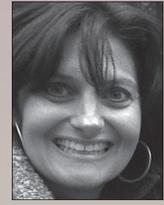


Getting to Great Questions for Inquiry and Research



“At all levels (preK–12) during inquiry learning, students benefit from conferences with the teacher and/or librarian.”

LESLIE K. MANIOTES

Just the other day, I overheard a middle school student say, “We never get to understand things! Like, why do we have to study plate tectonics? What is sea spread? Why do we need to know that?”

Through learning about plate tectonics, this student’s interest was piqued, and knowing that sea spread exists was not enough. She was bored with the facts and yearned to know why it’s important, what it *really* means. Underneath these questions she wondered why we don’t get to that level of understanding information at school. Traditional teaching and research fail to get to these bigger questions that students are yearning to answer, but using inquiry can.

INQUIRY AND GREAT QUESTIONS

Inquiry is a process that students can use to ask their own questions to learn more deeply from a variety of information sources. When inquiry is defined this way, our task shifts away from planning one lesson at a time and toward supporting student learning. Seeing inquiry as a way of learning motivates us to create a learning environment where students’ questions drive them to dig more deeply into the content. It is then that getting to great questions becomes the big challenge.

Research has shown that the questions students pose for research make a difference in whether they gather facts or make meaning (Kuhlthau, 2004). The guided inquiry design (GID) process was created to support teacher and librarian collaborating teams to get students to the questions that inspire them, keep them curious through the creation phases, and help them think critically about the world to construct and create new understandings. Great questions are the key to unlock the best inquiries, and the great questions for inquiry have the seeds of learners’ interests embedded in them.

The GID process (see Figure 1) provides librarian and teacher teams with a road map for inquiry that leads to successful questioning and research.

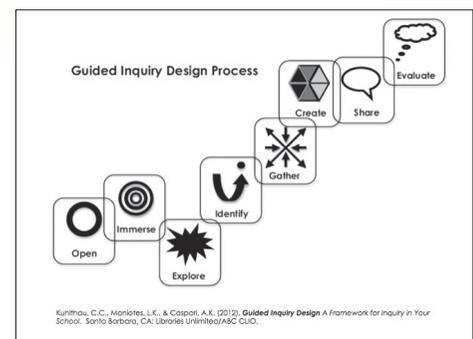


Figure 1. GID process

For example, in an inquiry unit on waves, a group of fourth grade students generated a list of questions (see Figure 2). The questions were documented in a collaborative Google Document at the end of the explore phase in the GID process (Maniotes, 2018).

At first glance, some of these questions might seem better than others for inquiry and research. But the goal of GID is that students choose their own path as they find an area of deep personal interest in the topic at hand. Each of the above questions has the potential to be a worthy inquiry question. A short conference with the learning team serves to clarify meaning, draw out student interest, and provide direction for students going off to gather information about their individual questions.

Figure 2. Student questions

STUDENT CHAT—SOUND WAVE QUESTIONS	
<p>How are waves created? In what ways do waves affect human beings? How do we harness waves? Why can't we see waves with our naked eye? What's the point of waves? What makes sound waves waver? How do sound waves (as in music) make us feel? How did humans find out about waves? How many waves are started in a day? Do people always use waves? What creates waves? Do animals use waves? What makes waves? Will people ever see waves? Does electricity carry waves? Do people carry waves? What starts waves? Can waves be dangerous? Can sound waves kill people?! How are waves so dangerous? How much noise would you need to make your hearing worse? Can you make waves by just tapping anything? How many ways are there to make a wave? How did people discover waves? Is there a way to see waves? How big can waves be? How small can waves be? How fast can waves go? How do sound waves get into our ears—seriously?! Are waves dangerous?! How are waves invented? Why do we have waves? Are waves different? How many wave types do scientist think there are?</p>	<p>What are waves made of? Why do we need waves? Why are waves so important? How are waves made? On an average, how fast do sound waves travel? Why are waves so apart/different? How and why do waves move in different directions? How are waves made? Are waves fast? Who invented waves? Are waves slow? Why are waves so important? How are waves made? Why do we need waves everywhere? Why do we have waves? How do waves move? Where are waves? How many waves come a year? How many waves are started in a day? How fast can waves go? Why do we need waves everywhere? Why do we have waves? How do waves move? How are waves made? Where are waves? Why do we need waves? Do waves do more than they're supposed to? Do waves help people or animals? Do waves hurt animals? Why do animals use physical sound waves? Can animals hear waves? Are waves invisible? How fast do waves go? How do you make waves? Who makes waves move and how?</p>

Source: Maniotes, 2018

POWER OF THE CONFERENCE

At all levels (preK–12) during inquiry learning, students benefit from conferences with the teacher and/or librarian. In GID, this transition occurs when students are moving from the explore into the identify phase (Kuhlthau, Maniotes, & Caspari, 2012). The purpose of this student conference is *clarifying*, as outlined in Figure 3. A quick conference with just the right timing and an inquiry

mindset helps bring life to simple questions, transforming them into more complex ones.

Here are some sample questions from the list from Figure 2 that students chose and examples of how members of the learning team (teachers and librarians) conferred with students to help them clarify their thinking (see Figure 3). This conference concludes with the student ready to move forward to research. Notice how the learning team goes into the conferences with an

inquiry stance—not a judgmental tone but one of authentic curiosity for students' ideas. Notice also that these are short conversations not requiring more than a few minutes.

Because the clarifying conference can be quick, the teacher or librarian will have time to end these conferences by engaging in a quick Google (or catalog) search with each student after they write their question down. That way, they have a clear direction for key words, some resources, and their im-

Figure 3. The conference on questions

THE QUESTION COACHING CONVERSATION	
<p>Student 1: Why can't we see waves with our naked eye?</p>	
<p>T: Hi! Tell me more about your question, "Why can't we see waves with our naked eye?" S: I don't know . . . T: Can we see waves with our naked eye? S: Yeah, the waves in the ocean. T: OK, so you know that you <i>can</i> see some waves with your naked eye. S: Yes. T: How could you make that question more clear? Your question was, "Why can't we see waves with our naked eye?" S: I meant like waves of energy. I <i>was</i> asking about <i>any</i> kinds of waves that we can't see with our naked eye, like waves of energy. T: Oh OK. That is clearer. Now that you say it that way, is that something you're still interested in, now that you've more clearly defined it? Waves of energy? S: Yeah, I want to know more about how we know there are waves when we can't even see them. T: Sounds like an interesting quest! Are you thinking of focusing more on the energy aspect of it or a specific kind of wave, like light waves? S: I'm not sure. T: OK. Answering that will help you narrow your question even more, and it might be easier to find information once you narrow it down. For now, write down your question with energy or light. Then, as you start searching, you can decide which is the more interesting path to take. [<i>Waits for student to write the question and check it.</i>] Great! I'll be interested in learning what you find out.</p> <p><i>Source:</i> Maniotes (2017) addresses "Getting to GREAT Questions for Inquiry: Talking with your students draws out their best intentions."</p>	
<p>Student 2: How do sound waves (as in music) make us feel?</p>	
<p>T: Hi! So, your question is "How do sound waves (as in music) make us feel?" What do you think you'll find out about that? S: Happy, sad, angry. T: Yes, that would be a pretty simple answer to find. So, what's interesting about that question? How can you change it and make it a little more interesting? S: Well, I can look at <i>what kind</i> of sound waves make us feel different emotions. T: Ooooh, that does sound interesting. I can see a chart with emotions and kinds of sound waves. S: Like when a dog barks "woof, woof, woof!" that can affect different people in different ways. Or music. T: Do you think you have enough to get searching? S: Yeah! T: OK, before you go, write that new question down in your inquiry journal, so we know you've captured this good thinking. S: [<i>Writes</i>] What kinds of sound waves make us feel different emotions? T: Ok!</p> <p><i>Source:</i> Maniotes (2017) addresses "Getting to GREAT Questions for Inquiry: Talking with your students draws out their best intentions."</p>	
<p>Student 3: How did humans find out about waves?</p>	
<p>T: Hi! So, you want to know, "How did humans find out about waves?" S: I want to know who discovered waves. T: OK, but tell me, if all you want to know is who, what do we know about that kind of question? S: That would be an easy answer. But I want to know who discovered waves, where were they when they discovered it, and how they discovered waves! T: Oh, so you want to know who discovered waves, where were they when they discovered them, and how they discovered waves? That sounds like you are looking to find the <i>history</i> about how waves were discovered. [<i>Student nodding</i>] I'm excited to find out what you learn about who, where, and when the first scientist discovered waves. Write your new question down in your inquiry journal here. S: [<i>Writes</i>] What kinds of sound waves make us feel different emotions? T: Ok!</p> <p><i>Source:</i> Maniotes (2017) addresses "Getting to GREAT Questions for Inquiry: Talking with your students draws out their best intentions."</p>	

mediate next steps, increasing independence in the gather phase.

CONFERENCE PROTOCOL

There are four important things for the learning team to think about when entering into the conference about questions.

Students have good intentions. Educators need to reach inside students' intentions. Asking questions helps students clarify the connections they are making that might not be explicitly stated right away. A conversation like the ones above can draw out the information students use to arrive at their question and helps them elaborate on their thinking and eventually get more specific.

No question is a bad question. Yes, some questions that students come up with have easy answers. But even those questions can hold the seeds of deeper thinking. If the librarian takes the time to dig a little bit into student thinking, conferences can really help students tell us more about the great thinking behind those seemingly simple questions.

Student interests drive their meaning making. Students will have more to tell if they are asked, "What interested you about this?" rather than, "Why did you pick this question?" Focusing on their interest takes the pressure and judgment off and opens the conversation to their third space. In GUID, the third space is when students connect their lives and experiences outside of school to their studies (Maniotes, 2005). It will often surface as students describe their interests. Asking why they picked a question provides an opportunity for students to explain how their question connects to their lives and their experiences.

Knowing student connection and interest allows the learning team to connect students to useful resources of high interest. (See <https://sites.google.com/site/lesliekmaniotes/home/about/research>.)

Paraphrasing students shows listening and support. Listening is a key to clarifying. Paraphrasing what students say will help the teacher or librarian be a better listener in the conference. Using "OK so" or "Oh so" when talking with students will help paraphrase their words, so they can "sign off" with their intention.

Although inquiry learning can seem complicated, a simple conversation embedded into the process can go a long way to supporting students to clarify their direction. Getting clarity on the focus of their research is essential to deep learning and searching and eventually deeper understanding. Time invested here, in the middle of the process in conferences, has huge payoffs for the long haul of student learning.

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