

Chapter 14

Negotiated Learning through Design, Documentation, and Discourse

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Reflective practice of teaching must stand on a well-defined theory of knowledge. Otherwise, we know not where to go. One needs a definition of knowledge to serve as a standard for effective teaching. The theory of knowledge to which we subscribe is constructivist—more precisely, social constructivism as found in Doise, Mugny, and Perret-Clemon (1975) and co-constructivist as found in Berger and Luckmann (1966), Tudge and Winterhoff (1993), Vygotsky (1986), and Wertsch (1985). We hold that knowledge is gradually constructed by people becoming each other's student, by taking an inquiring stance toward each other's constructs, and by sincere attempts to assimilate or reconcile each other's initial perspective (see Jankowicz, 1995; Palincsar & Brown, 1984). We further hold that knowledge is never verifiable through listening or by observation alone, but rather it gains clarity through a negotiated analysis of the communication process itself,

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for example, "Was that a question or a statement of fact?" This analysis necessarily contains tacit knowledge that is inferential and not literally "in the data" (Bruner, 1957; Polanyi, 1958/1998; von Glaserfeld, 1995).

Once this premise is accepted, our educational practice changes radically from a study of facts to a study of how we study and how we move from facts to meaning. The education of children now lies in helping them study their ways of making meaning, their negotiations with each other in a context of symbolization (Gardner, 1983), communication, (Tharp & Gallimore, 1988), narrative (Engel, 1995/1999; Taylor, 1993), and metaphor (Bruner, 1990).

The principles of this epistemology lead to practice similar to what we have observed in Reggio Emilia, a practice that we prefer to call *negotiated learning*. This term captures the centrality of the social, co-constructivist principles just mentioned. In negotiated learning, the teachers seek to uncover the children's beliefs, assumptions, or theories about the way the physical or social world works. Their study goes beyond simply identifying the children's interest. Their analysis reveals the reasons behind the children's interest—not strictly what is familiar, but what paradox or curiosity drives their interest qua topic. Children are encouraged to talk about what they know before they begin their projects. In a similar way, preverbal children are allowed to explore new objects or materials so that a teacher (observing the children's strategies) can infer what might be the children's theories, given those strategies (Forman & Hall, 2005). In this co-constructivist curriculum, the teachers form a community of learners with the children and with the parents and other teachers (see Rinaldi, 1996).

They discuss the social and symbolic processes through which meanings are negotiated toward some level of shared understanding. The curriculum is not child-centered or teacher-directed. The curriculum is child-originated and teacher-framed. The children discuss many interests—for example, making an amusement park for the birds that come to the school playground. The teachers reframe the goals into slightly more general concepts—say, how to make the birds feel less anxious about being away from home (see Forman & Gandini, 1994). Then specific follow-up activities are proposed and negotiated with the children and, at the more general level, with the parents (see Fyfe & Forman, 1996).

On the other hand, the curriculum could be teacher-provoked and then child-engaged. What is important here is that the teacher engages children's minds and interests in the topic proposed. For example, a teacher might invite a small group of children to join her in observing the squirrels that play outside their classroom window (something they had previously not noticed). As children and teacher comment on what they notice and converse about what the squirrels seem to enjoy doing, the teacher is engaging the children's interests. The teacher may ask probing questions (e.g., "What do you think the squirrels like about this tree?" "Are the squirrels playing or working?" "Why are they gathering nuts?") to engage children's minds. Once children are engaged and interested, the teacher can help children ask questions that give meaning to continued observations, investigations, or

experiments. All the while, the teacher is guiding and supporting children toward intended learning outcomes (e.g., develop inquiry skills and knowledge about the natural world).

We will specify three components that define negotiated learning as a dynamic system of causes, effects, and counter-effects. These components are *design*, *documentation*, and *discourse*. In general, these three components create a system such that academic skills are engaged within the context of meaningful problem solving, reflective practice, and communication among constituents. For example, when teachers document children's work and review these documents with the children, the net result is a change in the image of their role as teacher, a change from teaching subject matter to studying and learning with children (see Rinaldi, 1996). Furthermore, asking children to design their future work changes the way children talk about their work. Their talk becomes the discourse of prediction and explanation.

THREE COMPONENTS OF NEGOTIATED LEARNING

Design refers to any activity in which the designer (child or adult) makes a record of a plan or intended solution. A drawing is a design if it is drawn with the intent to guide a future reader in the construction of the items drawn or to specify for the reader a sequence of actions. For example, children at the Eighth of March School in Reggio Emilia drew the traditional sequence of acts in a "Drop the Handkerchief" game so that children unfamiliar with the game could learn the rules by reading the drawings. Children at La Villetta Preschool in Reggio Emilia drew fountains and amusement rides knowing that these drawings would be used to guide the actual construction and layout of these amusements in their outdoor playground. Designs can be in many media: a clay fountain to guide the construction of one made from pipe and hose, a wire figure to portray the movements of a dance for others to learn. Because the design will be revisited later to guide another person's actions, it must be crafted to be read. Thus, the designer should consider the readability of the representation as opposed to how precise or realistic it is. Indeed, it is often the more schematic representations that communicate the best. The educational value of design flows from the special attitude of the designer, an attitude of building a relationship with the reader, even with oneself as a revisiting reader of the design (Dunn & Larsen, 1990; Kafai & Harel, 1991).

Discourse connotes a deep desire to understand each other's words. Discourse is more than talking. Discourse connotes a more reflective study of what is being said, a struggle to understand, in which speakers constructively confront each other, experience conflict, and seek footing in a constant shift of perspectives. In effect, discourse is an analysis of communication, a meta-linguistic process in which meaning is questioned in the name of growth and understanding (Gee, 1990; Stubbs, 1983). Discourse is the voice we use for schooling and learning

(Goodman, 1992). Design and documentation serve to focus, maintain, and improve the discourse during the negotiated process of learning.

Documentation refers to any record of performance that contains sufficient detail to help others understand the behavior recorded. Whereas design represents a prediction or plan, documentation records the performance during a learning encounter as well as the documenter's interpretation of that performance. Thus, a single drawing by a child would not be considered documentation because it is not a record of the performance. However, a video clip of the child creating that drawing or a set of redrawn portions to plot the process that lead to the final drawing would be considered documentation. (A single photograph with text that describes and then interprets the unrecorded behavior, could be treated as documentation but is a less-than-ideal method for deep understanding.) The intent of documentation is to explain not merely to describe. Documentation is more than "work samples." Documentation may be publicly displayed, such as panels of photographs with explanatory text placed on the classroom walls, or may be filed in a portfolio and later studied as a collection. Strictly speaking, documentation is not a form of assessment of individual progress but is a form of explaining to the constituents of the school the depth of the children's learning and the educational rationale of curriculum activities. Documentation is central to negotiated learning, and much of what this chapter discusses deals with the relation between documentation and the two other components: design and discourse.

These comments contain a distinction between design and documentation. Design seeks to instruct; documentation seeks to explain. Design is prospective; documentation is retrospective. Both are more than the physical records. Thus, we use the word *documentation* instead of *document*, and *design* instead of *designs* to put the pedagogical function of these records in relief.

A Diagram for All Relations

To ease our discussion of this pedagogical system, we have provided the following diagram. This diagram contains all three action components and four constituents (children, teachers, parents, community). We have deliberately made the connection between the four constituents and the three action components rather loose. Otherwise the diagram would look like a tangle and cease to be useful. We describe specific relations in the text of the chapter.

These three components, design, documentation, and discourse, form a system of relations that is everywhere reciprocal. Design can be used to improve documentation. For example, the children's drawn designs can be placed within the wall panels to help explain the learning encounter. Documentation can be revisited to improve discourse by serving as a database for reflective teaching. Discourse can be documented and then used to improve a second design session. We use the flow among these components as a scheme to organize the segments

of this chapter. (Please note that as we describe the interrelation among these three components, we will venture into some suggestions for practice that have not necessarily been seen in Reggio or anywhere else.)

These components serve a variety of constituents—children, teachers, parents, and the general public. Consider how design helps children. Selected records of the children's assumptions or plans certainly serve the children as they revisit their own ideas to deepen and broaden the application of their concepts. Design helps teachers plan follow-up activities. Design helps parents who want to extend the child's study into the home, and it helps the general public understand the vision and objectives of the school.

These relations to constituents are neither simple nor one way. Constituents often work together around one component to improve another component. Teachers and children together engage in a design activity, and this improves their level of discourse when they study their designs. The design sessions are also documented. Teachers and children revisit these documents, and this in turn improves discourse further.

Traffic Within the Diagram

A useful theory not only specifies the components of a system but also makes propositions about traffic among those components. A theory tells us what to expect when one path is taken rather than another. In reference to the flow chart in Figure 14.1, here are some paths that exemplify the use of documentation to enhance discourse:

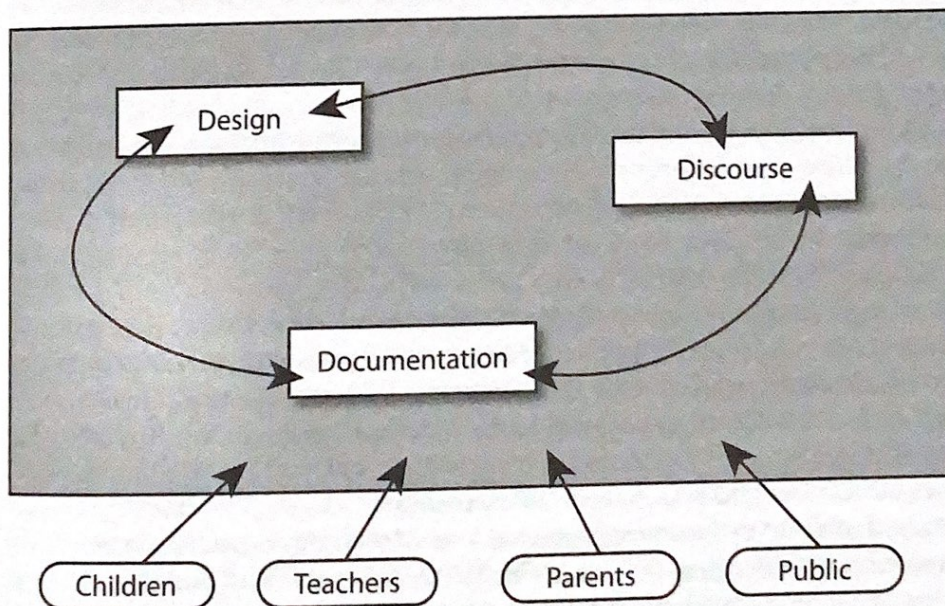


Figure 14.1 Components of negotiated learning.

Four children draw their plans for a village on the Moon, including vehicles with sticky wheels (*design*). Then they use their drawings to explain the buildings and vehicles to peers who ask them to clarify (*design affects discourse*). The teachers use an audiotape of these explanations to study the assumptions children have about how things work on the Moon (*discourse of children is documented*). By working in a small group, the teachers, using this shared referent of the audiotape of the children's conversation, discuss which comments to transcribe and how to explain this activity in a wall panel they make (*discourse of teachers affects documentation*).

PASSAGES TOWARD GREATER UNDERSTANDING

This diagram can illustrate principles of negotiated learning. We present these principles as a set of passages, from an initial understanding of a teaching practice to a more comprehensive understanding. We begin with the passage from description to design, which is a passage from a narrow view of representation as record to a broader view of representation as a recommendation for action.

From Description to Design

As we mentioned briefly, design has an instructive intent that is beyond mere description. This difference applies to many media not just drawing. However, for illustration's sake, let's consider the passage from drawing an object to using a drawing as a design. A drawing may be judged good if its referent can be recognized by another person. Granted, a realistic drawing can improve discourse, because it serves as a common referent, but such a drawing remains no more than a picture of something else.

A design, in contrast, is made to build something or instruct someone on how to do something. The designer needs to capture action in the marks and needs to help a new reader discern these implied actions. Somehow the "reader" must translate the marks on the paper into a set of acts to accomplish some desired result. For example, a drawing used to build a toy wooden boat might be drawn with less detail regarding the textures of the woods and more detail for the manner in which the parts are articulated. The interface between two parts carries more information for building the boat than does the texture detail. The design also includes marks that carry a message of action and sequence that is more than a static record of the features of a stationary object. Arrows, numbers, and a row of progressive drawings are some common techniques of representing actions. This shift from visual analysis of detail to the representation of a set of procedures is a fundamental shift in science and education (Piaget, 1970, 1978). This same shift underlies the high level use of representations in negotiated learning. Furthermore, the child's desire to explain how something should be done implies an audience, an audience that vicariously participates in the co-construction of knowledge (Vygotsky, 1986;

Wertsch, 1985). The dual emphasis on procedural knowledge and communication interfaces Piaget and Vygotsky in negotiated learning.

Here is an example of the description to design passage:

A group of children were interested in the huge sunflowers outside their window. They were absolutely amazed that the blossom head contained so many seeds. The teacher thought that this prolific blossom should be preserved in the children's memory somehow, so she suggested that the children make their own rendering of this blossom using paper and colored pencils. The drawings were beautifully done, with great attention to the individual seeds in the center of the huge flower. The teacher and children agreed that the drawing activity had sensitized them to details that they would not have noticed had they not taken pains to draw these details on paper.

On a second thought, we decided that this flower drawing activity was too limited. We asked the children why they were amazed about the seeds in the flower head. They told us that they remembered the seed that they had placed in the ground 6 weeks earlier, and now the flower has seeds in the blossom that look just like the one they planted. So we asked them to draw pictures that showed how these seeds were produced—that is, draw what they could not see, draw what they thought were the steps that took place inside the sunflower to produce the seeds. In essence, we were asking them to design a seed factory.

The drawings were diverse, clever, and revealing. The children did not give as much attention to the graphic realism of their drawing but rather became more interested in communicating their ideas about the procedures that yielded seeds in the flower's head. One child drew a set of drawings that portrayed the original seed advancing from the ground, inside the straw-like stalk of the sunflower, the same seed popping out of the blossom in the last picture! Through these designs of seed growth, the teacher found many more opportunities to engage the children's minds about their theories than were possible with the descriptive drawings of the sunflower per se.

From Display to Documentation

The passage from display to documentation travels the path from informing to educating and thereby changes the teacher's perspective from observing children to studying children. Museums, particularly science museums, are places to find examples of both displays that inform and documentation that educates. Take this frequently found exhibit, a row of silhouettes that show the changing profile of the human skull over the past 100,000 years. The display of these silhouettes is not itself documentation of an evolutionary process. The panel merely displays the evolution, informs us of its occurrence. Documentation, on the other hand, would make an explicit attempt to walk us through an explanation.

For example, we could add a caption to this row of skull silhouettes. "As humans evolved, the thickness of the brow ridge decreased, and the cranial

capacity increased, indicating a decrease in a defensive structure and an increase in brain size." Now the row of silhouettes exemplifies an interesting principle and can be studied for other features that exemplify similar principles. What might the reduction of jaw length mean? Good documentation provokes a study of the graphics because the text helps frame the graphics as examples of something more general than the features themselves.

When applied to negotiated learning, displays should be converted to documentation by adding interpretation and explanation to the graphics. A set of photographs pasted to poster board showing a trip to the farm is a display. A set of photographs captioned with the children's words would still be a display. The panels need commentary to qualify as documentation.

Imagine this set of photographs with a display of the children's words. One child, looking at 12 piglets suckling on the same sow, says, "Do all the piglets get enough to eat?" Elsewhere on the panel, an account is printed about how the children continued to talk about this relation between the supply of one mother and the demands of 12 children. The one child added, "If she [the sow] eats a lot, she can feed them all." The documentation printed more than the children's words; it also speculated on the general issues that were implicit, such as the fear that a mother might not be able to nurture her young. Documentation invites inquiry about the children's thinking and invites predictions about effective teaching. A panel with only pictures and the children's words could describe but not explain. The teacher's commentary is necessary to frame the data as examples of something more general, some principle that can be applied in new contexts. Display invites pleasure and satisfaction but is not deliberately designed to provoke hypotheses. Documentation is a research report used to enhance discourse rather than a mere record of a past event.

This brings us to a difference between documentation in negotiated learning and the portfolios that are popular in American schools (Glazer & Brown, 1993; Tierney, 1991). Portfolios are touted as a more authentic form of assessment, primarily because portfolios include the actual artifacts that children produce as they work, which can include drawings, diagrams, math sheets, photographs, and even videotapes that when studied chronologically in all their qualitative detail, present a unique path of progress for each child.

Documentation, as we mean it here, is more focused on children than on a child. Even when a child is featured in documentation, the intent is to have the viewer treat this child as a representative child. The documentation presents the spirit of the school, the pedagogical principles at work, which may include Shawn as the protagonist here and Rane as the protagonist there. Be aware that the interest of a featured child's parent could be inversely related to the interest of the other parents. The other parents need a message to which everyone can relate.

Documentation tries to raise questions about children's thinking and teaching strategies rather than to mark the progress of each individual child. The viewer is asked to assume that what one sees in the documentation of four children has

happened at other times with all the children. Documentation presents the wisdom of the teachers who write the explanations and provocations, but documentation, by itself, is not a systematic evaluation of instruction. These two objectives, evaluation and documentation, should be kept separate, at least when evaluation means applying some standard of achievement or skill. Documentation should not be constrained from presenting unique stories that reveal forms of thinking no book of standards contains.

From Talking to Discourse

We talk almost all the time. Sometimes we listen to our own words and to the words of others to understand more deeply. It is this meta-linguistic attitude toward talking—that is, talking itself as the object of study—that defines the discourse of schooling (E. A. Forman & McPhail, 1993; Palincsar & Brown, 1984; and especially Isaacs, 1930).

Take for example the following conversation among several children:

Erica: Look, my legs are long, but I am not split all the way up.

John: Yeah, but your hand is split into five fingers.

Tim: Well, your legs aren't split, they are just two.

Erica: What?

Tim: There are just two. They have always been two. You could say, "My legs are apart."

Erica: Oh.

Tim thought about Erica's choice of adverbs. Split means "once together, then separated." Although he was certainly thinking about the process of a continued split of one's legs, he was also thinking about how to word the more accurate facts. We call this form of negotiating the meaning of words *discourse*. Tim wanted to present an alternative word as a strategy to make explicit his alternative understanding of the future of Erica's legs. Is this a real example? It seems far-fetched from the conversations that happen in early childhood (preK–third grade).

As a team of teachers, we could read this transcribed conversation. Indeed, the way this conversation was analyzed in the previous paragraph exemplifies discourse. Teachers talk among themselves as they study a transcript to discover the children's theories, assumptions, false premises, misapplications, and clever analogies—all ambiguities that are pieces to be negotiated into shared meaning by the group of teachers. Teachers continually say such things as, "Would you then say that the children knew that would happen?" or "I am not sure I would call it collaboration; maybe parallel play." The teachers work to understand the meaning of the words they use to interpret their observations. This discourse mind-set carries over into teachers talking to parents, to the public, and all possible relations portrayed at the bottom of Figure 14.1.

Discourse also changes as it is affected by design and documentation, and of course, discourse changes design and documentation. As we study the children's

designs, hear them explain their plans, and revisit our documentation of these projects, we begin to speak differently about our subject matter, the children. We speak of them as exemplifications of growth, development, and power. Furthermore, as we take explicit note of how we speak differently, we become conscious of our own professional development. Instead of saying, "The children seem to enjoy the activity," we say, "The children enjoy watching the birds without being noticed." We observe that we now use more "verb talk" than "noun talk," such as, "You made that mark by pressing down very hard on the pencil," as opposed to, "I see that you made a dark line with your pencil." We think about how our patterns of speaking to children are changing. These are not trivial or jargon differences in discourse. They bespeak fundamental shifts in one's level of analysis and one's theory of learning (see Solisken, Wilson, & Willette, 1993).

From Remembering to Revisiting

Teachers of young children can serve as a memory, a record of an experience that can be revisited. This function can be served by writing down what the children say and then reading these words back to them on a later day when the children are trying to extend their understanding of something. Or the teacher can show a photograph or replay a video recording of an experience and ask the children to reflect on their intentions, purpose, expectations, and assumptions regarding the actions they see in the photograph or video. Note that compared with a static photograph, a video recording "uploads" the memory of the actual action into the recorder, thereby allowing children to use their mental space to think about things not seen, such as purpose and intention, the "why" of behavior rather than the "what."

There is a difference between remembering what one did and revisiting the experience. For remembering, the children are content with a simple listing of what they did, "We saw a pig. We rode the tractor. We looked down into the deep silo." But revisiting is more than remembering. Revisiting is just that, a return to a place to reestablish or to discover the significance of that place, like going to one's hometown after a long absence. As a visitor, you now look on the experience as an outsider. You no longer reside in the experience, but you seek to establish a new meaning and new feelings from that experience. You are a bit more detached as a nonresident but no less eager to be there. The past is reconstructed from the new perspectives of the present. You look for patterns to create meaning; you look for causes and relations that were not obvious while you were resident in the experience.

A teacher, reading from a transcript, says, "Yesterday you said that the man on the tractor made it turn by stopping one of the big wheels. How can stopping make something move in a new direction? Lets remember what you were thinking and try to figure out what you meant." The teacher has invited the children to revisit their assumptions or explanations about how things work on the farm. In regard to an experiment with shadows, a teacher might say, "Here is a photograph

of you jumping as you look at your shadow on the ground. Tell me what you were thinking just as you were in midair over your shadow." The teacher has invited the two girls to confront an earlier curiosity they had about whether one's shadow is always attached to one's feet. Note that the teacher does not ask, "Look at the photograph and tell me if your feet are attached to your shadow." The focus is on memories about the children's thinking, not photographic evidence of an answer.

While the initial question might be to recall a thought or an observation, the teacher carefully chooses memories that will draw the children into conversations about something that was unresolved or an action that is incomplete. It is the intent of revisiting to take children further and not simply list the places they have been. Photographs should be treated as a door to enter a world of possible events, not as a window that pictures a single time and place (G. Forman, 1995). Video should be treated as an opportunity for the children to abstract the theory, assumption, belief, or expectation that makes a strategy reasonable to them using that particular strategy and possibly create sufficient dissonance to motivate a reconstruction of those theories, assumptions, beliefs, and expectations.

From Symbol to Language to Languages

As we ask children to represent their thoughts, it is important to understand the concepts of a symbol and a language. We have often heard the phrase from Reggio Emilia, "the hundred languages of children." What does this mean? It could refer to the 100 ways children can use their native language to express their general attitude toward something, as in the phrases *multiple realities* or *multiple perspectives*. More literally, it could mean that there are 100 symbol systems that have enough systematicity and syntax to be called languages, languages that children could use if the classroom culture would allow it (see Gardner, 1983). For example, several children choose to use readable gesture to retell the story of a lion capturing a gazelle. Others use musical symbols that capture the action in tone, timber, and rhythm, and still others draw stick figures to show the crouch, pounce, and capture across three sequenced frames. Although children may not have 100 languages available to them, they certainly have more than the spoken words of their native tongue.

Perhaps the first idea of multiple perspectives can best be translated as differences in *voice*, as in, "He speaks with the voice of authority," or "She speaks with the voice of experience." Children have a hundred such voices. We also know that voice is central to revelations about gender differences in communication styles (Tannen, 1982, 1989). Although the concept of voice is important, it is probably not the meaning implied in the phrase *a hundred languages of children*. Let's look more closely at the second meaning, different symbol systems.

A language is more than a set of symbols. A language contains rules of combining these symbols to convey meaning. Thus, a panel where each child's photograph contains a little animal stamp to stand for that child's identity is not a

language. But a child's stamp followed by an arrow and another child's stamp could mean, "Amy likes Zoie." A simple syntax is born, and with it a new language for children to invent and explore relations. Likewise, a clay figure of a runner is a symbol but is not of itself a language. However, when 12 children make different clay figures to tell the other children how to play "Drop the Handkerchief," these clay figures become the elements in a proto-language. Tree leaves can be arranged on poster board in rows, but this is not a language of leaves because it tells us nothing. However, if the children tried to arrange the leaves to show the presence of a strong wind or a weak wind, then the relation among the leaves would constitute a proto-syntax, and the whole enterprise would engage the children to think about the language of leaves and what the leaves can tell us. These various media, when their elements are combined to tell a story, form the 100 languages.

In summary, we need to move children beyond the level of making symbols on to the level of inventing language and from the stance of using only the native spoken language to the use of many symbol systems: leaves, gestures, rubber stamps, clay, and so on. It is the nature of the relation among the symbols that converts the medium into a message, and it is the presence of an intended message that motivates children to negotiate shared meanings and to co-construct knowledge.



Hattie says to Tom, "You can't do that, that's Lisa's name."

From Listening to Hearing

We can give ourselves time to listen to children. We can say that our classroom is child-centered. We can transcribe the children's conversations and affirm the importance of their words. We may listen, but what do we hear?

In negotiated learning, it is essential for teachers to listen with the third ear, to hear the implied meanings of children's words. Take the case of Hattie, who was upset with a teacher, Tom, who was wearing a life-size photographic mask of Lisa, another teacher. Hattie says to Tom, "You can't do that, that's Lisa's name" (G. Forman & Kushner, 1986, p. 216). We can listen to Hattie's exact words, we can print them on a panel that documents the encounter, but what is the deeper structure of Hattie's complaint. What have we heard her say?

Hattie, like other four-year-olds, probably has some difficulty distinguishing between words that refer to objects and words that refer to words. The word *Lisa* refers to, at a minimum, the unique face, an object; but the word *name* refers to the spoken word we use to identify that unique face. Hattie more likely treats words as symbols that refer to objects. So it makes sense to her to say *name* when *face* would be better, albeit the removable face (the photo mask) is psychologically somewhere between the concepts of name and face. Nevertheless, the idea that the word *name* refers to another word (*Lisa*) is a bit beyond the ken of the average four-year-old. So we listen to Hattie's exact words, but our third ear hears the struggle she is having with the more difficult forms of reference. We also hear the objection to Tom pretending to be Lisa. Why wasn't Tom wearing his own photographed face? Was Hattie upset or amused at the joke of Tom wearing the "wrong" mask? There are many meanings to her words, and we try to hear them all. From this attempt to understand, we discover better follow-up questions to scaffold her reflections on her assumptions.

From Understanding to Provocations

Continuing the example of Hattie, what might we do with this understanding? Granted, teachers using a negotiated curriculum become researchers, but they must translate their study of children into a design for education. Do we simply ask Hattie, "What do you mean?" Do we ask Hattie, "Why did you say *name* instead of *face*?" Asking such direct questions would be like asking an infant why she repeatedly throws her cup from the high chair. We have to design encounters that cause children to engage the differences between these concepts—symbols for objects versus symbols for words.

The photographic mask was one such encounter, albeit an unplanned one. We construct negotiated learning by extending these fortuitous discoveries into a variety of contexts. Ideally, teachers will meet as a team and discuss Hattie's comments, look in their documentation for other episodes in which children are dealing with this transition to word-word relations, and plan ways to provoke the

children to reflect on these different types of symbols. It could be that the teachers and children will revisit the photographic mask game in which Lisa wore Tom's photograph and Tom wore Lisa's photograph mask. Together with the children, a new game could be planned. Perhaps the children want to place their own photograph mask over their best friend's face or place a printed sign saying *chair* on the table and a sign with the word *table* on the chair. If the children invent this game of inverting the markers for identity, they may be provoked to think, for the first time, about the range of referents that words can have, and eventually that the word *name* refers to a word (*Lisa*), not an object (*Lisa's face*).

From Encounters to Investigations

Interesting learning encounters can occur during ordinary moments in the classroom. Much can be learned about the children's thinking, interests, dispositions, and emotional engagement during these ordinary moments. When possible, our understanding of a momentary learning encounter can guide us toward some planned possibilities that expand the spontaneous encounter into a longer-term investigation. Here is an example.

A group of four-year-olds in Honolulu were outside playing when a gust of wind blew across the yard. "That's the windy wind," one child said. The teacher asked, "The windy wind. Are there different kinds of wind?" Soon a gentle breeze wafted across their faces and another child said, "There, that was a gentle wind." From this brief encounter with two different winds, the teacher arranged trips to other parts of the island. Eventually the children discovered and named 19 different winds from the monster wind to the mountain wind, invented marks that distinguished them, and even, with the help of high school students, animated their drawings of their winds.

This investigation of the winds involved a number of educational objectives: creating symbols that were schematic yet readable characteristics of their winds, creating a homespun mythology of the wind population, thinking about what happens when two winds of different types cross paths, the shape of wind currents as they are influenced by terrain, learning how to identify one wind from the other in the field, and so forth. An investigation uses the original encounter to give continuity to the various encounters and to maintain a high level of emotional engagement. The children continually revisit new encounters to relate them to both the original encounter and planned possibilities.

It is important for teachers to find the concepts within the children's interest and scaffold the children's thinking about that concept. An interest is not sufficient. One does not simply bring in more dinosaur pictures and plastic models if the children have an interest in dinosaurs. In the educational setting of a school, it behooves the teachers to speculate on what drives the interest and scaffold the concepts, not necessarily the interest. The progression of the investigation should

be considered on track not when children learn more about dinosaurs but when children learn more about the concepts that drive their interest in dinosaurs. For example: What would it mean to my feeling of safety if huge lizards walked in the forest today? Could I have a pet raptor? If there are no more dinosaurs, will there be no more of us after a while? When the teachers focus on the concepts and not the surface interest, the investigation can take branches that do not include dinosaurs at all, such as watching a mahout guide an elephant in a logging operation or an investigation of the relation between climate and current animal population. The teacher tries to identify the fear, the paradox, the curiosity, the anomaly that drives the interest, and then embeds the energy from this more emotional engagement into the investigations—not just to motivate the children but also to address their personal questions.

When possible, learning encounters should be expanded to investigations, but not necessarily long-term projects. *Investigations* have a somewhat longer duration than learning encounters, have more contexts that provoke a given set of concepts, have a community atmosphere to them, involve more children as they progress, and progress to more complex concepts as they run their course. *Projects* have all the same things as investigations, and in addition some central themes to which children have an emotional investment. This is one of the most important differences between learning encounters and projects.

In a negotiated curriculum, teachers and children get excited about what they are doing. They do things that are big and wonderful and often rather ambitious, like building an amusement park for the birds that visit their playground or holding an Olympic-style long-jump contest for the entire school. These projects, however, can emerge from an episode such as the learning encounter between Hattie and the photographic mask.

In a class meeting, the children and teachers decide that pictures placed in the wrong place, like Lisa's photograph on Tom's head, can be confusing, but pictures placed in the correct place can be helpful. By degrees and in the course of several meetings, the teachers and children decide to study pictures they see outside. One child mentions the pictures he sees on the road, such as the picture of children playing that is a warning for cars to be alert. The children decide to add pictures all over their classroom and playground that will inform people about what to do, what to watch out for, ground rules, and so forth.

A variation of this project was actually done at the Eighth of March Preschool in Reggio Emilia. Eventually the children invented an entire fantasy about a dragon, snakes in a pit, and a princess held captive in a tower that required road signs for all rescuing knights. The medieval adventure of this project motivated the children to invent these symbols, while not in the least diminishing their high-level thinking about how symbols convey meaning. In fact, these children invented the convention that any pictures drawn inside a triangle meant "danger," and any picture drawn inside a circle was a directional pointer.

From Assessment to Study

Assessment, as we view it in negotiated learning, involves the ongoing study of children. This study enables teachers to plan responsive curriculum that supports individual and group development. It is not done to compare children, to determine placement or inclusion into programs, to label, or to grade. It is done to understand children—their schema, feelings, interests, dispositions, and capabilities. This knowledge makes it possible for teachers to plan learning experiences that are meaningful and yet challenging to children.

Assessment of this nature is not focused on what children cannot do but on what they can do, independently, with assistance, and in different kinds of social contexts. It is a dynamic and flexible process. It does not aim to freeze the child in time to quantify achievement or development through a score, rating, or grade. It is an alive, contextualized process that aims to understand children within ever-changing life experiences and situations. Documentation, as we have described it, is at the heart of this kind of assessment.

Much attention has been given in recent years to promoting democracy in the classroom, to developing a sense of community in schools, to cooperative learning, but we seem to assess the effects of these kinds of strategies on only the individual. Our work with parents, in like manner, is solely focused on their own child, not the group. Sometimes we present what the child can do in group situations, but generally these are cases in which the child's behavior within a group is extracted to characterize the individual child, not the group.

The educators in Reggio Emilia study and assess the development of the individual, but also the development of the group, the development of a community of learners, a community of caring people. They celebrate how children learn from and with each other. By presenting documentation on the work of the group, and relating particular children's progress to the development to the group, teachers, parents, and children focus on the social dynamics of learning. Through negotiated learning, educators collaborate to develop a social consciousness about the rights of all young children.

From Parent Involvement to Intellectual Partnership

Many teachers view parent involvement as parent education. This could mean that the teacher's job is to share her expert knowledge with parents. From this standpoint, teachers might consider organizing documentation panels to give information to parents about their children's learning. If teachers operate on this assumption about the teacher's role in relationship to parents, documentation is likely to be used as a one-way communication. Parents are not seen as designers, nor are they invited to engage in discourse with teachers. Parents may be encouraged to ask questions about documentation but not to debate or supplement. Parents are expected to look to the teacher as a source of information.

On the other hand, if we apply the principles of negotiated learning to our work with parents, documentation of children's experiences can be used by teachers to support interactive communication and provide a focus for discourse between teachers and parents. The observations teachers have documented through photography, audiotaping, anecdotal records, note taking, video, or collections of children's work can be shared and explained and then serve as a base for further inquiry, discussion, and analysis. Just as teachers share such documentation with each other to gain multiple perspectives that lead to new insights into children's thinking, they can do so with parents. Parents offer different kinds of insights. They have knowledge of children outside the classroom. Their observations, combined with the teachers' observations, can lead to an even deeper understanding of children's thoughts, feelings and dispositions. By engaging in such discourse, parents and teacher may be able to negotiate an understanding of the learning documented. They become study partners. Designs for future learning experiences naturally flow from this kind of study.

In negotiated learning, teachers invite parents, whenever possible, to think with them not only about how to support children's learning (Fyfe, Strange, & Hovey, 2004) but also about how to best communicate with other parents. If panels or other forms of documentation are to be read by parents, what better way to test the readability than to invite a representative parent to consult in the process?

Another example that illustrates the shift from family involvement to intellectual partnership could focus on family participation in field trips. This is a perfect opportunity to invite parents or other adults to observe and document children's learning processes through photography, taking notes, or videotaping. In preparation for a trip to a farm, for example, the teacher could have a meeting or phone conversation with the family member(s) who will participate in the field trip. She could share what she and the children anticipate they will be exploring during the trip and then probe what parents or other volunteer adults think the children will be most interested in learning and experiencing. This conversation could reveal what prior experiences, if any, the children have had with farms; it could focus on the kinds of questions adults might pose to engage children in thinking about the animals they encounter, the smells they notice, the work of the farmer, and so on. This reflective talk before the visit can help family members develop plans (design) for their observations and conversations with children during the field trip.

A critical part of the negotiated learning process would involve the reflection and analysis of documentation after the field trip. Again, a teacher could meet with the parents or other family members, have telephone conversations, or engage in e-mail exchanges to probe reflections and analyze documentation, always being open to looking at unanticipated learning as well as the anticipated, examining learning processes as well as outcomes (e.g., vocabulary developed or used during the field trip, questions asked by children, interactions among children and farmer, etc.). As noted, the documentation collected during the experience should

be used as a platform for supporting these conversations, analyses, and reflections (discourse). Finally, family members could then be engaged in thinking with the teacher about what could happen next; what experiences or conversations could be designed for school or home to extend the learning? Thus the full cycle of discourse, documentation, and design is used to negotiate learning and build intellectual partnerships with families of young children.

Records of parent involvement can promote partnership with families. It is important to keep records of any form of parent involvement (e.g., parent-teacher committee meetings, parent-teacher conferences, parent participation in contributing and organizing materials for the classroom). Records might take the form of photographs, written descriptions of events, minutes of meetings, videotapes of family celebrations or field trips, written records of parent questions or comments. These records are then converted to documentation by revisiting them with parents to understand the roles of family members in negotiated learning. Such records can provide a common reference for discourse, a common memory of experiences or accomplishments that otherwise may have been forgotten or remembered differently. This conversion of records to documentation paradoxically can generate richer experiences in the future, much as reading last year's journal about a trip will enrich this year's trip. If the journal is not revisited, the current trip stands to yield only the same discoveries forgotten from the first—or even worse, the failure to generalize our subtle insights to new experiences. Our subtle insights are most easily forgotten and require the support of documentation to yield growth from experience.

Documentation of parent involvement can be displayed as panels on school walls or notebooks in family lounges, or used in slide presentations for school events. This kind of documentation should invite the viewer to recognize the many and diverse opportunities for parents to become intellectual partners in curriculum support. The display, again, becomes more than an accounting of parent involvement if it includes notes about the process, purpose, and value of the involvement. Quotes or questions from parents can be added to panels to communicate parent perspectives on the experiences. Teachers can even display photographs of parents looking at classroom panels with their children. Such moments, captured and displayed, give a visible presence to parental involvement in the study of their children's work and a clear message of the partnership among teacher, child, and parent, as well as the essential and tangible form of this trilogy. Photographs of parents looking at panels about projects express the "study of study" that defines discourse and negotiated learning.

Parent involvement documentation can be organized and disseminated in many other forms, such as newsletters, phone messages, binders of information, videotapes, or content on school or classroom websites or Facebook pages. The form of documentation should suit the population for whom it is targeted. Take the example of a class in which parents bring their children to school or frequent the classroom regularly. In this case, printed wall panels or video panels may be an

efficient means of communication. On the other hand, for a program in which parents seldom visit the school or frequent it only occasionally, other vehicles for documentation may be more effective in communicating and affirming parent involvement. A newsletter or minutes of parent meetings could be sent home or posted to a website. A lending library of video clips or multimedia of family involvement inside or outside the classroom might be made available on a website or on CDs. Making documentation accessible to family members is critical, but the full cycle of negotiated learning will only happen if the documentation is designed and used in ways that invite response and dialogue about learning.

From Cooperation to Co-construction

The components of design, documentation, and discourse have the power to transform teacher-teacher relations, to move the teaching team from routine cooperation to truly generative co-construction of new knowledge. In the first case, team members can cooperate by staying within a defined role, acknowledging each member's area of expertise, and providing material and psychological support for each other. However, these features of cooperation may not lead to growth through co-construction in which each team member is seen both as a learner and a teacher and each team member feels comfortable about making suggestions regarding another member's work. The dynamics of negotiation involve the creative use of confrontation and conflict.

Collective reflection and analysis of documentation at planning meetings leads to more coordinated planning in which teaching teams make better decisions about how to organize themselves and their time, to share their work yet differentiate it to best support the diverse needs of children within small-group projects, individualized activity, or larger group learning experiences.

Another aspect of organization that supports collaboration among teachers is the documentation of team discussions and planning. In negotiated learning, teacher planning is complex and time-consuming. It involves the collective study of the words and work of children and then planning for possible experiences that connect with or challenge children's current schema. When such study and planning for possibilities has been done, the team must then agree to strategies for presenting the plans to children so that they will want to participate. Teachers must determine the roles that one or more team members will play with regard to facilitating small group activities, and another monitors the activity of the rest of the children. They must plan strategies and allot time for documenting ongoing observations of learning; they must determine who will have responsibility for organizing appropriate documentation tools (e.g., camera, camcorder, tape recorder, paper and pen) and who will use them; they must schedule time to analyze the ongoing documentation that is collected and to involve parents through documentation and discourse. As the project evolves, they need to examine ways to use documentation (e.g., photographs, slides, videotape, transcripts of

children's dialogues, and children's drawings, writing, paintings, constructions) to sustain children's interests and involvement in the project.

Minutes preserve the collective memory of the group about these teacher agreements and remind the team members how they will coordinate their work. Without documentation of this sort, complete team efforts can easily fall apart. It is relatively easy simply to divide work among teachers in a preset and fixed curriculum, but to coordinate the flow of work within a negotiated learning system requires ongoing communication and collaborative planning. Such planning, organization, and co-construction of purposes and possibilities enables teachers to function efficiently and flexibly in ways that are responsive to children.

From Co-construction to Advocacy and Community Support

Just as it does with other stakeholders, documentation can give educators and the public a common platform for discourse about what goes on in schools. It gives to the public something tangible, visible, and accessible. If done well, it invites dialogue among educators, parents, and public. It can provide better facts to address long-held beliefs. Take the case of four-foot rope lengths, placed as loose strands on the classroom floor. These rope strands are used in many preprimary schools in Reggio as a play material. The legal-minded public often has the initial reaction that ropes are too dangerous as a free play material for young children. However, actual photographs and videos of how children use the four-foot spans of rope, as pretend fire hoses, as a two-way telephone line, as a line to guide block building on the floor, as a pulley rope when looped around a table leg, and even as a game in a supervised tug of war, would dispel the fear that braided cotton rope is a dangerous material.

Too often we use sweeping generalizations when we attempt to change public opinion about our schools. We loudly make claims such as the following:

- Children learn best in small groups!
- Children need hands-on materials to help them learn!
- Teachers need more time for planning and reflection!
- The environment is the third teacher!
- Children need meaningful projects, not drill on skills!

We may even back up these positions with evidence from research. We may be articulate in communicating these positions and needs for resources and occasionally succeed in swaying votes on a particular school referendum. Nonetheless, such accomplishments are often short-lived. Public opinion can easily change when someone or some group speaks louder and stronger.

If we apply the principles of negotiated learning to our efforts in gaining community support, we are less inclined to proclaim to the community and more inclined to engage community members in discourse about educational issues. We often

feel that the community is not interested in the details of our work, so we present the sweeping "should" and "ought" to gain their support. However, our assumption that community members feel too distant from our class projects ensures that they will remain so. We have learned from Reggio Emilia that documentation can be a powerful tool for engaging the public in reflective discourse (Rinaldi, 1996). Documentation can make visible the work of the schools and the capacities of children. Real examples of documented learning offer the public a more particular kind of knowledge that empowers and provokes them to reflect, question, and rethink or reconstruct the image of the child and the rights of children to quality education.

When the children of Reggio Emilia interview the farmer about the process of harvesting grapes or ask the street worker about the city's underground drainage system, they and their teachers are giving community members firsthand experience with the kinds of active learning processes that are characteristic of good schools. The documentation of these community-based activities can be returned to the community members as small booklets. These booklets can be sent to the Audubon Society volunteers who helped hang the birdhouses or to the public works people who helped add a new water supply. They can be posted on city websites or developed as articles for local newspapers. These documents build personal bonds and meaningful connections between children and adults in the community. Such documents often increase attendance to open-house events at the schools, which in turn provide opportunities for discourse among educators, parents, and community members.

Educators begin to ask community members for intellectual contributions, not just manual or monetary ones. They treat the community as a "fund of knowledge" for children (Moll, 1992). This kind of treatment is an expression of respect, a way to build connections through shared experience leading to shared conceptions of being and a sense of belonging. It strengthens the "we" identity of a community that cares about each other and helps all members learn and live more productive lives. These are the ingredients of effective advocacy.

We have to be careful not to assume that any contact with the community will engender support for the schools or that such contact is an inherent good. The community members involved—let's say in a class project—need to hear good questions from the children, to sense that the teaching staff has prepared the children for the field trip, and to learn how the experience will be used in the classroom in the future weeks. No one likes to feel that they have provided only a diversion for children, an outing to the fire station, an emotional high that is isolated from true educational objectives, a trip to a celebrated place leaving with only a plastic fire hat as a memory.

Once again, this is where the combined components of design, documentation, and discourse can assure more generative encounters with community members. Children, before meeting the community members, will discuss their expectations in group meetings. With support from a teacher, they will design a purpose, a set of questions, a reason for making the trip. They may even draw what they expect

to see and then take these drawings with them as hypotheses to check out. They will bring a camera and an audio recorder to document the experience, which in turn will indicate to the community members the seriousness of the trip for the children. They may bring their sketchpads in some cases. As was mentioned, the children will also share these records with the community members later when they create a documentation for public viewing. This cycle—from designing the purpose of the experience to documenting the experience to engaging the community in discourse during and after the experience—is essential to create an informed advocacy and community support.

SUMMARY OF THE DESIGN, DOCUMENTATION, AND DISCOURSE SYSTEM

To summarize how these three components affect each other, we will follow the traffic of a classroom activity using Figure 14.1. Lets say that a group of children want to enter a checker tournament with another school in the town. Two children know how to play checkers fairly well, but they do not know how to explain their skill to others. The class decides to take notes on how these two children play. These notes are written in a notation system that the children invented (*documentation*). These notes are then summarized and organized into a guide for more novice children (*design from documentation*). The expert players use the guide to walk the more novice players through a variety of board setups. The novice and expert discuss the rationale contained in the notes (*discourse from design*). The teacher videotapes the lessons (*documentation from design*) so that the students can revisit these lessons. The children discuss how effective the lessons were and how well the checkers strategies worked (*discourse from documentation*).

The parents study the documentation and marvel not only at how well the children play checkers but also at how well they can explain their expertise to others and how well the novice players explain what they need in order to understand. The parents listen to each other as they study the documentary video (*discourse from documentation*) and make plans for how they will help the children learn other board strategies (*design from discourse*). These plans are brought before the children for discussion (*discourse from design*).

Documents of the design meetings by the parents and the lessons from the more expert children are revisited by the teachers (*discourse from documentation and from design*). The teachers create panels using video prints and printed words from the documented activities. The teachers add their own commentary to these panels that explain what the children, teachers, and parents learned from these experiences (*documentation from discourse*). Then new parents and the general public come to the school to read these panels. The panels become the focus of a discussion for continuing the co-constructive thrust of the school (*discourse from documentation, then design from discourse*).

In these various ways, the community of the school produces the following results:

- Drawings function as design.
- Descriptions transform into documentation.
- Talking elevates to discourse.
- Remembering supports revisiting.
- Symbols combine into languages.
- Listening includes hearing.
- Understanding leads to provocations.
- Encounters expand to projects.
- Assessment is replaced by study.
- Parent involvement develops into intellectual partnership, and what could be dismissed as only a beautiful example of cooperation becomes a generative case of co-construction, with the special consequence of creating an informed public that will advocate for the continued success of the school program.

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