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teachers were involved in a project that extended five years and produced a DVD that would enable the district to share its work with other educators.

**LAYING THE GROUNDWORK**

The initial workshop, held on an auditorium stage, introduced teachers to sensory-based learning: its connections to emotional, kinesthetic, and cognitive processes; and its influence on creativity and idea formation. As a visiting consultant for visual art and drama, I’m also hoping to stimulate some early thinking about applications to classroom practice. Some opening discussion leads to a casual, but driving question: “Where do ideas come from?” Silence lasts for seconds.

Some teachers say they simply urge students to “be creative,” but have never considered creativity and idea formation as “teachable” qualities. The group quickly raises three key questions: “Can you teach to creativity?” “Does creative thinking embody an intellectual behavior which emerges from a specific set of conditions?” and “Can these conditions be recreated in the classroom?”

I let the questions dangle. Our search for answers will begin with the first hands-on activity. The teachers sit in a circle with a sheet of 18x24-inch drawing paper on each of our laps. We devote a minute or two to silence and establish a tranquil, focused tone in the warmly dramatic stage lighting. My seat is in full view of the others and, through demonstration, I guide the teachers to sit back, relax, and hold the paper to their bosoms. Together, we take a few deep breaths, hold and release. The teachers are amused, yet intrigued, and unsure about where this rather unusual situation will lead. Slowly, I begin to verbally and physically model a “sensory exploration” of my sheet of paper. There’s some initial giggling, but they begin to follow my lead by touching the paper against fingertips, backs of hands, lips, noses, and different parts of their bodies; they smell, taste, bite, and interact with it in any number of unusual ways. We gently press the paper over our heads, shaping it to cover our faces, eyes, and ears. There’s more laughter, but they’re becoming closely aware of the sounds made by flicking, tapping, rubbing, and tearing the paper.

I encourage the teachers to continue exploring the paper. Soon, the space is a tranquil oasis of sensitive, deep investigation. Some teachers have moved to tables; others are sitting on the floor. Before long, each one is surrounded by paper remnants of many sizes and configurations. I distribute small bottles of glue and coach the group to look for “natural attractions” between the small remnants and to glue them together to construct larger structures. I remind them to simply follow their intuitions and avoid working toward a predetermined final product. Without trepidation, both art and non-art teachers begin making connections, attachments, and interpretations. Within 15 minutes, each participant creates an intricately detailed paper “sculpture.”

I guide the teachers out of this sensory exercise and they display the finished sculptures on the center tables. We circulate around the tables, observing the sculptures from many angles. “This was unusual, calming, engaging. I explored in a way that I haven’t since I was a child.” “It was very freeing, being able to play with simple materials without an end result in mind.” “It led to new ideas that I would not have considered.” “I am amazed that I could create something so intricate. I was never any good at art.”

Their early accomplishments surprise the teachers, so we go a step further with an activity that requires them to identify qualities in their paper sculptures that are normally assigned to living creatures. This exercise will eventually lead to the creation of original characters, narratives, and ideas. I select a volunteer, and the dialogue begins:

**JA:** Can you tell us something about your paper sculpture?
**Teacher:** Well . . . mine seems very tired. . . . It’s very low to the ground and looks heavy, as if it’s carrying a lot of weight . . . and it has long extensions dragging behind it.

**JA:** Is it old or young?
**Teacher:** Middle aged, but on the older side. It’s tired and wrinkled from worry more than from age.

**JA:** Why is it so tired?
**Teacher:** It has seen a lot of trouble. It’s carrying the weight of the world. It’s dragging baggage.

**JA:** Does it have a family?
**Teacher:** Yes, but it carries the load for all of them. They are irresponsible.

**JA:** Does it like its situation?
**Teacher:** No, but it can’t extricate itself. It’s stuck. Guilt and responsibility keep it there.

**JA:** What is its skin like? What is its voice like?
**Teacher:** Its skin was once soft, now it’s rough, weather beaten, like leather in some areas . . . peeling in others. It has a very low, gravelly voice and talks slowly.

After a short break, we regroup, and I invite another volunteer to come up and physically assume the characteristics of his or her sculpture. A brave soul complies. Once in character, I ask him to complete a
simple, imaginary chore, such as making a cup of coffee, arranging a vase of flowers, or crossing a street. With each short improvisation, the teachers are growing more comfortable with — and intrigued by — these unusual activities. Both novice and seasoned educators engage in constructive play as they assume qualities of their paper sculptures (such as nervousness, anger, fright, confusion, timidity, and anxiety) while acting out simple chores. One teacher integrates dialogue into his performance, moaning in pain and broken breath as he crosses a busy street, the embodiment of an old man riddled with extreme arthritis. Another assumes the persona of a mythological “sprite,” quirky and energetic, smiling cheerfully and starry eyed, “twinkling” across the stage in rapid, tip-toed baby steps while making an imaginary cup of coffee. In a particularly courageous endeavor, another teacher reclines on the floor, recreating the pain of an elderly, seriously ill person hovering at the brink of death.

The teachers’ work is daring, but most important, it is exciting, rich in subtext, and indicative of the critical role of sensory-based, structured play in forming creative thoughts and ideas.

internal traits (happy, sad, bitter, childlike, conservative, cheap, extravagant, lonely, friendly, etc.). I ask the teachers to represent some of the words, ideas, or phrases from their lists by using paint and other available materials. One teacher poses an essential question: “How can you paint an inner trait like nervousness?” Another replies with a key idea, “Maybe by using colors or textures or lines or maybe by doing something unusual with the paint like mixing it with other materials.” Another adds, “So we are thinking in reverse now. This morning, we turned art into words; now we’re turning words into art.” The group becomes as resourceful as preschoolers, fearless of mistakes, making additions and subtractions, scraping, rubbing, and etching into the painted surface. They use fingers, steel wool, toothbrushes, sponges, sandpaper, coffee grinds, salt, and any materials available to emphasize important aspects of their stories.

They paint for about 40 minutes before displaying their work and gathering for a group discussion. They are clearly surprised by the intellectual struggle required by their studio experience. “I didn’t think making art was so challenging. It’s stimulating but really tough. I’m not used to thinking this way.” Many reflect that they “seemed to operate in different modes” while making art, sometimes relying on “felt” intuitive choices and at other times weighing their decisions, making additions and subtractions, scraping, rubbing, and etching into the painted surface. They use fingers, steel wool, toothbrushes, sponges, sandpaper, coffee grinds, salt, and any materials available to emphasize important aspects of their stories.

During the afternoon session, we refer back to their essays. Some of their descriptive words suggest outward visual qualities (skinny, tall, shaggy, spiky, rough, soft, craggy, scaly, pointy, hairy) while others allude to the teachers’ work is daring, but most important, it is exciting, rich in subtext, and indicative of the critical role of sensory-based, structured play in forming creative thoughts and ideas.

The teachers are challenged to enact characteristics of the sculpture they’ve created. This teacher reclines on the floor, recreating the pain of an elderly, seriously ill person hovering at the brink of death (above). Teachers represent words, ideas, or phrases by using paint and available materials (right).
cisions. They explain that the colors, shapes, lines, etc., represent specific details about the characters’ lives, histories, and environments. They are genuinely gratified by their newfound abilities to “be creative” and are fascinated by the power of making art to represent, reinvent, and enrich ideas.

CHANGING IDEAS ABOUT TEACHING AND LEARNING

As we conclude the day’s studio activities, we gather for a closing discussion, and soon the driving question from this morning’s opening dialogue resurfaces. “Where do ideas come from?” But this time the teachers respond without hesitation, speaking fluidly and thoughtfully. They assert that ideas cannot be summoned on command but can emerge by using the senses to explore materials, and they are further developed by unearthing possibilities, making connections, and keeping solutions open-ended.

“As educators, we can’t just tell students to come up with ideas and be creative. It doesn’t work that way. We have to provide classroom experiences that evoke idea formation at its roots,” said one teacher.

The group agrees that providing time for exploratory play is essential in the classroom. They stress that having students reframe ideas in verbal, visual, and written idioms, while integrating varied materials, can help them to think “out of the box” and enliven their propensity for applying knowledge in different contexts. “This approach can restore authenticity in art education, which has been largely lost through teaching methods which require students to make images based on established masters or formulaic exercises,” said one art teacher, reflecting the views of the others.

As our dialogue continues, the teachers begin to draw connections between the workshop activities and teaching across various subject areas. One comments that, “Some students have such a hard time with writing. It’s frustrating. They are particularly weak at including details and descriptors. Everything is very generic.” Another adds that students “rely too much on images from the media to create characters. I want to try having them explore paper, or maybe clay or another material, and then write a story about the characters they create.” Another teacher replies, “They also have trouble advancing thoughts in a logical flow. They tend to say everything in the first paragraph and then run dry. Having them go from one mode of operation to another, as we did today, might be a way to address this; it forces you to move from broad generalizations to specific details. It’s a way of thinking that can translate into their writing.” One teacher muses about making applications to social studies: “I like the sensory based idea. I wonder if it can be applied to recreating the sensory environments that people experienced in difficult or exciting times of dramatic social or political change. Maybe groups of students could create short skits that link together to tell a whole story. That might be an excellent way to teach a unit.”

At 3:00 p.m., teachers are still embroiled in discussion even though it’s time to leave. Some talk about how the workshop has changed their perceptions regarding the nature of schooling. “If I were walking past a classroom and saw students tearing paper and acting out as we did, I might have assumed no real work was going on, but now I would hesitate to come to that conclusion.”

Another remarks that “This was a different way of thinking about teaching and learning. I was never any good at coming up with original ideas and always felt that this impinged on my teaching. Now I have insights about how to stimulate ideas in myself and, I think, in my students as well.”

BUILDING A REPertoire

Subsequent workshops became more multifarious. Simple found objects (a piece of driftwood, an old broom, a silk scarf, or a piece of burlap) and familiar sounds (music, animals, traffic, and rain) often served as sensory stimuli for idea formation. Visiting facilitators in dance and music occasionally joined us, introducing new activities and forming breakout sessions. One particular workshop involved reading from textbooks or articles in different subject areas, extracting descriptive words or phrases, and applying them toward the creation of clay images, paintings, music, dance, or written nar-
Taking It to the Classroom

By the second and third year of the Glen Rock program, teachers who had completed one year were invited to co-teach with a member of the visiting team. Here are vignettes about what happened in three of those classrooms.

Bringing War Closer to Home

What aspects of the Revolutionary War will resonate with the lives of contemporary 10-year-olds? Since the war was characterized by British invading family homes, the theme of personal place and “what home means to you” seems salient. In terms of their development, Doug’s 5th graders are intrigued by adventure, danger, and action-oriented events. They’re also becoming more conscious of political and social affairs, as well as personal relationships and interactions. (We are sensitive to the fact that, since this topic is being addressed during the aftermath of the 9-11 tragedy, it may have particular implications to students’ lives).

I worked with Doug to integrate reading, discussions, a writing assignment, and a visual arts experience in the form of making papier-mâché sculptures. Students read short passages about the war and then discuss homeland security. “What is special about your home?” Students provide rich descriptions, which Doug rapidly notes on the blackboard: a safe place, private, loving, warm, secure, food, nice smells, family, etc. We ask students for words or ideas suggested by their readings about the Revolutionary War: nasty, sneaky, violent, evil, scary, bloody, invading, and world-shattering. As we continue the dialogue, they connect events of the Revolutionary War and their perceptions about home and security. Finally, they write essays imagining themselves as citizens or eyewitnesses during the war. They incorporate many of the words listed on the blackboard. When they share their essays aloud, we discover that students have melded a specific event or aspect of the war with events from their own lives.

IMPLICATIONS AND REFLECTIONS

During the fourth and final year of the program, participating teachers were surveyed to determine how the program had affected student learning. Teachers indicated that they saw “highly observable growth” in:

• Original idea formation and flexible thinking;
• Lengthy and deep engagement with extended activities;
• Creation of visual metaphors to represent ideas and concepts;
• Ability to transcend conventional thinking in favor of discovery through exploration with materials;
• Use of innovative narratives and character development in visual, written, and verbal forms of storytelling; and
• Capacity to understand, appre-
The Art of Minerals

Kelly is planning a science unit about the properties of minerals and provides her 5th graders with mineral samples. What possible connections could these inanimate objects have to the lives of her students? After a brief discussion, Kelly and I realize that each mineral is unique in structure and character, a salient concept for 5th graders who are beginning to place a high premium on individuality.

We invite each student to explore the characteristics of one mineral sample. With Kelly’s verbal guidance, the students explore their mineral’s smell, taste, texture, color, density, shape, opacity, and so forth. They rub it against different parts of their bodies and against other materials such as paper, wood, and plexiglass, observing the tracks it leaves and the sounds it makes. They look at it from different angles and observe how light strikes various surfaces. After this sensory exploration, they list descriptive adjectives. Using these lists as a reference, a student is invited to “bring her mineral to life” by assuming its characteristics while composing a simple imaginary chore.

One student explores a piece of sulfur and, in a beautifully sensitive performance, takes on its characteristics of intractable odor and deformity as she assumes a crooked hip, crippling walk, and a weakened, creaky voice. The class asks questions: “What is your life like?” She responds in character, “I’m a lonely person, can’t get rid of my body odor. I’m crippled, ridiculed. I have no friends.” The students are intrigued, curious about, even mystified by this performance. Their tone is serious, “How does your family treat you?” “How do you feel when you walk down the street?” She responds slowly and with touching sensitivity, “People point. I hear them say . . . ‘there goes that crippled girl again.’” This extraordinary occurrence continues at considerable length, and soon the students become completely engrossed, inquisitive, and compassionate.

Next, we invite students to translate the descriptive adjectives into small clay sculptures of invented creatures. Their sculptures are original, imaginative creations, thoughtfully orchestrated, free flowing, yet rich in artistic formalism. The students speak about their sculptures, drawing connections between their artistic choices and the properties of the minerals. In closing, Kelly distributes a quiz in which the students successfully demonstrate their naturally acquired knowledge about the properties of various minerals.

Dancing the Numbers

Karen is preparing to teach her 5th graders about numeration systems. Grouping, repetition, and placement provide the rationale on which numeration systems are typically constructed. Karen and I also realize these concepts have implications for music and dance, both important aspects of children’s lives. The visiting dance consultant joins us on our co-teaching day, and soon students are working in trios or quartets to create a movement in which repetitive motions and body positions represent particular numerical values. When each group “dances its numbers,” classmates guess the “values being danced about.” Karen gives the students a brief pop quiz in which they watch several dances and then designate the numerical values that are represented. (The results indicate the students’ heightened understandings about numeration systems and their abilities to apply this knowledge to correctly identifying values according to observed movements.)

When students are back in their seats, Karen and I distribute found objects, such as paper bags, tin wastebaskets, bottles, spoons, brooms, and so forth. We assign a numerical value to one group and have them come to the front and dance it out. Meanwhile, the rest of the students watch the dance and use their objects to create sound to accompany the movements they observe. The dance movements repeat and the sounds becomes more rhythmic and harmonious as the students develop brief, orchestrated, repeatable passages. The tables have turned. Instead of using dance to learn about numeration systems, the students are now using numeration systems and movement to explore a fundamental concept relevant to making music.