READING WRITING IN THE DISCIPLINES

**Reading and Writing in Science Video Transcript**

**Lynn Gilbert:**
Text is not just words. Text is all kinds of things and we are lucky in science to be able to do that.

**Meena Balgopal:**
What are strategies that you're using that I can take back to the novice teachers?

Many people here the word "literacy" and they think reading and writing, they think of their K-12 English classrooms or lessons. They don't recognize that it's taken on a different meaning that's even broader than that.

**Teacher:**
Light in is sort of adding to it, but then it's being subtracted by light out.

**Jacb Foster:**
The reality is, if you look at what a scientist does, much of that is writing, sharing what they've done, and that part is key to doing science, and in the classroom it's also key to better learning science.

**Maria C. Grant:**
You're not just teaching any kind of reading and writing and language, you're teaching the language, the reading, the writing of your content area, the place where you are expert. So you're just opening up the doors of the language of science.

**Student:**
All right, so we wanted to test clinical yeast and a few other types of strains, compare the two under different types of environments, specifically environments that may have to do with the human body, like salt concentration, temperature, to see how strong the biofilms would be at those particular points in comparison.

**P. David Pearson:**
The research says, if kids don't learn how to apply the specific ways in which reading, writing and language work in a particular discipline, they're not likely to engage in the critical reasoning processes that you have to in order to really get deep into each of those disciplines.

**Grant:**
The field of disciplinary literacy has really looked at, what are the elements of science, reading, writing and language that are characteristic of science? How do you help students to be able to, you know, read multiple texts and think critically about them?

**Gilbert:**
Today we're going to use video, we're going to use charts, we're going to use graphs, we're going to use words, and maps. So we're going to use five different types of texts today to try and answer some questions, and then we're going to hold our thinking in a graphic organizer.

**Foster:**
And in doing so, we can engage them in media, we can engage them in text, we can engage them in that notion of argumentation and the act of doing those things, that's where they have to wrestle mentally with how they think about the world.

**Pearson:**
A really, really big goal of ours in all of this work I to help kids learn how to make effective arguments about scientific phenomena.

**Gilbert:**
So we've got two claims from two pieces of text. One piece of text is video, the other piece of text is a map.

**Balgopal:**
How do we make a stronger argument by using more evidence, more warrants to support claims? How do we help students develop written reports, expository writing and persuasive writing? Scientists are spending anywhere from two-thirds to three-quarters of their time actually engaged in these type of literacy activities. That needs to be translated into the classroom practices.

**Mary Murphy:**
So how could you tell the story of transcription? I want you to narrate it. What do all these words mean? How do they work together? What's the story of transcription?

**Student:**
When a protein is made out of the amino acids, that amino acids are attached to specific tRNA that have the anticodons.

**Student:**
Yeah.

**Student:**
For the codons in the mRNA.

**Student:**
Okay, so the codons are just each...

**Foster:**
Teachers need to be explicit that they are teaching literacy standards, not just that they are engaging kids in conversations or they're asking students to talk to each other. That doesn't help the student learn how to talk in a discipline-specific way.

**Rohrbaugh:**
We must use scientific language, which means, instead of saying, "Hey, will you twist the thingy?" You need to be a little bit more specific. If you need to focus it, say, "I need to focus the course objective knob."

**Grant:**
So instead of the learning being about the strategy, it's about, "What's my task and what's the best tool to accomplish it?" And we give them a wide array of tools.

**Foster:**
We are not just throwing them, you know, a bunch of materials and saying, "Discover how the world works." We really are leading them through that process with purposefully designed lessons and activities that require that they do that mental work.

**Grant:**
And I think it's empowering to young people, no matter where they come -- high poverty schools or, you know, high socio-economic schools. Every one of them should have that kind of an understanding and an ability.

**Foster:**
They need to have enough understanding of the value of science and how science works and how it explains the world such that they can apply it in their career.

**Tracy Tran:**
You guys have done your background information, you've done your research, right? You have your conclusion, your results and everything. Now we want to summarize it in a very concise way.

**Pearson:**
If they can read and they can write about what they read, then kids have a limitless power to explore things on their own.

**Amy Sheck:**
Eject the tips.

**Balgopal:**
As we move forward in the 21st century, we're helping prepare our students for the world.