

Thought and Practice: (1987-1991) the Journal of the Graduate School of Bank Street College of Education

Volume 2 | Number 2

Article 3


1989

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Recommended Citation

Radens, E. C., & Schwimmer, S. (2016). Thinking Together: The Value of Discussion in the Five Year Old's Classroom. *Thought and Practice: (1987-1991) the Journal of the Graduate School of Bank Street College of Education*, 2 (2). Retrieved from <http://educate.bankstreet.edu/thoughtandpractice/vol2/iss2/3>

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THINKING TOGETHER: THE VALUE OF DISCUSSION IN THE FIVE YEAR OLD'S CLASSROOM

Elizabeth Clancy Radens and Susan Schwimmer

"You don't have to have water," said Daniel.

"Yes you do!" Aaron lived near the reservoir we visited and felt almost proprietary about it.

"You could drink something else," countered Daniel as if to say 'you're not so great'.

"You could drink soda," David joined. Turning to a teacher, "Is there water in soda?"

"I think there is."

"Well you could drink orange juice," said Catherine. "Oh no (modern child), you've got to add three cans of water!"

"Apple juice! You could have apple juice," said another.

"Where does the apple juice come from?" asked a teacher.

"Apples!" several children replied.

"Apples come from trees," said Aaron.

"And apple trees need water," cried Daniel.

There was a pause. All were lost in thought.

"You could drink milk," said a child.

"Milk comes from cows."

Elizabeth Clancy Radens, a longtime teacher at the Fieldston School in NYC, continues to develop curriculum for Fieldston Outdoors, a summer camp committed to environmental education with the history and ecology of the Hudson River at its core. There she endeavors to integrate story telling, trips, folk music and visual arts in a context of adventure. Susan Schwimmer currently teaches in the Early Childhood Center at Sarah Lawrence College. Both authors currently administer Fieldston Outdoors.

“Cows eat grass.”

“Oh, and grass needs water!” Another pause.

“Well . . . you could eat.”

“You could eat meat.”

“But meat comes from animals.”

“Animals like cows eat grass.”

“Grass needs WATER.”

“Bread?”

“Flour! Flour is grinded wheat.”

“And wheat needs rain . . . WATER.”

“Everything that’s alive needs water!”

“Yeah! Even sugar.”

It was May and this spontaneous discussion among kindergartners was carried on with an ability that had been carefully cultivated over the school year. One of their teachers was reminded of a similar topic in a textbook from her own school days. “All Forms of Life Need Water” headed the chapter. How dull it had seemed. In contrast, here were five year olds leaping up, eyes shining with delight, with their own discovery of that fact.

We believe this excitement is the consequence of an educational stance: The teacher places high value upon questions—child or adult generated. Discussion has become a centerpiece of the five year old’s program. Why? Because discussion stimulates children’s thinking and helps build a community out of a group of five year olds.

These ideas are set against a philosophical background that has two main tenets: The first that child development is always the determining factor in the school program; the second is a Deweyian, progressive view of education where social studies functions as the central core of the curriculum. We believe that not only do children learn by doing, as Dewey stressed, but that learning is deepened and perpetuated by reflection upon the “doing”. Discussion invites reflection and it clarifies thoughts as efforts are made to express them. Responses of peers support individual expressions, confirm opinion or challenge belief.

Just as the subject of “water” is so potentially interesting to five year olds (because of recent bladder control? perhaps even the experience of birth itself), so is the subject of origins, that which evokes the question, Where did I come from? There are probably as many contexts for thinking about origins as there are classrooms. In this particular room, the experience with Monarch butterflies almost always provokes this basic issue for the children.

A floor-to-ceiling flight cage made of netting provides a non-abrasive enclosure for the butterflies’ delicate feet and wings. A door in the side permits children to go inside as well, to hold and feed the butterflies sugar water and the nectar of field flowers. If we’re lucky, two butterflies will mate and the female will lay eggs from which caterpillars will emerge.

Some child questions are explored again and again. “Where did the first butterfly come from?” There is much conjecture. The teacher provides no solutions.

Children find answers to other questions through reason and interaction. After watching a Monarch egg day after day until it finally hatched into a caterpillar, Elizabeth asked, “How many eggs do you have to see hatch before you know how long it takes?” Tara answered, “One.”

Elizabeth: “Then you just know about that one. You have to watch them all.”

Tara: “You can’t watch them all.”

Elizabeth: “Then you have to watch a lot.”

Observation of change can answer their questions and inspire logical thought. Long after the first butterfly hatched Elizabeth exclaimed, “When butterflies mate you get caterpillars and not butterflies so fast.”

Teacher: “What do you mean? What came before?”

Elizabeth: “Plain butterfly” (Teacher recording in cartoon form on the blackboard).

Teacher: “Before that?”

Elizabeth: “Chrysalis.”

Teacher: “Before that?”

Elizabeth: “Caterpillar.”

Debra jumps up excitedly. “I get it! It keeps on going. It happens over and over again! The caterpillar what comes out of the egg turns into all those things and becomes a butterfly and mates and lays eggs and it keeps

on going!" As Neil Postman (1990) says, "the modern inductive lesson requires a wedding of intuition and induction. The sudden new perception of relationships, similar to the celebrated 'aha' experience, though probably on a smaller scale, is a necessary part of the generalizing process."

We want to interfere as little as possible with the opportunity for discovery that the Monarch butterfly study affords. Teachers provide live specimens and not much else in the beginning. There does come a time however, when more information than can be inferred is needed. "What do butterflies do in winter?" for instance, requires more than the children's own resources. Through stories and pictures we see that Monarchs fly to a place (Mexico) where it is warm in winter and food is plentiful. After children have had real butterflies to count, draw, write poems, dance about—only after giving children time to experience—do we present second hand information: photographs of the life cycle, factual story-books about Monarchs, telling them about Dr. Urquhart's (University of Toronto) success in tagging them and tracing their migratory routes.

Inevitably, careful as we are, a butterfly will die. Outdoor conditions are simply healthier. What will happen to our other butterflies? We talk about them. Some children note that they have a long trip before them. Others mention that it will get too cold outside for them here in New York if we keep them too long. Someone may have noticed it's harder to find flowers around here than it was. Some children want to release them immediately, while others, unable to let them go emotionally, wish to keep them in school. "

But they'll die," a child says. "Do you want them to die?"

"No."

Teacher: "But you still don't want to let them go, do you?"

It turned out many children didn't want to let them go but realized this would mean causing them to die. They were all able to express sadness about letting the butterflies go along with their ultimate desire for them to remain alive. The children were able to prevail upon the last hold outs among them to free the butterflies. We then took a trip to the Hudson River along the Monarch migratory route and there watched as our butterflies flew south toward the George Washington Bridge and beyond.

On a cold day in late November our last butterfly was born.

Teacher: "What shall we do?"

A Child: "Let it go."

Another: "It's too cold."

Another: "It can't get flowers."

Another: "If we were more souther it would find flowers."

Another: "If we keep it, it will die."

Another: "Let it go."

Another: "It'll still die—it's cold."

Jason: "What if we drive it. We could go on a trip."

Teacher: "You mean all of us?"

Many: "Yes! Yes!"

Teacher: "You mean to Mexico?"

Children: "Yes!"

Someone: "It's too far to drive."

Edward: "You have to take a plane."

William: "I'm not going."

Teacher: "Why not?"

William: "I've got to take care of my dog."

Megan: "I've got to go to Gymnastics."

Debra: "I'm not going either."

Teacher: "Who wants to go?"

Only four of eighteen children raise their hands.

Jason: "Maybe we could drive them halfway cause then it would be warm and they'd have flowers and they could fly the rest of the way."

Matthew: "Yeah. To Florida!"

Philip: "Florida is too far!"

Jason: "Maybe we could put the butterfly on the plane. When they get there someone could open the window and it could fly out."

Philip: "Who would open the window?"

David: "In the plane they'll be warm cause they're closer to the sun!"

Teacher: "Could we really go to Mexico?" Some children say yes, others no. "You know we really couldn't. We wouldn't be back for the houses. Your parents would worry. We'd have to buy airplane tickets and that's a lot of money. But did you ever hear of air mail? You can send packages. When Dr. Urquhart sends butterflies he puts them in an envelope and then puts the envelope in a box. Now, if we knew someone who lives in a warm place...."

Katy: "My Grandmother lives in Florida!"

We actually did mail the butterfly to Katy's Grandmother. She sent a letter back telling of its safe arrival and how she watched it fly to a Eucalyptus tree.

Children have to think before they can understand all the aspects of a Monarch's life cycle. Discussion can be the process by which they do that.

Once again an important emotional issue for five year olds underlies the talk about migrating Monarchs. It is clear that the children's newly found independence and their old reluctance to separate from their parents are still not reconciled.

Some discussions occur because circumstances arise that upset some of the children. One day we were gathered for some other purpose when someone discovered that the frog was dead. It was hard to restrain people, everybody wanted to see it at once. Most dared touch. Was it really dead? Most thought yes. If so, could it become alive again, the teacher asked.

"Of course not!" said Tommy. The tone was 'what a silly idea'.
Annie wasn't sure. Nor was Luke.

The teacher (thinking this was a place to step in) said, "Once something is dead, it stays dead." Then wondering if the children would think of burying it as most five year olds do, she asked, "What would you like to do with it?" She hardly expected the reply.

Pierre jumped up, "Mail it!"

Consternation! Everyone asked, "Mail it?"

Teacher: Who would you like to mail it to, Pierre?"

Pierre quite pleased with his answer replied, "Dr. Singer" (who is the principal).

Paul: (derisively) "Silly! He's not *that* kind of a Doctor!"

"I know!" cried Tommy (who had moments ago said nothing dead could come alive with such conviction) "Let's send it to the vet!"

Here discussion provides a vehicle for the children in their search for understanding, and satisfies their need for community in the face of loss. At the same time it illustrates the fact that the most sophisticated five year old can lose his/her grasp on the distinction between fantasy and reality when faced with a fearful situation.

In spring we took a series of trips in and around New York Harbor. As we did so, such recurrent sights as the World Trade Center and Statue of Liberty were greeted with delight by the children. Heated arguments however, arose about the former.

“See! I told you the one with the antenna is taller!”, cried Jonathan as the twin towers loomed in the foreground as we drove south on the highway in Manhattan.

“See! I told you the one without the antenna is taller!” cried Anthony as he pointed triumphantly from the Staten Island Ferry.

The fact that the view from Brooklyn showed the towers to be of equal height did not resolve the issue for the fives. They so tended to believe what they saw. Discomfort with the contradictions led the search for new ideas among the group. The teacher’s question “Do you think the buildings move?” was even entertained, albeit momentarily. Someone finally said “the one that’s closer looks bigger.” But someone else said, “I know! The one with the antenna is bigger because of the antenna.”

The teacher does not interpret the visual mystery for the children. The learning comes from the excitement and the tension around the argument. To be passive and hear an adult’s logical explanation would not move a child into another mode of thinking. The dynamic exchange between children creates the stress necessary for the growth of their thought processes. However, individual children cannot be moved beyond what they are conceptually ready for. As Sigel (1969) interprets Piaget, “socialization creates stress that induces cognitive transformation” (p. 470).

It was midwinter and the children were fascinated to know that Eskimos got everything they needed from their surroundings. Someone asked while we were reading a picture book: “What are kayaks made from?” The teacher repeated the question. “Snow!” one child offered.

“That would melt!”

“No, it wouldn’t. Igloos don’t melt.”

“In the water it would,” said another.

“Wood!”

Teacher: “Where does wood come from?”

“Trees! Oh yeah. They don’t have any trees.” This was indicative of the kind of responses. Andra finally said, “I know. They catch a whale and hollow it out and that’s a kayak!” Given the problem, children have been stimulated to think creatively.

In the experience of talking together perceptions become altered by what others say. It is a dialogue in the true sense of the word. Teachers point out the grain of truth in each hypothesis. Finally we look up photographs. We find that the kayak is made of bones with sealskin stretched over it (not so dissimilar really). The children, having speculated, are now hungry for this kind of information.

Further along in the Eskimo study, the classroom, stripped of all its furniture, is full of simulated igloos. We spend about a week with children pretending to be different Eskimo families and their dogs. There are five round dwellings made of large blocks. Babies are carried in hoods. Lunch is taken inside the family igloo. The whole day is spent out on the hunting grounds paddling one’s kayak, sewing, carving real soapstone, telling stories around the whale oil lamp. There comes a time when we have to raise the question: Is it time to dismantle? After a short discussion we find that although many children want to go on, some do not. And since we need everybody for our play, we’ll have to stop. There is disappointment, especially for some, but the play was satisfying and they are willing to move on. The dolls, the old fur coats, the cardboard harpoons, the blocks are stored away.

The teacher calls out to everyone in the big, clear space, “Listen everybody, we are supposed to make a school here. Have you ever heard of such a thing? What does a school need?”

(Laughter) “A school! You know—you need tables and chairs.”

Teacher: “What are those? We don’t have those in the North Pole.”

Child: “It’s like a snow bench but made from wood.”

Teacher: “Wood! Wood is so precious. How could you get so much of it?”

Child: “From trees.”

Teacher: “Trees—what are those?”

Child: “They’re like giant flowers made of wood.”

This discussion continues in a similar fashion, the children ultimately describing a school in terms of their arctic environs: A table is like a caribou with its head cut off . . . a ladder is a sled in an upright position . . . a classroom is as large as five musk ox standing on top of each other . . . drawings are like scratching in stone . . . wooden blocks like the snow blocks of an igloo. Through metaphor the children finally succeed in communicating with a resistant teacher. The form seems so striking here in terms of their five year old understanding of the arctic. More surprising is that the group has become so adept at discussion and explanation that they can speak from the perspective of the listener. What a leap beyond egocentrism it is for a five to be able to define their familiar world in terms of an exotic realm! The teacher is emotionally reassuring because the children are young, but still must be intellectually provoking to get at deep learning. She provides the grain of sand in the oyster.

Nurturing descriptive language is part of the process that enables children to have such rich discussions. The use of metaphor in the above discussion may be unusual, but it is common for children to speak metaphorically when impelled to communicate. Isolated metaphors are not unusual. Many examples come to mind. A child, after picking natural dye stuffs said, "I saw a bird with legs like pokeberries, not the berries, just the pokes." Months after the last chrysalis had hatched its butterfly, a child remarked, "A butterfly hatching is like the shell of a baby clam cracking open." A child thought "velcro is like tar baby."

The following discussion shows children not only using verbal symbols to express themselves, but using their bodies as well. As fives need to "do" in order to learn, they are usually active. Here they use their physicality as their language.

David and Nicky were fondling and sniffing the loaves of homemade bread on the table. "We grinded all that flour with our muscles," said David. It had taken months. Everybody had contributed by turning the hand flour grinder. It had been hard. When a teacher wondered aloud how flour was ground for bread bought in the store, people had several ideas.

"By machine," said Eric.

"Motor," said Michael.

“Gears,” said Derek.

“How about in the old days before there were motors?” the Teacher asked.

“Windmill,” said Lisa (she had remembered The Little Red Hen).

(Later, after we had visited a watermill at Phillipsburg Manor) “Derek said there would be gears. Did you see gears?” Many had. “Could you be a gear?”

Lisa and Andrea were gears by cartwheeling in opposite directions. They tried to stay together but couldn't. David and Akin lay on the floor lengthwise, bodies touching and rolled in toward each other and over. Kim and Robin became grindstones. Robin lay still and Kim lay on top of her and turned.

Then Eric, Mike, and Mark were the water wheel. Avery and Joey lay head to head, grasped hands, and were the shaft which connected the wheel and the gears (Lisa and Andrea) and the grindstones (Kim and Robin). David was the miller letting the corn into the hopper. Akin said, “I'll be the gate!” He stood in front of the wheel and jumped up to let in the water. The wheel began to turn. The shaft tried but giggled because it couldn't spin in place.

Later, a teacher asked, “Do you think we could build the mill?” Another teacher suggested trying it in paper first. Mary Helen said, “I know how!” She made intense motions with her hands. “Cut it here, put a little tape there.”

The mill committee sat at a table. Mary Helen explained what was needed to execute her idea. Pretty soon there were a pair of paper circles held equidistant by paper Ls around the circumferences between them. “I get it,” said Eric. “It's a ferris wheel.”

“But what sits in the seat?” the teacher asked.

“Water,” said he.

“No,” said Mary Helen. “It doesn't sit—it stands on its head!”

Thus the individual is inspired by the shared experience to do independent work. That work in turn sparks the group to new endeavors. This is what we mean by community. That's what we mean by thinking. The process, once started, can go on and on.

We see the teacher as a catalyst in this process—a person who speaks the language of five year olds, not absorbed in right answer nor intent on closure.

The children may forget many details of what they learned in kindergarten. We like to think, however, as in the Chinese proverb: If you give a man a fish you feed him for a day. If you teach him to fish you have fed him for his whole life.

In conclusion, we have observed groups of five year olds collaborating with their teachers and each other to develop their own thinking through discussion. Fundamental to the process have been the age appropriate activities that stemmed from a social studies core curriculum. Children's work is enhanced by their words. Children's dialogue confirms their growth.

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