

# Kindergartners' Questions Become the Curriculum

Paula Rogovin

This year, our kindergartners have been on an exciting adventure that has “taken us around the world.” The very first day of school, our students thought about what they would like to learn about their new school, The Manhattan New School, PS 290, in New York City. Here are a few of their requests:

- \* Who works in our school?
- \* How many children go to our school?
- \* How did they make the windows?
- \* How did they make the (wooden) cubbies?
- \* How did they make the carpets?
- \* How old is our school?
- \* How did they make the (brick) walls?
- \* How did they make the (plastic, metal) chairs?
- \* How many computers are there?

In March, we added several other topics to that list: How do we get the water for the drinking fountain? How do we get foods (chocolate milk, regular milk, watermelon, carrots, chicken...) for our cafeteria? How did they make the lights?

Did someone ask us when we were children what we wanted to learn? Were our families invited to participate in the curriculum? When teachers create a curriculum around the children's interests and family involvement, we bring adventure and some really deep and profound learning to our young students. I'll describe here just some of those adventures.

## Research Groups

There are two research groups in our kindergarten class, each consisting of about 10 to 15 students and a preservice teacher who meet for 30 to 45 minutes in the morning, three days each week. Toward the conclusion of their research workshop, the two groups share some their research with everyone, so the topics are known to the whole class. (Having one research topic for the whole class also works well.) On the fourth day, we usually have a research-related interview that involves the whole class. We also have field trips to research-related sites, weekly nature walks, and visits to a nearby construction site.

My research group focused on the beautiful oak cubbies that were built into our classrooms 112 years ago. We started by talking about what we already knew about wood, and then

the children asked questions:

- \* Who made the cubbies?
- \* Where did the wood come from?
- \* How did they get the wood?
- \* How did they make the cubbies?

These questions became the source of the curriculum for our research group. We posted these questions (and others, as they arose) on the wall and returned to them occasionally so children could see that, over days or weeks, the questions really were being answered.

We made a list of ways that we could find the answers. I see the goal of educators as helping children find multiple ways of finding and even verifying answers. In the beginning of the year, children had just a few ideas about where to find answers. In the process of doing the research, we expanded far beyond nonfiction books to videos about the work of lumberjacks and saw mill workers, historical fiction, experiments with wood, pictures and photos, websites, newspaper articles, interviews, and a trip to a cabinet shop. While researching about logging, the children invented ways to get heavy logs from the forest to the saw mill, using pieces of wood and blocks, string, tape, and model railroad tracks and trains from our classroom “construction site.”

## Messages to the Family

Each week, I write a bulletin called “Family Homework,” informing our students' families about our work in reading, writing, math, and our social studies research. I explain what we are doing and ask them to help us find resources for our research. In particular, I ask if they know anyone whom we can interview—in our classroom, at their work site, or anywhere in the world (on Skype). We Skyped Archer's Uncle Matt in Western Australia when we were learning about how to get wool for carpets. Matt has 2,000 sheep! We interviewed Allison's family friend, Steven, in Texas, when we were learning about how plastic is made for chairs and other things. Steven works in an oil refinery and actually makes the plastic pellets from crude oil!

I'm always looking for teaching resources. I talk with my

family, friends, colleagues, and total strangers. While driving home from a family trip in the Catskill Mountains, we passed a small sawmill. I backed up the car and drove right up to the mill. The owner of the Big Dog Saw Mill welcomed us to take photos and videos. I couldn't wait to show the children the video of this real sawmill. On another day, we interviewed Rachel's father, who is a construction worker, who brought some of his tools. Mya and her father, Ricardo, made a video for us when they went during a vacation to her uncle's sawmill in southern Brazil. Then we interviewed Ricardo and Mya using a pretend microphone that Ricardo carved with a lathe at the sawmill. At the Little Wolf Cabinet Shop down the street from our school, we interviewed workers and watched them cut wood and make cabinets. The children still treasure the wood samples that workers gave them.

A few years ago, during a community study with first graders, we interviewed two visiting grandparents who lived near the redwood forest in Fortuna, California. Their parents and grandparents were lumberjacks and saw mill workers! We made homemade books about each of these interviews and trips, using the books for word study before children took their copies home.

### **Research Leads to Social Action**

A big problem arose when children got upset during our role-plays about logging. In the role-plays, some children represented trees, and others were the animals of the forest. The "animals" got angry when they lost their homes just so we could have wood for our school and other buildings. When I said, "Well, we need the wood," they shouted back at me, adamant that this wasn't right, it wasn't fair. When children are upset by what they perceive as injustices, I believe it's so important for them to look for ways to correct those injustices. Social action is an essential part our inquiry curriculum.

We set aside lots of time at research workshop to deal with their concerns. I challenged the children to find solutions to this problem. They had great ideas, such as don't cut so many trees, use other stuff to build cabinets, when you cut a tree, you could plant a new tree, don't use so much wood from trees, and recycle paper. Then, we did more research to see what ideas other people had for solving this problem. We were so excited to see that adults were using these ideas, too, and that there is a profession (forestry) with practices (e.g. sustainable timber harvesting) and laws (land management and conservation laws) to make sure that our public and private forests are not destroyed. That was amazing to kindergarten children!

This new knowledge opened up research about recycling wood, paper and newspaper.

The question then became how to teach other children and adults about this important topic. We made a list of ways including write poems, make signs, and "tell everyone" through public speaking. I thought that having the children write a play would help them understand the issues more deeply. We could perform our play for peers, friends, and families.

### **Creating a New Drama**

We gathered at story circle to come up with ideas for the play. As children suggested words or actions, I wrote them down as fast as I could. Then, we tried acting out segments of the drama. Lots of students' suggestions evolved from the role-plays we had done. The finished play, "From Trees to Cubbies," started out in the forest. Six children wearing homemade costumes represented trees. Other children had spectacular hats, representing various animals of the forest. Midori, a parent, made the hats. She had helped a lot two years ago when her son was in the class. Parents also worked with children to make the scenery.

The trees and animals "talked" until three lumberjacks walked onto the stage with their homemade "chainsaws." The trees and animals pleaded with the lumberjacks, who said that people really needed the wood, so they had to do their job. The trees and animals came up with a plan (which reflected the class's earlier suggestions about the wise use of natural resources). Then, "people and animals from all over the land, got together and worked hand-in-hand" to get a new law to protect the forests. They tried "abracadabra magic," but that didn't work. So, they wrote letters to the lawmakers. That didn't work. They made phone calls to the legislators. That didn't work. Then, they marched around the auditorium chanting, "Pass the tree law, pass the tree law!" Finally, that did it! The play culminated with children singing, "This Land is Your Land," by Woody Guthrie, accompanied by my oldest son, David, and "Where Will the Children Play?" by Cat Stevens, adapted by our music teacher, Steven Listengart.

Plays are great in so many ways. They help with reading, enunciation, community-building, self-esteem, and, best of all, growing leaders who will help make this a better world. As we practiced the lines and movements, we revised the script and sent revisions home with students, so that their family could help them practice and discuss the content of the play. In the dialogue, there was lots of choral speaking (during which several actors speak in unison)—the birds, the deer, and the lumberjacks, and the trees all spoke out for the interests of their group. Choral speaking gives children the confidence to present themselves and represent their concerns. By the time we performed the play, formerly timid or shy children spoke boldly. They even got solo parts, and performed them well.

Students performed the play for their peers during school hours and at a family celebration in the evening. Sebastian's father, Slaven, filmed the play so that each family would have a digital copy of the performance. The sequence of actions in our play reflects on the work of social movements around the world. The children chose to use a similar sequence in a play we are working on now about banning toxic pesticides (as part of our research about watermelon and other foods in our school café). Sebastian's mother, Tea, is co-directing this play with me.

The research and social action evolving from the simple request to learn about our wooden cubbies continues and will probably last a lifetime.

## Construction Workers in Our Neighborhood

The first week of school, we launched a year-long research project about the construction of the Second Avenue subway. It is a stroke of luck that the new subway Tunnel Number Three and station are right around the corner from our school. During my last 21 years of teaching at PS 290, we have made weekly visits to sites wherever there was new construction or renovation. My special interest in introducing children to workers and their important jobs came from my father, Milton Rogovin. Here is an excerpt from his favorite poem, “A Worker Reads History,” by Bertoldt Brecht:<sup>1</sup>

Who built the seven gates of Thebes?  
The books are filled with names of kings.  
Was it the kings who hauled the craggy blocks of stone?  
And Babylon, so many times destroyed.  
Who built the city up each time? In which of Lima’s houses,  
That city glittering with gold, lived those who built it?  
In the evening when the Chinese wall was finished  
Where did the masons go?...”

Every Friday, my class stops to find Trevor, who is in charge of pumping water from the tunnel, adding a purifier, and filtering it before it goes into the sewer system. We count out loud, “1,2,3, Trevor!” in English, Spanish, French, Croatian, Bosnian, Maltese, Italian, Chinese, Portuguese, and Greek—the many languages of my students’ families. Trevor usually appears and greets us with a tremendous smile. We ask about what he and the other workers will be doing that day. Children often take their families to see Trevor before and after school. During a previous year, when Trevor came to school at night to see our play, the children screamed and welcomed him as if he were a celebrity! And he is—his work is so important.

We have our other best friends: Steve, the crane operator, who honks and waves from his crane, while we say good morning to him, using Danny’s walkie-talkie. When the workers have a break, they come to say hello and answer our questions.

Our best friends from previous years included Lori, the operator of the huge gantry crane, who either talked to us by walkie-talkie or came down to say hello and answer our many questions when she was on a coffee break. It was rare to see women working in jobs other than flag-wavers. Once we interviewed Julie, a geologist at the construction site, who came to our classroom during her break. She was part of a special program to bring women into the construction industry.

A “Sandhog” is the term adopted by construction workers who labor underground on a variety of excavation projects in New York City. Rob, a Sandhog, was one of the workers who helped dig the subway tunnels and the cavern for the stations. Rob gave each of the children a special shirt from Local 147, NYC Sandhogs. (See the **SIDEBAR**) It said, “You are someone and you make a difference.” Workers gave us “presents,” such as samples of rock from underground: Manhattan mica schist

and orange pegmatite. We also met Jose and Oscar, who did seismology work to make sure the buildings and sidewalks didn’t shake too much during the subterranean blasting. When the construction company asked us to make a picture for the new T-shirt for 600 workers, our picture included Lori, Rob, Jose, Oscar, and our other friends. We got shirts, too, in appreciation for our efforts.

## Workplace Safety

One year, the Sandhogs invited our class to have a pizza party in their work container right in the middle of Second Avenue. They provided the pizza, our families brought the drinks. We’ll remember that forever.

I made sure that children look at the safety equipment the workers wore—hardhats, goggles, gloves, face masks, ear plugs, and steel-toed boots, which were strong enough to protect their toes from children and even teachers! In contrast, we looked at paintings of construction workers by Fernand Leger, the French painter. In these mid-20th century paintings, none of the workers had any protective gear. We wondered, “Why not?” We thought about why Rob said workers were required by law to wear safety equipment, and why we met special workers who were in charge of worker and pedestrian safety. How did it happen that people changed their attitudes about workplace safety? We even did role-plays, as we thought workers might have done, to get their fellow citizens to help pass laws about workplace safety.

On one of our unscheduled visits to the work site it was so noisy that we didn’t linger. We didn’t have ear protection. Back at the school, we did more research about the pulleys we saw atop the cranes. We have a big pulley on our homemade crane in our classroom construction site in the block area.

## Creating New Works of Art

Weather permitting, we sit on mats and sketch the cranes, the pump trucks, other construction equipment, workers, and other things of interest to the children. Parents and grandparents join us, sometimes with siblings in strollers. Often, the adults will join us in sketching, too.

During center time, children painted murals about the subway construction. We posted some murals in our classroom or in the hallways of our school, and some we gave to the workers as thanks for teaching us so much. Each mural had large captions and labels, which provided great help with spelling and reading.

Some of the workers invited us to the work office, where they mixed sand, water, cement, and rocks, and then poured the concrete into a mold they had made, with one block for each child. We made a mural as a thank you note for the workers.

A few times during the year, after a trip to the subway construction site, each child wrote a page for a homemade book. Parents volunteered to print copies of the book at work, or I get permission to print at school. We use the books for word study before we send them home for the families to keep. Families treasure those homemade books.

As we near the end of this school year, we wonder what we'll see at the construction site. We also wonder about how water gets cleaned on its way to our drinking fountain, about how macaroni and cheese in our school café is made, about what social action might arise from our research....Anything is possible! 🌍

#### Notes

1. This poem was also quoted in my book *Classroom Interviews: A World of Learning* (New York: Heinemann, 2000). "A Worker Reads History" by Bertolt Brecht from *Selected Poems, Bertolt Brecht* H. R. Hays, ed. (New York: Reynal & Hitchcock, 1947). Reprinted by permission of Ann Elmo Agency, Inc.

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Donkey puncher at gyppo logging operations, Tillamook County, Oregon. (Courtesy of the Library of Congress [www.loc.gov/item/lsa1998003147/PP/](http://www.loc.gov/item/lsa1998003147/PP/))

## The Sandhogs

Local 147, known as the Sandhogs, are part of the Laborers' International Union of North America (LiUNA), "the most progressive, aggressive and fastest-growing union of construction workers, and one of the most diverse and effective unions representing over 800,000 men and women working towards better wages, benefits, safer job sites, and more opportunity." Links at the website ([www.sandhogs147.org](http://www.sandhogs147.org)) tell about Local 147 and LiUNA history. A free booklet, *SANDHOGS: A History of the Tunnel Workers of New York*, by Paul E. Delaney, is online at [www.sandhogs147.org/ULWSiteResources/sandhogs147/Resources/file/Sandhogs-History.pdf](http://www.sandhogs147.org/ULWSiteResources/sandhogs147/Resources/file/Sandhogs-History.pdf).

Sandhogs are New York's legendary urban miners, having "built every tunnel in New York and the foundations for many of the city's bridges." They built the caissons that formed the foundations for the Brooklyn Bridge; the Holland, Lincoln, Battery, and Mid-Town tunnels; the subway network that transports four million people a day; the city's sewer tunnels; and the steam tunnels that still provide so much of its power. Finally, the Sandhogs built all the water tunnels that bring the city's water—a billion and a half gallons a day—to New York from many miles away.

Today the Sandhogs are busy on a number of projects—finishing the second stage of a vital new water tunnel—City Tunnel Number Three; extending the 7 Line of the subway over to the far west side of Manhattan; connecting the Long Island Rail Road to Grand Central Station; and building a new filtration plant for the city's water system in the Bronx.

Building tunnels is tough and dangerous work, so to protect themselves, workers formed a union and still strive to make their job as safe as it can be. Nevertheless, since work on Tunnel Number Three began in the early 1970s, twenty-four people have lost their lives in accidents related to the construction. (Photo by Keith McIntosh. Courtesy of Local 147 NYC SANDHOGS LiUNA)

