boring, right? We didn't mention pacing very much, but explicit instruction is much faster paced than any other system there is. Kids pick up on that pacing.

This is an enthusiastic teacher, a teacher who is fiercely committed to student achievement, who does not allow you to lay low and not pay attention, who's constantly harnessing your attention.

It's also a teacher who makes you feel successful, who praises your success. "Look at us! Look where we're going. We are on fire today, kids!" They use their full body to gesture to envelop attention and to teach the heck out of this material. It is a very enjoyable and very satisfying experience.

I contrast this to what otherwise would be possible which is you're sitting in some group, and apparently you're the only one that doesn't know how to do it, or you're doing all the work and you're sitting here just frustrated.

That's why there's that meme that is out there that's like, "When they lower me into my grave, I hope it's my group so that they can let me down one last time."

**Anna Geiger:**

Ha! I had not heard that one!

**Zach Groshell:**

Group work, doing stuff on your own and struggling, and trying to discover it is not satisfying like everyone thinks it is. But learning stuff gives you purpose and joy, and it gives you discipline too.

So no. I totally reject that idea.

**Anna Geiger:**

I'm going to go to another one that you've already debunked, but this is what people think so we'll do it again. Explicit instruction is just lecture.

**Zach Groshell:**

Yeah, and it's not. Let's just define lecture as a continuous monologue by a teacher who just wants to hear the sound of their voice. Someone who just thinks it's their job to convey information that actually can be probably better just written down and read. It's used by university professors, not because they're very, very smart, which they are; it's because they've never been trained to teach. This is the method of people that have no training in teaching.

I have no idea why anyone would think that this is good. I have no idea why explicit instruction or direct instruction has any relation to this methodology. It's very bad. Is it worse than pure discovery learning and giving lots of crafts and activities? I don't know, at least you're giving them something to think about and whether they do or not is their choice. But these are two very bad methodologies.

There's a reason why explicit instruction and direct instruction have so much history and research, especially empirical research. It's because they've been shown to be effective, and they're not these two things.

**Anna Geiger:**

I think people might hear explicit and direct and think, oh, it's the teacher just telling you everything you need to know, without realizing there's so much more to it than that, which you've laid out very well.

What about that explicit back and forth instruction doesn't leave room for creativity?

**Zach Groshell:**

Yeah, I mean, we're not going to have you be creative with something you don't know. That's the first part, asking someone to be creative about something you just learned about.

I'm not very knowledgeable about a lot of things, but you can't pick out something like archeology or plumbing or real estate or something that I've just never been taught or exposed to and say, be creative.

I'm going out looking for houses around here thinking maybe I'll get a bigger house, but my ability to understand whether or not that house is in good shape or is in a good area… These are all based on my prior knowledge, and to be creative about that is very much impossible standing next to my father-in-law who loves this stuff. He knows all about it, and he could start rapping his knuckles on parts of the house and say, "No, no, no. You smell that? It's going to flood," and so on and so forth.

You are going to be creative at the end with the knowledge that you have been taught. You're going to create new responses and new ways of thinking about it by combining the knowledge you have been properly taught in a sequenced fashion in an explicit instruction classroom.

**Anna Geiger:**

Yeah, so for people to keep in mind that not every single thing that you teach has to be delivered in this way, but when we're teaching new information, this is an important, powerful way to teach.

Last one, and I know you've covered it already, but we'll talk about it one more time. That is that this kind of back and forth, explicit repetition type of instruction kills the love of learning.

**Zach Groshell:**

Yeah, it doesn't. The love of learning comes from being successful, and your motivation comes from seeing that this all makes sense, and that there's purpose, and that I don't feel stupid because everyone else is learning except for me and everyone else is able to be creative except for me. And I have a teacher who really cares about me and is not going to let me lay low. They are not going to let me opt out of this, and they'll bring me back to that kidney table (as part of an RTI or MTSS), and they'll teach me, and they'll advocate for me.

A lot of kids, though, just don't like certain things, and maybe we need to just be okay with that. Some kids are going to love certain subjects a little bit more than some other ones, but their best path to enjoying the whole breadth of what we can teach is that they feel successful and accomplished in how we teach it to them.

**Anna Geiger:**

As a mom who just took five of our six kids on vacation (my oldest was on a band trip), there are certain members of our family who do not prefer museums, and we did hit a lot of them. Finally, you just have to say, "You know, I think this is good for you, and I know you don't like it, but we're going to do it anyway."

**Zach Groshell:**

Yeah, and maybe you'll appreciate it later, or maybe you don't even know what it's going to be like until you get in there. Let's go do it.

And guess what? You stayed so long in that one part of it, and *that* was what initiated a whole lifetime of being obsessed with a certain topic. You never would have known if I hadn't dragged you kicking and screaming into this museum. That's just the truth of how motivation is.

**Anna Geiger:**

Thank you so much for all the work that you do and the voice that you have. I know you're out presenting many places and supporting schools, and I look forward to sharing your resources in my show notes.

Anything else you'd like to share or projects you'd like to talk about before we sign off?

**Zach Groshell:**

Thank you so much for having me. That's it.

Not trying to sell too many things, but if you definitely want to check out Progressively Incorrect, that is my podcast. Keep listening to Anna's, of course, but people who listen to podcasts tend to want a second or a third one. I'd love for you to come check ours out. I just released an episode with Richard Mayer on his multimedia principles which is chapter three or so of my book, and I would definitely go check that out.

**Anna Geiger:**

Perfect, thank you so much.

You can find the show notes for today's episode at themeasuredmom.com/episode215. Talk to you next time!

**Closing:**

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