Chapter 5
When Students Generate Questions: Participatory-Based Reading Instruction in Elementary Classrooms

Molly Ness

Introduction

Walk into any elementary language arts classroom and you are likely to see teachers posing questions to children. Open up the teacher's manual to any core reading program, and you'll find a series of questions that teachers are meant to pose to children. The ubiquity of teacher-generated questions has been well documented in research, perhaps most famously by Delores Durkin (1978–79) in her landmark observational study of fourth-grade classroom instruction. In observing over 3000 min, she noted that over 12% of instructional time was allotted for teacher-generated questions. Though teachers were likely to use questions as a means to assess students' comprehension, they almost never provided explicit instruction to facilitate comprehension (Durkin, 1978–79; Ness, 2008).

The trend of teacher-generated questions continues today. In the vast majority of classrooms, the responsibility for generating questions belongs to the teacher. In fact, the typical teacher asks 300–400 questions a day (Cazden, 2001; Leven & Long, 1981). That figure translates into up to two questions every minute, around 70,000 a year, or two to three million in the course of a career. In her 2001 book, Courtney Cazden studied the use of teachers' language in classrooms. She found that teachers most naturally relied on a language pattern known as "Initiate, Respond, and Evaluate" (IRE). In the three-step IRE process, the teacher initiates classroom talk by posting a question to students. Next students respond to the question, and finally the teacher evaluates the correctness or appropriateness of their responses. Furthermore, the majority of these questions are low-level questions that focus on lower cognitive skills, such as memorization and factual recall (Wilhelm, 2007). Richard Allington (2014), a distinguished literacy scholar, called the "interminable number of low-level literal questions" a "misguided but common instruc-

M. Ness (✉)
Fordham University, New York, NY, USA
e-mail: mness@fordham.edu

A. Eckhoff (ed.), *Participatory Research with Young Children*, Educating the Young Child 17, https://doi.org/10.1007/978-3-030-19365-2_5

tional move" (p. 18). A common instructional approach, teacher-generated questions seem to allow little room for deep interaction, involvement, and engagement of young children.

When we shift the responsibility for asking questions away from teachers and towards students, we transform research and practice into participatory acts. We honor knowledge, skills, and experiences that children bring to the classroom. By validating children's innate curiosity, we reposition the role of children in education. This chapter draws from my research with K-5 elementary English Language Arts classrooms where teachers adopted a participatory approach that aimed to share responsibility for question posing between teachers and students. In this chapter, I highlight the instances in which I observed teachers working alongside children to explore the power of student-generated questions as both participatory pedagogy and research. In my role as a researcher sharing the participatory space opened to me by both the teachers and students, I was responsible for the careful observation and documentation practices that appropriately reflected the meaning and value of the shared voice within the classroom settings.

Shifting Question Generation to Students: Participatory Research

My interest in participatory designs began at home, as I experienced the power of student-generated questions as a parent of a young child. When my daughter was 4 years old, each day began with her rapid-fire questioning.

> Mama, can ants swim? Why do worms come out of the ground when it rains? If there is a Big Dipper and a Little Dipper, why isn't there a medium Dipper?

During her particularly inquisitive phase, I tried my best to indulge her questioning. I'd pat myself on the back for giving eloquent answers or for finding an appropriate book which answered her question. Sometimes, my patience wore thin, and I found reassurance in knowing that I was not alone. Willingham (2015) noted that "even the most responsive parents don't answer something like 25 percent of the time" (p. 45).

In my dual role as a parent and teacher educator, I knew that his 'why' phase is a normal developmental phase for young children. These questions are the signs of our children being naturally curious about the world around them. As children perseverate with the seemingly endless 'whys', they are trying to make sense of the world around them. The magnitude of questions generated by young children is impressive. On the average day, mothers typically are asked an average of 288 questions a day by their children aged 2–10 (Frazier, Gelman, & Wellman, 2009). Parents field one question every 2 min and 36 s. Within 1 year, children have posed 105,120 questions. Chouinard and colleagues (2007) revealed that children ask between 400 and 12,000 questions each week.

As a teacher educator, however, I noticed a stark contrast between the frequency of children's questions at home and their questions at school. Why did children ask so many questions in their home environments, yet so few in formal educational

settings? What happens in classrooms that carve out instructional time and space for student-generated questions? When questioning moves away from teachers and towards students, what is the impact? With these question in mind, I set out on a participatory study in which I explored the role of student-generated questions in reading instruction. Using purposeful sampling, I reached out through my professional network of current and former graduate students, teachers, and school leaders to situate myself in classrooms taught by teachers who valued inquiry-based classrooms and student-generated questions and who designed instruction around these questions. Over a 4-month period, I worked alongside teachers and children in a participatory design to highlight the value of inquiry-driven classrooms. The vignettes below come from a variety of classrooms, where I acted as a non-participant observer and documented classroom discourse through audiotaping and field notes. In many cases, I followed up my observations with teacher interviews and member checking, in which I debriefed with the teacher to have them explain and make sense of the classroom observations.

Understanding the Research Base of Student-Generated Questions

The most commonly accepted definition of question generation comes from the National Reading Panel (2000), which defined question generation as a type of instruction where readers ask themselves questions about various aspects of the text. Taboada and Guthrie (2006) defined student questioning as self-generated requests for information within a topic or domain. The student or reader, not the teacher, asks the questions. Student-generated questions help to focus readers and promotes better reading comprehension or understanding of the written text (Chin, Brown, & Bruce, 2002).

Recently, neuroscientists have used magnetic resonance imaging (MRI) to understand blood flow activity in the brain when asking questions. A 2014 research team from University of California Davis (see Singh, 2014) monitored brain activity to measure how engaged learners were in reading questions and their answers. When learners' curiosity is piqued by questions and their answers, the parts of the brain associated with pleasure, reward, and creation of memory underwent an increase in activity. These findings indicate that curious brains are better at learning tasks, leading researchers to conclude that, "Curiosity really is one of the very intense and very basic impulses in humans. We should base education on this behavior." These benefits of student-generated questions are explained in detail below:

Asking Questions Motivate Students

When children ask questions, they demonstrate intellectual curiosity. As curious children ask the whats, whys, and wherefores, they build internal motivation for learning and attach personal relevance to what they learn. Researcher Lillian Katz

(2010) posited that intellectual curiosity is innate and inborn, and that educators must nurture that quality in children. Questions show our children as engaged and inquisitive. As children generate questions, they learn to not accept information at its face value, but instead to extend their learning in a self-directed manner. As Postman and Weingartner (1971) wrote, "Once you have learned how to ask relevant and appropriate questions, you have learned how to learn and no one can keep you from learning whatever you want or need to know."

Additionally, questioning activities promote a positive attitude towards reading and literacy. Yopp and Dreher (1994) randomly assigned sixth-grade students to two different treatment groups: (a) teacher-generated questioning and (b) student-generated questions. The students who received instruction on how to generate their own questions were more engaged in literacy instruction, assigned texts, and classroom discourse. Simply put, students are motivated by questioning and finding the answers to their questions (Singer & Donlan, 1989).

Asking Questions Promotes Academic Achievement

The learning benefits of children posing questions are profound. As children pose questions, they engage their higher-level thinking skills. Question generation aids students with memory, recall, and identification and integration of main ideas through summarization. Students who generate their own questions show improvement in reading comprehension scores; in their meta-analysis of question generation, Therrien and Hughes (2008) reported significant findings for the use of question generation as a way to improve students' comprehension. Harvard-based reading researcher Catherine Snow (2002) wrote that, "teaching students in grades 3-9 to self-question while reading text enhances their understanding of the text used in the instruction and improves their comprehension" (p. 33). Janssen (2002) noted that, "self-questioning leads to increased comprehension and more and more high-level questions" (p. 98). Furthermore, question generation holds the reader accountable for "deeper interactions with text" (Tabaoda & Guthrie, 2006, p. 4). When students generate questions they performed better on tests examining knowledge of story structure than those who did not receive such training (Nolte & Singer, 1985).

Asking Questions Promotes Comprehension

An additional benefit of student-generated questions is a deep engagement and involvement with text. By posing and answering their own questions, students become more involved with their reading. A wealth of research demonstrates the effectiveness of question generation, leading the National Reading Panel (2000) to conclude that, "the strongest scientific evidence for the effectiveness of a text comprehension intervention was found for the instructional technique of question

generation (pp. 4–45)". Grasesser, McMahen, and Johnson (1994) described an active learner as one who shows that inquisitiveness and curiosity. When students pose questions about text, they are "actively involved in reading and…motivated by his or her queries rather than those of the teacher" (National Reading Panel, 2000, pp. 4–110). This active involvement gives students an initiating role in their learning (Taboada & Guthrie, 2006).

When Kindergartners Ask Questions

My observations took me to Amelie Anderson's Kindergarten classroom; Amelie Andersen is a veteran Kindergarten teacher, who attended a professional development workshop that I facilitated. Self-described as a "play-based, constructivist-oriented early childhood educator", she explained her logical inclusion of questions in her classroom:

> My kids love to ask questions. It comes naturally and easily to them, and so I want to honor their innate curiosity. In my classroom, they know that their questions matter and that their juicy questions will often take our learning in new and different directions.

I observed Ms. Andersen encourage student questioning through text images. Prior to this lesson, the Kindergarteners had rudimentary understandings of essential elements of fiction text, including characters, setting, and sequencing. To encourage text-based predictions, she selected the children's picture book, *My Friend Rabbit* by Eric Rohmann (2007). Written for beginning readers, the book tells the story of mischievous Rabbit, who gets Mouse's brand new airplane stuck in a tree. In an effort to dislodge the airplane, Rabbit tugs, drags, carries, and cajoles a wide variety of animals to stand one on top of another under the offending tree. Mouse just reaches the wing of his plane when the entire group comes crashing to the ground. The text of *My Friend Rabbit* is simple:

> *My friend Rabbit means well. But whatever he does, wherever he goes /trouble follows. "Not to worry Mouse! I've got an idea!" / The plane was just out of reach. Rabbit said, "Not to worry Mouse. I've got an idea!" /So Rabbit held Squirrel, and Squirrel held me, but then…/The animals were not happy. /But Rabbit means well. And he is my friend. /Even if, whatever he does, wherever he goes, trouble follows.*

After gathering a small group of children on the rug before her, she held up the cover of *My Friend Rabbit*. Ms. Andersen explained, "This story is about a mouse that is friends with a rabbit. Somehow this rabbit always gets into trouble. Today is a special day because before we even read the book, you get the chance to ask any question you'd like." She pointed to sentence strips in a pocket chart, displaying the question prompts "How? Who? Why? What? Where? When?" She continued, "Remember that good questions start with these words. I'm going to give you a silent minute to think of some questions, and then I'd like you to turn and talk to your neighbor to share some of the questions that you'd like to ask just by looking at the picture on the cover."

After brief silence, students murmured their questions while she circulated to eavesdrop on their conversations. When students called out their questions, she acted as a scribe to write each one on the board. As students were quite familiar with making predictions, they initially resorted to their comfort zone and offered predictions based on the cover art. She adeptly modeled converting one child's statement of "I think that the mouse is driving the plane" to the question "Who is driving the plane?" When a boy stated, "I think the bunny is the main character because he's much bigger than the mouse," Ms. Andersen, "How could we rewrite that prediction into a question that we hope the text answers for us?" She reported, "What I hear you asking is, 'Who is the main character?' The following questions were generated from these Kindergartners:

- Who is driving the plane?
- Where is the plane going?
- What is the name of the bunny?
- What is the name of the mouse?
- What is going to happen in the story?
- What happens in the beginning, middle, and end?
- What is the setting of the story?
- Is this story nonfiction or fiction?
- How is the bunny feeling in the picture?
- Why is the mouse sitting in the plane?
- Who is the main character?

Satisfied with the quantity and quality of queries generated from the cover illustration, Ms. Andersen showed the rest of the illustrations – page by page. From a picture depicting the rabbit holding up an airplane, a student asked, "How much does an airplane weigh?" Another picture showed a rabbit lifting an alligator, a goose, and a bear, prompting a student to ask, "Are rabbits really strong?" When the illustration's orientation changes – forcing the reader to change the book from horizontal to vertical – a student posed, "Why did they draw the picture like that?"

Having generated these questions, students began the book eager to search for the answers.

Through this simple activity, Ms. Andersen shows the power of student voice and inquiry; she demonstrates that readers ask questions prior to reading and during reading, and that these questions sometimes go unanswered in the text itself. With a simplistic text, she provides the academic language of question generation to students so that they successfully apply questioning to support their comprehension.

When First Graders Ask Questions

Young children often start their questions with wondering statements, or what Barell (2008) calls *wonder talk*. Judith Lindfors (1999) identified some of the common wondering statements that young children shared in informal discussions:

- There's a part I wanted to ask about…
- I'm trying to figure out…
- This is what I don't get…
- I thought it was…
- I wonder why….
- Maybe….perhaps….

'I Wonder' journals are adapted from Barell's (2008) use of inquiry journals, who noted that "one of the best ways I know of to become aware of my own inquisitiveness has been to keep my own journals." An 'I Wonder' journal is a log of readers' wonderings, inquiries, and observations that lead to question generation. Though often used for higher-level, more metacognitive students, the following evidence from Ethan Byrne's classroom highlights how the strategy can be modified for first graders.

Mr. Byrne followed a scripted basal curriculum. His charter school was housed in New York City's East Harlem neighborhood, with high numbers of students qualifying for free and reduced lunches. Nearly 70% of his students spoke a language other than English at home. A second-year teacher, Mr. Byrne came to the classroom through an alternative certification route while also pursuing graduate-level coursework.

Mr. Byrne incorporated 'I Wonder' journals during his poetry unit. Already familiar with the basic conventions of poetry, he selected the poem "Honey, I Love" by Eloise Greenfield. Published in 1978, this poem was written from the viewpoint of a young narrator. The narrator loves visits from her cousin, with his Southern accent, his whistling habit, and his swagger. She loves hot summer days when her neighbor Mr. Davis cools off children with a hose. She loves laughing at her paper doll creations with her friend. She loves car rides to the country in her uncle's crowded car. She loves church picnics with delicious food. She loves kisses from her mother. Of all the things in her life, the only thing the young girl does not love is going to bed. The crux of the poem is the simple things that mean the most, like sharing laughter with a friend, taking family rides in the country, and kissing her mama's arm. The poem reminds readers that love can be found just about anywhere.

Before Mr. Byrne read the poem aloud, he encouraged students to listen for its rhythm. He distributed their 'I Wonder' journals – simple folders with blank pages with the sentence starter "I Wonder" and a graphic of a thought bubble. He used the title to think aloud as a means to showcase his thought processes.

> The title of this poem makes me think all about love. But I wonder if it is a love letter from someone to the person that they love. What do they love? Who do they love? All of these questions belong in my 'I Wonder' journal.

As some of his young students were not yet independently writing, he allowed them to express their questions in illustrations. A student drew a picture of a young girl. The teacher stooped next to her and whispered, "Tell me about this picture. How does it show your question?" The child reported that the picture is the speaker in the poem, and told the teacher she wanted to know what the character looked like,

particularly what color her skin was. Acting as her scribe, Mr. Byrne used a blank "I Wonder" page and wrote, "What does the girl look like? What color is her skin?

The teacher read each stanza of the poem aloud, making sure to stop and to allow children to note their questions in their 'I Wonder' journals. He used a variety of approaches to encourage these questions; sometimes students turn and talk to a neighbor about their questions, sometimes he called on the whole group to share out their questions, and he also left independent time for them to write on their own. At the conclusion of the poem, he scanned their journals and jotted juicy questions down on the whiteboard:

- How old is the cousin? What do they like to do on his visit? How long does he visit for?
- What does it mean when it says "words just kind of slide right out of his mouth?"
- Can you really tell where someone is from by how they talk?
- Why is the word 'love' in all capital letters in the middle of the poem?
- How do you learn how to whistle?
- Why does she love the way her cousin walks? Does he walk funny?
- Can the sun really 'stick to her skin"? Does that just mean she's hot?
- Who is Mr. Davis?
- Does this take place in the summer?
- Where does this girl live?
- Why does Mr. Davis turn on the hose? Is there a fire? Is he watering plants in the garden?
- Does it feel good when the 'water stings her stomach' or does it hurt?
- What is a flying pool?
- Who is Renee? Is Renee a boy or a girl? How old is Renee?
- Why does Renee's doll not have a dress? Does she not have money to buy clothes for her doll?
- How does she make a dress out of paper?
- Does it hurt Renee's feeling when the narrator laughs at her doll?
- Why do they laugh so hard?
- How many people are in her uncle's crowded car?
- Where is the car going? Where is she sitting?
- Why do the church folks like to meet in the country? What do they do there?
- Who are the church folks?
- How does her mama feel when the girl kisses her arm?
- Why does the girl trying not to cry? What does she want to cry about?
- Who is this girl speaking too? Who is the 'you' in the final line?

These questions prompted a rich conversation, as some of their questions were addressed by the text and others prompted talk where students attempted to answer questions with their personal and real world knowledge. When one student questioned, "Where does this girl live?", her classmate purported that "I think she lives in the city, because it sounds like all the church folks meet in the vacation as a little vacation."

For the remainder of the school year, students returned to their 'I Wonder' journals as they approach other text genres. They added questions to their 'I Wonder' journals during science class and on their field trip to a farm. One student wrote the following questions in his 'I Wonder' journal:

- Why do trees and plants grow?
- When was the earth made?
- Why do we walk on two legs?"

For any unanswered question, Mr. Byrne directed them, "Go jot that down in your 'I Wonder' journal."

In these I Wonder journals, Mr. Byrne demonstrated the omnipresence of questions: a space to house the curiousity sparked by poetry, everyday observations, and daily interactions. By creating a space in which students frequently visit to generate questions, they are more likely to continue their questions.

When Second Graders Ask Questions

Erin Gilson was a midcareer second-grade teacher in the South Bronx. Her school structured its literacy block in a reading and writing workshop model, which allowed her "to highlight the wealth of fabulous authentic children's literature." Her students – most of whom qualify for free and reduced lunches – wer "sometimes limited by their lack of life experiences, so I read aloud frequently to build their background knowledge." She explained that their limited life experiences often was a detriment to their comprehension:

> In particular, they struggle with nonfiction text – because they don't have firsthand experience with dolphins, or exhibits at museums, or the countryside, or whatever is the topic of our text. I try to use images and Internet resources to build their background knowledge and pique their curiosity so that they are more motivated to approach a text.

A tried-but-true question generation strategy, Ms. Gilson incorporated the KWL graphic organizer with the following structure:

- K (What I Know): Where students activate their background knowledge before reading a text
- W (What I Want to Know): Where students set a purpose for reading – by asking questions or listing what they hope they gain from text
- L (What I Learned): Where students reflect – after reading – on the knowledge they gained from the text

Ms. Gilson began a small-group social studies lesson about Gandi with an essential question. On the classroom computer, she projected two pictures: one of Mahatma Gandi and the second a map of India. The following conversation unfolded:

> This man was a leader of India, where people who were not white were treated unfairly in the 1940s. He used nonviolence to work peacefully to get fairer treatment for everyone.

> Now I'm sure that these pictures and our essential question make you think of some questions that you'd like answered in our reading, so let's use a KWL chart to jot some of those wonderings down.

Students shared out the following five questions:

- I want to know why he didn't do violence?
- I want to know how he died.
- Did he have a family?
- Why didn't he want to fight?
- When he was first born, was he treated unfairly like others?

After recording their questions on the whiteboard, Ms. Gilson praised their efforts and handed out individual copies of the KWLS chart.

KWLS Chart

Before Reading		After Reading	
K	W	L	S
What do I know?	What do I want to know?	What did I learn?	What do I still want to know?

The traditional KWL chart has three columns; this chart divided questions into those generated *before* reading and those generated *after* reading. To highlight the notion that texts do not answer all of students' questions, the chart also included a fourth addition: the S column, to hold the place for questions that students *still* wanted to address.

Since students were loosely familiar with both Gandhi and the KWL chart, they set to work individually on the K portions of their charts, recording the following background knowledge about Gandi. The majority of their background information came from Ms. Gilson's quick frontloading instruction, with the essential question and the visual references. Any misinformation in the K column reflected the authenticity of student work.

- He saved India.
- He died.
- He is black.
- He is a leader in India.
- Gandi wanted to help the others in India so it is a better place.

- Gandi was born in India.
- He didn't want to fight.
- He was treated unfairly.
- He went to school.

After praising them for thinking about what they already knew, Ms. Gilson pushed students to generate questions about what they hoped the text will answer.

> Next, let's take some time to think of questions that we hope the text will tell us. Some of your questions might piggyback off of what you wrote in the K column. Some might be about the photos I showed you and our essential question. This is the chance to think of as many questions about Gandhi, about India, about nonviolence, and about this time in history as you can.

Students set to work writing their own questions, as the teacher circulated to provide support. For students struggling with the academic language of question generation, she pointed to the "Wonder Wall", a bulletin board with questions starters (e.g. "Who", "What" "How" "When) to jumpstart their thinking. Table 5.1 lists of the comprehensive questions generated by individual students.

The remainder of the lesson was spent reading a leveled biography of Gandi. Students were directed to use a sticky note to flag pages that answered the questions

Table 5.1 Before reading questions: "What do I want to Know?"

Name of student	Questions generated
Anya	Was Gandi the first Indian to make people nice? When was Gandi born? Where did he go to school at?
Fadima	When did he die? When was he born? Did he have a family? Why didn't he fight? Why didn't he do violence? Where was he living?
Samantha	I want to know if Gandi is old. I want to know if Gandi wears different clothing. Did he go to school?
Leighton	I want to know if he died. I want to know if he knows karate. I want to know if he's joyful. I want to know if he's relaxed and magical.
Yumaris	How did he die? How did he make India fair? Why didn't he want to fight? Has he ever been to jail?
Oumar	Why is he dead? What did he speak? What was his favorite color? Did he have a family? Did he get married?

in their "What do I want to know?" columns. After reading, they refered directly to the text to share out their findings.

With the objective of showing students that one text cannot address all of their questions, Ms. Gilson directed students to the column titled, "What do I still want to know?"

> Let's look across our W and L columns. We've come a long way in answering some of the questions that you first asked. But some of your questions might linger – that means, you still might want to know their answers. The text might also have made you think of new questions. Good readers know that one book can't answer everything, and good readers are always asking all sorts of questions. So now, let's add to the "What do I still want to know column?" For example, I have a question that this book made me think of. We learned that Gandi stopped wearing Western clothes and instead wore robes and sandals. I want to know more about this, so I'm going to record this question in my S column: Why did Gandi only wear sandals and robes? Let's hear some of your S questions.
>
> S1: Why did he fast? What made him think a fast would work?
> S2: How long did he stay in jail for?
> S3: How long can someone fast for before dying?
> S4: Did Gandi ever meet Martin Luther King?
> S5: Did he have a family? Any kids?
> S1: Are things in India fair now?
> S3: Why is he bald in all the pictures? Did his hair fall out or did he shave his head?

This teacher adapted one of the most commonly used reading strategies to place more instructional focus on question generation. KWL was originally designed to be a pre-reading activity which encouraged students to activate their background knowledge, to set a purpose for reading, and to monitor their learning from a text. The simple addition of the S column pushed students to generate more questions, either the nagging questions unanswered in the scope of one text or the questions that inevitably arise as learners become more familiar with a topic.

In subsequent lessons, Ms. Gilson might bring in supplementary texts which address their unanswered queries or incorporate ways to have students conduct outside research. The power of the "What do I still want to know" column is clear. Not only do the questions in the S column outnumber the questions in the W column, but these fourth-grade students were better able to address the teacher's initial essential question.

When Third Graders Generate Questions

"Why do roller coasters make me barf?"
"When you lose weight, where does it go?"
"Can hair really grow as long as Rapunzel's?"

These questions, scribbled in student handwriting on colorful sticky notes, covered an enormous poster, titled "Parking Lot", hanging in a fourth-grade classroom. For this fourth-grade teacher, the parking lot was as an ongoing log of children's

unanswered questions. A former student in my literacy methods classes, Mr. Dewitt taught in his fourth-grade classroom for 8 years. He explained:

> When kids have a question – one I can't answer or one that is off topic – I tell them to jot it down and put it in the parking lot. When we've got a couple extra minutes of time, I pull things from the parking lot and try to answer them.

The parking lot was the home for questions that a teacher prefered to momentarily leave unanswered. When a student asked a seemingly off topic question or a question that could not immediately be answered, the teacher acted as a scribe and records it on the parking lot – be it a classroom poster or a section of a white board. Harmin and Toth (2006) explained that the parking lot "reminds us to handle such deferred questions, assures students that their questions will not be forgotten, and, of course, helps us to keep our lessons flowing with active involvement" (p. 219).

In our interview, Mr. Dewitt admitted that time has prevented him from fully addressing the questions in the parking lot, noting that, "the parking lot is the place where my students' questions have gone to die." As he aimed to bring life back to their unanswered questions, he uses an inquiry-based model that is student-centered, collaborative, and motivating for young readers. Mr. Dewitt created student-centered small-group sessions, in which students determined the origin of their parking lot inquiries and purposefully used informational text to address their questions. The list below shows the questions that emerged within the first week of creating the parking lot:

- Why do our hands get wrinkled after we take a bath?
- Why can't penguins fly?
- Why are apples different colors?
- Why don't snakes have feet?
- What are our belly buttons for?
- Why do we drink milk from cows?

Next, Mr. Dewitt modeled how to tackle the parking lot question "Can hippopotamuses swim?" The question originated from the children's picture book *The Circus Ship* by Chris Van Dusen (2009), which shows a shipwrecked hippopotamus swimming to shore. Using a digital document camera to project an informational text, he overviewed the headings, tables of contents, maps, graphs, charts, and indexes. Students directed him to turn to two chapters "Staying Cool" and "River Horses". In a "eureka!" moment, the teacher read aloud a paragraph explaining that though they spend the majority of their lives submerged in water, hippopotamuses cannot swim nor float.

In their leveled guided reading groups, students were matched to appropriately leveled text to tackle their parking lot questions; a higher-level group tackled a complex text *Grossology* to answer the question "Why do I burp?" For groups that needed additional support, sticky notes direct students to the relevant pages.

Mr. Dewitt explained that the parking lot quickly became the hottest location in this classroom. Instead of emptying of questions, the sticky notes in the parking lot

increased in number. As students saw authentic purposes for their questions and informational text, they actively generated questions. Not only did students' questions increase in quantity, they also increased in quality. Initially students posed literal and basic questions (e.g. "What do hippopotamuses eat?"). Subsequently, students posed questions that are more analytical, evaluative, and interpretive (e.g. "Where did the myth that elephants are afraid of mice come from?").

Concluding Thoughts

In these inquiry-based classrooms, we see teachers who shy away from traditional approaches to reading instruction. In the traditional approach to reading, the teacher is viewed as the purveyor of information; in the classrooms I observed through a participatory design, students had powerful contributing roles to knowledge. They participated in the co-construction of learning, guided by the questions that they generated. These children – as young as 5 years old – determined the direction of their learning, simply through the questions that they posed. For this to happen, their teachers gave up some of their control and took the lead from their students. These teachers offer evidence of the connection between participatory research design and participatory classroom practices.

These classrooms value the notion that the question often has more power than the answer. In early childhood classrooms where teachers embrace the questions that children ask, their voices are the steering wheel of reading instruction. When teachers recognize that the most powerful questions come not from a teachers' manual, but from children themselves, young children are more engaged in discussion and more purposeful in their reading.

Questions for Reflection

- In what ways do you honor the questions that students bring to your work?
- Which of these approaches or vignettes most closely resonates with you? How might you adapt one of the ideas to your research practices?
- How would you describe a balance approach between adult-generated questioning with student-generated questions?
- Do schools today honor or discourage student-generated questions? How can your research serve to support student questioning and honor their ways of knowing?

References

Allington, R. (2014). Reading moves: What not to do. *Educational Leadership, 72*(2), 16–21.

Barell, J. (2008). *Why are school buses yellow? Teaching for inquiry PreK – 5*. Thousand Oaks, CA: Corwin Press.

Cazden, C. (2001). *Classroom discourse: The language of teaching and learning*. Portsmouth, NH: Heinemann.

Chin, C., Brown, D., & Bruce, B. (2002). Student-generated questions: A meaningful aspect of learning in science. *International Journal of Science Education, 24*(5), 521–549.
Chouniard, M. M., Harris, P. L., & Maratsos, M. P. (2007). Children's questions: A mechanism for cognitive development. *Monographs of the Society for Research in Child Development, 72*, 1), 1–1)129.
Frazier, B. N., Gelman, S., & Wellman, H. M. (2009). Preschoolers' search for explanatory information within adult-child conversation. *Child Development, 80*(6), 15–92. https://doi.org/10.1111/j.1467-8624.2009.01356x
Grasesser, A. C., McMahen, C. L., & Johnson, B. (1994). Question asking and answering. In M. A. Gernsbacher (Ed.), *Handbook of psycholinguistics*. San Diego, CA: Academic.
Harmin, M., & Toth, M. (2006). *Inspiring active learning: A complete handbook for today's teachers*. Washington, D.C: Association for supervision & Curriculum Development.
Janssen, T. (2002). Instruction in self-questioning as a literary reading strategy: An exploration of empirical research. *Educational Studies in Language and Literature, 2*(2), 95–120. https://doi.org/10.1023/A:1020855401075
Katz, L. (2010). Knowledge, understanding, and the disposition to seek both. *Exchange, 32*(6), 46–47.
Leven, T., & Long, R. (1981). *Effective instruction*. Washington DC: Association for Supervision and Curriculum Development.
Lindfors, J. (1999). *Children's inquiry: Using language to make sense of the world*. New York, NY: Teachers College Press.
National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implication for reading instruction*. Washington, DC: National Institute of Child Health and Human Development.
Ness, M. (2008). Supporting struggling readers: When teachers provide the 'what,' not the 'how. *American Secondary Education, 37*(1), 80–95.
Nolte, R. Y., & Singer, H. (1985). Active comprehension: Teaching a process of reading comprehension and its effects on reading achievement. *The Reading Teacher, 39*, 24–31.
Postman, N., & Weingarten, C. (1971). *Teaching as a subversive activity*. New York, NY: Dell Publishing.
Singer, H., & Donlan, D. (1989). *Reading and learning from text*. Hillsdale, NJ: Erlbaum.
Singh, M. (2014). What's going on inside the brain of a curious child? *National Public Radio*. Retrieved from http://blogs.kqed.org/mindshift/2014/10/whats-going-on-inside-the-brain-of-a-curious-child/
Snow, C. (2002). *Reading for understanding: Toward a R & D program in readingcomprehension*. Washington, DC: RAND Reading Study Group. Retrieved from http://www.rand.org/pubs/monograph_reports/MR1465/MR1464/pdf
Taboada, A., & Guthrie, J. T. (2006). Contributions of student questioning and prior knowledgeto construction of knowledge from reading information text. *Journal of Literacy Research, 38*(1), 1–35. https://doi.org/10.1207/s15548430jlr3801_1
Therrien, W. J., & Hughes, C. (2008). Comparison of repeated reading and question generation on students' reading fluency and comprehension. *Learning Disabilities: A Contemporary Journal, 6*(1), 1–16.
Wilhelm, J. (2007). *Engaging readers and writers with inquiry*. New York, NY: Scholastic Press.
Willingham, D. (2015). *Raising kids who read: What parents and teachers can do*. San Francisco, CA: Jossey-Bass.
Yopp, R. H., & Dreher, M. J. (1994). Effects of active comprehension instruction on attitudes and motivation in reading. *Reading Horizons, 34*(4), 288–302.