VOLUME 17, NUMBER 3 · AUTUMN 2004

ENCOUNTER

Education for Meaning and Social Justice

INTEGRATED LEARNING
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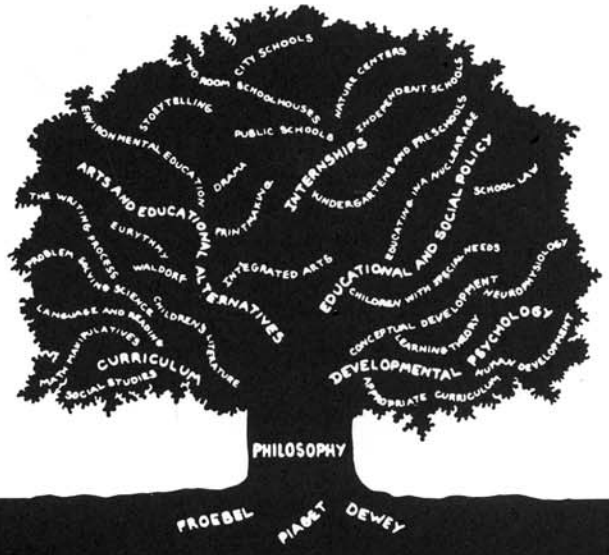
Alfred North Whitehead



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ENCOUNTER

EDUCATION FOR MEANING AND SOCIAL JUSTICE

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Editorial

Biased Tests

You might have seen a *New Yorker* cartoon about a man who is trying to get into Heaven. As St. Peter thumbs through the relevant documents, the man says, "You're kidding! You count S.A.T.s?" (Twohy 1991).

The SAT and other standardized tests have enormous power, often determining how far people can advance in the world. And the tests create special roadblocks for low-income students and students of color. Because these students, compared to white middle class students, generally receive lower test scores, they are disproportionately excluded from our top colleges and universities. In this issue of *Encounter*, Tasha Prosper provides an emotional and sharply observed account of the experiences of African American women in today's test-dominated society. As Prosper points out, African Americans are coming to believe that standardized tests have replaced the dogs, fire hoses, and separate-but-equal laws that used to keep her people "in their place."

It's my impression that most educators, and much of the public, know that there are racial, ethnic, and income disparities in standardized test scores. But people rarely question the tests. Instead, they see the problem as having to do with the test-takers—if not with their native intelligence, then with deficits in their educational preparation.

New Evidence of Bias

Educational preparation does matter. But new research suggests that the tests themselves are quite biased. As a psychologist, a profession with expertise in testing, I must confess that one source of bias went unnoticed for a very long time. The bias has to do with a technical goal in test construction.

When they create a new test, test makers strive for a form of *reliability* called *internal consistency.* The test makers first examine individual pretest items to see how well the items are associated with the overall test scores. Then, when they decide on the final version of the test, they retain only the items that are consistent with the overall scores.

Note: Readers may access a discussion guide for this editorial at <www.great-ideas.org/Edit173Guide.htm>.

But Jay Rosner, executive director of the Princeton Review Foundation, points out that this seemingly neutral goal hurts people of color. In an interview with the *Chronicle of Higher Education* (Young 2003), Rosner described his findings with respect to the October 2000 SAT. He discovered that the test makers retained all the pretest items on which the white students outperformed the African Americans and Latino students, but they discarded all the pretest items on which the African American and Latinos outperformed the whites. These items weren't associated with most of the other high scores—those achieved by the larger numbers of whites—so the items were thrown out.

The test makers' decisions were not motivated by racial prejudice. The people who develop each version of the SAT—the Educational Testing Service (ETS) researchers—didn't know the students' racial identities. They simply cast aside the items on which the students of color did better because those items weakened the test's internal consistency. It was all done on purely technical grounds.

Freedle's Research on Difficult Items

Another critique has been leveled by Roy O. Freedle (2003), a recently retired ETS scientist. Freedle found that among white and African American students with identical scores on the SAT Verbal test, the white students perform slightly better on the *easy* items, while the African American students perform slightly better on the *hard* items. These differences are small but consistent. At whatever level one looks (e.g., a score of 290, 300, or 640 on the SAT Verbal test), the same pattern appears.

Freedle reports that this pattern also characterizes white and African American students' performances on the SAT's quantitative test, and that the pattern holds for other ethnic minorities and low-income students as well.

Freedle is so impressed by the African-Americans' performances that he wants ETS to use a separate SAT score, an R-SAT score, which would consist only of the *hard* items. He estimates that the R-SAT would reduce general white/African American disparities by a third. What's more, Freedle says, a small number of African Americans would gain enormously. For example, some students with SAT Verbal scores under 300 would soar to over 600, qualifying them for admission to the country's elite colleges and universities.

Why do African Americans do relatively better on the difficult SAT items? Freedle thinks the explanation has to do with language. The easy items typically use everyday vocabulary that is actually the vernacular of white, middle class students. These students are therefore more familiar with its cultural nuances. The difficult items, in contrast, use more abstract terms that are usually found only in textbooks and classroom lectures. This abstract language is more precise and culturally neutral. It provides a more level playing field on which African Americans do relatively better.

Freedle's research doesn't explain all the SAT differences between whites and African Americans—only about a third. So other variables, such as academic preparation and special tutoring, are still important considerations. But Freedle's findings, together with those of Rosner, point to biases that are so substantial that they call the entire SAT into question.

High School "Push Out"

The SAT is not, of course, the student's first experience with standardized tests. Since the 1983 publication of *A Nation at Risk*, almost every state in the country has installed rigorous standardized tests at almost every grade level. What's more, the states are increasingly attaching high stakes to the tests; they are making grade promotion (e.g., advancement from 3rd grade to 4th grade) and high school graduation contingent upon specific test scores. It will be important to see if the same biases that Rosner and Freedle have uncovered for college-entry tests also plague the tests for younger students.

In the meantime, information on the harmful effects of standardized tests keeps growing. In two recent reports, Gary Orfield at Harvard University (Orfield et al. 2004) and Walt Haney at Boston University (Haney et al. 2004) describe how high-stakes tests are contributing to a crisis in graduation rates.

The SAT and other standardized tests have enormous power, often determining how far people can advance in the world. And the tests create special roadblocks for low-income students and students of color.

Nationwide, today's four-year high school graduation rate is only 68%; among African American and Latino youth, the graduation rate barely exceeds 50% (Orfield et al. 2004). At least part of the explanation, Orfield and Haney contend, is the practice of informally pushing out students who are likely to earn low test scores. By dropping these students from their rolls, schools can raise their overall scores. The victims are commonly low-income students and students of color.

Early Discouragement

High school "push out" has attracted media attention. But high stakes testing also begins turning students off to school in the early grades. Under the pressure to prepare children for the tests, schools have little time for the activities children find exciting and meaningful—activities such as building things, gardening, producing plays, and conducting research projects. Instead, children must spend hours on test-prep drills and exercises that they find extremely boring.

The tests also produce considerable anxiety. Students dread the tests throughout the school year, and as the testing dates approach, their anxiety intensifies. Many children cannot sleep at night and

develop stomach aches and head aches. If they face the humiliation of grade retention, their fear is even greater.

These feelings of boredom and fear ruin the entire educational enterprise. As Dewey, Piaget, Montessori, and others have argued, intellectual development occurs when children are enthusiastic about activities. When children become engrossed in tasks, they think deeply and imaginatively, and their minds expand. By replacing the child's enthusiasm with boredom and fear, test-driven education stifles the urge to learn.

Since low-income children and children of color generally have the most difficulty with the tests, they are given the largest doses of monotonous test-prep drills and they experience the greatest fear of failing. For them, school is an even more unpleasant than it is for others. It is little wonder that when they are old enough, they seriously consider dropping out. Given a nudge by school officials, many do.

—William Crain, *Editor*

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Snails in the Classroom

Charles Turner

Even snails can help teach elementary school students about life.

When Liem Tran Van looked at his snail sitting on the piece of black construction paper that was his snail's "yard" on his desk, his heart melted. He had told his friends the day before how much he hated snails, that he would never touch one no matter what Mr. Turner, his teacher, told him. Now, as the snail slowly began to come out of its shell and look around, Liem began to fall in love. The snail lifted up its head and appeared to stare right at Liem. Liem's hand reached out and picked up the snail and brought it close to his face. He wanted to see close up the two black dots he took for eyes. He wanted to see if the snail was really looking at him, as he looked back at it. Meanwhile, Mr. Turner was talking. Liem listened, but his attention was on the movement of the snail's eyes. It looked around, twisting, as though looking for something. Liem thought it was looking for its family.

Mr. Turner was telling his first and second grade class that although we may normally think of snails as garden pests, we still had to treat the snails with respect as other living things. He said that some people did not believe in taking animals, like snails, out of their natural homes and using them to study and learn about science, but that in this case he thought it was OK. He had come to have a great deal of respect for the snail as a hard working creature, after having used it over the years in science lessons about animals. He said that because he was much more attracted to the beauty of plants, he had seen the snail as an enemy until he started to bring it into the classroom. He said a new appreciation of these animals was important.

When kids had said they would not touch a snail, or that they would smash it, Mr. Turner hadn't said much. "You don't have to touch it if you don't want to," he had told them. Now he told them they had to make sure the snail did not crawl off the table. If they didn't want to pick it up, they should ask for help. The real danger, he said, was that the snail could fall

Charles Turner has taught elementary school for over 30 years. During eight of those years, he taught at the Round Rock School, an alternative school that he co-founded. Charles has strong interests in philosophy, literature, and environmental issues. He and his wife Judy, a preschool teacher, have three children.

to the floor and crack its shell. That could possibly kill it. In the wild snails can mend a small crack, but in the classroom it would be much harder for them to recover. This was because they had to live all together in an aquarium; there wasn't enough space in the tank for an individual snail to hide and recuperate. Liem checked his snail, which was about to crawl off the paper, as he listened to this.

The Children

The children could relate to living in cramped spaces. They shared the problem with the snails in the tank. Their school, the Tenderloin Community School, is situated in downtown San Francisco, nestled between Civic Center and the much more fashionable Nob Hill and Union Square districts. The area got its name from a form of bribery that was and no doubt is still prevalent in the area. In the city's notorious past, the butchers used to pay off the police and other gangsters with a choice piece of steak. It's an area that has its share of problems, drugs, prostitution. It's famous for its afterhours fight clubs and gambling dens. After five o'clock or so, when the homeless people on the street start drinking, the children know they must not go out unescorted.

The area also has many stable families, whose adults mostly work for hotels and restaurants. The parents often work split shifts, one parent home sleeping while the other is at work. Somehow they manage to raise their families while they try to make enough money to move to more desirable areas. They are often happy to be in this situation, in this country making money. Most families live in small studios, one-room apartments. Some have small kitchenettes and bathrooms attached; others have to share those kinds of facilities with everyone on their floor.

Liem's family, like many in the neighborhood, was multigenerational. In the one-room studio they had several beds. Liem and his older brother shared one single bed, sleeping head to foot. Their parents, grandparents, aunt and uncle, and baby sister all shared beds, too. Everyone's belongings were kept in garbage bags or cardboard boxes under the beds. There was room for Liem and his brother to have a few toys and a few books. As always, there was a TV, as large as the family could afford, with an electronic game player, in one corner of the room. It was usually turned on. There was no space for a table or chairs. Everyone ate, played, or did their homework, on the beds.

Snail Care and Naming

Now, as the students listened to their teacher talking about snail care, and chimed in with comments and questions of their own, each child became transfixed by the sheer beauty of the living thing that was before them. Nearly everyone reached out to at least touch their snail. Only one or two children asked someone else to return their snail to its "yard" on the construction paper when it began to wander off. A couple of the snails stayed in their shells. Mr. Turner explained that snails normally sleep during the day, that they were nocturnal, coming out at night to look for food, as they would in your garden. He said that maybe they would like a bath and put them in a small tank of water. The kids were fascinated by this, and several, whose snails were in the tank, crowded around to see if it was true that submersing the snails would wake them up. Will they drown? They all wanted to know. Mr. Turner told them that snails have lungs and breath air as we do. He showed them the hole that slowly opened and closed on the underside of one of the snails that was out of its shell. Snails could drown, he told them, if left in the water too long. They would be careful. They just wanted to wake the snails up. And that's what began to happen.

Next, Mr. Turner asked the students to name their snails. He put a large piece of chart paper on the chalkboard and listed the names as they came up with them. Previously he had numbered each snail, using White Out. This made it possible for each student to identify their snail and receive the same snail for each observation. The numbers on the snails also came in handy because sometimes he traded science lessons with other teachers, taking the snails to another class where they would receive another set of names.

Then, Mr. Turner told the students that if they could get permission in writing from their parents, he would consider letting them take their snail home, as a pet, at the end of the unit. The possibility that the snails could be taken home as pets contributed to the identification process. All the children loved and wanted pets. Living in small crowded apartments meant they rarely had a pet. Sometimes they could have a fish, but a snail was better because

you could touch it and care for it. All kids, but especially these kids, crave something smaller than themselves to care for.

Usually three or four of the students would manage to convince their parents to give them permission to keep their snail for a while as a pet. In order to take a snail home, students had to not only receive permission, but they had to sign a contract saying that after keeping the snail for a week or two, they promised to take it to a nearby park and let it go. This solved part of the problem of what to do with the snails after the science lessons were finished.

The snails in Mr. Turner's class were a species called the Helix Garden Snail. This species, the children learned, was not native to San Francisco. It was introduced by European immigrants as a food source, and it had escaped and gone wild in the mild California climate.

In the past, Mr. Turner had gathered snails from his own garden. Lately, raccoons had taken up residence in the neighborhood, and had eaten all the snails. These snails came from the gardens of Bill Morgan, a friend and fellow teacher, in nearby Pacifica, where they did not have raccoon problems. Bill did not want the snails back either. Mr. Turner would take all the snails that weren't taken for pets to a suitable wild area in a park and let them go. He knew that some of the snails would die as a result of using them for the study. But many of snails also would die in the garden because they were considered pests. In the park, they would have a fighting chance. In the long run, perhaps fostering a new attitude among the children would pay off in terms of their protection.

Liem squirmed in his chair as he waited to tell his teacher what he wanted to name his snail. First, he wanted to name his snail "Wilson" after his best friend. Wilson, however, rejected the idea, saying, "I'm not no snail." Liem briefly tried to convince Wilson that his snail was "cool," but seeing Wilson was not buying that, he chose the name Jackie Chan. As the first day's lesson ended, and the snails had received their names, the children were all smiles as they returned their snails to the aquarium. They went back to their seats to record the day's observations in their snail journals. Only two students had refused to touch their snails. And those two had both said they would consider touching their snails during the next day's lesson.

Mr. Turner was pleased as well. He knew the students were exhausted from having just finished the two weeks of mandatory state testing. They were ready for something like this. Something real. He always saved the snail unit until the end of the year like this, to give the students something positive to finish off the year. Many other teachers were winding down instruction. He wanted to end the school year on a real high note. This year's class was a combination first and second grade, so he would see the first graders, like Liem and Wilson, again, as second graders. They'll be excited to start again, he thought.

The next day's lesson began again with getting the snails out of the tank, and observing how each one appeared. Were they awake and moving readily, were they lethargic or sickly? From experience, Mr. Turner knew the snails began to deteriorate after too much time in captivity. They could stay healthy in the aquarium for about two weeks. Each morning he washed all of them and cleaned out the tank. Keeping them clean and moist was the key to keeping them healthy, that and not feeding them too much. Liem eagerly accepted Jackie Chan when Mr. Turner placed the snail on the paper on his desk. He looked his snail over as if the snail was returning home from a long absence. Jackie Chan was awake and moving.

Sizes

Mr. Turner told them that today they were going to learn about the size of snails, and they would measure the size of their own snails. He told them that snails ranged in size from about two cm, or the size of an apple seed, all the way to 61 cm, or the size of a basketball. Liem got ready to measure the size of his snail by drawing an outline of the snail on provided graph paper. The paper was divided into 1 cm squares, and the students were to count the squares to determine the size of their snail in square centimeters. They had practiced this before the state test, using inanimate objects. This was a tested item, part of the second grade math curriculum.

The children understood the concept of measurement and its uses. Still it was a struggle for some to think of measuring in two dimensions. Some students had trouble drawing an outline around their

wiggling animal. The real technical difficulty, however, in measuring the area of a snail, was how to count the incomplete squares on the graph paper drawing of the snail. Liem knew he had to count the whole squares first and then estimate the partial squares, but putting together several parts from several squares was difficult for him and for all. He could not accomplish this without Mr. Turner's assistance. The rest of the day's lesson was spent getting this done. By the end of the hour Liem and everyone had a number in square cm for the area, or size, of their snail. Some numbers were more accurate than others. All had participated in the process.

Then it was time for the snails to go back in the tank. Wilson had to take a time-out for running around the room with his snail in his hand. He said it was flying and wanted to change its name to Supersnail. Mr. Turner said he liked its original name, Slimy, but that he would think about it. There was an optimal time for the snails to be out, on the desks, handled by the kids, and Wilson had to respect this.

Snail Behavior

All the students fell completely in love with their own snails. After 20 or 30 minutes of working with the snails, some would begin to get creative about trying to see what their snail might do. This usually took the form of neighboring students putting their snails together to see if they wanted to be friends. The snails often wrapped themselves around each other, prompting explanations from the children like: they're hugging, or wrestling. Sometimes the children wanted to know if they were having sex. Mr. Turner explained that each snail had both male and female reproductive organs. This information caused a certain amount of tittering among the students. It was more than they really wanted to know, and they began to discuss among themselves what each one thought about their own snail's sexual identity. As the second day of the snails ended, comments such as, "my snail is always a cute girl snail," or the opposite, "I know my snail is a boy," reverberated around the room. Now, no one balked at touching his or her snail, and several students felt confortable enough to let their snails crawl up their arms. One girl kissed her snail. All squeamishness about the slimy creatures was gone. Liem and Wilson decided their snails were best buddies who liked to wrestle each other. They argued over which snail was the tougher of the two, but they were still happy and smiling when they put the snails back in the aquarium.

Habitat and Diet

The next day's lesson was about snail habitats. The students tried their snails in different types of substratum to simulate different habitats. They already knew about water. "These snails we have here are land snails," said Mr. Turner. "They will stay alive in water for a few minutes, but real water snails can live under water." The students put their snails on various pans of dry dirt, wet dirt, sand, broken glass, rolled up balls of paper, sawdust, bark chips, and leaves. The snails, they concluded, did not like anything dry or gritty. Mr. Turner showed the class how a snail could crawl over a piece of broken glass or a knife blade without getting cut. "It's the slime that protects it," he explained. "That's why they like smooth moist surfaces, like the glass walls of the aquarium," he said. "They can lay down a protective layer of slime on something smooth but not on something dry and gritty like sand." Liem's snail got covered with sand and had to go in the water bath to get cleaned off.

The next lesson was about snail diet. Mr. Turner had asked each child to bring in any leaf they could find. Liem forgot his leaf but Wilson brought in several that he had collected from the park that morning on the way to school. They sorted the leaves by color, by size, and by texture. Then each picked one or two leaves to try on their snail. It turned out the snails liked pretty much the same kind of leaves that people like. "That's why they're considered to be such pests," Mr. Turner told the class. After it was determined which kinds of leaves the snails preferred, the students wrote in their snail journals and the snails were returned to the tank. The snails were not allowed to eat their fill at that time because that very night was to be a special event, at which the snails were scheduled to be a feature attraction.

The Races

Once each year the school held a special night for families to come and learn about the school program. Sometimes it was a literacy night, or a math night, this one was to be Family Science Night. Each class

prepared a hands on science exhibit that the parents could learn and do. Room 205, Mr. Turner's class, was offering snail racing. Student volunteers presented their owns snails in races on which the parents were allowed to bet a quarter each. The students had prepared a huge banner, which read "Tenderloin Derby." On a large piece of chart paper, Mr. Turner listed all the snails with comments about their conditioning and readiness to "run,"comments like: "Jackie Chan: looked good in workouts"; "Supersnail: well-rested, ready to run"; and "Britney Spears: sleepy this morning but could surprise."

These comments helped the parents pick which snail they wanted to back. The students, with their teacher's help, devised a system for keeping track of the bets, sold betting tickets and collected the money. Mr. Turner had made a plexiglass racetrack with brightly colored masking tape lane markers. The actual races were conducted by the students, who held out a choice piece of lettuce in front of each of their snails to encourage them to "run." This seemed to work well. The snails were hungry enough that they followed the lettuce to the finish line. There was enough time to run three races of six snails each.

Liem's uncle arrived for the last race and wanted to bet on Jackie Chan. He bought a 25 cent ticket and settled in to watch the race. The snails "took off," following the lettuce that their student trainers dangled in front of them. At first, Jackie Chan did not appear to be interested in "running. Then, as if suddenly he remembered he was hungry, he charged down the track and claimed first place by a couple of tentacles over Wilson's snail, Supersnail. There was a small dispute about the outcome of the race but this was quickly settled. There were three student finish line judges. Their decision was final. Liem's snail had won. The winner took the whole "pot" of quarters bet on a particular race; there were no prizes for second or third. Liem's uncle was elated to receive a couple of dollars. After the event was over, several other teachers complained that the snail racing had been too exciting, and that the parents had not paid enough attention to their exhibits. At the end of the evening one parent approached Mr. Turner and offered to help him set up a snail racing parlor in the neighborhood. Mr. Turner politely declined the offer. All in all, the racing had been a huge success.

Anatomy

The last lesson of the snail unit was on snail anatomy. Each child made a paper model of the snail. One side of the model showed the insides of the snail, as if it had a transparent shell. The organs and various parts were labeled by letters and a key helped the students to identify the parts. Liem and Wilson spent a good deal of time brightly coloring their model snails' insides.

Goodbyes

Then it was time to say goodbye to the snails. Liem had gotten permission to take his snail home. Liem brought in a small plastic container in which Mr. Turner punched several air holes. At the end of the day Liem took Jackie Chan out of the tank and placed him in the container and took him home. Three other students who had also been given permission did the same with their snails. Wilson had not received permission to keep a snail for a pet. He and the rest of the students said their final goodbyes; some cried as they put their snails in the tank for the last time. They all took home snail books they had made of their observations, using the snail "yard" paper as a cover. After school Mr. Turner took the remaining snails to a park near his home and released them.

On Monday when Liem returned to school he told the class that his snail had crawled around in his apartment, eaten some lettuce, and slept in an empty fish bowl with a lid. The next Monday Liem announced that his mother had made him take the snail to the park and let it go. "It was getting sad," he said. "It missed being outside in nature." He said, also, that his mother had promised they could visit his snail in the park on the following Sunday. When school resumed that Monday Liem informed the class he had seen his snail over the weekend. A week later Liem told the class he had gone to the park on that Sunday to look for his snail but had been unable to find it. He didn't seem to be overly concerned about the welfare of the snail, howeve. "I think Jackie found a friend and is off running around with him," he told everyone.

Feminist Pedagogy and the Elementary Classroom

Lee Woodham Digiovanni

A feminist pedagogy is an appropriate response to the lessons taught by the hidden curriculum.

During doctoral coursework I was exposed for the first time to feminist philosophy. I remember the apprehension I initially had about reading and discussing anything "feminist," but as I got into the reading and the discussions I sat dumbfounded and thought, "At last! Someone understands how I think!" My professor made the comment to us that it was about time that the women in our class were affirmed in our coursework. It had only taken until the doctoral level! She further noted that our male peers receive confirmation at every level of their education, yet this is not something that is readily considered as one of the reasons why males do not have a drop in self-esteem by the middle school level, but females do, regardless of ethnicity.

This statement resonated deep inside of me. Differences in the results of our educational system for males and females have been the focus of extensive literature and research (e.g., AAUW 1992; AAUW 1999; NCWGE 2002; Sadker and Sadker 1994). These differences have been highlighted further in both literature reviews and studies that focus primarily on adolescent girls (e.g., Gilligan 1993; Hancock 1989; Orenstein 1994; Pipher 1994). As an elementary educator, I find these writings valuable, not to mention heart wrenching, yet I can not help but wonder why the focus has been so much on adolescent girls when the lack of affirmation that can lead to the drop in self-esteem and achievement begins so much younger than adolescence. Admittedly, Myra and David Sadker (1994) devote an entire chapter to the different educational results for boys and girls on the elementary level, but other than this instance, the elementary level is not a focus of study.

The beginning of this past school year marked a significant change for me as an educator, and one

Readers are invited to download a study guide for this article at <www.great-ideas.org/Digiovanni.htm>.

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that has caused my attention to focus on female students in particular and the changes that occur in their self-esteem and achievement at the elementary level. This change came about because I now have two roles at the elementary school where I work—I am now both a teacher and a parent. While my kindergarten daughter obviously loves going to school, and is prone to cheer when we pull into the school parking lot, I have been amazed to note how quickly some lessons have taken hold. My daughter has learned the correct way to walk in the hall, how to ask questions in class, "proper" work habits, and a host of other things that are not in the formal curriculum. I have also noticed that she has learned how teachers respond differently to girls and boys, and that there is now a proliferation of the use of "guys" when she is addressing family members (when only one member of our family is male). There is also a slight, quiet change in her mannerisms that shows she is learning how to be a "successful" student. This slight change in mannerisms is not unique to my child. I know from experience that the change multiplies visibly every year for the young girls that I teach, so much so that by the time these children are in fifth grade, it is very difficult to find that once eager kindergartner deep inside. These young ladies are more reserved and less eager to draw attention to themselves academically, and some almost become invisible presences within the classroom.

These changes can be attributed in part to the hidden curriculum. I would be unwise if I thought that I could completely summarize what the hidden curriculum is, but I would also be remiss if I did not attempt to identify parts of it. Jane Roland Martin (2002, 60) concurs that the hidden curriculum is difficult to pin down, as she notes that she

> once tried to compile a list of all the sources of school's hidden curriculum. On my list were school's rules, its social structure, its physical layout, the role models it provides, teacher-pupil relationships, the games played, the sanctioned activities, textbooks and audiovisual aids, furnishings and architecture, disciplinary measures, timetables, tracking systems, curricular priorities. I finally came to the conclusion that I had set myself a never-ending task.

While the hidden curriculum is difficult to define, it is interesting to note that in the nineteenth century, much of today's hidden curriculum was actually part of the overt curriculum and was designed to establish social control. The founding of the common school and the use of textbooks like the *McGuffey Readers* demonstrate the intent to actively mold and

One way to examine the hidden curriculum is to look at the formal curriculum and consider what is learned because of what is* not *taught in school.

impose values upon the American public. Some of the Founding Fathers made it clear that they wanted public education to help make citizens more homogeneous in the hopes of maintaining a permanent union of the states (Vallance 1973, 75). There are those contemporary theorists who postulate as well that schools continue to serve the purpose of social control through the reproduction of our society and socioeconomic class system. In our schools, students learn how to be a part of the world of work, to follow directions, to be attuned to time in segments, to be numbed to routine, and how to be moved about in a way that will eventually cause them to follow the same paths that their parents did as they moved into the workforce (e.g., Anyon 1990; Apple 1995).

Perhaps a simpler way to define the hidden curriculum is to think about what is learned at school that is not part of any formal curriculum. On the elementary level, examples include the various procedures that are established just to accomplish daily functions, such as how to walk in the hallway or buy lunch. Another way to examine the hidden curriculum is to look at the formal curriculum and consider what is learned because of what is *not* taught in school. For example, if one were to examine the social studies textbooks for contributions made to government and history by women and people of color, one would be hard pressed to find more than a handful presented, and their contributions are not delineated to the extent that the contributions of white males are. What does this tell the reader of these text-

books? In this same vein, one could also examine the posters that are displayed as educational aids in the classrooms. How many posters show women or people of color? If one were to pick any child in the class who is not a white male, would that child be able to find anything on the walls or in textbooks that represents the image that is seen when she or he looks in the mirror? (Granted, efforts have been made to redress the lack of women and cultural others in textbooks and instructional materials, but the efforts are little more than the "add women and stir" variety which do little to communicate a message of equity). When one also considers conversations, classroom interactions, teacher actions (or inactions), the hidden curriculum becomes more understandable. The reasons why educators should be more consciously aware of the hidden curriculum and the need to address it are also easier to recognize.

Just because one is aware of the hidden curriculum does not mean that one becomes immune to its effects. Recently, I was assisting my students with individual science experiments and projects in one of my fourth grade classes. One of my more outgoing female students approached me for help, and as I moved away to get something to assist her, several male students managed to gain my attention and I quickly forgot my initial purpose. She sat demurely by the computer; her face had fallen by the time that I remembered to get back to her. After I apologized to her profusely, I made the comment to her that she should not let me or anyone else forget her request, nor brush off the fact that we had—there was nothing wrong with being forceful about needing help, but there was something wrong if we ignored what had happened. She continued to sit there quietly.

What kind of lesson had I just taught this young lady? Here I am, someone knowledgeable about the hidden curriculum and the loss of self-esteem adolescent females face and I find that I am just as guilty of allowing more boisterous students to grab my attention away from a female student who clearly needed help. Does this not reinforce the lesson for her that she is a second-class citizen?

The hidden curriculum has this propensity for females. Women *are* conspicuously absent from the formal curriculum, leading girls to believe that women do not "do" history, science, or math. Women are not the important authors, movers, or shakers; their tasks and accomplishments are relegated to the sidelines, or to a month-long celebration in the year that is often brushed aside on the elementary level for more fun activities like leprechaun visits and springtime celebrations. When one adds this facet of the hidden curriculum to the actions (or inactions) of teachers as gender roles are reinforced in the classroom, girls tend to internalize the lessons and their sense of self diminishes (Sadker and Sadker 1994).

As an educator, I am more than bothered by the results of the hidden curriculum for our females. Educators as a rule want their students to succeed, and this is difficult when the deck is stacked against at least half of our school population. What can one do? Going back to the "a-ha" moment that took place for me in doctoral coursework, I began to wonder more about feminist pedagogy and a potential connection that could be made on the elementary level to combat the hidden curriculum for our young females. Judy Logan's (1993) work that is delineated in both her book *Teaching Stories* and the book *Schoolgirls* (Orenstein 1994) shows how a feminist pedagogy can be effective in a middle school setting. If I find affirmation with both feminist philosophy and with an instructor who practices feminist pedagogy on the doctoral level, and if success has been found in a middle school classroom (not to mention Women's Studies programs in colleges throughout the United States) where feminist pedagogy is lived and practiced, could the same approaches help combat the negative effects of the hidden curriculum in the elementary classroom? With this question in mind, I began to examine feminism and how feminist pedagogy might be effectively brought into the elementary classroom.

Feminism

Broadly conceived, feminism is "the affirmation of all life forms without exploiting any" (Liston 2003). Like scholars who focus on race and class, feminists try to liberate those who are oppressed, silenced, or ignored—in this case females. There are important similarities between feminist, antiracist, critical, and engaged pedagogies. All agree that the "banking system of education" (Freire 2000, 73), where the teacher is the holder of all knowledge and

deposits it into the minds of their young charges, is not the model that should be espoused in our schools. All desire to be liberatory.

While some people have spent years defining what feminist pedagogy is, and I cannot pretend to embody of all of its elements, I like Mayberry's (1999, 7) explanation of feminist pedagogy:

> Feminist pedagogy invites students to critique the unequal social relations embedded in contemporary society and to ask why these circumstances exist and what one can do about them. To achieve these liberatory goals, feminist educators develop and use classroom process skills, many of which are used in collaborative learning environments…. Great care and skill go into developing a learning environment where students work together to design group activities that demonstrate an awareness of race, class, and gender dynamics that permeate the larger society. Through dialogue and conversation, students and teachers negotiate a curriculum that articulates their needs and concerns. These classroom strategies are designed explicitly to empower students to apply their learning to social action and transformation, recognize their ability to act to create a more humane social order, and become effective voices of change within the broader social world. (Mayberry 1999, 7)

Applications to the Elementary School

Most information that can be found on feminism relates to the college level and beyond (e.g., Coffey and Delamont 2000; Diller, Houston, Morgan, and Ayim 1996; Gabriel and Smithson 1990; Mayberry and Rose 1999), and information pertaining to the elementary classroom usually tends to be related to the formal curriculum, discipline techniques, and the like—certainly not feminism. A rare study on feminism within the elementary school was carried out by Carla Washburne Rensenbrink (2001). Resenbrink's study examines three elementary teachers who consider themselves to be feminists. One woman is white and heterosexual; another is white and lesbian; and the third is black and heterosexual.

The similarities that these three women bring to their classes, which range from second grade to the upper elementary school years, are noteworthy. Each works to develop a more conscious practice of education. Their strategies include classroom reading materials and wall postings that provide a more inclusive worldview; the restriction on racist and sexist talk; the effort to make sure all students feel safe in the classroom; and the open discussion of gender and race. Even discipline is handled in a way that shows "their fundamental respect and care for their students" (2001, 147). Rensenbrink further notes that, "as feminist teachers—with different emphases—they see their role in terms of helping their students to learn and grow, to think for themselves, to understand and accept each other, and to work together" (2001, 146). Seating arrangements are important to these teachers as well; they have students sit in small groups and try to keep the groups gender mixed. Math is taught in each classroom in a "hands-on, cooperative, discussion-based approach" (2001, 147) that is consistent with recommendations made by those who have examined gender and achievement (AAUW 1992; Sadker and Sadker 1994). Responsibility on the part of students is also a key factor in each of these classrooms.

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In my teaching, I have found it especially important to guard against information that is left out. In this effort, comprehensive frameworks can be useful guides; teachers can look to the framework to be sure they are not omitting anything important about gender. One framework I strongly recommend is Peggy McIntosh's (1983) five-phase curricular model for inclusive teaching. Using history as an example, these phases can be described as "Womanless and All-White History;" "Women in History," which provides a sprinkling of exceptional achievers in the curriculum; "Women as a Problem, Anomaly, or Absence in History," which unmasks why women are not present in the curriculum; "Women As History," which treats the daily lives of women as worthy of inquiry; and finally "History Redefined and Recon-

structed to Include Us All." As an elementary educator who desires to affirm all students in her classroom, I am obligated to examine the formal curriculum to see what messages my students are getting. If each of my students does not see someone who looks like them (or for that matter, someone who doesn't look like them) in the curriculum that I am presenting, then a "curricular re-vision" (McIntosh 1983) is in order. McIntosh notes that the final phase does not exist in our schools yet, and the one prior to that is a rare find.

Concerns

Some may argue that the elementary age is too young to achieve the broad goals set out by feminism and a feminist pedagogy. I disagree in part. From the very first day that a child walks into a classroom, the hidden curriculum negatively affects adolescent females. A pedagogy that encourages young students to work together and affords them the opportunity to "create a more humane social order" (Mayberry 1999, 3) is an excellent opportunity for even the youngest kindergartner who walks full of hope and wonder into the classroom. If one thinks about how a kindergarten class operates, these youngsters must learn how to work together, regardless of race, class, or gender. We do not expect five-year-olds to be able to solve complex algebraic equations, but we do expect them to learn the first steps of the process in kindergarten. By the same token, the broad goals of feminism should not be the chief goals of an elementary classroom, but the foundational underpinnings—equity and affirmation of all regardless of race, class, or sex—are more than appropriate on the elementary level.

With the statement I made earlier about a "curricular re-vision" (McIntosh 1983), I can hear yet another argument forming. What about the boys in the classroom? With all the discussion of how to affirm females, aren't you forgetting about half of the population? If you are advocating a feminist pedagogy, are the boys going to end up being just like the girls—playing with dolls, or maybe something even worse?

A feminist pedagogy does not forget about the boys in the classroom. On the contrary, the contributions of males are still an important focus in elementary education, but so are the contributions of females. When one "re-visions" the curriculum, one is not eliminating instruction about historical male figures. A re-vision of the curriculum would allow for understandings and perspectives that are not chiefly male perspectives to be taught and appreciated. It can be argued as well that because so much of the focus in education has been on the world of men, the productive sphere, the world has been misunderstood because the world of women, the reproductive sphere, has been left out (Martin 1985). A better understanding of the world, for all of our students, can only be a good thing.

Paradoxically, feminism has made it acceptable for elementary females to be involved in activities that used to be the chief domain of males, such as sports, without any question to the femininity of the participant. Yet if an elementary male is involved in activities that are traditionally feminine, such as dance or playing with dolls, his masculinity is questioned. A feminist pedagogy by its nature increases opportunities for all students to practice caring and nurturing. Zhumkhawala (1997, 5) notes that it is more than appropriate for boys to play with dolls or other "stereotypical 'girl' activities," as it allows them to "develop nurturing skills and refine their fine motor coordination." Sadker and Sadker (1994, 204-205) further note that "males as well as females benefit from the experience of caring for others, and if these opportunities are denied, boys may lose touch with their own emotions."

Even more sadly ironic, the hidden curriculum is as detrimental for boys as it is for girls.

> As boys learn that they are the more valued gender and that female activities are to be avoided at all costs, boys begin to disparage girls…. Boys' feelings of misogyny, if allowed to develop unchecked, can bear bitter fruits in adulthood. Men who view women as worth less or as objects of scorn and submission may act on those beliefs. Each year approximately 2 million wives are physically assaulted by their husbands and more than 100,000 women report they have been raped. Almost one-third of all female murder victims are slain by husbands and boyfriends. (Sadker and Sadker 1994, 208)

The lessons that the hidden curriculum teaches both genders are certainly disturbing. If feminism is indeed the "the affirmation of all life forms without exploiting any," then a feminist pedagogy is appropriate for both females and males.

Conclusion

I would like to conclude with a personal anecdote that illustrates the application of feminist pedagogy to the elementary classroom. During one of my fourth grade classes' discussion of current events, the same girl I had "forgotten" earlier, made a comment. Two of the boys, however, began to ridicule her. I had a chance to make amends to the girl. I stopped the conversation and explained why I had a problem with what was happening. I made it clear that in my classroom, I want people to know that it is safe to make comments about what they think. If fear exists, then some people in the class might have a tendency to hold back valid thoughts and opinions, and then we might miss out on important comments that could enable us to examine different perspectives. If that was indeed the case, then we could not have the debates that I knew they looked forward to. The two boys looked at me, nodded in agreement, and proceeded to apologize. The apologies were not tinged with sarcasm, as they are prone to be in some elementary settings, but were completely sincere. The young girl in question grinned from ear to ear—not in victory, but in appreciation.

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African American Women and the Pursuit of Higher Education

Tasha Prosper

CUNY's admissions policies encourage minorities to attain academic success while they block them from going very far.

This year marks the 50th Anniversay of the legal case, Brown v Board of Education. It began when a little girl, Linda Brown, had to walk one mile through a railroad switchyard to get to her all-black elementary school, even though an all-white school was much closer to her home. Her father, Oliver Brown, couldn't get her transfered to the nearby school so he enlisted the help of the National Association for the Advancement of Colored People (NAACP). In 1954, the NAACP won the monumental Supreme Court decision that outlawed segregated schools throughout the country (Knappman 1994, 467)

In the middle and late years of the nineteenth century a new dialogue began regarding women and education. Social theorists focused on the extension of higher education to women and African Americans (Grant 1992; Ihle 1992). Black women were often dissuaded from entering degree programs, but they forged ahead nonetheless. By the turn of the century, African American women were defying society's expectations and attending coeducational integrated institutions (hooks 1981, 91). The 1954 *Brown v Board of Education* decision gradually led to an increase of black women at traditionally white colleges and universities across America. Today the oppression, hostility, and disapproval that black women face when applying to graduate programs is covert but still present.

As I walk down the graduation aisle this year to receive my masters degree, each step will be in honor of young Linda Brown and all ancestors who have struggled before me. I did not have to walk a mile through a switchyard as little Linda Brown did in order to attain my degree. But at my back I felt the shock of the CUNY administration's switch

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as my tuition was increased. I heard the agony of the students who had to drop out and defer a dream due to the current CUNY administration. The CUNY switch provoked angry protests from scores of us, but CUNY imposed its new increases without any real acknowledgment of the hardship it was creating.

Moreover, CUNY ignores the racial and ethnic unfairness of its recent admission policy. Students now must pass new standardized tests to prove they belong in college. Those rejected by the tests alone—those who otherwise qualify for college and would have been admitted in the past—are disproportionately people of color. What's more, the tests lack adequate predictive validity; they are weak or useless predictors of success in CUNY courses (Crain 2003). At CUNY, where undergraduate applicants are typically people of color, the SAT predicts freshman grades less well than it does nationwide. Moreover, even nationwide the SAT predicts only about 16% of the variance in freshman grades (Sacks 1999, 7).

In America, standardized tests have great prestige. They give a numerical score to a person's potential. Nevertheless, researchers are finding that the test construction process itself biases the results against students of color. SAT pretests reveal items on which African Americans often get better answers, but these items are not used in the official versions because they don't correlate with the rest of the test (Young 2003).

This is the spirit of a new racism. CUNY doesn't block the doors with hoses and dogs. It uses standardized tests. Nor will the education system turn you away at first glance based on color alone. Instead, it gives you a biased entrance exam where your race, economic background, and gender predisposes you to a certain score bracket. As Iain Walker and Ann Pederson (2000) argue, the nature of racism and prejudice has changed over the last century. It is now more subtle and covert.

An Unsafe Minority?

I have personally had to deal with turning to African American faculty for advice and being rejected because I was not a "safe bet." I didn't seem sufficiently cautious and conservative—someone who wouldn't stir things up. My education has trained me not only academically, but also in the politics of the CUNY experience. It has taught me that if you do not know your place, you cannot play in the race.

In conversation with an African American staff member of CUNY, I was told that my degree would be useless unless they stopped letting all of these blacks and foreign speakers in to CUNY. She said that my degree would be worth more if CUNY became more "white." I was rendered speechless, as I had just told her that I had been on WBAI radio earlier that week promoting the need for access and open admissions for all.

The CUNY system applies a hypocritical approach to people of color and the working class. It asks us to work hard to accomplish academic success, but it also works to block us from going very far. It keeps tightening testing requirements. When it comes to graduate studies, a major obstacle is the Graduate Admissions Test (GRE). The GRE is perhaps as prestigious as the SAT, but it is an even poorer predictor of academic success. The Educational Testing Service estimates that, nationwide, the GRE predicts only about 9% of the variance in first-year grades in graduate school. Other research indicates that the GRE's predictive capacity is even less (Sacks 1999, 276). Yet this test, which seems practically useless, produces lower average scores among people of color and carries considerable weight in graduate school admissions (Sacks 1999, 276). And then, if the tests aren't enough, CUNY keeps increasing tuition, as if it didn't know that most people of color are financially poorer than Americans in general.

The cloud created by the politically appointed CUNY Board of Trustees obscures what it is doing. It says it is concerned about people of color and praises the rare successes. It says it wants to make sure we're qualified. But through the fog, I can still see the statistics of the 1997 CUNY Student Data Book. In the mid-1990s, when 47% of the university's bachelor's degrees were awarded to people who were either black or Hispanic, the equivalent figure for PhDs was only 13.5%. The administration has yet to release more recent demographic numbers, but the situation for any low-income student may soon be worse, after CUNY's new tuition hike in 2003.

The efforts of the Governor- and Mayor-appointed Board of Trustees leave me, as a woman of color, wondering why they do not want reflections of me here. Is there an unsafe quality to our color? Are we dangerous? Are we a threat? The 1969 struggle for open admissions was a breakthrough for people of color, but the CUNY central office seems to long for the homeostasis of the good old days of a safe CUNY system.

The media bombards us with indelible stereotypical images of black women who are so powerful and prolific that, even in the face of evidence to the contrary, the tendency is to keep an eye out for the black woman to eventually reveal her "true nature." Many African American women on college campuses have to confront the perceptions of incompetence held by their professors and fellow classmates. The stereotypes are often expressed subtly. Throughout my academic career, I've been complimented by whites because "I speak so well," as if an African American woman is not supposed to sound like an educated person. Charisse Jones and Kumea Gooden (2003, 9) report that 79% of the African American women they surveyed felt that in order to gain acceptance by whites they had to change the way they speak and tone down their mannerisms. They also felt that in order to gain acceptance they could only talk about what white people were interested in. They had to avoid controversial topics. What's more, black women constantly have to prove themselves both as African Americans and as women who are qualified for professions historically dominated by males. Typically, they have to outperform their peers just to achieve the perception of equal performance.

(I am speaking in this essay as an African American woman. The experiences of African American males might, in their own ways, be harsher still. They certainly suffer from more severe under-representation in higher education. Black males must struggle against a society bombarded with media images stereotyping them as drug-addicted rapists. "Not since slavery has so much calamity and ongoing catastrophe been visited on black males," says Dr. Louis Sullivan, former U.S. Secretary of Health and Human Services [Majors and Gordon 1994, ix.])

Speaking Out

Often, minorities speak up for themselves only in safe environments among close friends and peers. When I conduct multicultural investigations as a social psychologist, several participants spontaneously tell me their personal views about CUNY's racism. However, they only do so in private. They often think that they are the first to see it and uniquely hold the burden on their hearts.

Not only is speaking up but also speaking out and letting your voice be heard necessary to our mental health as people of color. Keeping silent in an establishment that does not honor multicultural integrity through faculty hiring and admissions policies has far reaching consequences. Keeping silent masks the problem and allows it to fester. It is extremely important to form peer support groups and to find culturally sensitive mentors to navigate the system. Having a voice which is heard and appreciated, is motivational. This is especially so in a society and public school system that puts the voice of the working class student last. As women of color, we have to reach out to each other and lift up our voices. Linda Brown would demand it of us. Anything less would be an outright shame.

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Gay Male High School Teachers

A Taxonomy of Fear

William DeJean

A window into the experiences of gay high school teachers

I often joke to friends and family that teaching for me has been like returning to the scene of the crime. It still seems ironic that I chose to work in an environment that once represented isolation and pain. Yet I have come to see how becoming a teacher has been, without my realizing it, a way to reclaim my past, a way to create light in a place that once felt so dark.

Like many lesbians, bisexuals, and gay men, my high school years were marked by not being real. Each morning I would wake up and make deals with the universe. I would pray to forget the truth that I knew. I would ask for one day where I didn't have to think about being gay. If I was granted this wish, I agreed to improve my grades or treat my family better. It never worked.

Looking back, it is not surprising I felt this way since I never saw myself in high school. Literature in English never included me. I never knew of a teacher who was gay. I never heard the words "gay" or "lesbian" mentioned; it was always "faggot" or "dyke." In every aspect of high school, my story was never told, or if it was told, it was through rumors and lies. Because of this, I remained silent.

In college, while my roommates thought I was at work, I was in the public library. On the third floor of the downtown branch, my world began to open up. It was in the gay and lesbian literature section that I began to reclaim my life. I would spend nights alone, sitting on the floor, reading coming-out stories, sections of fiction, gay and lesbian history, and anything else that I could find. My experience was much like the one Sapp (2001, 18) describes:

> I had this sudden moment of revelation: everything I know about being gay I've heard from white, conservative, heterosexual males! No wonder I'm messed up. How is it possible for someone who is not me to name and define me?

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> I immediately made a commitment to begin reading material written by gay people for gay people.

I didn't think I could be a teacher. It took me weeks to fill out the credential application. As I completed the form, I remember thinking about the life I would have to hide in order to stand in front of a class. It was finally my college roommates who convinced me to mail it in.

My first year of teaching was my first experience with hate. "Faggot" and "queer" were painted in large letters across my classroom windows. "DeJean is gay" was scratched into a desk. "Faggot" was carved into the door to my classroom. After each incident, I would wonder how they knew. After each incident I withdrew. I suddenly didn't walk across the large quad at lunch for fear that someone would scream something out. I arrived at work earlier, so I could do most of my work alone, without students or other teachers around. With each attack, I became more guarded, which could be seen in how I taught, and what my lessons would reveal. Students knew there was a line in the sand, and rarely did they cross it. Since I didn't have tenure, I told only a few people what was happening to me. Simply put, I taught from a place of fear.

By the end of my first year of teaching, the California Education Placement Association awarded me as an outstanding first-year teacher of Southern California. In many ways this award did not come as a surprise since my fear was masked in a veil of professional perfectionism. This perfectionism was centered on the false belief that being a great teacher would keep me safe. Yet, the recognition provided me with the confidence I needed to remain in the classroom as well as a desire to find new ways to move out of the educational closet that I felt so tightly locked in.

That process began slowly by coming out to a few colleagues, then to a few students, and finally to my administration. I continued by joining the local chapter of the Gay, Lesbian, Straight, Educators Network (GLSEN), and meeting with other gay and lesbian educators. A few years later, tired of changing pronouns or thinking before I spoke, I came out to a few of my classes in which I was currently teaching.

A Qualitative Study

After all of that work, I began to look back at my experience and wondered what the experiences were of other gay male teachers who taught in the same school district that I was teaching in. I decide to conduct a study to examine how homophobia and heterosexism impact gay male educators. The driving question was simple: What is it like being a gay male teacher in a public high school?

I chose to conduct a qualitative study. As Creswell (1998) observes, qualitative designs effectively capture many of the issues in which social sciences are increasingly interested in, including gender, culture, and marginalized groups. With the gay and lesbian community often seen as an invisible minority within the K-12 system, utilizing a qualitative methodology offers an important tool to ensuring that their experiences are honored and that their voices are heard.

To begin, I contacted five gay male high school teachers via e-mail who taught in the same school district I was currently teaching in. I had met each individual previously, usually through professional conferences, yet had never had the opportunity to discuss with them these issues this study intended to explore. I gave each of the five a brief overview of the study, and an explanation of how data would be collected. In the end, three gay male teachers agreed to take part. Collectively, they were veterans of the classroom, with teaching experiences that ranged from 11 to 29 years.

The interview protocol featured 17 questions (which can be found in the inset on page 23) generally focused on the men's experiences as gay male teachers. Those items not targeting demographics were structured yet still open-ended (Denzen 2000, 649), which encouraged respondents to speak candidly and tell their own stories without restraint. Overall, the narratives captured the common and unique problems each faced with students and colleagues, and their impact on both what they taught and how. The interviews were conducted after school either in a classroom or at my home, based on the participant's requests. Each interview was tape recorded and lasted approximately from 30 to 40 minutes.

Findings: A Taxonomy of Fear

The pervasive theme throughout the interviews was *fear*. The fear, however, occurred in severaldifferent fundamental contexts.

Entering the Profession

Scott has been teaching at the same school for 11 years, and is currently one of two science department chairs. He believes that for the most part, he has had little negative experience as a gay teacher at his high school. He is *out* (publicly known to be gay) to many of the teachers and administrators on campus, as well as to some students. Yet he contends the fear he con-

fronted emerged in the beginning of his career at the school.

> It was very very scary and very unnerving, very uncomfortable. I felt like I was the only gay teacher on this campus. I felt as if I did come *out* I wouldn't have a support system for that. When I actually did come *out*, it was a whole different story. People were really supportive. I've had for the most part, nothing but positive things happen.

Scott explained how that fear was heightened when someone placed a letter in the faculty mailboxes.

> When I did start working here, before I told anyone about my living arrangements or my sexuality, a teacher here had used district letter head and dropped a letter and xeroxed it and put it in everyone's box. Saying something along the lines, although you can still love somebody who is homosexual, you don't have to love or agree or support the homosexual lifestyle. So we should not tolerate that on this campus.

So for Scott, fear was an experience felt initially entering the school. In response to this fear, as well as to gain a network of support, he eventually came out to a few colleagues. Reflecting on his experience of entering the profession as a gay man, he he observed,

> I would say initially it is scary to come out, and to share that part of your life to your peers, or actually to anyone. It is scary to share that if you don't know who they are or their background or their thoughts or how they might act to the whole situation. What I have come to find out is, I had a lot of anxiety over something I really didn't need to be anxious about. Once I did come out, and now, for the most part, I have had nothing but positive experiences.

Hiding Within Structure

Joe began teaching in Tennessee some 29 years ago. He moved to California for "the freedom." While he contends he has not had any negative ramifications for being a gay teacher, Joe's experience in Tennessee taught him the institutional rules of silence required of gay men who choose to work in the K-12 school system. Joe's fear was shown through his hiding within the structure. That hiding took place in numerous ways. As he put it,

> It was like, I know how to act with these people, and I know how to keep closeted. And I know how to cover myself. So I felt, as long as I played the role, there wasn't any danger. It was mainly a flamboyant teacher, or an outsider, or somebody who was from the north that would have trouble. That might have their car keyed, or maybe beaten up, because they are gay. Or have their yard toilet papered, or fag written on the side of their car.

Yet, even when Joe moved to California, much of who he is continued to remain invisible.

> I think probably the thing is that I have excluded myself from school life, more than if I had been married and had school kids. Back in Tennessee, unless I had a female date, I would not attend a school function. I think that has removed me, I did this on my own, it wasn't that anyone told me to do this, it just that I wasn't comfortable in a social situation outside the classroom.

Although Joe moved to California to gain more personal and professional freedom, much of his identity within the teaching profession remains hidden. As Joe explained,

> As long as you know how to play the game, you are okay. And when you learn growing up how the game operates, you don't even think of it as a game; you just see it as life. That is just the way you live. It is not good or bad, it's just life.

Harassment While in Structure

For both Scott and Joe, many of their decisions taken as educators, from initially hiding their sexual orientation, or not attending staff functions, stems from a silent understanding that revealing one's identity within the school setting could cause negative consequence.

Of the three teachers in my study, Tom seemed to best understand the harassment gay and lesbian people often feel at school.

As a high school student, Tom had been verbally harassed because, as he says," they knew that I was a fag and I got picked on." In order to find a way to defend himself, he took up swimming, because "I couldn't beat

up someone who was six feet tall that was calling me faggot." But he was on an even playing field when he was in the pool.

When Tom became a high school teacher, and part of the school's swim team, that harassment returned but in a more direct way. Tom was fired as the school's swim coach when the school learned his sexual orientation. As he told me,

> When the swim coach found out that I was gay, I was promptly fired without warning the next day … within a week. In the middle of practice I was called…. It was the most traumatizing event that I have ever been through. To be called into the office in the middle of practice, and (told) that I wasn't coming back. That the swim team was going to take on a new direction, and that my services were no longer needed. I mean, practice had been going on for 45 minutes. They didn't even have anyone to take over. And they had orchestrated this.

In addition to being fired, Tom experienced in some ways much the same verbal harassment he experienced as a teenager.

> It wasn't like people would call me faggot or anything, but you would be sitting down at lunch, and you would hear anti-fag this and anti-fag that. It wasn't like they looked at me and said it, but there were a few people who made it clear that I was … that I was gay, and they did not like, and they knew it was wrong, and I would burn in hell.... It was pretty bad.
>
> I would have probably would have left a long time before then and moved to California, but I had a house that was in an area, for many reasons, I could not sell at the time.… So I was stuck.

It was this harassment that led Tom to finally leave his job and move to Atlanta, and finallyto California. Today, because of the memory of that experience, his identity is known by few people at the campus where he works.

Teaching from Compassion

Although fear was a central idea that each man expressed, especially fear as a product of working as a gay teacher in a public school setting, so was compassion. Collectively, they were aware that being gay influences how they teach. During their individual interviews, Scott, Tom, and Joe described how their experiences as gay male high school teachers have resulted in trying to create inclusive classrooms where hurtful language is not accepted. As Scott said,

> It definitely influences the rapport I have with my students. They are aware that any type of language or actions that would be considered degrading or hurtful to another persons, regardless of their sexuality, their ethnicity, their religion, whatever the case may be, that it isn't acceptable in my room.

And, as Tom explained,

> I think it makes me sensitive to certain issues. I think when you are aware of discrimination and feeling different, the whole "I'm different" feeling for whatever reason, because you transferred into a new school, because there is a new kid in town, because your parents don't speak English, because you are the latest you know in a boat full of refugees, whatever that is, I think that gay people can relate to. They can relate to overcoming that difference, and more being accepted, which is what everyone wants, to be accepted, even the new kid in school.

For Joe,

> It has impacted me on my humanity. I think that if I had been straight, I would not have gone into teaching. And if I had been straight, I don't think I would have been as sensitive to the downtrodden and to minorities and other groups. I think I would have been a white bigot, like everybody else I grew up with.

Thus, as educators, Scott, Joe, and Tom have used their experiences as gay men to create classrooms where respect, safety, and inclusion are the focus.

Discussion

It has taken me seven years to break the fear and silence I was working in. While today there are many changes on the campus where I teach (I am *out* to the majority of my students; our high school campus now has a gay/straight student alliance; I have a network of support). I am still faced with the occasional parent who wants to pull his or her child from my class be-

Interview Questions

- How long have you been teaching?
- What subject do you teach?
- What grade level do you primarily work with?
- How long have you known you were gay?
- Are you *out* to your students? Administration? Other teachers? Your family?
- How would you describe what it is like being a teacher who is gay?
- As a teacher, have you had any negative experiences because of your sexual orientation?
- What contributes to you feeling safe or unsafe on campus?
- As a gay teacher, what words would you use to describe what it felt like as you entered the teaching profession?
- Does being gay impact how you teach?
- If you have come out at school, what has your experience been like?
- Were there events that led you to be more open on campus?
- How do you deal with anti-gay comments of jokes as a teacher?
- What kinds of decisions have you made to be *out* on campus?
- What questions should I ask?

cause of who I am; I am still confronted by a hateful comment which is occasionally made, and sporadically still get "faggot" written on my classroom door. Because of these experiences as well as my discussions with Scott, Tom, and Joe, I now realize that at times I am still navigating within this taxonomy of fear. For this reason it is not surprising to me that fear would permeate the stories of gay male teachers since, since as Pobo (1999, 2) points out, "homosexual teachers know that, by and large, academic systems and structures reward the closet and punish the person kicking at its door." It is because of this that many gay and lesbian teachers working within the K-12 setting choose to remain in the professional closet. Yet while the closet might offer some "protection," often the cost is both personal and professional.

I am also reminded that while remaining in the professional closet might appear to offer us safety, it also places us at odds with what many have argued makes for effective teaching. That is because good teaching is not only centered on the subject one knows or the methods a teachers uses, but, as many of my students have reminded me, it is often connected to who a teacher authentically is within his or her classroom. That is because as Palmer (1998, 15) argues, good teaching comes from a state of being undivided where "every major thread of one's life experience is honored, creating a weave of such coherence and strength that it can hold students and subject as well as self." Or as Hamachek (1999, 209) says, we often

> remember our teachers, not so much for what they taught, but for who they were and are. We remember their substance as persons, their style and manner as individuals. Students might be attracted to a teacher's mind, but it the essence of a teacher's selfhood that is remembered.

Why do lesbian and gay men, faced with a taxonomy of fear, choose become teachers? Kissen's studies (1996, 15) suggest that they do so for the same reasons that straight people do. They care about children. They love ideas, or a particular field of knowledge…. Lesbians and gay men become teachers for … reasons that have nothing to do with their sexual orientation. Only when they encounter the pressures of homophobia—the fear and hatred of gay people—does being a teacher become a problem.

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Young Immigrants

A Psychosocial Development Perspective

Glen Milstein and Luka Lucić

Young immigrants are caught between parents who communicate the enculturative message of their homeland, and teachers who communicate the acculturative message of the receiving society.

We reside in New York City, which is currently experiencing a wave of immigration not seen since the beginning of the last century. According to the 2000 Census, 36% of New York City's population is foreign born (Buckner 2003; Kinetz 2002). This percentage is even higher in some parts of the city. For example, 46% of Queens, one of New York's five boroughs, is foreign born, and 56% speaks English less than "very well" (U.S. Census Bureau 2004). In New York City schools, 48% of all students come from immigrant-headed households (Landale and Oropesa 1995). The pattern of immigration is similar across the nation. Currently the population of the United States includes 32.5 million people who are foreign born, representing 11.5% of the population (Schmidley 2003). One in five of all school age children in the United States are immigrants (Hernandez 1999), and these numbers are likely to increase in the near future.

Teachers and parents do not always share the same values and views about priorities for children's education. The potential grounds for conflict include disciplinary rules, gender roles, racial stereotypes, work habits, and occupational choices; all of which can be exacerbated by cross-cultural misunderstanding and miscommunication. It is therefore essential to address the questions which arise from the increasing cultural diversity in our public schools, brought about through immigration (Phinney et al. 2001).

Readers are invited to download a study guide for this article at <www.great-ideas.org/Milstein.htm>.

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One way to understand these conflicts is as a disruption engendered by the disparate developmental processes of enculturation and acculturation. Enculturation describes the process whereby we acquire the values, norms, and skills that enable us to function within our own cultural groups (Ho 1995). Each culture is unique, specific, and adapted to function within its own community, which results in differences of customs, communal organizations, educational systems, and the distribution of economic resources. Enculturation is mediated through interaction with one's significant relations, whom Erik Erikson calls "counterplayers" (e.g., parents, family, teachers, friends, progeny) (Erikson and Erikson 1997, 48-49). Acculturation, in contrast, refers to the process of acquiring the values and behaviors appropriate to a new culture (Redfield, Linton, and Herskovits 1936, 149).

Migration and relocation disrupt the developmental processes being engendered from within one's own culture, as the immigrant necessarily acculturates to the usually very different mores of the receiving society. Upon entering the public school system, the immigrant child becomes exposed to a whole new set of cultural rules, roles, norms, and demands that represent the acculturative messages of the receiving society. When young immigrants' processes of enculturation and acculturation are neither in concert nor complementary—but rather clash with each other—there is a potential that this conflict will hinder the development of immigrant children.

We became interested in the psychology of immigration—particularly in the adaptation and adjustment of immigrants within the context of their host society—because of the community where we live and work. Students at our school, The City College of The City University of New York (CCNY), come from 147 countries and speak 91 different languages (Silverman 2004). Enveloped in such a diverse environment and surrounded by many personal tales of immigrant experience, we became aware of the wide array of outcomes that follow the immigration process. Some immigrants adjusted relatively easily, while others struggled to learn rules, roles, and norms as they internalized the moral and social rules of conduct that governed their new society.

Through common themes that we heard from CCNY students, we became interested in the interplay of personal and social forces, which can lead to a relatively easy adjustment for some immigrants, but cause enormous hurdles and impediments for others. Using the stage theory of Erik Erikson as a conceptual framework to guide our efforts, we chose to examine how the disruptions of migration might interfere with the psychosocial development of migrants to the United States. We asked which developmental stages are more vulnerable to these disruptions than others.

Erikson's Contributions

Erik Erikson was a student of Sigmund and Anna Freud. He developed his theory of psychosocial development by extending the Freudian theory of psychosexual development with its emphasis on the internal processes of libidinization of primary body zones to include the corresponding ego modes as well as environmental and interpersonal influences, resulting in his theory of psychosocial development (Crain 2000). Erikson's theory follows an epigenetic principle that states that "anything that grows has a ground plan, and that out of this ground plan the parts arise, each part having its time of special ascendancy, until all parts have arisen to form a functioning whole." (Erikson 1968, 52).

Across our lifespan we ascend through eight stages of psychosocial development, one invariably following another. Within each stage we encounter a novel and unique developmental crisis or task. The outcomes of the eight crises result in strengths and deficits, which in turn influence subsequent development. The stages themselves, according to Erikson, are universal, but each culture organizes the experience of its members. Therefore, the development of the individual is a function of psychological maturation through social interactions. These interactions involve an expanding radius of influential counterplayers. It begins with the maternal person and at each successive stage expands to include a new segment of society, which the maturing person encounters while moving from one stage to the next. At each stage, the circle includes the persons or groups of people who can provide the necessary interactions

for the successful resolution of each specific developmental crisis/task.

Birth to 6 Years: Infancy, Early Childhood, and Play Age

In the first three stages of psychosocial development, from birth to age six (Evans 1967), the growing child is passing through the developmental crises of *Trust vs. Mistrust*; *Autonomy vs. Shame, Doubt*; *Initiative vs. Guilt*. The most significant relationships in a young child's world are those within the nuclear family, beginning with the maternal and parental persons and then the basic family. Parents at this time assume a primary role within the child's social life and become a platform from which all subsequent relationships will have an opportunity to emerge. Even in the first stage of life, that of *Trust vs. Mistrust*, the society of the parents matters. Erikson says parents create a sense of trust in their children by a kind of "administration which in its quality combines sensitive care of the baby's individual needs and a firm sense of personal trustworthiness within the trusted framework of their community's lifestyle" (Erikson 1968). In these early stages it is the child's family that provides cultural guidance for social functioning within their shared community.

Age 6 to 12: School Age

During the stage of *Industry vs. Inferiority*, the radius of counterplayers expands to include not only the basic family but also same age playmates—as well as adults outside the family—from their neighborhood and school. Immigrant children might become integrated within the social context of this particular age group because children at this age are open to interdependent functioning. As Erikson (1963, 245) notes,

> On the whole, it can be said that American schools successfully meet the challenge of training children of play-school age and of elementary grades in a spirit of self-reliance and enterprise. Children of these ages seem remarkably free of prejudice and apprehension, preoccupied as they still are with growing and learning and with the new pleasures of association outside their families. (p. 245)

At the same time, there is the potential for feelings of inferiority. Erikson warns about the societal prejudices that, if rooted deeply in the structure of the society, can create a hostile environment for children of these ages, both immigrant and non-immigrant alike. He points out that there is "the danger threatening individual and society where the schoolchild begins to feel that the color of his skin, the background of his parents, or the fashion of his clothes rather than his wish and his will to learn will decide his worth as an apprentice" (Erikson 1963, 260).

Adolescence

During the stage of *Identity vs. Identity Confusion*, the task of adolescence is to integrate the identifications and skills from early childhood with growing expectations of what the future may hold and what the adolescent wants to be and become. From successful integration and incorporation of the future expectations into one's scheme of self, an adolescent will acquire the basic sense of identity. Although the child needs to receive behavioral and emotional guidance, the adolescent instead seeks out models of behavior to contemplate as possible choices for self-identification. The availability and type of models the adolescent encounters can influence whether this stage is resolved through formation of an independent identity or results in identity confusion.

The majority of role models necessary for the development of identity are found within the radius of social interactions, which in early adolescence primarily includes peer groups and out-groups. Adolescents are eager to be affirmed by rituals through the relations within peer groups and to separate via the negative identity of the out-group. Erikson (1968, 132) warns that at this stage "young people can become remarkably clannish, and cruel in their exclusion of all those who are 'different', in skin color or cultural background, in taste and gifts, and often in entirely petty aspects of dress and gesture arbitrarily selected as the sign of an in-grouper or out-grouper." Later, as the next stage of young adulthood encroaches, the adolescent looks for adult models of leadership to emulate (e.g., relatives, coaches, clergy).

Our Study

At what developmental stage, if any, might young immigrants experience the greatest difficulties? In order to gain information about this question, we conducted a preliminary study in the introductory psychology classes at CCNY. We asked 179 foreign-born college students to fill out surveys that asked at what age they migrated to the United States. They then answered questions from three scales designed to measure their current sense of self-esteem, personal anxiety and social anxiety.

We had reason to believe that the children and their parents could have experienced difficulties during any of the three age groups we described above. The children who came to the U.S. prior to the age of six—during the stages when they were more exclusively dependent on their parents—might have more acutely experienced their parents' difficulties with adjusting to a new society. Those students who migrated during the latency stage, from ages 6 to 12, might have had fewer problems. According to traditional Freudian theory, the children are in the latency stage, a period of relative stability (Freud 1949). Still, Erikson notes that children of this stage can experience the pains of inferiority with respect to learning and the adjustment to school society. Adolescence would also seem to be a time of particular difficulty for immigrant youngsters because they are undergoing a quest for models to emulate in the formation of their psychosocial identity.

Although we are still in the process of analyzing our data, preliminary inspection of the results indicates a clear pattern. Somewhat to our surprise, the college students' data indicate that, in terms of current levels of anxiety and self-esteem, those who had migrated to the U.S. between six and twelve—during the School Age stage—had worse outcomes. The results prompted us to revisit the literature on that stage.

Immigrant School Age Children And their Counterplayers

From ages 6 to 12, children enter and pass through the School Age stage and seek to resolve the crisis/task of *Industry vs Inferiority*. This stage requires that the child learn to use the technological tools necessary to advance within a particular society at that particular moment in history (e.g., swords in the 1st Century, computers in the 21st Century). In addition to learning the technical skills of tool use (including literacy and other academic skills), children learn new rules and expectations for social competence and collaboration. The potential problem of a lack of mastery leading to a sense of inferiority is real.

School-age immigrant children may have a more difficult time because their need to learn from adult counterplayers introduces potentially conflicting cultural influences.

The role of counterplayers is also very important. Both parents and teachers—who are typically in the Adulthood Stage of *Generativity vs. Stagnation*—have a developmental task of transmitting the social rules of culture (Erikson 1964; Huxley 1964; Fromm 1992). From whom will the children learn societal rules? Which culture's rules will be taught? The answers to these questions may underlie the emotional complexities of School Age stage for immigrant children.

Upon entering school the child enters a time of rapid developmental transformation. The social learning environment changes as the radius of significant counterplayers has its greatest expansion. Whereas the years of early childhood development were mediated by parents and extended family in the context of the home and with an emphasis on learning through play, now the insular home is supplemented by learning at school. The child now becomes an interactive member of the larger society, which accentuates structured education that is constrained by societal norms. The parents, who until yesterday occupied the dominant role in educating the child and were the main connection to larger social currents, must now *share* this role, and gradually be superseded by school teachers and school chums as the primary counterplayers during most of the child's day. The parent needs to feel comfortable that the development that began at home will continue through the teacher and in the school environment. While this would be a large and complex change for

any family, the results of our study suggest that handing over the child to the school may be particularly fraught with confusion and conflict for immigrant parents and their children.

It may be that those immigrants who arrive during the years of early childhood have a relatively easy time during the transition because they are, at the time, interacting mainly with their parents who are communicating only the enculturative messages of their homeland to them. However, school-age immigrant children may have a more difficult time because their need to learn from adult counterplayers introduces potential conflicting cultural influences. On one side are the parents communicating the enculturative message of their homeland, and on the other is the teacher who is communicating the acculturative message of the receiving society.

Another aspect of the conflict created by the separation of School Age children from their parents is that even 6, 7, and 8-year-olds are often the parents' essential helpers. Because the kids typically speak English so much better than the parents, the parents depend on them enormously. The parents feel helpless when the children aren't home, and the children feel very guilty leaving the parents so helpless and alone. This helplessness may be worsened by the parents' recognition that, due to deficits of language and cultural fluency, they are unable to fulfill their adult counterplayer role.

In contrast, immigrants who arrive during their adolescence may have a relatively easy time adjusting to the United States, because the young adolescent seeking to resolve the crisis of *Identity vs. Identity Confusion* is no longer looking to adult counterplayers for guidance. As parents grow distant in their role as counterplayers to the adolescent immigrants, the adolescent is less receptive to guidance based on the mores of their homeland. This stage is mediated through their peer counterplayers; from peers they can seek a single acculturative message of American society.

An example of the clash of enculturation and acculturation forces, and their potential to hinder development within the social context, is seen in a conflict experienced by a sixth grader named Mei. Mei immigrated to the United States from China two years ago with her parents and a younger sister. Although she did not speak any English when she entered school in the United States, Mei mastered the language of her new nation very quickly and excelled in all of her classes. A housing model she made was so creative that Mei's teacher encouraged her to participate in the SimCity urban planning competition to be held in Washington D.C. Mei was really excited about the prospect of going to the SimCity competition and discussed with her peers her dream of being an architect when she grew up. When Mei tried to explain this exciting opportunity to her parents, they were perplexed. Her parents did not understand why a teacher would encourage a young girl to develop an interest in a field in which she had no prospects for the future because in their experience engineering was a strictly male profession. In the end, Mei's parents decided that she would not attend the SimCity urban planning competition, because it would cause unnecessary distraction from her regular studies.

Female immigrants, in particular, might experience a hindrance in their development because some immigrant communities demand that girls preserve their cultural mores even more than boys. In such cases, the enculturative messages communicated by the parents will be considerably different from those communicated by the school, causing the young girls like Mei to experience a significantly larger amount of distress (Dion and Dion 2001).

Lessons

When thinking about ways we can structure new school programs—and modify existing ones—to meet the needs of new immigrants and their schools, we must keep in mind Erikson's insight that personality develops according to an epigenetic principle. That is, as a person grows and matures, different aspects of personality arise, each having its specific time of ascendancy. If the child is to develop fully, each new personal potential must be supported within a context of significant relationships.

With these considerations in mind, educators and parents must carefully consider how the potential clashes between the processes of enculturation and acculturation can cause deficits in the development of immigrant children. One of the steps that we could take to minimize these negative effects would

be to facilitate a public dialogue between parents and teachers, which would address the potential areas of conflict. Discussions of this sort could provide us valuable insight into the developmental priorities of teachers and parents, which, if they were in conflict, could be potentially damaging to the development of all children, immigrant and non-immigrant alike, since they together share their learning environment. Erikson in his book *Insight and Responsibility* (1964) provides us with a potential guide to our efforts. He observed that Bernard Shaw warned us not to abide by the golden rule in its traditional form—that is, "do (or do not) unto another what you wish him to do (or not to do) unto you"—because it is impossible to fulfill. How do we know what another wants or does not want to be done to him?

How do we promote those psychological processes that will help rather than hinder people from different cultures at different stages of their development? Erikson (1964, 233) suggests that the golden rule be amended to state that "truly worthwhile acts enhance a mutuality between the doer and the other—a mutuality which strengthens the doer even as it strengthens the other." Understood in this way, the Rule would say, "Do to another what will strengthen you even as it will strengthen him—that is, what will develop his best potentialities even as it develops your own."

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What is Essential in Mathematics Education?

A Holistic Viewpoint

Robert London

The solution to nonroutine problems involves recognition and orientation, "trying something," and persistence.

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What is essential in mathematics education? This question has driven my research and teaching for over twenty years. In my opinion, any curriculum that claims to address this question must provide the average student with the tools to effectively address significant problems in the student's life. This article discusses an approach to high school mathematics instruction that helps the student see the connection between solving significant real-life problems and nonroutine problems in mathematics.

Nonroutine Problems

For instructional purposes, a *nonroutine* problem at an appropriate level of difficulty requires three steps to complete: (1) problem recognition and orientation, (2) trying something, and (3) persistence (London 1989; 1993; 1995). In addition, nonroutine problems permit a variety of solutions, and every student is able to solve the problem to some degree. Although the quality of solutions will vary, students will be able to confront the problem and generate a solution consistent with their ability and efforts.

Nonroutine problems work best when they have a holistic dimension—when they come from a variety of fields and include problems that are personally meaningful to the student. They are easily integrated into projects-based curricula and cooperative learning, and are also consistent with the National Council of Teachers of Mathematics (NCTM) standards. A curriculum of nonroutine problems is consistent with a constructivist approach and can be easily tied to other contemporary approaches such as project-based learning (London 1976; 1993; Curtis 2002; Peressini and Knuth 2000).

Integrative Problems

To appreciate the value of mathematical problem solving, students need to work on meaningful, day-to-day problems that might not appear to be mathematical in nature. These are called *integrative* nonroutine problems.

A representative problem of this type is "Planning a Trip." The task might be to plan a trip that (a) will increase the class's appreciation of diversity, (b) is interesting and enjoyable from the students' point of view, and (c) is inexpensive. In the field-testing, one group planned a trip to Boston. Their research uncovered many good ideas including visiting a variety of relevant museums; seeing sights in culturally rich sections of Boston; interacting with Cultural Survival, an organization that focuses on helping indigenous cultures survive; and interviewing Napoleon Jones Henderson, an Afrocentric artist.

How is this problem connected with the mathematics curriculum? For one thing, the students see how the three steps of solving nonroutine problems are useful in solving this practical problem. Students who have successfully solved a sequence of nonroutine problems might demonstrate the following type of evidence of applying the three steps:

1. *Problem recognition and orientation.* Students might realize that some of the criteria for evaluating their project are contradictory, and part of a good solution will be finding possibilities that satisfy all three criteria. For example, many possibilities that would satisfy the criteria of being interesting or educational might be expensive. In addition, given the criteria of developing a trip appealing to their classmates, they might realize the need to gather data from classmates rather than relying solely on their own ideas.

2. *Trying something*. Students might brainstorm possible sources for ideas (e.g., people to talk to, written sources to check) and decide which resources to actually investigate. They might decide to develop a questionnaire in order to gather data.

3. *Persistence*. Students might realize that there is a need for additional data to finish the problem well. For example, most questionnaires give some clear data, but also generate some data that suggests the need to ask follow-up questions, or a need to persist by gathering additional information in some key areas suggested by their initial data.

In addition, even in a problem that does not seem to be mathematical in nature, students many times improve in specific mathematical content areas. For example, in "Planning a Trip," after the groups report out concerning their ideas, there might be ten suggestions for portions of the trip. The students can be given the task of developing a method to evaluate quickly, yet accurately, which of the ideas are most liked by the class. Students might compare three methods: each student voting for one idea they most like, each student voting for three ideas they most like, and each student rank ordering all ten ideas. Students discover that one vote per student is typically not enough data to draw conclusions, and that rank ordering all the items is too much data in the sense that it takes significantly longer to evaluate the data than three votes per student while basically generating the same quality of results. Students also get a sense of when some additional data is needed to clarify the results (i.e., there is a need for persistence). After a few problems of this type most students develop a sense of how to quantitatively generate the right amount of data to clarify a question of this type quickly, yet accurately.

Additional problems of this type include (a) "Improving the Class" where students generate a list of ways to improve the class based on collected data; (b) "Having Fun in Your Community" where students determine ways to have fun in their local area; and (c) "Home and the Environment" where students determine how to make their homes more ecologically sound.

My experience in field testing these and similar problems is that students who put in a reasonable effort with appropriate teacher support are surprised at the quality of results that they achieve, and begin to appreciate the power of the three steps.

When students demonstrate a reasonable understanding of solving nonroutine problems, I require them to formulate and solve meaningful nonroutine problems in their own life. Students typically select problems involving a major purchase (e.g., a used automobile or a stereo system), obtaining employment (e.g., a well paying, interesting summer job), planning a trip or vacation, budgeting (e.g., budgeting to buy an automobile), or selecting a post-secondary institution to attend. The potential of this approach is illus-

trated by two vocational students of poor mathematics ability who took my Problem Solving course.

The first student had a lawn care business with a few clients with large lawns. He had difficulty organizing the business and was ready to give it up. His problem was to effectively organize the business. To gather information, he interviewed his clients and three lawn care professionals. He then developed a schedule to complete the lawns in four days, allowing for bad weather and other complications. The schedule included working on the largest lawn early in the week. After devising this schedule, he checked with his clients and a fourth lawn care professional, implemented it, and was very satisfied with the results.

The second student picked a very personal problem—he was concerned about his inability to relate well with other students, particularly his inability to make close friends. He investigated a number of options and decided to see a school psychologist. I saw the psychologist the next fall after the student graduated, and she indicated that he continued seeing her through the summer, making significant progress.

To me, these two examples indicate the power of a curriculum of nonroutine problems. These two students, considered below average in mathematics ability, were able to define a significant problem in their life and apply the steps a mathematician uses to solve a difficult problem to effectively solve their problem. It should be clear that I am not claiming that these students have the same abilities as a student with excellent mathematics ability to apply the strategies and heuristics of mathematical reasoning (e.g., seeing patterns and problem reduction), but rather that they have a good understanding of the process of problem solving and can apply that understanding to solve significant problems in their life.

Mathematics Problems

Some problems that provide a good introduction to nonroutine problems, and involve traditional mathematical content include:

- "Leaves on a Tree." Students estimate the number of leaves on a large tree. After some observation, students generally notice patterns that allow them to make a good estimation.
- "Calculating the Area of an Irregular Closed Curve." Students calculate the area of an irregular closed curve drawn on graph paper.
- "Maximum Volume." Given a piece of construction paper, students construct their three best containers without a lid that hold the most volume, using only scissors, a ruler and tape.
- "Marbles." Students predict the percentage of four different colored marbles in a bag. Students work in groups and are allowed to randomly remove ten marbles at a time, record the information, and return the marbles to the bag. Students are evaluated on both accuracy and the amount of data used.
- "Graphing 1." Students determine the graph (nonlinear) of the solution set of an equation, given the equation. Each graph requires students to try some values, look for patterns, and persist until the entire graph is clear.

A detailed example of an introductory matematical nonroutine problem is presented in the Appendix of this essay.

Example of an Advanced Nonroutine Problem

"$Y = e^x - \sin x$" is an example of a nonroutine problem that is appropriate for *advanced students* with experience solving nonroutine problems. The task is to find the fiftieth root less than 0 for the equation $y = e^x - \sin x$ ($e \approx 2.714$ and is an important number in calculus). You cannot solve the equation for x through normal algebraic manipulation. Instead, the student needs to generate data using a graphing calculator and look for patterns. In working with calculus students with experience solving nonroutine problems, a typical student solution might be:

1. *Problem recognition*. The student realizes the problem is not solvable by algebraic manipulation, sees the need to generate data, and has some confidence that trying something and persisting will lead to a solution.

2. *Trying something*. The student uses a graphing calculator to generate the first few roots and looks for patterns, noticing a fairly linear decrease in the value of the roots.

3. *Persistence*. In trying to make sense of the pattern the student realizes that the roots change by a value approaching π ($\pi \approx 3.14$) and realizes that e^x contributes close to zero to the value of e^x - sin x as x decreases in value; therefore, the appropriate root of y = sin x (i.e., - 50π) is an excellent approximation of the actual root—in fact, a better approximation for the root is not possible even with a graphing calculator. When I have tried this problem with Calculus students with experience solving nonroutine problems, approximately 75% of the students found an excellent solution to this problem. My experience indicates that without instruction in solving nonroutine problems (or another approach with similar goals) the majority of students would not be able to solve this problem. My hypothesis is that an average academic student in the fourth year of a mathematics program that integrated nonroutine problems would be able to successfully solve a nonroutine problem of this difficulty level.

Implementing a Curriculum of Nonroutine Problems

In this section I will discuss a curriculum of nonroutine problems and discuss some models for implementing such a curriculum. The recommendations in this section are based primarily on my experience field testing the curriculum with teachers in a variety of classrooms, including all the traditional high school mathematics courses and a seventh grade classroom (DeLeon 2004), as well as an elective one year course, primarily for seniors, in problem solving I taught from 1984 to 1995.

I recommend a curriculum consisting of 32 to 60 nonroutine problems (eight to fifteen a year) over the four-year high school mathematics curriculum. Each problem typically requires at least one week to complete (one to three hours of class time), with two-thirds of the problems being solved in cooperative groups. Students are required to orally and/or in writing document the process for solving each problem. About 40% of the problems involve content not typically considered mathematical, including problems that attempt to increase the student's appreciation of diversity, involve ecology with an emphasis on problems directly affecting their lives, or are practical applications affecting their lives, including problems that students individually define and solve. The curriculum should include an introductory unit that describes the three steps of a nonroutine problem, gives several examples of the steps applied in a variety of fields, and has the students research additional examples. The curriculum is designed as one component of a secondary mathematics curriculum (approximately 20% of the allotted time for mathematics instruction) and is easily integrated with a curriculum consistent with the NCTM standards. Field testing indicates that the following guidelines are important when implementing such a curriculum of nonroutine problems:

1. The most effective way to improve students' ability to solve nonroutine problems is to repeatedly put them in a situation in which they are given a nonroutine problem at an appropriate level of difficulty, have them work on the problem and generate their best solution, and then discuss or process the problem as a class.

2. In an effective sequence it is normal that each problem *is* difficult—that the student would not be clear about how to solve the problem initially, at times feel as if the problem is not solvable, and would need to persist until the problem becomes clear.

3. The teacher needs to provide a structure that allows students to work on problems at an appropriate level of difficulty. We can manipulate the level of support we provide students when solving the problem. In previous work (1995), I define seven levels of support that form an instructional sequence. For example, at the fourth level, students are given a nonroutine problem to solve, and groups brainstorm ideas for each of the three steps for teacher review before attempting each step. At the seventh level, each student defines a nonroutine problem important to him/her and solves the problem.

4. A cooperative group model is consistent with the purposes of this curriculum. For example, students benefit from being exposed to the thinking of other students, and cooperative group work provides a supportive atmosphere for dealing with the natural difficulty of the problems (e.g., Leiken and Zaslavsky 1997).

5. The curriculum needs to emphasize problems from a variety of fields and problems that are relevant to the student's life. Field testing indicates that

without variety and relevance students are unlikely to transfer the problem-solving skills to their day-to-day life. One implication of this guideline is that nonroutine problems that are meaningful and specific to the students' context are particularly effective. One corollary of this guideline is that students with a rich cultural background could benefit from solving problems connected to that background. For example, Lipka (1994) has worked with Yup'ik Eskimo communities in southwest Alaska to develop a mathematics curriculum consistent with the NCTM Standards and the culture of the Yup'ik elders, teachers, and students. The curriculum emphasizes a culturally based, hands-on approach for the teaching of the process of problem solving in mathematics.

6. For most students nonroutine problems that do not require significant content prerequisite skills are more effective initial problems than nonroutine problems that require significant content prerequisite skills (London 1993). Appropriate instruction in solving nonroutine problem does not have to be delayed because of lack of content mastery (e.g., Bottege 2001).

In developing an actual curriculum for one school (London 1995), a representative sequence for an academic geometry class included the following eight problems:

- "One Inch of Rainfall." Students calculate the volume of water created by one inch of rain in their community.
- "Triangles." Students determine under what conditions two triangles are congruent. They are given two, three, or four bits of information about the triangle.
- "Maximum Area." Students determine in a variety of situations how to maximize area given a certain amount of perimeter.
- "Flipping Coins." Students predict the outcome of tossing ten coins 1000 times (e.g., how many times will the result be 6 heads and 4 tails).
- "Graphing 2." Students determine the graphs of some nonlinear equations. Each graph requires students to try some values, look for patterns, and persist until the entire graph is clear.
- "School and the Environment." Students determine ways to make their school more environmentally sound.
- "Planning a Cultural Trip." Students plan a class trip that is inexpensive, enjoyable, and increases the class' appreciation of the diversity of cultures.
- "Buying a Car." Students determine the best car for their stated values and a given amount of money.

In a four-year curriculum, attention can be given to gradually shifting the responsibility to students to generate and solve nonroutine problems. This model needs to be adjusted slightly if a teacher is teaching a one-year traditional academic course (e.g., Algebra I) and it is unlikely that the students will have a curriculum of nonroutine problems the following year. My experience indicates that even within the context of a one-year traditional academic course, the students' ability to solve nonroutine problems and do mathematics can be significantly affected.

Finally, I have developed a model of alternative secondary education that includes nonroutine problems in community contexts (London 1996). For example, students can work individually or in small groups with local businesses, nonprofit organizations, local artists or writers, or local government (e.g., a conservation committee to review open space needs of the community). Individual work in community contexts would be the basis of discussion in the required core course. The model suggests that a curriculum grid can be developed to insure that students work in a variety of contexts over the course of their education. In addition, the model provides a method of identifying core skills required of all students and monitoring their progress in mastering those skills.

Conclusion

Hopefully, I have conveyed my enthusiasm for this type of approach to teaching the process of problem solving. I offer one last suggestion in implementing such a curriculum: Allow yourself to be open to the richness of the problems, to the variety of solutions, and to the opportunities for growth that the student efforts will create. If you have any questions or comments concerning implementing such a cur-

riculum or want a copy of a paper with a more in-depth treatment of pedagogy and sample problems, please e-mail me at <rlondon@csusb.edu>.

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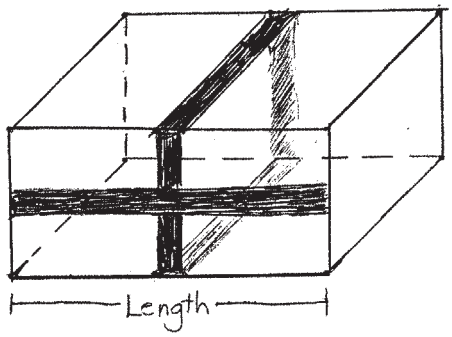
Appendix: Sample Nonroutine Problem For High School Students

A Problem of Modest Difficulty

Most students need a careful introduction to the three steps. Therefore, I give initial problems that concretely give most students a successful experience with them. For example, the problem "Expensive Tape" is a nonroutine problem that is clearly mathematical in content that could be used early in the curriculum to introduce the students to the process of solving a nonroutine problem. Students are asked to determine three boxes that hold the most volume, given that the box is taped with exactly 30 inches of expensive tape, covering one length and one girth (two widths and heights) of the box, as illustrated below:



Two of the three dimensions (length, width, and height) must be whole numbers. (The reason for this restriction will be clarified in the discussion of the solution.) For students with little experience solving nonroutine problems, I demonstrate a procedure to generate data (e.g., they pick a length, subtract from 30 and divide by 2 [equals a width and height] and then enter a width and height equal to that sum). I encourage the students to generate a good amount of data and to look for two patterns that will help them solve the problem. When students generate data they typically notice two patterns in the data. Before reading on, see if you can spot the two patterns on the following page.

The two patterns illustrated above are: Girths closest to squares yield higher volumes, and lengths closer to ten inches tend to yield higher volumes. Most groups notice these two patterns, thereby finding good solutions to the problem, such as the following three boxes: 10" x 5" x 5" (250 cubic inches); 8"

x 6" x 5" (240 cubic inches); and 12" x 5" x 4" (240 cubic inches). These three solutions are consistent with the two patterns: The lengths are close to 10" and the girths are as close to squares as possible with the stated restrictions. Students that persist realize that 9" and 11" lengths should in theory provide better solutions than 8" and 12" lengths (being closer to 10"), and discover the following two solutions, each of which includes one fraction: 9" x 5" x 5½" and 11" x 5" x 4½" (both with a volume of 247.5 cubic inches).

Length	Width	Height	Volume
10	5	5	250
10	6	4	240
10	7	3	210
10	8	2	160
10	9	1	90
16	4	3	192
14	4	4	224
12	5	4	240
10	5	5	250
8	6	5	240
6	6	6	216
4	7	6	168

Many students initially assume that lengths of 9″ and 11″ will not work because the sum of the width and height will not be a whole number.

The processing usually helps students not only see how trying something results in uncovering patterns that make the problem easier, but also notice how persistence can lead to the best three solutions. Given the help described, most groups of students are successful with this problem, which does not necessarily mean that all the groups find the best solution, but rather that most of the students are engaged in working on a problem at the appropriate level of difficulty and participate in the processing of the problem—a good indication that their problem solving abilities will naturally improve (Caine, Caine, and Crowell 1994).

Many additional examples of nonroutine problems can be found in resources readily available to teachers, such as publications connected with the NCTM. For example, in recent journals, articles described potential nonroutine problems such as designing the bedroom of your dreams (Corzan 2002), building effective rollers (Casey 1998), designing a city park (Tepper 1999), understanding flight (Giannetto and Vincent 2002), or creating a country (Olson 2003).

Silence and Solitude

Raji Swaminathan

An education that is truly transformative must include silence and solitude as well as dialogue and community.

Readers are invited to download a study guide for this article at <www.great-ideas.org/Swaminathan.htm>.

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Silence and solitude are considered integral to the awakening and nurturing of the spirit. Scholars and mystics have long sought spaces created for the renewal of self, like retreats and silent meetings because "it predisposes to the inner attitude of meditation" (Montessori 1930, 2). Alternative schools with a holistic philosophy are concerned with educating the spirit of children as much as they are with their bodies and minds. Consequently they advocate for the integration of silence and solitude in the curriculum along with student empowerment and dialogue. While mainstream education has embraced the ideas of dialogue and empowerment, the use of silence and solitude in the everyday life of schooling is comparatively rare and is viewed with doubt and suspicion.

The discomfort and uneasiness that teachers display when confronted with the possible use of silence or solitude in the curriculum reflects broader social attitudes. Silence generates disturbing emotions. It is equated with being without a voice and associated with powerlessness. Popular sayings like "Children should be seen and not heard" reinforce associations between silence and low-status. Moreover, silence is often imposed by those in authority to punish. For example, the much used "time outs" in classrooms or stern admonitions to "reflect on your own behavior" bring to mind either a sense of being deliberately left out or the solitary confinement of a prison. Given the dismal images that silence generates, it is not surprising to find resistance towards the use of silence and solitude in teaching; indeed, it could well be an indication of one's sensitivity.

There are schools, however, founded on holistic philosophies that have embraced the use of silence and solitude in their curriculum. Montessori schools, for example, advocate the use of silence through what Maria Montessori (1930) called the "silence game." Montessori described the game as one that

encourages in children a feeling for an interior life that is developed when the "lens of silence" is placed upon the ear. In the classroom, teachers encourage children to be aware of and develop a sensitivity to sound even while learning to quiet their minds and still their bodies. One way teachers do this is by making a game of how silent children can be as they tiptoe around the room or close their eyes listening attentively while the teacher calls out their names in a very soft voice. Rudolf Steiner described the need for a rhythm in the classroom that is like breathing, with activity followed by periods of quiet concentration or silence (Steiner 1970). The rhythm that Steiner referred to is best seen in the practice of Eurhythmy. The aim of eurhythmy is to speak and sing through movements and gestures that reveal to the eye what language and music bring to the ear. The movements of the eurhythmist relate to the space around one and can vary from simple hand gestures to whole body movements. Children are introduced to eurhythmy early, and every grade brings them to a new level of complexity. Beginning and ending in a circle, children develop both an awareness of the self and of the group, and they explore and experience harmony in movement followed up by moments of quiet stillness. Additionally, teachers at Waldorf schools may at times light a candle in the classroom to create a mood for being quiet.

The right use of silence and solitude in teaching may in fact nurture the spirit of children.

Similarly, in the schools founded by Jiddu Krishnamurti, silence is an essential part of the school day as teachers encourage periods of quiet reflection and the days begin with the whole school sitting together in silence. A silent room or a quiet study is always available for use by teachers or students.

These examples remind us not only that silence need not be negative but that the right use of silence and solitude in teaching may in fact nurture the spirit of children. Schools drawing on holistic philosophies have different ways of using silence and solitude in the curriculum. In this article, I present concrete examples of learning through silence and solitude as practiced at Sunshine Day School.[1]

The Sunshine School

Sunshine Day School is a small private school with a student population of one hundred and thirty students between the ages of ten and sixteen in a large mid-western state situated near a wooded area. My interest in holistic schools drew me to volunteer there and fill in wherever I was needed. In the process, I was teacher and friend, tutor and gardener as well as "the person who takes notes." Eventually, as I began conducting research into alternative and holistic schools, Sunshine Day School became part of a larger pool of sites I worked with and researched.

Sunshine Day School was founded in 1975 and had its roots in parent dissatisfaction with existing models of schooling. The school has its philosophical basis in holistic education as espoused by such educational pioneers of the twentieth century as Montessori, Krishnamurti, and Steiner. While the school did not attempt to follow any one philosophy completely, it drew from all their teachings and defined itself as being "inspired" by holistic educators. Sunshine Day School began with the belief that schools should be concerned with nourishing the spirit of children besides nurturing their bodies and minds. The school was organized to implement and integrate four components: community, solitude, silence, and dialogue. A central theme tying the four elements together was "making connections"—connections with one's inner self and others, and with the world, nature, knowledge, emotions, body, imagination, and the creative process. In all these, dialogue, reflection, solitude, and silence played a role.

Although most teachers at Sunshine Day School were self-selected individuals who had knowledge of one or more of the philosophies that the school drew upon, new teachers nevertheless often felt discomfort with the curriculum. They wondered how they could advocate student empowerment through active dialogue while attempting to integrate silence or solitude into their courses. Only after teachers had been at the school for a while did they see for themselves how dialogue and silence complement each other and how community and solitude formed parts of one holistic model of schooling.

The first question for new teachers was to find out whether there is a difference between being silenced and silence itself. Students' responses to periods of quiet reflection gave teachers cause to rethink their assumptions about silence and its uses in the school day. It is common for young teenagers today to go without a moment of silence in their day as they move from one activity to another without pause, often filling up any occasion for quiet with headphones that croon their favorite melodies. Educators (Moore 1992; Wood 1999) have argued that care of the soul requires that children slow down their pace of life. In a similar vein, Iris Murdoch (1992, 337) advocated teaching "meditation in schools" so that students can learn to quiet their own minds. At Sunshine Day School, teachers found that once students were introduced to the concept of being still and quiet, they usually asked for more such moments where they could have a "sense of space." Students made creative use of silence by using it to meet their various needs. For example, some students asked for a moment of silence at the beginning and end of classes to help them get into the mood for the lesson and to disengage or have a sense of closure at the end.

As silence was integrated into the curriculum of the school, teachers at the school suggested that silence be a topic for an open discussion every year. Open discussions took place every morning for one hour during the first two weeks of every semester. Typically, the whole school gathered together to discuss questions and concerns raised by either staff or students on how to bring out the best in the school community. Students found the discussions on the new topic of silence meaningful, and one year, a group of students suggested that the topic be extended so they could explore it in greater depth.

Silence was therefore introduced as a topic for the school's Inquiry Hour. This was a weekly hour in which the entire school discussed matters concerning the mysteries of life. Topics included: What is beauty? How can we be sensitive to nature? What are our fears and what do we do to tackle fear in our lives? What are the pressures we feel in our lives and what do we do about them? The aim of Inquiry Hour was to keep questions alive through dialogue and not attempt to find an answer to them.

The topic of noise and sound in our lives was an Inquiry focus for one semester. The school was divided into several age-graded groups for these talks and I had the joy of exploring the meaning of silence with a lively group of twenty 12–14 year olds who were anything but silent. To initiate the discussion, we began by our observation or experience of how we use silence in everyday life. What multiple meanings did silence hold for us in different contexts? From the examples that students shared, we learned that silence could serve multiple functions. It could create connections and bonds or it could separate; it could be used as a weapon of hostility or as a way to communicate and bridge distances. One student, for example, described a fight with her sister and revealed that she had used silence to demonstrate her continued anger with her. Another student shared her experience of sitting with her close friend sharing a silent joy after a music concert. Yet another student admitted using silence as a political statement to "express" his disagreement with a decision made in a group. And one student talked about silence as a way to communicate what she really felt to another person—when words appeared inadequate to the task. Besides being a means of communicating these range of feelings, we also found that when alone, and in silence, we could either be deep in thought or in the process of emptying the mind of chatter.

Two Moments of Silence

Having discussed what meanings we made of silence in our individual lives, students and faculty decided to look critically at the several spaces of silence within the school day. Of all the silent times during the day, students wanted most to discuss two: the ten minute silent meeting in the mornings and the two or so minutes of silence before lunch.

Students were skeptical of the purpose of silence before lunch in the dining room. They said that this silence was not taken seriously by students and was not used well. It created a tense moment in which students were waiting to break the silence in order to eat rather than to be still. The result of all the school discussions was a decision to abandon this moment of silence and, instead, to use a minute or two for a humorous piece of prose or poetry. The ending of the reading signaled a natural beginning to the meal.

We then turned to the silent morning meetings that took place everyday. Every morning, students and staff came into a circular hall where the meeting took place and sat quietly down on one of the chairs or on the pillows on the floor. Some closed their eyes, others stared at fixed objects around the room. Still others faced the ring of windows that lined the circular wall and looked out at the magnolia trees in full bloom. New staff and students often commented on the energizing quality of the meetings.

In our discussions, students described feeling the collective goodwill of the group; they received energy and vitality along with a sense of calm. Some in the group thought ten minutes was too long and others felt it to be too short. On further discussion, students realized that the length of time was related to the degree of resistance they had towards being silent. It was not easy for some students, unaccustomed to any silence in their lives, to sit still for ten minutes. It took a semester for some to begin to use the minutes to focus or to watch their thoughts. One of the students illustrated the point well. "I learned to watch my thoughts over time. In the beginning, I resisted sitting still and being silent, but eventually I realized that I was resisting myself since no one here was forcing silence on me." He began instead to watch his thoughts, and discovered a new still space that was full of energy. Students went from resisting silence to being willing to explore silence thereby engaging in "centering" which is defined as an act of "bringing in" (Richards 1989, 4) or assisting the mind in the powers of self creation. Centering is the first step in a movement towards deep listening.

Deep Listening

Nobel laureate Barbara McClintock describes listening to corn plants while they told their story of genetics (cited in Keller 1983). Students were deeply affected by the account. One student related it to our investigation into silence by remarking that only in the practice of silence did she practice deep listening, it was then that she "heard" the sounds to which she was usually oblivious. Another student in the group abruptly declared that he had never really come upon silence per se — "there's always something and if it's not outside, it's inside." The group was intrigued by this possibility and decided to conduct an experiment with themselves. They chose deep listening as the medium through which to "search" for silence.

The next week during Inquiry Hour, we went out for walks, some students went to sit under trees and others near a pond at the edge of the school grounds. Still others demanded that we go to a nearby wooded land in search of silence. Students practiced deep listening and gradually became aware of and sensitive to the different sounds in nature, birdcalls, the rustling of the leaves in the breeze, the grasshopper rubbing its legs, the flapping of a bird's wings, the call of the cicadas and the very different sounds of a group of people approaching. It all led up to one finding — that indeed, one always "heard" something if we were listening. The search for silence and in silence brought one to a state of deep listening. It brought us closer to nature and assisted us in examining our relationships to what we saw around us. The students recorded all the sounds they identified and described those they could not name. Inspired by Barbara McClintock, they wrote the stories that they heard from a blade of grass or a weed or a flower petal. So far, although the students practiced deep listening, their listening was tuned into sound and not into silence. It was much later that they learned to "hear" stories told in silence. To facilitate and draw their attention to the possibilities of communicating in silence we introduced the concept of non-verbal communication.

Non-Verbal Communication

In order to understand silence as a means of communication, we began with the assumption that speech did not necessarily have to be verbal, we could speak through what is popularly known as body language. We discussed the different postures that signified "cool" and what that meant within different peer groups. We decided to experiment for two weeks by communicating in silence in class. To make it a worthwhile experience, I invited a mime to conduct a workshop on communicating in silence and the use of body language. She started by making us aware of the space around us and how we use that space. She taught us to take walks where one partner was blindfolded and was led by another to take a walk in silence all around the school, which she

called "trust walks." She also taught students to be aware of how they used their bodies and their expressions and the ways in which they convey precise meanings. For two weeks we "spoke" through our bodies and facial expressions and maintained silence in the classroom. We wrote on the board what we wanted to communicate and spent the time on researching individual and group projects. At the end of the two weeks, we were all communicating perfectly well with each other using our bodies and facial expressions to talk. We learned to become aware of the smallest movement and to tune into each other's thoughts and feelings.

Moments Alone

Solitude is yet another state of being that young people rarely experience. Solitude, like silence, is associated with solitary confinement and with being left out. At Sunshine Day School, the staff decided to approach solitude differently. Philosopher and educator Krishnamurti (1976, 14) once said this about solitude:

> For the total development of the human being, solitude as a means of cultivating sensitivity becomes a necessity. One has to know what it means to be alone, what it is to meditate … and the implications of solitude…. [These] can be known only by seeking them out. These implications cannot be taught, they must be learnt. To experience what is solitude and what is meditation, one must be in a state of inquiry; only a mind that is in a state of inquiry is capable of learning.

In order to help students learn what it means to be alone and experience solitude, we decided to try out a number of safe activities. One way was to integrate solitude into an existing course. We asked a class on environmental studies to go alone to pre-determined spots around the school and to sit there observing a section of the landscape, building, or tree. Preferably this exercise should occur where students can sit outdoors or in an area filled with plants. Students filled in a logbook after they observed quietly for fifteen minutes. Parents and visitors at the school were often quite astonished at the sight of a young girl or boy staring fixedly at a tree. Almost always, adults and visitors curiously asked the student what she/he was doing and the student responded politely—"I'm observing the tree." The visitors smiled, not quite sure if the student was joking until they met the teacher and found out that indeed the student was observing a tree. Every student chose a tree to observe and care for for the duration of the course which lasted one year rather than one term.

For 15 or 20 minutes a week, students observed their tree. This was usually the period used for individual experiments, group hands-on work and projects that students worked on in environmental studies. Students used 20 minutes to fill out the observation log, although over the course the year, students asked for as much as 30 or 40 minutes to sit alone in silence to observe their tree. Every week children found that the places they usually took for granted as unchanging and remaining the same actually changed a lot. Not only did birds build nests, flowers bloomed and withered, fruits appeared, various insects and other small animals made their homes in the tree, the shade of the tree changed with the position of the sun, leaves changed colors. Students learned to measure the height of their tree, observed the different colors in the leaves and flowers, pressed leaf and flower samples, felt the bark and learned all about healthy trees and their contribution to the ecosystem. This project was also expanded students' interests into grassroots movements against cutting of trees and policies relating to role of trees in cleaning the air.

Almost all the students enjoyed this time alone, and in their logbooks they reflected on their feelings. Students commented on the ways in which their sensitivity to nature had blossomed, and how much was going on right under their noses that they had totally missed because they had been in a hurry. The 21st century is one that sets a fast pace and children are usually thinking quick thoughts, rushing from one class to another. Sitting alone to observe slows them down and facilitates their making connections with nature and with their inner selves.

Camping

In order to further experiment with being alone and experiencing solitude, one rite of passage that was instituted with the outgoing class of 17-year-old

students was to take them camping. During the camping trip students had an hour or two to experience solitude by sitting quietly at a predetermined spot on their own. This was a spot that was picked out carefully and students took turns to have their hour of solitude.

One year, however, the outgoing class of students came up with a different plan. They still wanted to go camping, but they wanted to take long treks without staff presence, and they wanted to spend a day and a night when each student was alone, just by himself or herself. They would be near the other students, but not close enough to talk with each other or be able to see each other. During this time alone, they said, they would make their own meals and sit or walk by themselves. They would write about their feelings—what they had learned from this experience. They would also reflect on their schooling, and think about the questions of life and how to live and act that were most crucial to them at this time. They explained that they wanted to think about the kind of person they wanted to be and the difference they wished to make in the world. After the night and day spent in solitude, late in the evening they would gather together around a campfire, to share what they had learned. They would then celebrate by honoring each other and would spend the rest of their time together before they returned to school.

Our first response as adults at the school was to worry about their safety and to try to talk them out of it. Students challenged us in talks with us and asked why we were afraid to let them be alone and experience solitude, which was one of the cornerstones of the curriculum at the school. We were forced to reconsider our own uncertainties. After much discussion, we decided that, instead of using the forest we used every year, we would move that year's camping to a hundred-acre parkland owned by an Environmental Society, where the safety factor was very high. The grounds were well known to a number of staff who prepared to go with the students on the trip. After much preparation, the class celebrated their graduation ritual by leaving for three days to spend as they had chosen.

They returned refreshed, a little emotional, and strong. We had an informal fireside chat upon their return and much of the school's junior students gathered around to talk, share and listen to the graduation rituals and rites in which the group had taken part. The most exciting tale was the one where they went solo. Like the first solo flying experience, they described feeling excited along with a touch of fear as they spent a whole day in silence and alone. Every one of them stated that the experience made them feel transformed. They felt they had stepped into a different phase of their lives. The staff at the school realized that we would have made a mistake if we had obstructed rather than facilitated what was clearly a much valued experience for them.

Teachers

If silence and solitude need to be part of the school curriculum, teachers need to prepare themselves in several ways for that to take place. All too often, teachers share the wider society's negative attitudes toward silence. Indeed, the conventional value on speech is so strong that teachers often evaluate a class based on student interactions and vocal participation. It is necessary therefore for teachers to understand and experience for themselves the meaning of community, silence, solitude, and dialogue and their intersections. To assist teachers in making connections and in making meaning from their own situations, there were a number of spaces that were created.

Besides the weekly meetings, teachers went on retreats at the start and end of the school year to reflect on the year, on themselves, and on their relationships with each other. This was also a time to get together, be friendly and social. To bring about a sense of harmony to the group, the week-long retreat was often structured to include a class on movement, meditation, Yoga or dance, as well as several long treks and walks and evenings of entertainment. At the end of the retreat, teachers were usually refreshed and revitalized so that they were ready to meet the challenges of the forthcoming year.

There was never a time when teachers at the school thought they had everything figured out correctly. It was always a time for learning, exchanging new ideas, and engaging in vigorous dialogue. There was always the striving towards making connections and facilitating all children and all adults' inner growth. As Krishnamurti put it, education needs to

be concerned with inner growth and if it remains concerned primarily with the outer, it would lead to inequities since the vast majority of students would be deprived of the opportunity to develop their inner spirit and make connections with the outer and inner worlds. In his words,

> As long as education is concerned merely with the culture of the outer … the inner movement with its immense depth will inevitably be for the few and in that there lies great sorrow. (Krishnamurti 1975, 215)

At a time when educational mandates pressure one to focus on testing and performance standards, it is important to resist what may result in greater disparities in education and instead consider that accountability in education would need to meet the tests of equity and excellence. To work towards the latter is to attempt to craft an education for transformation, a long-held objective for holistic educators. Such an education would consider not only dialogue and community within schools but also silence and solitude to facilitate an inner nurturing.

Note

1. Sunshine Day School is a pseudonym used in keeping with research protocol to protect the identity of the school and those who work in it.

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Note to Authors

Encounter is dedicated to the education of the whole, growing person as she seeks meaning and justice in the world. Most education today focuses very narrowly on only one aspect of personal development—cognitive skills. Our journal emphasizes that humans also have physical, emotional, spiritual, and social needs and potentials.

We therefore welcome a wide range of manuscripts. They may address any phase of the life cycle. So far, most of *Encounter*'s articles have been theoretical, but we also invite research reports and accounts of personal experiences—and even an occasional poem if you think it's the best way to express yourself. We would like to see more writing on children's relationship to nature and students' activities on behalf of peace.

Manuscripts should be less than 20 double-spaced pages, with ample margins. Please follow the author-and-date format in Chapter 16 of the 14th (1993) edition of the *Chicago Manual of Style*. Manuscripts should be original work and not under consideration elsewhere. To facilitate a blind review process, please remove all the information that might identify you or any of your coauthors.

Good writing is hard work. It is usually necessary to write several drafts. Try to write simply and directly. We strongly recommend William Strunk and E. B. White's little book, *The Elements of Style*. The second and fifth chapters, on composition and style, are especially useful. You might already have read the book, but it merits repeated readings.

When relevant, it's important to cite earlier works on your topic, but authors sometimes try to strengthen their essays by including numerous quotes from esteemed scholars—quotes that sound so eloquent and profound, yet do little to advance the author's thesis. Although an occasional quote can be helpful, I encourage you to take the risk of standing alone and saying what you, yourself, have to say.

Send three copies of your manuscripts to Professor William Crain, Department of Psychology, CCNY, 138th St. and Convent Ave., NY, NY 10031.

—William Crain, Editor

Education as a Glowing Experiment

Ceciel Verheij

The Bifrost school effectively bridges fantasy and knowledge, reason and feelings.

In Herning, a provincial town in Danish Jutland, a remarkable school is situated, named "Bifrost."

The word Bifrost is derived from Scandinavian mythology and means "rainbow," a bridge between the earth and the supernatural world of the gods. The Bifrost school wants to pay homage to its name: its pedagogical approach aims to bridge fantasy and knowledge, reason and feelings. "There, on that rainbow, the interface between the known and the unknown, we hope to encounter both daily reality and utopia, enabling us to face the world with both courage and joie de vivre," as the motto of the school goes. The educational experiment, which has been ongoing for sixteen years, is attracting much attention lately, predominantly from the Nordic countries. Each year, many educators from Norway, Finland, and Sweden, come to visit this school.

Overview

Bifrost is a so-called *friskole*, a public state-funded school that has been established by both parents and teachers for pupils between six and sixteen years of age. Though the school radiates a mood of art and culture, one should not regard it as an "art school." Its aim is not to train children to become artists. The core tenet of the school is that expressions of art and culture are an important source of inspiration in the learning process. At Bifrost, one can find children of all social backgrounds, though the number of children whose parents have an academic background is slightly higher than at regular schools.

The history of the school dates back to 1971, when a group of teachers in Herning started experimenting with thematic, cross-curricular and non-graded education. After experimenting with innovative ideas and practice for some years, several teachers concluded that it was very difficult to implement drastic changes within the prevailing structures. The innovations developed in the junior classes were

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only sporadically followed up in the higher classes. A fundamental pedagogical view of *how* children learn, *what* is important for them to learn in today's world, and *why* children learn, was lacking. This gave the teachers— along with a group of committed parents—the impetus in 1987 to start a whole new school. An experimental pedagogical approach derived from these fundamental questions would be their point of departure.

Initially, Bifrost started off with three teachers and thirty pupils, divided over the three lowest groups. Each subsequent school year, a new pre-school class was added. Now, after sixteen years, the school has reached its maximum size of 180 pupils in ten classes, from preschool up to grade 9. This means that Bifrost encompasses the whole so-called *grundskole* period, the compulsory school period. The school board has decided that each grade should have no more than eighteen pupils, so that a personal, intimate relationship between children, teachers and parents can be maintained.

Inspiration Themes

At Bifrost, they try to break away from the traditional one-sided focus on cognitive learning processes and passive education. Learning is regarded as a versatile process, not only focused on acquiring knowledge, but also on engaging the senses, fantasy, and feelings. From its early stage onward, a pedagogical approach was adapted that is based on the innate inquisitiveness and interest of children to learn. "From the early age up, children are curious by nature and are anxious to experiment. It is our task as teachers to cherish and to stimulate those original impulses," says Bodil Abildtrup Johansen, founder and director of the Bifrost School. "Children should have a true saying in and impact on their own learning process, so that their natural inclination to inquisitiveness and exploration continue to be stimulated throughout the process."

All education at Bifrost is related to cultural–historic themes, the so-called *inspiration themes*. Each year, teachers select in average two to three inspiration themes, with which the whole school will work continuously over an extended period of time. Examples of such themes have been Van Gogh, Mozart, the Danish composer Carl Nielsen, M. C. Escher, the Olympic Games, Leonardo da Vinci, and the children's book *The Mystery of the Playing Cards* by the Norwegian author Jostein Gaarder. As Johansen says,

> An important criterion for us as teachers when selecting a theme is, whether it contributes to raising interest for other historical periods and cultures that previously were relatively unknown to the children. We as teachers are trying to provoke interest for new items among children; therefore, we prefer to select non-conventional themes. By provoking children, we open up new learning arenas. Introducing new perspectives, breaking conventions, confronting and investigating: these are all important preconditions for learning.

Leonardo and His Era

For a five-month period in 1997 the whole school engaged in the inspiration theme "Leonardo da Vinci." In order to help children resonate with this versatile 15th Century scientist, researcher, and artist, the teachers organize a large happening, whereby the whole school building has been transformed and designed in style with "Leonardo and his Era." The idea is to give an impression of his life, époque, work, publications, inventions, art, technical capabilities, and explorations in nature.

In one room there were different light sources—candles, lamps, and spots—that illumined different objects. Here the children could experiment with shadows, shape, and color.

Another room focused on perception. Here children did experiments related to questions like: Do we actually see what we think we are seeing? Another room was decorated with mirrors, where children did experiments in mirror writing. In one corner there were music instruments from the Renaissance period and someone played Renaissance music. Leonardo was interested in optics and eyes. The children could use different lenses or dissect real eyes, which tended to trigger quite strong reactions and emotions—and that is exactly what it aims at.

Johansen explains:

> At Bifrost all education is derived from direct experiences, experiences which are provoked

> by confrontation with a new theme. We introduce any new inspiration theme to the children in such a way that it not only stimulates them intellectually, but also emotionally and sensually. We want children to relate their imagination and emotions to such a new theme.

After the presentation of a common inspiration theme, extensive evaluations are held in smaller groups. The teacher stimulates all children to express as many thoughts, associations, and experiences as possible that are provoked by the inspiration theme. This evaluation process is highly valued and can take up to a whole day or more. All ideas and suggestions are written down. They form the basis for the subthemes, with which the children will work the coming two to four months.

More than "Project-Based Education"

Although all education is related to the central thematic projects engaging the whole school, Johansen does regard the Bifrost approach as more than merely "non-graded project-based education."

> We aim to integrate different dimensions of learning. In that sense we are very much inspired by the American psychologist Howard Gardner. He claims that in Western education we overvalue cognitive learning, while we in fact have multiple learning capacities. He distinguishes, for example, emotional, social, sensual, and physical capacities. Here at school we aim to enhance all these different learning capacities. And we think it is important not to prioritize cognitive capability over emotional or sensual. That is why we value aesthetic expressions very highly at the Bifrost school, which is illustrated by the diversity of artistic creations one can find throughout the school building. We think it is of utmost importance that children learn to express themselves in many different ways, through painting, music, sculpting, theatre, writing, or poetry. These are all different ways of communication. It takes time to learn how to understand and use them.

An interesting example in this regard is that mathematics is not merely regarded as an exercise in solving math problems, but also as a communication exercise. Children learn to apply mathematical concepts in a drawing or in a written text. For instance, they should try to find the mirror image line in an object or a portrait. Or they should try to make their own mirror image game, including the rules of play that pertain to it. In Johansen's words,

> In our Western culture the rational learning processes are overemphasized, which results in a one-sided development. Knowledge should also be connected to emotion and aesthetic experiences. Through our ratio we can investigate and understand parts of the whole. But imagination and fantasy are of crucial importance if we are to understand the whole. We take up the challenge to turn education into an exciting endeavour, a glowing experiment.

Environment

The Bifrost School is located in a former textile factory, which was drastically rebuilt under the supervision of an architect. The interior design and the shaping of the rooms conform to their pedagogical purposes. The flexibility of the learning process is reflected by the interior design of the building. Each classroom has its own shape and size: There are rooms with bended walls, others have extra large floor space, and larger group rooms alternate with smaller rooms.

Another remarkable feature is that many rooms lack a fixed entrance door. This is done on purpose, to enable both pupils and teachers to frequently go in and out. In that way, they can take notice of other activities elsewhere and possibly be inspired. There are no fixed tables, chairs, or teacher desks. In the middle of the building, there is a large open space, where the library is situated.

Additionally, there is a large common room for gymnastics and performances, a music studio, an natural science lab for the senior level pupils, and a large open kitchen. In each classroom there is an open cupboard with plastic storing baskets, where each pupil stores his or her own belongings and study material.

The function of a classroom can change during the course of a school day. At one instant, it may serve as a more traditional classroom, used for courses in Danish or mathematics. For that purpose tables and

chairs, and, if needed, a blackboard, are moved into the room. At other times during the day, the same room can be used as a painting atelier, a reading or writing atelier or lab, when painting easels or the laboratory instruments are brought in.

Throughout the building, on walls and in corridors, one sees creations made by the children. Sometimes the entire interior of the school is reshaped to reflect the inspiration theme. One large interior wall is marked out for murals, which the whole school can help create.

The junior level encompasses preschool through grade 2 (ages 6, 7, and 8) and the intermediate stage grades 3, 4 and 5. The senior level is divided in group I (grades 6 and 7) and group II (grades 8 and 9). There are five teachers working in the junior level and five in the intermediate. Each teacher is qualified, be it in Danish, mathematics, English, or music. There is also a separate art teacher.

No Assessments Through Grades

Not only are the children challenged to find ways to study an inspiration theme, but teachers have to submerge themselves into each new theme, both individually and as a team. They collect all learning materials themselves and have become proficient at creating special assignments that relate to the current theme. This demands intensive preparation and inquisitiveness and presupposes an extraordinary spirit of cooperativeness. The teachers consider this to be a very stimulating and inspiring process. As the content and way of working at Bifrost are to a very large extent determined by the input and interests of the children, working with standardized books and methods is not appropriate. Each theme brings its own perspective or specific assignments. Where one theme seems appropriate for a more aesthetic approach, another might be more suitable for a natural-scientific or historical approach. Additional study material can be found in the school or in the public library, or on the Internet.

Another remarkable feature of Bifrost is that no assessments are made through grades or tests. "Creativity, flexibility and responsibility have become ever more important assets in current society, but it is exactly those qualities which are difficult to express in grades," says Johansen. Grades contribute to anxiety and add to the erroneous "learning for reward" attitude. Learning should be considered as a *personal* challenge, and not something one does to get approval from others. From early age on, children at Bifrost are trained to evaluate their own achievements, as well as those of others. These evaluations encompass much more than what could be expressed in grades, since they reflect both the process and the result. In close cooperation with teachers, children review their acquired knowledge, mutual cooperation, interest, creativity, time scheduling, etc. In Denmark, grades or a final exam list are not an obligatory requirement at the *grundskole* level.

Unlike most other Scandinavian schools, where homework is common practice at most intermediate and senior level education, the children at Bifrost do not get homework. Children are taught to take responsibility to work with assignments at school. To obtain skills takes much time and effort, and sufficient time is provided to train them during school time. After school, the children should be free to plan their own activities and do what they like.

In Practice

The Bifrost approach can best be illustrated by a concrete example. When the inspiration theme "Leonardo da Vinci" was being introduced to the children, some become fascinated by the "eye": How does an eye work? How can we see? What is color blindness? What do we mean with the expression "the inner eye"? The eye became one of the subthemes with which children of the low and intermediate grades worked. The children could choose to experiment in one of the workshops with assignments that are developed by the teachers. They themselves chose in which workshop they wanted to work and whether they wanted to work on an assignment individually or in a group.

The process of choosing is thoroughly planned. First, the students fill out a so-called "working sheet," indicating what they intend to do, how they plan to work, how long they expect to be working with an assignment, with whom they want to work, and what materials or tools they plan to use. The children who can read and write can fill out this form by themselves. Others get more assistance from the teacher.

"The filling out of this worksheet is a slow and intense process, which requires assistance of the teacher," explains teacher Kirsten. "What is important here is that the children learn to plan their activities. The younger ones start off with shorter, less complicated assignments, but gradually they learn to handle more encompassing assignments, spending more time doing experiments and investigations. To oversee such a process is complicated, which is why we think it is important to take enough time."

Here are some examples of assignments in the junior and intermediate level related to the subtheme "the eye":

Painting atelier
- Painting fantasy animals
- Drawing copies of portraits
- Making a fantasy drawing inspired by a story
- Making a drawing by observation

Reading and writing workshop
- Exercise in mirror writing
- Reading/writing facts about eyes
- Reading about the inner eye, imagination

Science laboratory
- Color blindness
- Eye tests
- Dissecting an eye
- Experiment with lenses, magnifying glass, glasses
- Experiment with eye pupil
- Observation of one's own eye in the mirror

After finishing the assignments, the children evaluated the result and way of working. For this they once again make use of the "work sheet." The teachers not only assist in suggesting what can be written down, but also in how it should be written down, the spelling. The reasons for a child to be satisfied with one's own work can diverge considerably. It is important that they reflect on this and learn to express their own thoughts in this respect.

Gradually, the children got more and more fascinated with Leonardo, his life and his interest in nature and technology. During the course in Danish they read about him, or told each other what they had read. Or the teacher read out loud to the group, and asked the children to retell the story. The goal is to train their memory, and their use of vocabulary. Illustrations are made to accompany these texts. The afternoon courses allowed for further exploration of a subject, related to the inspiration theme. These explorations could be practical (like collecting insects or flowers, examining and drawing them, and planting seeds) or more theoretical (like reading about the anatomy of the eye or the body or studying night-blindness). Another possibility was that they could study more deeply one of the topics which Leonardo himself investigated, like the invention of book printing, the anatomy of the human body, the use of warm, cold, and complementary colors in painting. The children usually bring forth numerous associations to an inspiration theme, so there is no shortage of material worth studying.

In the senior level, the pupils work more on a project basis. On basis of the inspiration theme "Leonardo da Vinci," two subthemes were selected: "The Renaissance" and "A New Mankind in the Renaissance." Over an extended period, the pupils studied subjects like architecture in the Renaissance, individual and societal views in the Renaissance, and the development of science and music during this époque. They elaborated their findings in a so-called "muse product," which could be a painting, poem, sculpture, or lecture. Some pupils chose to work individually, others in groups.

Once they finished, the students gave a presentation of their muse product to the whole senior level group. They elaborated on the choice, the content of their muse product, and the way it is made. The presentation usually concluded with a group discussion. Each presentation was thoroughly evaluated by both pupils and teachers, the children were stimulated to criticize and they learned to be criticized.

Mural

In the initial stages of the "Leonardo da Vinci" theme, the idea was launched to finish the project with a mural, a creation in which the whole school would participate. At that early stage, nobody had the slightest idea how the mural should look like, to say nothing of the practicality of the project. This was to evolve gradually during the project period. The teachers at Bifrost prefer not to structure a project totally from beginning to end; they rather leave room for the unexpected. An essential part of the creative process is to learn to be open for the interaction of ideas, visions, and practical experiences, to allow for new thoughts

and experiences to arise. This process should get a chance to develop slowly and spontaneously.

However, to have a whole school with 180 pupils participate in one single mural—and to prevent it from ending up in chaos—did eventually require some thorough practical preparation. One teacher came up with the idea to place two big lenses in the middle of the picture as basis for the mural, each one shedding light on a universe. Leonardo da Vinci was indeed fascinated by optics. In fact he studied two universes: the "inner universe" of the human being, and the outer-worldly universe. Both lenses would be shaped as two intersecting elipses. At the crossing point a human being would be depicted. Each school level was given the task to fill in a part of the mural, relating to the subthemes they were working with. The lowest level chose to depict a replica of Da Vinci's technical inventions, while the intermediate level wanted to represent his interest in nature. The senior level painted the cosmos in one elipse, and on top of that historical images of the Renaissance period. The intermediate level designed the other eclipse, with a focus on human anatomy.

The whole process of painting the mural took several months. Each time one group had elaborated on a sub-theme, it resulted in new images, which would become part of the mural. Children of the intermediate level had studied the sub-theme "anatomy" and examined organs, dissected an eye and a heart of a pig, and measured limbs. This resulted in a wide range of motifs for the mural. Others had made sketches of exotic plants, which were copied in the mural. Yet others had studied the topic of architecture in the Renaissance. They choose to depict a replica of the Dome of Florence. Some pupils had made studies of the Mona Lisa, and placed her portrait behind one of the lenses. They also painted motifs of the of Leonardo as a youth. A group of pupils that had been studying the role of the church in the Renaissance, painted a witch on a burning stack with Death swaying with his scythe. The Renaissance invention of the use of marble was visualized by a checkered floor that also illustrated Da Vinci's discovery of the concept of perspective. The pupils of the junior level wanted to give this section a playful twist by painting insects and seeds on this floor, which they had been studying in the context of "Leonardo and nature." Finally Da Vinci himself was placed in the middle of the mural. In his hands he holds an eye, giving expression to his fascination with this complex organ.

Building a Community of Learners

A Very Special School

Doralice Lange de Souza Rocha

The Bellwether School is a genuine community of children, families, and teachers.

The development of an educational community does not happen spontaneously. It takes energy and organization. In this paper, I will discuss how community is built in a very special school, a place where children, families, and teachers work and learn together.

The Bellwether School (BWS) is a little school located in Williston, Vermont. I conducted field research on the school from January to June of 2000, observing the behavior in classrooms, parent and teacher meetings, and cultural events. I also conducted several interviews with teachers, students, and parents.

The School

The Bellwether School started as a home preschool in 1992 in Burlington, Vermont. In 1995, it moved to Williston and became a nonprofit organization supported partially by the students and partially by donations and fundraisers organized by the school community. During the time of my observations, the school had no professional administrators. It was run by the teachers who met once a week to talk about educational matters and make decisions about school issues. There was also a board who dealt with the school budget, oversaw the development of the school, and worked as a liaison between the school and the external community.

When I conducted my research, it had three classrooms: a preschool, with two teachers and 15 children (ages 3 to 5); a primary classroom with 2 teachers and 18 children (ages 5 to 7), and an elementary classroom with 9 students (ages 8 to 11). In 2001 the school expanded to accommodate the needs of the students continuing up to 6th grade.

Both the preschool and the primary classrooms were divided into different working areas. For example, the

Note. For different aspects of the kind of education offered by the BWS, see my 2003 book, *Schools Where Children Matter: Exploring Educational Alternatives* (Brandon VT: Foundation for Educational Renewal). In this book I not only explore different educational aspects of this specific school, but also discuss the experience of two other schools that share a holistic perspective: a Waldorf school and a school named "The School Around Us," which uses the world as its primary learning environment and has teachers, parents, and students decide upon everything that happens in school.

Readers will find a classroom discussion guide for this article online at <www.great-ideas.org/Rocha.htm>.

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primary classroom included a meeting area; a reading area with a rug, pillows and a shelf full of books; two block-building areas (one with medium size blocks and one with large blocks that could be used to build structures that children could fit in); a woodworking area; a dress-up area; and a sand table. From time to time these areas were transformed to make room for different kinds of activities. The sand table, for instance, was substituted for a water table, for a weaving machine, or for an overhead projector, which teachers and students used to project shadows on the wall.

The School Day

The students came in any time from 8 to 8:30 a.m. From 8:00 to 9:30 the school had something called "Explore Time." The teachers arrived earlier in the morning and prepared various kinds of activities and materials that were distributed in the classroom. During Explore Time, the children could individually or in groups freely engage in activities of interest to them. They were free to do whatever they wanted, even just spending time talking to friends, as long as they did not risk their safety or the safety of their classmates and did not disturb the work of the people around them. Some of their choices during the time of my observations were knitting, embroidering, sewing, electric circuit building, jewelry-making, weaving, writing, drawing, painting, clay modeling, puppet-making, puppet shows, recorder and drum playing, block building, sand-table and water-table play, woodwork, table games, shadow projection, or just talking with each other. While sometimes children chose to work by themselves, most of the time they did things together. This was an excellent time for them to practice collaborating with each other in the development of different kinds of projects and to strengthen their relationships. Because all the classrooms had Explore Time at the same time of the day, the students were free to visit each other's classrooms and socialize with children of different ages.

After Explore Time, the activities were more directed. In the elementary classroom (ages 7 to 11), for instance, teachers and students met for about 15 minutes in what they called "morning circle" where they shared the news, talked about the activities they developed during Explore Time, and discussed issues of interest to everyone. Whenever there was a need, they would spend time talking about particular issues, such as the illness of a child's family member. In this case, the whole group would listen to the child and support her in dealing with the situation.

Other parts of the school day were divided into periods when teachers asked children to work on specific skills, but there was considerable room for students' choices. At about 9:50, they had a block of approximately 25 minutes with rotational activities such as the study of Spanish and geography, the practice of the recorder and spelling, and the exploration of scientific projects. From 10:15 to 10:30, they sat in a circle where they had a snack brought in by a volunteer parent. During this time they would usually have a group conversation about some subject of their interest.

Twice a week, from 10:30 to 11:45, they had a math workshop, and three times a week, they had what they called "writer's workshop." During this time the children worked individually or in little groups. The writer's workshops were meant to lead children practice writing and specific writing skills. The children could usually write about any topic of their choice. Before starting, the teacher would have them sit in a circle and tell the group which aspect of their writing they would focus on (e.g., content, spelling, grammar). Whenever the teacher felt children needed help making better choices, she would direct them so that they would not keep avoiding working on specific writing skills, especially those which they had more difficulties with. In the case of the math workshops, the teacher would often prepare different kinds of problems on little chalkboards that were given to each child. Sometimes she would also ask students to work on certain chapters of a math book. While students completed their tasks, the teacher would work with individual children or with small groups of students giving them mini-lessons on specific topics. At the end of the workshops, she would check on each child's work in order to make sure the children had satisfactorily completed their tasks and were in fact advancing in their learning and development.

At 11:45 there was a one-hour outdoor recess where children could freely choose their activities and interact with their peers. After the recess they had lunch, and around 1 p.m. they started the "shared reading time." During this time the teacher

would read a chapter of a book or an article aloud and then lead a discussion about the reading. After this, they would usually have some time for quiet reading or for working on the development of thematic projects. While children worked, the teachers would walk around the classroom and give individual attention to them. Once a week, the children had a special music class and an "all school meeting" where they talked about different subjects which were of interest to everyone in the school. The official school day ended at 2:30 p. m. Some students stayed for the afterschool program.

A Child-Centered Approach

The BWS curriculum was emergent and child-centered, which meant that while the teachers had in mind some specific goals they wanted their students to meet, much of the "curriculum" grew out of the daily life of the school. The teachers observed children's interactions with peers, materials, and teachers, and then prepared activities that could potentially connect with subjects that the students were interested in. Let me give an example.

During Explore Time in the primary classroom, a child was examining the overhead projector and discovered he could project some of the plastic illustrations of a book on the wall. One of the teachers and some of the students who observed this child helped him to improvise a little "movie theater," setting up chairs close to the projection area so that everyone could watch the boy project the pictures. As this experience attracted some of the students, the teacher invited them to develop their own stories and illustrations and present them to the group. Various children engaged in this project according to their level of interest. This experience not only showed the specific child who inspired the whole project that his interests were valuable, which was probably important for his self-esteem, but it also motivated different students to work on their own stories and illustrations. This, in turn, promoted children's creativity, writing and drawing abilities, and verbal communication skills.

Although the curriculum was based on students' interests, the teachers tried to make sure, by the way they put the activities together, that children would keep progressing in the building of new knowledge and abilities. For example, in the elementary classroom one teacher wanted the children to learn about science and wondered if they might learn a great deal through a science fair. She proposed the idea, which the students liked, and they chose their own topics. The children discussed their ideas in class and developed a personal research plan with the help of the teacher. Many students got so involved with the project that they would work on it even during Explore Time, a time they could use to do anything they wanted to. While they worked on their specific projects, they would present their preliminary findings to the class and get feedback from the teacher and peers. In some cases they would also bring special guests to the classroom (parents and friends) to help them develop and present their projects to the group. Little by little, they built their knowledge in individual and collective ways. The science project ended with the presentation of students' research to the whole school community (parents, teachers, students, and friends of the school). This project was so appreciated by the children that its development became a routine in the school in the following years. Now it involves not only the teachers, students, parents, and friends of the school; it also involves members of the scientific community whom they contact to through the Internet.

Mixed Ages

At BWS the teachers work with children of different ages and different levels of development in the same classroom. There were advantages of this kind of arrangement. First, the younger students learned from the older and the older learned from teaching and helping the younger. Second, since the children were of different ages, there was no expectation that they were at the same learning level and development. Therefore, the children who had some difficulties in some areas did not stand out in the group because of these difficulties. They could work on their problems according to their rhythms. Also, those who were more developed in certain aspects could continue in their developmental journey without having to wait for their peers who were not at the same level. In this system, children could work according to their needs without feeling held back or forced to enter into an educational scheme that went against their natural inclinations.

Community

Although BWS focused on children's individual interests, it also facilitated the development of a sense of community between people in the school. In each class, during the morning meetings and throughout the weekly all-school meetings, the children had the opportunity to talk to each other and to solve common problems with the help of the teacher. During Explore Time, snack, outside time, and lunch, they could spontaneously interact with their peers, which allowed them to nurture their friendships. The BWS teachers consciously put in a lot of effort in promoting an environment where the children felt seen, respected, and safe to learn and to express themselves authentically and without fear of humiliation. While I observed the school, I noticed that the teachers would not hesitate to stop any of their activities to address social problems when problems emerged. They were so intent on solving social problems that they did not let even small incidents go unnoticed. For example, on one occasion 8-year-old Joshua loudly complainted that some younger children had taken materials with which he needed to work. The teacher asked him to restate his objection in a nicer way, and then invited Johsua to raise the problem with the whole group so it could work on strategies together.

The teacher did not ignore or punish the child for his aggressive complaining. She let him know that his concern was valid, and then used the episode as an opportunity for the children to solve problems together. Such meetings were common in the school. The teachers encouraged the children to discuss their problems in honest and nonaggressive ways. They tried to help the children become sensitive to one another's limitations and to carefully listen to one another's viewpoints before making certain decisions.

The Community of Teachers

While most of us teachers work practically in isolation behind the closed doors of our classrooms, the BWS teachers established a learning community not only for their students, but also for themselves. They would meet once a week, after the regular school hours, to discuss both administrative and pedagogical issues. They would also make time, whenever it was possible during the day, to share experiences and support each other on issues that were going on in their classrooms.

While the teacher's wages were far from being ideal, all the BWS teachers felt grateful for being part of the school community and for collaborating to help the school be what it was. They felt respected since they had complete autonomy to develop the curriculum according to the needs of the students with whom they worked. They felt valued since they had an important role in the school's administration, philosophy, and educational practices. They also felt "at home" in school considering that they found the school a place where they "could be themselves" and work as a team to promote their own learning and the learning of their students.

Parents

In many schools, parents are, at most, tolerated. At BWS, in contrast, the parents were quite welcome—even during the regular school hours. Parents were seen by the teachers as a resource to help them in the education of the children. To help get the parents into the classroom, the school had a policy that the parents had to actually enter it in order to sign their children in and out. Once the parents were physically in the classroom, many ended up staying a while, chatting with teachers and students and/or getting involved in activities along with the children during Explore Time.

The parents were frequently invited into the classroom in different kinds of situations such as leading specific activities, helping develop certain projects, or giving talks on subjects of their expertise. Some parents volunteered in activities such as the organization of puppet shows, plays, school trips, and cultural festivals. Some participated in committees to promote social events and festivals to raise funds for the school and organize activities such as the maintenance of the school building and the publishing of the school newspapers. Yet other parents actually helped in the classroom as volunteers on a regular basis. In the elementary classroom, for example, a mother would come in every Thursday afternoon to lead a project with students on the natural history of Vermont. She skillfully developed this work along with the classroom teacher and the children through research and artwork.

The presence of the parents in the classroom was beneficial to teachers, students, and parents in a number of ways:

- As the parents helped in the development of school activities, they kept themselves informed about the learning and development of their children and learned some effective ways of helping them at home.
- As the teachers maintained direct permanent contact with the parents, they learned about the student's life outside of school, which gave them tools for a good relationship with the children and for further activity planing.
- While the parents learned from their interactions with the teachers, they brought into the classroom rich experiences from their personal and professional lives that the teachers and students wouldn't normally have access to by themselves.
- The presence of the parents in the classroom generated a sense of continuity between school and home, facilitating the transition from one environment to the other.
- The dynamic interaction between parents and teachers generated a sense of partnership between them. This way, the school's atmosphere felt like that of a big family where everyone worked toward their own education and the education of the children.

Unfortunately, many educators believe they have little to learn from parents. They believe true education must come from them, the official educators. Many teachers claim that parents' presence will distract children. However, according to my observations, the main reasons why many schools and teachers do not welcome parents into the classroom are that they either do not believe they can learn anything at all from parents or they are afraid of exposing their own ignorance and weaknesses.

This morning I met a wonderful street artist who plays the guitar and sings for a living. I asked him about his family, and among other things, he told me that he has two daughters who study in a public school. I then asked him whether the school had ever invited him to play for the children and he said that in all the years that his children have been at the school, he played there only twice, from his own initiative, in school festivals. As I heard his story, I started wondering how much that school could gain by inviting this man to come in a few times a month to do some kind of work with the children. (The school doesn't have a music teacher.) This street artist, from what he has told me, would be more than happy to do some volunteer work at the school. Even the least technically skilled mother or father could contribute to everyone's education at school, if only by teaching teachers and students how to cook a delicious snack or how to plant and take care of growing vegetables. It is obvious, however, that to bridge parents' informal education with the kind of formal knowledge schools are supposed to work with is not an easy task. The teachers would have to work from where the parents left off and lead the children towards more academic knowledge. This would certainly take a lot of commitment, work, and organization.

Parental participation is best developed when the school establishes an explicit culture in which parents' presence is expected and valued. In such a culture, the school's faculty will realize even that those who do not have a lot of formal education can offer important contributions to the kind of education that is done at school.

Why the School Works

The BWS is a place where parents, teachers, and students liked to be, as many of them told me during interviews. It was a place where people felt part of something bigger than themselves: a true learning community where they felt respected and valued both as individuals and as contributing members of the community. Some important characteristics of the BWS that facilitated the building of this kind of environment were:

- The relatively small number of students for each teacher allowed the latter to focus both on the needs of individual children and on the needs of the whole group.
- The structure of the curriculum permitted the children to pursue their individual interests and, at other times, to work with the whole group. They felt valued and respected as in-

dividuals even as they developed a sense that they were a part of a community that learned and worked together.

- The structure of the day provided children with the time and opportunity to interact with each other and strengthen their friendships ("Explore Time" and outdoor recess were just part of the 2 to 2 ½ hours they could freely interact with one other.)
- The children received support to talk about personal issues and work toward resolving their problems with their teachers and peers during occasions such as "morning circle" and "all school meetings." Moreover, the teachers wouldn't hesitate to drop what they were doing to address social problems that emerged during the day. They were fully committed to fostering a sense of respect and solidarity between all the members of the school community.
- The multi-age aspect of the classrooms and the assumption that children were at different developmental levels encouraged collaboration rather than competition between students. The older children helped the younger ones, and the younger developed the attitude of also helping others as they grew older. Since the students in the classroom were expected to be at different levels and with different needs, these who had some special needs did not stick out as problematic. Also, the most advanced students did not resent having to wait for their peers so that they could keep advancing in their learning. They could work according to their needs without feeling held back.
- Teachers visited one another's rooms to chat about their work and had a structured time once a week after the school day to discuss both administrative and pedagogical issues and to give support to one other. These activities promoted their professional development and fostered a sense that they were a part of a community where they could learn and count on each other to improve their work.
- Finally, the parents were regarded as partners of the school in their children's formal education. They were not merely welcome in the school to help with fundraisers and special activities, they were constantly invited to share their expertise with the teachers and students. They observed their children's work and progress. They learned from the teachers, enriched the curriculum themselves with their knowledge and experiences , and provided for continuity between what happened at school and what went on at home.

Parental participation is best developed when the school establishes an explicit culture in which parents' presence is expected and valued.

Before ending this paper, it is important to remark that, while the BWS was a pleasant place were everyone really liked to be, it was also an excellent school on an academic level. Most of us would be tempted to think that, because this school allowed students to choose many of their own activities and because it invested so much in children's social skills, the students would somehow be impaired in their intellectual development. According to my observation and analysis of students' intellectual work at school, this was not the case. The academic development of BWS students was as good as, if not better than, the development of students in other schools. I believe that this had to do with the fact that while children did have a strong voice in the development of the curriculum, which kept them motivated to learn, the teachers were always monitoring the children's progress, making suggestions that would enable the children to develop new knowledge and skills. Although the reality of the BWS is different from the reality of most schools we know, it can offer us inspiration and practical ideas to develop more human and effective ways of working with the education of children and of preparing them to become productive members of communities.

Review Essay

Minding American Education: Reclaiming the Tradition of Active Learning

by Martin Bickman

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Reviewed by Catherine A. Franklin

Martin Bickman's *Minding American Education* provides an historical and philosophical context for understanding current trends in American education. He reminds us of our 19th century traditions with schooling and the pivotal thinkers who continue to influence views on learning and teaching. Bickman challenges us to return school to a place where thinking is at the "center of our teaching in terms of what we ask of both our students and ourselves" (p. 140).

Minding American Education is structured in a flexible way; chapters can be read in any sequence. Similar to the experience of attending an on-going lecture series at the graduate level, the reader has various entry points into this text. The practitioner may want to first read about immediate classroom application in the chapter "Enacting the Active Mind," before moving into the chapters that explore the history and rationale of active learning. Those interested in educational theory and practice may first want to read the chapter "Uniting the Child and the Curriculum," which explores the work of John Dewey. Those who want to explore educational philosophy and history will want to begin with the preliminary chapters on the 19th century New England Transcendentalists (e.g., Ralph Waldo Emerson, Margaret Fuller, Henry David Thoreau).

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Minding American Education provides a concise, well-referenced background in support of the tradition and practice of active learning. The opening chapters explore our current educational debate by examining the patterns of thought that emerged in our schools during the nineteenth century. The discussion is framed between two contrasting priorities: the need for structure and order in our schools and the need to engage the individual student in intellectual inquiry and meaningful academic engagement. The second third of this book moves the discussion forward to John Dewey and his work with the Lab School in Chicago. Connections are made to the influences of the New England Transcendentalists. The final section of the text explores the application of active learning in the classroom. Also included are the voices of artists (e.g., Robert Frost, William Carlos Williams) and the insight they offer on active learning and classroom practice.

This review focuses primarily on the chapters related to educational philosophy and history. Applications within the field are also explored. Horace Mann and Ralph Waldo Emerson frame the initial discussion. This review begins with a brief overview of their work and is followed by my own experiences—as a classroom teacher and as a teacher educator—with how two prevailing conceptions of education play out in the field.

Framing the Educational Landscape: Divergent Visions

Horace Mann (1796–1859) worked as secretary of the Massachusetts Board of Education for twelve years. As someone involved in the abolitionist movement, he was committed to creating a system of education that included children of all races, belief systems and socioeconomic classes in the United States. Along with advocating improved physical facilities of schools, he created a set of systems that brought order to a chaotic organization. It was during this

time that the familiar structure of school was instituted: students were grouped by age in self-contained classrooms; knowledge was divided into "subjects"; textbooks contained authoritative knowledge and teachers used these textbooks to transmit this knowledge; paper-and-pencil tests measured student knowledge; and report cards were distributed at regular intervals to disseminate these results. This became the accepted practice and reality of schools for later generations.

In his endeavor to actualize an ideal for excellence and equality in a workable educational system, Mann unwittingly helped build one of the most hierarchical institutions in our society. Bickman argues that Mann's ideas eventually grew into an accepted bureaucratic practice that resulted in dulling uniformity, heedless standardization, and self-preservation. To this day, any attempt at changing these structures is viewed with incredulity.

While Mann was bringing order to the business of learning and thinking, a disparate group of philosophers, educators, and artists in New England shared a keen interest in creating an alternative approach to school. They envisioned a place where knowledge was not seen as pre-existing, absolute, and authoritative, but rather where ideas were constructed and questioned, and knowledge was viewed as something provisional and tentative. This group became known as the Transcendentalists and it was from their work that the concept of active learning emerged.

Ralph Waldo Emerson (1803–1882) epitomized the driving spirit of this group in his piece "The American Scholar." He delivered this paper at the annual Phi Beta Kappa address at Harvard College in 1837. He raised questions about how education should function in a democracy and how to help the student develop good citizenship in the deepest and broadest sense. Emerson felt that there were three essential influences at play with the thinking individual: nature (e.g., observing the natural world), past (e.g., reading about the world through text), and action (e.g., experiencing the lived world). Emerson moved beyond the dichotomy of intellect and physical body. Instead, he viewed education in a more integrative, dialectical way. He believed that schools needed to bring an on-going dialogue between knowing and questioning, thinking and doing.

Bickman argues that we are engaged today in the conversations begun in the 19th century about the direction of American education. While Horace Mann accomplished a great deal in systematizing our fledging education system and elevating the status of the teaching profession, he set into motion a self-perpetuating mechanism focused on accountable educational practice. Bickman (p. 79) notes that

> in every educational situation there is a conflict between the immediate workings of intelligence and the institutional structures that work against this very act of mind.

Ralph Waldo Emerson and his fellow New England Transcendentalists remind us that the playfulness and messiness of the mind needs to be at the center of the educational process.

Uneven Comparisons

In the chapter, "The American Scholar vs. American Schools," the stated aim was to "reveal previously unnoticed patterns" of how two conceptions of American education emerged at about the same time. While I appreciate how this chapter was framed, and how today's trends in education could be explored through the institutional practices that Horace Mann helped to create and through the contrasting philosophy that Ralph Waldo Emerson envisioned for the individual learner, it did not make for a compelling argument. With the exception of an initial quote at the beginning, the reader never reads directly from Mann! Instead we read from a secondary source, Mann's biographer, to analyze the impact of this influential educator. This contrasts with numerous quotes from Emerson.

While the author's position on education is clear, he missed an opportunity here to delve into Mann's work. This is particularly important because he uses Mann as the point of comparison to Emerson. Even if, as Bickman argues, "Mann never analyzed some of the ways in which order and uniformity by their very nature discourage genuinely educative possibilities" (p. 8), it still would have been useful to learn what Mann himself thought about education. Selected excerpts from Mann's work would have re-

vealed his preoccupations during his tenure as education secretary. This would have helped the reader develop a more complex understanding of his work and how he continues to influence American schooling today. Including pertinent writings from both Emerson *and* Mann would have deepened the level of analysis within this chapter.

Seeing It First Hand: Individual Development and Social Control

Nonetheless, this chapter connected to my experiences as a classroom teacher and as a teacher educator. In the various private schools where I had taught as a middle school classroom teacher, the students and I had time to delve deep into a topic of study. For instance in one unit, the eighth graders and I explored the legislative branch of government by focusing on the U.S. Senate and transforming our classroom structure to a class senate. Students researched contemporary issues in current events so that they could work as lawmakers to construct and debate relevant legislation. Over the course of two months, we became "active insiders" to this unit of study, not detached students of it.

Interacting in an entirely new context, the eighth graders immersed themselves into the language and activity of the Senate, and they formed political relationships within this setting and developed positions on legislative issues (Franklin 2003). Knowing became rooted in activity and reflection (Cobb and Bowers 1999).

In my current position as a teacher educator in a large urban college, I am sadly aware of a different reality in too many elementary classrooms. Teachers have shared countless stories with me about the "pressure cooker" atmosphere and how they and their students have to contend with scripted curricula, high stakes testing, and state mandates. There is seemingly no value given for students and their teachers to wonder and to inquire about the world around them. Bickman notes that

> the central irony here is that the institution in our society most explicitly charged with encouraging thought has become the most impervious to reflective, unbiased thinking about its own workings. (p. 8).

And so the pressure continues to build.

While I have been mindful of (and deeply concerned by) the different educational priorities set within various school settings, it was not until I read Bickman's *Minding American Education* that I began to view the classroom experience from a different frame of reference. We can get so caught up with current debates, forgetting that today's educational situation is closely tied to our divergent educational traditions: the institution's need for order and control, and the corresponding need to grapple and wonder about ideas.

As a former classroom teacher, I can remember having conversations with parents, students, and administrators about the importance of delving deep within a unit of study and using the textbook as one frame of reference, not as the sole authority. At times, I was questioned about this approach and so I supported my position with evidence that showed how students were learning with complexity and deep understanding. How much more expansive the discussions would have been had I framed my practice within the context of our educational traditions.

Minding American Education provided me with a deeper understanding and a stronger rationale for why active learning is so vital. Not only does this approach need to be explored more fully within our teacher education courses, but it also needs to be an accepted and more recognizable practice within our elementary and secondary classrooms.

"The American Scholar"

One of the key documents that Bickman brings to the attention of the reader is Emerson's address in 1837, "The American Scholar." It is here where Emerson speaks about the thinking person and the importance of interacting with the world in a mindful, active way. This document is woven into various chapters and Bickman uses excerpts from it to show Emerson's influence on various thinkers and educators. At the same time, Bickman also explores the thinkers and movements who had influenced Emerson (e.g., German Romantics).

As a reader, I was hoping to locate "The American Scholar" within the appendix of the book. I was disappointed. Nonetheless, I was able to locate it in a nearby bookstore. Any text of Emerson which in-

cludes his complete collection of essays will contain this 17-page text. As it is mentioned frequently within this text, it helped to have "The American Scholar" in front of me. In this way, when Bickman made reference to it, or quoted an excerpt from it, I had the full text before me. This helped me to follow Bickman's analysis of it and/or the connections he was making from it. Then too, it helped me to formulate my own thinking about Emerson and his vision of active learning.

For example, in Chapter two, "Romantic Wholism" we learn how German Romantic thinkers influenced Emerson. Friedrich Schiller in 1795 wrote "On the Aesthetic Education of Man." In this piece, Schiller cautioned how the individual can become dangerously separate from the world around him. Bickman noted this same theme being echoed in "The American Scholar" and saw how Emerson sought integration. Emerson believed that education needed to connect the individual to the self, to nature, and to the community at large. He was concerned with how the pervasive force of society can split the individual from his/her own true self. In a parable introduced in the beginning of "The American Scholar," Emerson cautioned the reader to live a more integrated life.

> The state of society is one in which the members have suffered amputation from the trunk, and strut about so many walking monsters—a good finger, a neck, a stomach, an elbow, but never a man. (2004, 51)

Through this perspective, the scholar becomes the delegated intellect, nothing more. At worse, "he becomes a mere thinker, or, still worse, the parrot of other men's thinking" (2004, 51). Emerson urges readers to construct learning environments that develop habits of mind that support *thinking*—where thought is not fixed, absolute, authoritative, but rather where thinking is in a constant state of flux and where there is continual questioning, probing, and wondering about the world.

Seeking Unity: Provoking Thought

Along with examining the educational influences of Horace Mann and Ralph Waldo Emerson, I also got to know Margaret Fuller (1810–1850). She was a driving force in her time for advancing progressive ideas about the role of women in society. Influenced by the transcendentalist school of thought advocating human fulfillment, she saw how women were intellectually starved and frustrated within male-dominated society. She noted how the voice and ideas of women were largely absent in the exchange of ideas going on in New England at that time. She wrote *Women in the Nineteenth Century* which became a "must-read" for generations of women. As a gifted speaker and skilled writer, she started a series of conversations with women on such topics as art, culture, literature, women, and life (Flexner and Fitzpatrick 1996). Her role was not to teach but to provoke thinking about societal conventions and accepted norms. Along the way, she co-edited the quarterly magazine, *The Dial*, with Emerson and later became the literary critic of the *New York Tribune*.

Fuller contributed another dimension to the tradition of active learning. She viewed the mind as having elements of both masculine and feminine qualities. Rather than trying to separate one from the other, like splitting a page of paper from its opposite side, she argued that the mind, in fact, was androgynous. Through her creative and intellectual work, Fuller embraced this unity of mind.

Through the example of Fuller, Bickman points out that the act of creation helps the individual to connect with the world around him/her. This act of creation—through writing, through drawing, through breaking from gendered opposites—provides a lens from which the individual makes sense of the world. In so doing, the individual can observe more and can become more deeply connected with the world around him/her. At the same time, through the process of active learning the individual has the opportunity to deconstruct and reconstruct the world anew. Bickman argues that the Romantics were not necessarily focused on emotion over intellect, but rather they worked to bring the two together and to "heal the splits between them" (p. 29).

Distracting Detours

There were times when Bickman took distracting detours in his historical survey of influential thinkers on education. For instance, in examining the preoccupation with duality that concerned some 19th

Century thinkers, he sketched Carl Jung's theory of development. Bickman then analyzed the effect of this model on the movements of Western culture. He included a quote from Richard Tarnas:

> The evolution of the Western mind has been driven by a heroic impulse to forge an autonomous rational self by separating it from the primordial unity with nature. (p. 441)

This was immediately followed by a passage from Bickman which begins:

> This tendency became particularly pronounced at the beginning of modern philosophy in the West with Descarte's positing of his own ego as the foundation upon which to rebuild all our knowledge. (p. 28)

As a reader, I became increasingly bewildered and lost with the connections that were drawn into this discussion. One moment my attention is drawn to Fuller, then to Jung, next to Descarte. I found myself wanting to return to the works of the Transcendentalists and their contributions to active learning. While I understood the context for this detour, I was more interested in hearing from Fuller and what she had to say about society at that time, rather than reading a condensed contemporary analysis on identity, ego and dualism.

This was a pattern I noticed within *Minding American Education*. There was not enough time spent on making clear connections and providing content background to related reference sources. Not all readers are versed in the combined fields of philosophy, psychology, and history. At the same time, however, this text challenged me as a teacher educator. I found myself wanting to learn more about the New England Transcendentalists and their connection to active learning.

Final Words

Densely packed with reference citations to various educators, artists, and writers, this text serves as an intense guide for those wishing to become more familiar about various social movements and key educational writings connected to active learning. Through the course of its nine chapters, the reader can begin to understand the many shapes and forms that are integral to this approach of learning and teaching. Admittedly, this is not the most accessible of texts and its structure can at times be distracting. Nonetheless, it is thought provoking and well-referenced.

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Book Reviews

Letters to the Next President: What We Can Do About the Real Crisis in Public Education

Edited by Carl Glickman

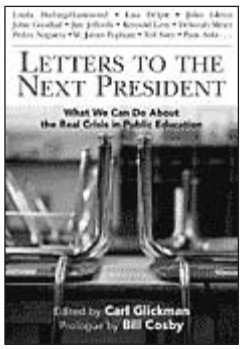
Published by Teachers College Press (New York), 2004

Reviewed by Mary Rose McCarthy

It is important to pay attention to book titles, especially the parts that come after a colon. Authors and editors often reveal their agenda in those subtitles. *Letters to the Next President: What We Can Do About the Real Crisis in Public Education* is a case in point.

This volume is a collection of letters ostensibly written to the person who will lead the United States after the next election. Opening with a prologue by Bill Cosby and ending with an epilogue by the late Sen. Paul Wellstone, it includes messages from students, teachers, administrators, parents, teacher educators, scholars, and politicians. They present needs, offer analysis, and suggest ways that the future president can lead the country to educate all its children more successfully. The premise that they are speaking directly to presidential candidates is appealing, and the book is shaped by the political nature of such a dialogue. However, if communicating with presidential candidates were its only goal, the book would have a severely limited audience.

Editor Carl Glickman, writing in the introduction explains more fully the intentions of those writing in the book. He acknowledges that it is "straight talk from experienced, caring, and intelligent citizens about what" can be done to improve public education in America (p. 3)—citizens "who hold in common the belief that we are in great need of a president who can gather our energy as local citizens and educators to re-center our public schools" (p. 6). However, Glickman adds that the writers "also believe that citizens and educators need not wait upon their next president to alter and improve the course of education" (p. 6). In fact, the text is meant to be a tool to motivate Americans to do so. The letters "speak directly to the real crisis in education and what all of us need to do to rally for better public education" (p. 6). The text, then, lays out a political agenda. It challenges the goals and policies of the current administration, as well as longstanding practices by which our schools and those who work within them are complicit in reproducing social inequalities.



In this respect, the subtitle's promise is fulfilled. The "We" in the title is clearly a larger collective than the presidential candidates, and the crisis in public schools is more than test scores or graduation rates.

The authors are exquisitely aware of and eloquent about the injustices present in the educational system itself. Some of the most powerful of these essays come from students. For example, Rosa Fernandez, a young woman who attended a New York City public high school, describes the consequences of the differences between her experiences in a small school and those of her identical twin sister who attended an overcrowded large high school. Students from a Navajo Nation school describe the poverty of resources they endure. Michelle Fine, April Burns, and Maria Elena Torre provide a set of postcards, emails, and memos (p. 214) from young people who express dismay at the disparity between educational settings and the consequences they perceive such differences to have on their ability to believe in American democracy.

Mary Rose McCarthy is Assistant Professor of Education at Pace University. She is the co-author of *Critical Issues in Education*. She teaches foundations of education courses, is a historian of education, and researches issues of social justice in schools. She received her M.S.Ed. in curriculum and teaching from the University of Rochester and her Ph.D. in the social foundations of education from the State University of New York in Buffalo.

Other essays come from scholars such as Jeannie Oakes and Martin Lipton who present a concise and persuasive summary of the realities of current inequalities among public schools. Deborah Meier, Asa Hilliard, William Mathis, George Wood, and Sophie Sa challenge the prevailing "dark, bleak, and fearful vision of education" (p. 48) and present examples of the accomplishments of public schools. In doing so, they begin the process of critiquing the policies of the current administration. In powerful essays, Pedro Noquera, Jacqueline Jordan Irvine, Thomas Sobol, and Karen Hale Hankins identify the limitations and the crippling consequences of reform efforts that are limited to imposing standards and high-stakes testing on American public schools. The results of research on teaching and learning are presented by Linda Darling-Hammond, Lisa Delpit, John Goodlad, and Lillian Katz. Ultimately an alternative agenda for school reform emerges in these essays.

The clear articulation of that agenda is perhaps the book's greatest contribution to the public dialogue on education in the United States. It takes into account the social and political realities of schooling in America, but it returns again and again to a vision of publicly funded and publicly accountable schools. The writers ground their calls for such reform in the belief that such institutions, when working well, are optimal for meeting the need of a democratic society for an educated citizenry.

That is, unlike the agenda of competition proposed by most recent educational reform, notably the No Child Left Behind legislation, this agenda emphasizes cooperation for the sake of the common good. It includes the difficult tasks if providing for the material, nonacademic needs of poor children; holding states accountable for their school's conditions and outcomes; developing school policies and practices that are respectful of and responsive to parents of all races, ethnicities, and socioeconomic status; providing adequate financial resources to ensure that all schools have access to qualified teachers, books, and other learning materials; assessing learning in multiple ways; and creating schools that are small enough to maintain personal relationships among students, staff, administrators, and families. In this vision of what constitutes the real crisis in American education, there are no quick fixes. Solving the problems public school students and teachers face requires a political will to see that justice, not efficiency, is served.

The book is well-edited. The selection of material for each section has been made carefully and the order of the sections has been structured to lead the reader to the conclusion that a national educational policy that supports real equity in American schools is long overdue, and more importantly, can be created.

The book is not perfect, of course. As an academic, I'd like to see more precise references to research studies, for example. Additional connections to the history of public education would also be useful in an attempt to persuade a future president and fellow citizens of the consistency between these proposals and the surprisingly consistent goals we have had for public schools in the last hundred and fifty years. However, this is not a book that pretends to be academic. Its intention is clearly to advocate for a political agenda that challenges the one currently dominating American life.

I recently co-authored a textbook on contemporary issues in education. In doing research for the project, I often set out to explore opinions on the topics. Whenever I searched on the Internet, I experienced dismay at the easy access I had to the opinions of those who supported a reform agenda of standards, testing, privatization, alternative teacher certification, and vouchers. Searches would return site after site where the justification of such proposals were articulated passionately and sometimes quite persuasively. It was difficult, on the other hand, to find material that analyzed educational issues from a political perspective that supported the idea that government has an important role to play in providing education to its young citizens. This book will provide some remedy to the problem by gathering a collection of essays endorsing that alternative view. The power of the essays in this book is in their consistency. The agreement about the nature of the problems and the basic shape of the solutions is heartening in an era when it seems as though only the voices of those whose starting points are individualism and private markets are publicly united.

Place-based Education: Connecting Classrooms and Communities

by David Sobel

Published by The Orion Society (Great Barrington, MA), 2004.

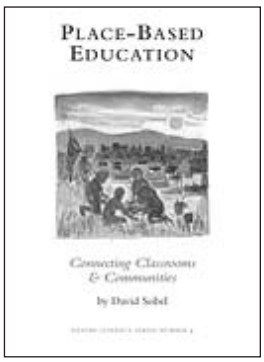
Reviewed by J. William Hug

David Sobel's book, *Place-based Education: Connecting Classrooms and Communities,* provides an excellent overview of place-based education, along with experience-based strategies for implementing a place-based curriculum in a variety of school contexts. The book begins with examples of successful projects from around the United States. Following these examples, Sobel provides a description and definition of place-based education and contrasts it to environmental education. However, in the section entitled "Reconceptualizing Environmental Education," Sobel uses a definition of environmental education that is narrowly defined as education focused on environmental issues. This narrow definition of environmental education, although commonly used, is not universally accepted. There is a diversity of views with regard to environmental education, many of which are more inclusive than the environmental issues education definition. For example, a broadly defined environmental education could include an educator teaching biology, geology, natural history, outdoor education, or social studies—not just environmental issues, such as climate change, population growth, or pollution. The book also oversimplifies the socio-historical complexities of the development of environmental education and the movements that influenced it, such as nature study. In oral conversation Sobel would be able to clarify and negotiate a clear understanding, but this section of the book breezes too quickly over the complexities.

J. William Hug serves as an assistant professor in science education at Montana State University. Dr. Hug's academic work revolves around bringing schools and communities together through place-based education. His research, teaching and community service interests include elementary science teacher education, place-based education curriculum, and experiential education using ethnographic/interpretive research paradigms/methods.

After briefly describing environmental education, Sobel (p. 9) goes on to define place-based education:

> Place-based education takes us back to the basics, but in a broader and more inclusive fashion. Desirable environmental education, or what we're calling place-based education, teaches about both the natural and built environments. The history, folk culture, social problems, economics, and aesthetics of the community and its environment are all on the agenda.



If you define environmental education narrowly, the differences that Sobel writes about are accurate, but if you ascribe to a broader definition of environmental education then there is more overlap between the concepts.

Sobel advocates place-based education as a method for fostering school reform in opposition to "narrow-minded school reform initiatives that have spread their kudzu-like tendrils across the public school landscape" (p. 16). He suggests that new philosophical directions embedded in place-based education provide excellent promise for school reform. He lists these as:

- From extraction to sustainability as the underlying metaphor
- From fragmentation to systems thinking as a conceptual model
- From here-and-now to long-ago-and-far-away as a developmental guideline for curriculum design
- From mandated monoculture to emergent diversity as a school district goal (pp. 16–22).

Sobel describes research that supports the contention that place-based education benefits students. Several of the studies look at school reform, while others address student academic achievement and positive aspects of engaging in place-based education. This text would likely not satisfy an academic audience, but it contributes positively to a general understanding of supportive research in place-based

education. It will provide support and confidence to those who are contemplating a place-based education project or have encountered resistance in their project and need research to support their arguments for the benefits of place-based education.

An excellent section of the book concentrates on the work of the place-based education Evaluation Collaborative, a working group of committed organizations and people to further place-based education. Sobel writes (p. 36),

> While we all started out thinking that our focus was on school improvement and academic achievement, we have come to realize that our focus is equally on creating vital communities and preserving the quality of the environment.

This section continues to elaborate on each aspect of this "three-legged stool" that only stands if all three aspects of a place-based education project are present: "academic achievement, social capitol, and environmental quality" (p. 36).

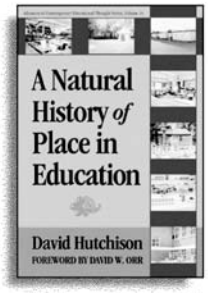
One of the book's strengths derives from Sobel's considerable experience forming partnerships that foster the adoption of place-based education curriculum in schools. This experience comes through clearly in a section (pp. 53–68) that identifies and describes Sobel's core strategies for creating place-based curriculum:

- Put an environmental educator in every school.
- Create "SEED" teams to provide vision and guidance (made up of 2 or 3 teachers, an administrator, an environmental educator, 2 or 3 community members, a school staff person, and 2 or 3 students).
- Build connections through community vision to action forums.
- Tread lightly when you carry a green stick.
- Nurture continuous improvement through ongoing professional development.
- Nurture community exchange.

Sobel's experience building collaborations provides a quality blueprint for others to work from as they construct their place-based education programs. While Sobel acknowledges that individual collaborations are different, he describes some common milestones in the implementation process. These ring true with the research literature on school reform and in the crucible of actual experience.

Sobel's book is an excellent resource of considerations and strategies for implementing place-based education in schools across the country. The book does not contain highly prescriptive formulas for success but finds a comfortable balance between sharing general strategies that have worked over a number of projects and specific examples of individual place-based education projects. There are a variety of ways educators could potentially use this text—from teacher in-service workshops to university courses to school and community development meetings. Sobel should be congratulated for contributing a fine book to inspire and support additional place-based curriculum reform projects.

Great New Books!



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David Hutchison / Foreword by David W. Orr

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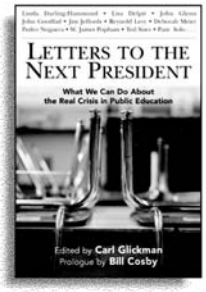

Letters to the Next President

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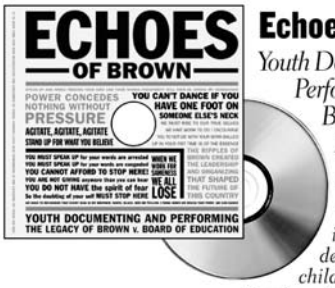

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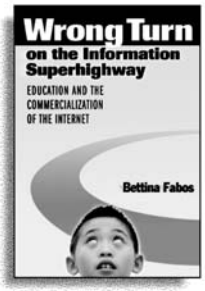

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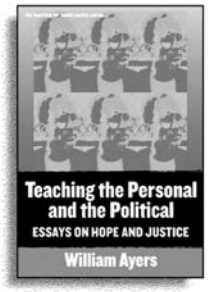

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