

# Promoting Creativity for Life Using Open-Ended Materials

Walter F. Drew and Baji Rankin

"I just made a tulip and a sunflower. The tulip is not like a Van Gogh, but the sunflower is."

"I never knew toothpicks could do these things!"

"I need to get this big huge lump out of my picture. Never mind. I actually like it that way. I can draw a bigger flower now."



Creative art is so many things! It is flower drawings and wire flower sculptures in clay pots created by kindergartners after visiting a flower show. It is a spontaneous leap for joy that shows up in a series of tempera paintings, pencil drawings of tadpoles turning into frogs, 3-D skyscrapers built from cardboard boxes or wooden blocks. It can be the movement and dance our bodies portray, the rhythmic sound of pie-pan cymbals and paper towel tube trumpets played by four-year-olds in their marching parade, the construction of spaceships and birthday cakes.

What is most important in the creative arts is that teachers, families, and children draw upon their inner resources, making possible direct and clear expression. The goal of engaging in the creative arts is to communicate, think, and feel. The goal is to express thought and feeling through movement, and to express visual perception and representation through the process of play and creative art making. These

forms of creative expression are important ways that children and adults express themselves, learn, and grow (Vygotsky [1930–35] 1978a, 1978b; Klugman & Smilansky 1990; Jones & Reynolds 1992; Reynolds & Jones 1997; McNiff 1998; Chalufour, Drew, & Waite-Stupiansky 2004; Zigler, Singer, & Bishop-Josef 2004).

This article is based on field research, observations, and interviews about the use of creative, open-ended materials in

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early childhood classrooms and how their use affects the teaching/learning process. We identify seven key principles for using open-ended materials in early childhood classrooms, and we wrap educators' stories, experiences, and ideas around these principles. Included are specific suggestions for practice.

### PRINCIPLE 1

#### Children's spontaneous, creative self-expression increases their sense of competence and well-being now and into adulthood.

At the heart of creative art making is a playful attitude, a willingness to suspend everyday rules of cause and effect. Play is a state of mind that brings into being unexpected, unlearned forms freely expressed, generating associations, representing a unique sense of order and harmony, and producing a sense of well-being.

Play and art making engender an act of courage equivalent in some ways to an act of faith, a belief in possibilities. Such an act requires and builds resilience, immediacy, presence, and the ability to focus and act with intention even while the outcome may remain unknown. Acting in the face of uncertainty and ambiguity is possible because pursuing the goal is worthwhile. These actions produce a greater sense of competence in children, who then grow up to be more capable adults (Klugman & Smilansky 1990; Reynolds & Jones 1997; McNiff 1998; Zigler, Singer, & Bishop-Josef 2004).

Children and adults who are skilled at play and art making have more "power, influence, and capacity to create meaningful lives for themselves" (Jones 1999). Those skilled at play have more ability to realize alternative possibilities and assign meaning to experiences; those less skilled in finding order when faced with ambiguity get stuck in defending things the way they are (Jones 1999).

In Reggio Emilia, Italy, the municipal schools for young children emphasize accepting uncertainty as a regular part of education and creativity. Loris Malaguzzi, founder of the Reggio schools, points out that creativity

seems to emerge from multiple experiences, coupled with a well-supported development of personal resources, including a sense of freedom to venture beyond the known. (1998, 68)

Many children become adults who feel inept, untalented, frustrated, and in other ways unsuited to making art and expressing themselves with the full power of their innate creative potential. This is unfortunate when we know that high-quality early childhood experiences can promote children's development and learning (Schweinhart, Barnes, & Weikart 1993).



Photos courtesy of the authors

The Association for Childhood Education International (ACEI) has enriched and expanded the definition of creativity. Its 2003 position statement on creative thought clarifies that “we need to do more than prepare children to become cogs in the machinery of commerce”:

The international community needs resourceful, imaginative, inventive, and ethical problem solvers who will make a significant contribution, not only to the Information Age in which we currently live, but beyond to ages that we can barely envision. (Jalongo 2003, 218)

Eleanor Duckworth, author of *The Having of Wonderful Ideas* (1996), questions what kinds of people we as a society want to have growing up around us. She examines the connection between what happens to children when they are young and the adults they become. While some may want people who do not ask questions but rather follow commands without thinking, Duckworth emphasizes that many others want people who are confident in what they do, who do not just follow what they are told, who see potential and possibility, and who view things from different perspectives. The way to have adults who think and act on their own is to provide them with opportunities to act in these ways when they are young. Given situations with interesting activities and materials, children will come up with their own ideas. The more they grow, the more ideas they’ll come up with, and the more sense they’ll have of their own way of doing things (E. Duckworth, pers. comm.).

## PRINCIPLE 2

### Children extend and deepen their understandings through multiple, hands-on experiences with diverse materials.

This principle, familiar to many early childhood educators, is confirmed and supported by brain research that documents the importance of the early years, when the brain is rapidly developing (Jensen 1998; Eliot 2000). Rich, stimulating experiences provided in a safe, responsive environment create the best conditions for optimal brain development. The years from birth to five present us with a window of opportunity to help children develop the complex wiring of the brain. After that time, a pruning process begins, leaving the child with a brain foundation that is uniquely his or

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hers for life. The key to intelligence is the recognition and creation of patterns and relationships in the early years (Gardner 1983; Jensen 2000; Shonkoff & Phillips 2000; Zigler, Singer, & Bishop-Josef 2004).

The importance of active, hands-on experiences comes through in the stories that follow, related by several early childhood educators.

At the Wolfson Campus Child Development Center in Miami, program director Patricia Clark DeLaRosa describes how four-year-old preschool children develop some early understandings of biology and nature watching tadpoles turn into frogs. The fact that this change happens right before their eyes is key to their learning. The children make simple pencil drawings of the characteristics and changes they observe.

One day during outdoor play, the teachers in another class see that children are picking flowers from the shaded area and burying them. This leads to a discussion with the children about how to prepare a garden in which to grow flowers and vegetables. Children and teachers work together to clear weeds and plant seeds. They care for the garden and watch for signs of growth. Over time they observe the plants sprouting, leaves opening, and colorful flowers blooming. The direct, hands-on experience inspires the children to look carefully and to draw and paint what they see.

Another group of children in the same class takes walks around downtown Miami. The children then talk about what they saw, build models, look at books, and explore their new understandings in the block play area.

DeLaRosa describes a classroom that includes a number of children who display challenging behaviors. Some of the architectural drawings the children produce during a project on architecture amaze her. They demonstrate that with a concrete project in which children are deeply interested, and with teachers who guide them and prompt them with stimulating materials and related books, children’s accomplishments can far exceed expectations. Because the children have direct and compelling experiences and multiple ways to express their thoughts, curiosity, and questions, the teachers are able to help them focus and produce, expressing their thoughts and feelings in a positive way.

When an architect supplies actual building plans of a house, the children become even more active. They make room drawings and maps of the house, all the while conversing and building vocabulary. They roll up the plans in paper tubes and carry them around like architects. Because the children are deeply involved in the project, DeLaRosa reports, they experience significant growth in critical thinking and creative problem solving. With questions like “How can we build it so it stands up?” and “Where’s the foundation?” they show a growing understanding of the structure of buildings and a deep engagement in the learning process.



Photos courtesy of the authors



Claire Gonzales, a teacher of four- and five-year-olds in Albuquerque, points out how open-ended materials allow children choices and independence, both crucial in stimulating genuine creativity. Children make things without preconceived ideas. When teachers support authentic expression, there is no one right or wrong way—there is space to create.

Gonzales describes a child who is fascinated by a stingray he sees on a visit to an aquarium. He is inspired to make a detailed, representational drawing of the stingray that goes beyond anything he has done before. Gonzales relates how he was able to use his memory and cognition to revisit the aquarium because the stingray made such a deep impression on him. The child recalled the connection he made with the stingray and represented the creature's details—the eyes, the stinger, the gills.

Key to this kind of work by children is the teacher's respect for both the child and the materials and the availability of open-ended materials like clay, paint, and tools for drawing and writing. Materials can be reusable resources—quality, unwanted, manufacturing business by-products, otherwise destined for the landfill, which can serve as much-needed, open-ended resources: cloth remnants, foam, wire, leather, rubber, and wood. (See "A Word about Reusable Resources.") Open-ended materials are particularly effective because they have no predetermined use (Drew, Ohlsen, & Pichierri 2000).

Margie Cooper, in Atlanta, Georgia, works with Project Infinity, a group of educators inspired by the schools of

Reggio Emilia. She speaks of the value of seeing art making not as a separate area of the curriculum but rather as an extension of thinking and communication. Art making can be especially valuable for young children whose verbal skills are not well developed because the diverse materials offer a variety of ways to communicate. We can learn a lot from children who show a natural affinity for materials, gravitating to them without fear or intimidation. Cooper notes that adults often approach materials, familiar or unfamiliar, with apprehension. Learning from children's openness to materials is important so as not to teach children the fears or discomforts we as adults may have.

### PRINCIPLE 3

#### Children's play with peers supports learning and a growing sense of competence.

Duckworth underscores the importance of this principle, emphasizing that by working and playing together in groups, children learn to appreciate not only their own ideas and ways of doing things, but also each other's. A child can learn that others have interesting methods and ideas that are worth paying attention to and that can contribute to his or her interests as well.

In a kindergarten classroom in Worcester, Massachusetts, five- and six-year-old children study flowers together before a visit to a flower show. The children see and discuss with each other pictures of flowers

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painted by Vincent Van Gogh, Claude Monet, and Georgia O'Keeffe. They use some of these pictures as inspiration for their own sketches and paintings. They explore flowers with different colors, paints, paper, brushes, and print making.

To give the field trip a focus, the teacher, Sue Zack, organizes a scavenger hunt. At the flower show, the children work in small groups, searching for wolves, sunflowers, tulips, a large fountain, waterfalls, goats, a yellow arrangement of flowers, and a Monet painting.

At school the children make flower creations using recycled materials. At first, they have difficulty making their top-heavy flowers stand up. Then one child discovers that he can use the recycled wire available on the table to hold the flower upright. Others encountering the problem use their classmate's solution.

When children discover how difficult it is to make flowers from clay, one child suggests, "We can use the clay to make a vase and put flowers in it instead." So the project turns into making clay pots. Zack describes the children as being so involved that they seem unaware of her presence nearby. They are engrossed in their flower pots, expressing their thoughts to each other while working and using adjectives such as *smooth, bigger, huge, longer, taller, bumpy, dusty, sticky, and cold*. All the children are proud of their work, eager to show and share with one another. "Did you make yours yet?" "Where did you put yours?" "What flowers do you have on yours?" "I have a dandelion and tulips." "My flowers go right from a side to the bottom."

Here are children excited to be working in small groups and deeply connected to a sense of themselves. They do not look for external motivation or recognition. Rather, they express something direct and clear from within themselves as individuals. This is a wonderful example of endogenous expression, where children draw on their inner resources and express themselves from within.

Learning in a social setting is extended when children use diverse materials and symbol systems such as drawing, building, talking, making, or writing. The interaction among these various symbol systems—that is, different languages children use to express themselves—promotes and extends thinking in individuals and within the group.

Promoting interaction among these expressive languages fosters children's development and learning. And the languages encompass a variety of subjects, which leads to the next principle.

#### PRINCIPLE 4

**Children can learn literacy, science, and mathematics joyfully through active play with diverse, open-ended materials.**

When children play with open-ended materials, Duckworth says, they explore the look and feel of the materials. They develop a sense of aesthetics by investigating what is beautiful and pleasing about the material. The wide variety of forms of different kinds of materials, along with suggestions of things to do and to look at, flows over into artistic and scientific creation. These experiences naturally lead to conversations among children that they can write or draw about or make into books or other literacy or science experiences. Play helps children develop a meaningful understanding of subject matter (Kamii 1982; Christie 1991; Stupiansky 1992; Althouse 1994; Owocki 1999; Jensen 2001; VanHoorn et al. 2002).

The more children use open-ended materials, the more they make them aesthetically pleasing by fiddling, sorting, and ordering, and the more they see the potential in the materials and in themselves. "Knowing your materials is the absolute basis for both science and art. You have to use your hands and your eyes and your whole body to make judgments and see potential," states Duckworth.

Cathy Weisman Topal, coauthor with Lella Gandini of *Beautiful Stuff* (1999), points out that children develop power when they build individual relationships with materials. When children have the chance to notice, collect, and sort materials, and when teachers respond to their ideas, the children become artists, designers, and engineers. When children are simply given materials to use without the chance to explore and understand them, the materials do not become part of their world. Weisman Topal relates,

When a child says, "Oh, I need some of that red netting from onions," he demonstrates that he has experience, knowledge, and a relationship with the material, a connection. It is not somebody else's discovery; it is the child's. Whenever a child makes the discovery, it's exciting, it's fun. The child is the researcher and the inventor; this builds confidence. (Weisman Topal, pers. comm.)

Children's explorations come with stories, histories, associations, and questions. From the questions come the next activities, investigations, and discoveries. A natural consequence is descriptive language; children

naturally want to talk about—and maybe draw about—their discoveries. “Not many things can top an exciting discovery!” says Weisman Topal. Organizing and dealing with materials is a whole-learning adventure. Working in these modes, the child produces and learns mathematical patterns and rhythms, building and combining shapes and creating new forms.

Teachers can promote language, literature, mathematics, and science through creative exploration. Margie Cooper points out that skill-based learning and standardized testing by themselves do not measure three qualities highly valued in our society—courage, tenacity, and a strong will. Yet these three characteristics may have more to do with success in life than the number of skills a person may have mastered.

### PRINCIPLE 5

#### Children learn best in open-ended explorations when teachers help them make connections.

Working to strengthen a child’s mind and neural network and helping the child develop an awareness of patterns and relationships are the teacher’s job. Constructive, self-active, sensory play and art making help both children and adults make connections between the patterns and relationships they create and previous knowledge and experience. The brain, a pattern-seeking tool, constructs, organizes, and synthesizes new knowledge.

Teachers integrate playful, creative art making with more formal learning opportunities such as discussion, reading, writing, and storytelling. They ask questions and listen to the children so that the more formal learning activities are connected closely to the children’s ideas and thinking. Teachers provide concrete experiences first: investigating, manipulating, constructing and reconstructing, painting, movement, and the drama of self-activity. Then the reflection and extension involving literacy, science, and mathematics that follow are meaningful. Zack in Massachusetts gives us a good example of this when she organizes a scavenger hunt at the flower show, encouraging children to make connections between their interests and activities at the show.

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### PRINCIPLE 6

#### Teachers are nourished by observing children’s joy and learning.

A central tenet in the schools of Reggio Emilia is the idea that teachers are nourished by children’s joy and intelligence. DeLaRosa clearly demonstrates this tenet as she describes teachers working with children on the architectural plans:

Watching the teachers guide, interact, and work with the children makes me feel extremely excited—joyful just to see the gleam in their eyes. You know the children are thinking, you see them creating and producing and playing with purpose. I am proud to see teachers taking learning to higher levels, not sitting back festering about this problem or that. They could hang on to the fact that they have a hard time with some of the children . . . but they don’t. They look at the positive and move on. (Pers. comm.)

Teachers and children learn together in a reciprocal process. The exciting work of the children inspires the teachers to go forward. Children are looking for more, and the teachers think, “What else can I do to bring learning to the next level?” “How can we entice them to go further?” “What new materials can I introduce?” and “I can see how to do this!” At times the teachers set up and move ahead of the children, and at times the children move ahead of the teachers. When teachers see what children can accomplish, they gain a greater appreciation for them and for the creative arts and materials.

In addition, the work that children do, while inspired by experiences teachers and parents provide, is at the same time an inspiration to all adults who notice. Sue Zack notes,

The flower unit forced me to make the time to listen, reflect, and write down observations of the children. It felt good! It is what I need and what the class needs in order to be a group that communicates, experiences life, creates, learns, and cares about each other. (Pers. comm.)

### PRINCIPLE 7

#### Ongoing self-reflection among teachers in community is needed to support these practices.

It is vital for teachers to work and plan together to promote children’s creativity and thinking. By meeting together regularly over a few years, teachers connected with Project Infinity in Atlanta have developed the trust to have honest conversations with each other regarding observations of children and classroom experience—not an easy task. They are doing research and constructing knowledge together about how children build relationships (M. Cooper, pers. comm.). Just as children learn and grow in community, so do their teachers (Fosnot 1989).

## Conclusion

Play and the creative arts in early childhood programs are essential ways children communicate, think, feel, and express themselves. Art making, fiddling around with bits of wood and fabric or pieces of plastic and leather, reveals the gentle spirit creating simple forms and arrangements, touching the hands, hearts, and minds of young children—and adults.

Children will succeed when they have access to a wide variety of art-making materials such as reusable resources, and when they are surrounded by adults who see and believe in the creative competence of all children and are committed to their success in expressing themselves. As we trust the process, as we encourage and observe the emerging self-initiative and choice making of the children, we come to more fully understand the intimate connection between the spirit of play and the art-making process.

Given these optimum circumstances, children surprise and delight us—they create structures and thoughts no one has seen or heard before. We adults develop a greater appreciation for the children and for the power of creative art making and materials, thus providing a strong motivation for adults to continue teaching and children to continue learning in this way.

In this era of performance standards and skill-based/outcome-based education, it is more important than ever for educators and families to articulate the values and support the creativity of play and exploration as ways to meet the standards—and to go beyond them.

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## A Word about Reusable Resources

Many of the materials used in art-making and play experiences can be discarded donated by local businesses. Fabric, yarn, foam, plastic moldings, gold and silver Mylar, paper products, wood, wire, and a world of other reusable materials provide early childhood teachers and families with hands-on resources for creative learning.

Most businesses generate an abundance of unwanted by-products, overruns, rejects, obsolete parts, and discontinued items and pay costly fees to dispose of them. Throughout the nation, manufacturers dispose of their discarded materials in landfills and incinerators.

Through the establishment of a local Reusable Resource Center, high-quality, unwanted materials serve as much-needed resources for creative play, the arts, mathematics, science, and other creative problem-solving activities for early childhood education.

In this way businesses become a powerful force to improve early childhood education while reducing disposal costs, improving their bottom line, helping their community, and communicating a strong message that they are in business not just to make a profit but also to make a difference.

(For information on Reusable Resource Centers near you or for training and technical assistance in developing a reuse program in your community, contact Reusable Resource Association, P.O. Box 511001, Melbourne Beach, FL 32951, or visit [www.reusableresources.org](http://www.reusableresources.org).)

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