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Planning Meaningful Curriculum

A Mini Story of Children and Teachers Learning Together

The constructivist approach to education espouses the belief that children are capable learners with many questions, ideas, feelings, and theories about their world (Cadwell, 1997; Cadwell & Fyfe, 1996; Chaillé & Britain, 1997; Edwards, Gandini, & Forman, 1999). Consistent with the constructivist perspective is the view that teachers and young children are “co-learners” in the classroom who benefit from learning experiences that offer: 1) connections to their prior knowledge, 2) opportunities for observation, 3) opportunities to construct questions and hypotheses, and 4) time to revisit ideas and to reflect on their actions. This environment encourages children to work and learn together by asking questions, developing theories, planning investigations, and reflecting on actions. As children collaborate they share their ideas or theories, and exchange points of view. Thus, constructivist classrooms encourage active, shared learning experiences that lead to the co-construction of knowledge (Berk & Winsler, 1995).

For both children and teachers, observation plays a critical role in the development of a meaningful curriculum. Careful study of children’s classroom behavior provides teachers with the information to plan connected learning experiences that build on children’s interests and allow for continued inquiry, thus sustaining children’s active engagement. In the process, teachers become “researchers” with children. Teachers may record their observations using photographs, videotapes, audiotapes, or written notes. Such documentation can be used when teachers collaborate to study aspects of the children’s actions. Using the information collected, teachers can generate questions, formulate hypotheses, and propose next steps for their curriculum.

As children learn to hone their observation skills, they will construct a broader range of questions and theories. Observation encourages both teachers and children to slow down and direct their attention to, and reflect on, their actions. By adding depth to their observations, young children can become critical thinkers and learn to appreciate multiple perspectives.

The following article describes how practicum students, university faculty, and preschool children at one school used their observations to create connected learning experiences. Inspired by the Reggio Emilia approach (Edwards, Gandini, & Forman, 1999; Hendrick, 1996), the practicum instructor and university students used observation and documentation to plan

Practicum students from the local college, who were placed in Ms. Carl's class to learn about planning meaningful learning experiences, helped plan curriculum that evolved from the questions or ideas expressed by the children as they observed the world outdoors.

curriculum. The teachers recorded their observations of children using videotapes, audiotapes, photographs, and written notes, paying particular attention to the children's use of drawing. The children studied their natural world and shared their ideas through conversations with others.

Tools for Observation

The children in Ms. Carl's preschool class were observing changes to the outdoor environment in their neighborhood. During the Alaskan summer months, flowers, shrubs, and trees grow rapidly. Ms. Carl introduced the children in her class to the signs of summer as they walked to the park, noting the variety of flowers and plant life. Practicum students from the local college, who were placed in Ms. Carl's class to learn about planning meaningful learning experiences, helped plan curriculum that evolved from the questions or ideas expressed by the children as they observed the world outdoors.

The practicum students recorded the children's actions and words, and introduced the children to several observation tools, such as cameras, camcorders, a light table, and drawing tools. These observation tools enabled the children to record their interests and obtain documentation to use as referents. Recordings

(audiotapes, videotapes) of children's dialogue with each other and the adults served as another observation tool for documentation. During conversations, the children would pause to think about, or revisit, their ideas. The practicum students used their dialogue with the children as a way to reintroduce the children's ideas for further study. The children's drawings became graphic representations of their thinking.

Use of Cameras and Photographs.

To encourage the children to examine their environment, take notice of interesting scenes or images, and create a visual record of their observations, the practicum students offered the children cameras to use on their nature walks. By collecting the children's photographs, the teachers could "re-visit" the children's interests or ideas. Because the children were unfamiliar with the concept of using cameras as an observation tool, the practicum students encouraged the children to "find something that is interesting" to photograph as they walked along. Initially, the teachers recorded what the

children said while taking the pictures. After studying their observations, the teachers talked to the children about their photographs. Eventually, they displayed them, along with brief descriptions of the children's actions and words.

The practicum students planned classroom activities using what they had learned about the children's observations on the walks. The practicum students also used cameras, but their purpose was different from the children's. The practicum students recorded their observations of the children's actions, while modeling how to use the camera as a tool.

The Light Table. During the days that followed, the children's interest in their surrounding environment increased. Once outdoors, the children noticed insects, cloud formations, and flowers and other plant life. In the classroom, they explored the life cycle of the giant moth, tadpoles' transformation into frogs, and plant growth. The children also gathered materials from their walks (leaves, branches, dandelions, and bark), which they examined and made into classroom displays.

To advance the children's observation of the environment, the practicum students showed the children how to use a light table to see their materials in further detail. The light table was arranged next to visual

displays of the children's collected materials and with baskets of other natural materials. The practicum students listened and recorded the children's ideas as they viewed their collections on the light table. Then, they planned experiences based on the children's interests, questions, or ideas. The cycle of observation, study, and planning continued for the duration of this curriculum experience.

In addition, the practicum students arranged paper and pencils next to the light table, inviting the children to draw or write about their collections. The children used the light table to study detailed aspects of their collected materials. They traced leaf patterns and commented on details that they had not noticed before—the "lines" (veins) in the leaves, for example. As a result, the children's drawings of leaves showed shaded areas, lines for the veins, and different shapes.

The children's interest in the outdoors led them to collect materials from home. One morning, Darrel, age 5, brought a spruce bark beetle in a jar to share with his friends. He asked to use the light table so he could further examine it. The light table served as another tool for the children to use as they thought about their experiences from the outdoor walks, shared their interests with other children, and extended their interest in the outdoor environment.

Introducing Drawing as Observation. When Darrel noticed Jody, a practicum student, using a camera, he asked her to take a picture of his spruce bark beetle. The children had become familiar with taking photographs of things that interested them, and they knew they could discuss the photographs later in class. Jody noted Darrel's interest in the beetle and recorded the children's ideas about and knowledge of the beetle. Unfortunately, the camera would not operate and Jody could not take a photograph. Jody suggested they use drawings to create a record. Children can be shown how to use drawings as a written record (Forman, 1989). Jody explained to Darrel that she wanted to make a drawing of the beetle so that she would have a perma-

nent recording she could use to remember the beetle. She encouraged Darrel to tell her about the beetle as she drew, describing the legs, the wings, and the antennae, in order to ensure an accurate representation. Darrel told Jody that the beetle lived "under the bark." This conversation about Darrel's spruce beetle was the beginning of Jody and Darrel's further inquiry.

As they talked, another practicum student found a working camera and used it to photograph the beetle. The drawing and photograph, along with Jody's written observations of the experiences, were used as documentation with the other practicum students. The practicum students studied and discussed the transcripts and drawings as they planned other experiences with Darrel and his classmates. Darrel and Jody originally intended to research more about the beetle by examining it on the light table. Darrel misplaced his beetle, however, when he took it home for the weekend. Jody again asked Darrel to use drawing as a way to share his knowledge about the spruce beetle. The drawing and dialogue became a tool for further observation and for building inquiry into the curriculum.

Drawing and Dialogue

Children's drawings can be graphic representations of their thoughts, questions, or ideas, helping them express what they understand and remember (Forman, 1989) and what they wish to know. Jody wanted Darrel to know that his ideas could be represented through drawings. In addition, Darrel could verbalize and clarify his thinking as he drew.



Darrel observes details in the materials using the light box.

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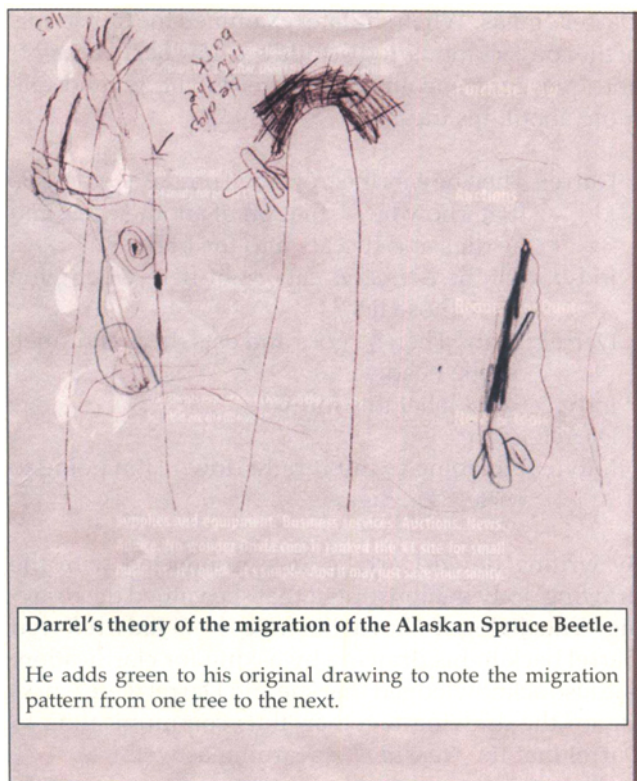


Figure 1

Darrel draws his theory of the spruce beetle migration, "the circle of life."

Finally, Darrel's recorded ideas about the beetle might provide his classmates with ways to extend their own observations of nature.

Reggio Emilia educators commonly study conversations among children, and between children and adults (Cadwell & Fyfe, 1996; Edwards, Gandini, & Forman, 1999). They believe such conversations allow children to reflect on their ideas and extend their thinking (Cadwell & Fyfe, 1996). Thus, the practicum students working with Ms. Carl's class used conversations with the children to learn about the children's ideas, extend the children's thinking, and reflect on their own teaching practices. Jody incorporated drawing activities into her dialogue with the children.

Jody remembered that Darrel had explained that the spruce bark beetle lived under the bark, and so she directed

Darrel back to that observation:

Jody: Remember when you brought the spruce beetle in for everyone to see? You put that spruce bark in the jar for it to eat. I [had] never seen a bark beetle, a spruce bark beetle. I was wondering if you knew how they got inside the tree and what they did after they got inside of it.

Darrel: They ate all the green. They . . . ate all of the green taste off, the green smell off of the, uh, those green parts.

Jody: I was wondering if you could help me understand what you were thinking by drawing a picture of how the beetle got inside.

Darrel: They, like, get in.

Jody: I have some paper; maybe together we can figure out how they did that.

Darrel: Watch. I will draw. 'Cause I'm good at drawing. Let's say that is a tree.

Jody: Show me on the paper where that tree is. Okay. . . . So there's the tree.

Darrel: And this is a leaf tree, and he, like, climbs up onto it.

Jody introduced the drawing activity by telling Darrel that she wanted his help in understanding his ideas (see Figure 1). By showing interest in Darrel's ideas, Jody supported her role as a co-learner. This way of communicating to a preschool child supports the concept of co-construction of knowledge, or of teachers and children learning together. Instead of merely asking Darrel to draw a beetle as part of a theme on bugs or the outdoors, Jody invited Darrel to use his drawing as an expression



Children examine the spruce beetle.

of how he thought something works. Specifically, she wanted Darrel to explain how, and why, a spruce beetle penetrates tree bark. The result led both Jody and Darrel into discussions and investigations.

A constructivist view of education emphasizes children's need for opportunities to ask their own questions, study their answers, and revise or modify their thinking. Curriculum subjects are selected and studied deliberately, with time set aside for observation and discussion. Both children and teacher connect their prior ideas or thinking with the current activity. The practicum students described here noted that the children gained confidence in their ability to use drawings as a way to explain their ideas. They had learned a new purpose for drawing.

Darrel: [The beetle] spreads out his wings on this tree. He spreads his wings.

Jody: Show me how on the paper. Can you show me, on the paper, how he does that?

While Darrel and his classmates were accustomed to drawing, the idea of using drawings to explain ideas was new. As Jody directed Darrel, he began to elaborate on his thinking as he drew.

Darrel: And there's his other wing. There's his other wing, and he, like, flies over to this tree that has the big branches on it. And sparks on it, the big spines on it.

Jody: The needles?

Darrel: And he gets in here. Then he goes into one of these to the tip top. Then he eats down, eats down, eats down, and he comes to another needle and goes up to the top and eats down.

Jody: Is he on the inside of it, or the outside of it?

Darrel: He's on the inside of the needle.

Jody: The inside.

Darrel: Then he goes through the branch and goes to another needle and goes to the top, then goes down, and eats, eats, eats, eats, eats. Then he moves on through the tree just eating, eating, eating, eating.

Jody: You're drawing your lines inside the tree. So he stays inside the tree?

Jody commented on specific aspects of Darrel's drawing to direct Darrel's attention to his thinking about how the beetle lives in the tree. His initial ideas continued to evolve into his "theory" of the spruce beetle's migration patterns.

Role of the Teacher in Dialogue

As Darrel and Jody continued their discussion, Jody commented on parts of his drawing and wrote down

Darrel's ideas. When she later examined the transcripts of the conversations, Jody could see how her comments and questions encouraged Darrel to clarify, and talk more about, his ideas.

Darrel: Then he eats the tree smell off the needles. So that's how he . . . flies off of another tree, and he digs and he eats into the bark.

Jody: Oh, he digs and eats right here where you drew those lines?

Darrel: Yeah. Then he goes and eats the green smell off the needles.

Jody: Can I label this for us?

Darrel: Yeah.

Jody: I'm going to put it right down. I'm going to write, "He digs. . . ."

By writing down Darrel's ideas connected with the drawing, Jody demonstrated that she valued the drawing. The dialogue above illustrates how Jody referred Darrel back to his drawing by asking for clarification. She also acknowledged that she and Darrel were working on the drawing together, thus communicating to Darrel that the "teacher" is learning as well.

Jody: What happens to the trees when they eat them?

Darrel: You know how sometimes in the fall when the leaves get dry. Well, that's what happens when the spruce bark beetle comes and eats the green off the tree. They're brown.

The conversation continued, and Darrel used the "circle of life" concept to name his theory about the life cycle of the spruce beetle.

Darrel: They fly into a spruce tree, then, like, um, they eat in a little circle. Then, [he] makes it out.

Jody: Can you draw that on one of these so I can understand what you're thinking? That's where they eat the circle?

Jody made it clear that what Darrel had to say was important, and that she wanted to understand his thinking. This way of keeping the conversation moving encouraged Darrel to develop his "theory" further.

Darrel: They eat into the circle. Then they . . . close up the door.

Jody: That's the door?

Darrel: Like, close the door back. Then they sleep all winter. And when they're done he goes through a little tunnel, then eats back out.

Jody: He eats out the door that closed up?

Darrel: Yeah, that's how they live. Then [they] come

- back to where they've been and eat.
- Jody: And they eat, and then those trees all turn brown and dry out?
- Darrel: Yeah, and they die. The tree dies and they have to come clip the tree off. The tree just grows up another one.
- Jody: And when all the beetles die, all the beetles are gone. You don't have them anymore, ever?
- Darrel: No! They plant eggs inside of their burrow. Then they . . . stash bark inside. They hatch out—they have plenty to eat.
- Jody: Can you show me, on the paper, where they stash those eggs?
- Darrel: They go through their little home again, and . . . put eggs, then they go out and collect food like bark, and bring it back in and then put it in there—where the eggs are. Then when the eggs hatch out, they have plenty to eat until they're big enough to fly away.
- Jody: Can you show me on your picture where the eggs are? Can you draw them on there?

Jody continued to encourage Darrel to draw his ideas into the picture, keeping Darrel interested in his emerging theory.

- Darrel: That big blob has eggs inside that.
- Jody: Inside that circle?
- Darrel: Yeah. All the eggs are just in a big egg. Then, the mom brings the bark in and . . . the eggs hatch out of their big egg. Then they have plenty to eat.
- Jody: Because she put all the bark in there?
- Darrel: The tree grows back the little door, so they're warm. Then the mother dies out and then, when the beetles are big enough to fly away, they fly away and they do the same thing.
- Jody: Oh, so there's always beetles?
- Darrel: That's how they migrate. They migrate. They move from tree to tree and they go on. The mothers stay in one tree, and make it a home, then the eggs that hatch fly into another tree, and they dig in and do different things. When the other eggs are hatched out and they're big enough to go away, they fly and make another tree a home. That's how they migrate.
- Jody: They spread everywhere.
- Darrel: That's the circle of life. They spread everywhere. In the circle of life.

Through the experience of drawing, Jody and Darrel worked together to create a theory about how the spruce beetle eats away certain trees native to Alaska. In the days that followed, Darrel brought in another

beetle and several friends joined him one morning to observe the beetle moving around in the jar for almost an hour. The children debated what would happen if the beetle were to become scared, which led into a discussion of what would frighten a beetle.

Final Words

Written transcripts and drawings of the children's experiences allow teachers to examine their teaching practices. In addition, teachers can review their questions and comments, and study the ways their responses influence the children's actions or thinking. Studying transcripts to reflect on teaching practices is a means for lifelong learning.

Although observation has been common practice in the field of early childhood for some time, early childhood educators and caregivers have much to learn about using it to understand how teachers and children learn. Observations of children's and teachers' actions can shed light on how we establish our curriculum, for example. In addition, we can learn how to transform our teaching principles into daily practices. Transcripts, children's work, tapes, or written notes can offer a context for teachers as they communicate and find ways to plan experiences that evolve from children's interests, questions, or theories. The study of observations also can be a powerful context in which teachers exchange views about child development and the interpretation of children's actions and words. The experiences shared in this article are only starting places for teachers in child care or primary school settings who are interested in using observation and documentation for planning curriculum.

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