

Three Chapters from Free at Last

By Daniel Greenberg

Daniel Greenberg conceptualised The Sudbury Valley School. This is a democratic school run by a School Meeting. Students and staff each get one vote on all matters of substance; including the school rules and hiring/firing of staff. The school has no grades, tests, or scores.

And 'Rithmetic

Sitting before me were a dozen boys and girls, aged nine to twelve. A week earlier, they had asked me to teach them arithmetic. They wanted to learn to add, subtract, multiply, divide, and all the rest.

"You don't really want to do this," I said, when they first approached me.

"We do, we are sure we do," was their answer.

"You don't really," I persisted. "Your neighborhood friends, your parents, your relatives probably want you to, but you yourselves would much rather be playing or doing something else."

"We know what we want, and we want to learn arithmetic. Teach us, and we'll prove it. We'll do all the homework, and work as hard as we can."

I had to yield then, skeptically. I knew that arithmetic took six years to teach in regular schools, and I was sure their interest would flag after a few months. But I had no choice. They had pressed hard, and I was cornered. I was in for a surprise.

My biggest problem was a textbook to use as a guide. I had been involved in developing the "new math," and I had come to hate it. Back then when we were working on it -- young academicians of the Kennedy post-sputnik era -- we had few doubts. We were filled with the beauty of abstract logic, set theory, number theory, and all the other exotic games mathematicians had played for millennia. I think that if we had set out to design an agricultural course for working farmers, we would have begun with organic chemistry, genetics, and microbiology. Lucky for the world's hungry people that we weren't asked.

I had come to hate the pretensions and abstruseness of the "new math." Not one in a hundred math teachers knew what it was about, not one in a thousand pupils. People need arithmetic for reckoning; they want to know how to use the tools. That's what my students wanted now.

I found a book in our library, perfectly suited to the job at hand. It was a math primer written in 1898. Small and thick, it was brimming with thousands of exercises, meant to train young minds to perform the basic tasks accurately and swiftly.

Class began -- on time. That was part of the deal. "You say you are serious?" I had asked, challenging them; "then I expect to see you in the room on time -- 11:00AM sharp, every Tuesday and Thursday. If you are five minutes late, no class. If you blow two classes -- no more teaching." "It's a deal," they had said, with a glint of pleasure in their eyes.

Basic addition took two classes. They learned to add everything -- long thin columns, short fat columns, long fat columns. They did dozens of exercises. Subtraction took another two classes. It might have taken one, but "borrowing" needed some extra explanation.

On to multiplication, and the tables. Everyone had to memorize the tables. Each person was quizzed again and again in class. Then the rules. Then the practice.

They were high, all of them. Sailing along, mastering all the techniques and algorithms, they could feel the material entering their bones. Hundreds and hundreds of exercises, class quizzes, oral tests, pounded the material into their heads.

Still they continued to come, all of them. They helped each other when they had to, to keep the class moving. The twelve year olds and the nine year olds, the lions and the lambs, sat peacefully together in harmonious cooperation -- no teasing, no shame.

Division -- long division. Fractions. Decimals. Percentages. Square roots.

They came at 11:00 sharp, stayed half an hour, and left with homework. They came back next time with all the homework done. All of them.

In twenty weeks, after twenty contact hours, they had covered it all. Six years' worth. Every one of them knew the material cold.

We celebrated the end of the classes with a rousing party. It wasn't the first time, and wasn't to be the last, that I was amazed at the success of our own cherished theories. They had worked here, with a vengeance.

Perhaps I should have been prepared for what happened, for what seemed to me to be a miracle. A week after it was all over, I talked to Alan White, who had been an elementary math specialist for years in the public schools and knew all the latest and best pedagogical methods.

I told him the story of my class. He was not surprised.

"Why not?" I asked, amazed at his response. I was still reeling from the pace and thoroughness with which my "dirty dozen" had learned.

"Because everyone knows," he answered, "that the subject matter itself isn't that hard. What's hard, virtually impossible, is beating it into the heads of youngsters who hate every step. The only way we have a ghost of a chance is to hammer away at the stuff bit by bit every day for years. Even then it does not work. Most of the sixth graders are mathematical illiterates. Give me a kid who wants to learn the stuff -- well, twenty hours or so makes sense."

I guess it does. It's never taken much more than that ever since.

Classes

We have to be careful with words. It's a miracle they ever mean the same thing to any two people. Often, they don't. Words like "love," "peace," "trust," "democracy" -- everyone brings to these words a lifetime of experiences, a world view, and we know how rarely we have these in common with anyone else.

Take the word "class." I don't know what it means in cultures that don't have schools. Maybe they don't even have the word. To most people reading this, the word conveys a wealth of images: a room with a "teacher" and "students" in it, the students sitting at desks and receiving "instruction" from the teacher, who sits or stands before them. It also conveys much more: a "class period," the fixed time when the class takes place; homework; a textbook, which is the subject matter of the class clearly laid out for all the students.

And it conveys more: boredom, frustration, humiliation, achievement, failure, competition.

At Sudbury Valley the word means something quite different. At Sudbury Valley, a class is an arrangement between two parties. It starts with someone, or several persons, who decide they want to learn something specific -- say, algebra, or French, or physics, or spelling, or pottery. A lot of times, they figure out how to do it on their own. They find a book, or a computer program, or they watch someone else. When that happens, it isn't a class. It's just plain learning.

Then there are the times they can't do it alone. They look for someone to help them, someone who will agree to give them exactly what they want to make the learning happen. When they find that someone, they strike a deal: "We'll do this and that, and you'll do this and that -- OK?" If it's OK with all the parties, they have just formed a class. Those who initiate the deal are called "students." If they don't start it up, there is no class. Most of the time, kids at school figure out what they want to learn and how to learn it all on their own. They don't use classes all that much. The someone who strikes the deal with the students is called a "teacher." Teachers can be other students at the school. Usually, they are people hired to do the job.

Teachers at Sudbury Valley have to be ready to make deals, deals that satisfy the students' needs. We get a lot of people writing the school asking to be hired as teachers.

Many of them tell us at length how much they have to "give" to children. People like that don't do too well at the school. What's important to us is what the students want to take, not what the teachers want to give. That's hard for a lot of professional teachers to grasp.

The class deals have all sorts of terms: subject matter, times, obligations of each party. For example, to make the deal, the teacher has to agree to be available to meet the students at certain times. These times may be fixed periods: a half hour every Tuesday at 11:00AM. Or they may be flexible: "whenever we have questions, we'll get together on Monday mornings at 10:00AM to work them out. If we have no questions, we'll skip till next week." Sometimes, a book is chosen to serve as a reference point. The students have their end of the deal to meet. They agree to be on time, for instance.

Classes end when either side has had enough of the deal. If the teachers find out they can't deliver, they can back out -- and the students have to find a new teacher if they still want a class. If the students discover they don't want to go on, the teachers have to find some other way to occupy themselves at the appointed hour.

There is another kind of class at school, from time to time. It happens when people feel they have something new and unique to say that can't be found in books, and they think others may be interested. They post a notice: "Anyone interested in X can meet me in the Seminar Room at 10:30AM on Thursdays." Then they wait. If people show up, they go on. If not, that's life. People can show up the first time and, if there is a second time, decide not to come back. I've done this kind of thing several times. The first session, I usually get a crowd: "Let's see what he's up to." The second session, fewer come. By the end, I have a small band who are truly curious about what I have to say on the subject at hand. It's a form of entertainment for them, and a way for me (and others) to let people know how we think.

Persistence

It's a problem with words again. The way I just described it, learning sounds casual, loose, laid back. Easy come, easy go. Random. Chaotic. Undisciplined.

Often I wish that were true.

When school first opened, thirteen year old Richard enrolled and quickly found himself absorbed in classical music -- and in the trumpet. Richard soon was sure he had found his life interest. With Jan, a trombonist, available on the staff to help him, Richard threw himself into his studies.

Richard practiced the trumpet four hours every day. We could hardly believe it. We suggested other activities, to no avail. Whatever Richard did -- and he did a lot at school - - he always found four hours to play.

He came from Boston, 1-1/4 hours each way every day, often 1/2 hour or more on foot from the Framingham bus station. Like the proverbial postman, "in rain or shine, hail or

sleet" Richard made it to school, and to our eardrums. It was not long before we discovered the virtues of the old mill house by the pond. Built of granite, roofed with slate, nestled in a distant corner of the campus, the old neglected building took on sudden beauty in our eyes. And in Richard's. In no time at all it was turned into a music studio, where Richard could practice to his heart's content. He practiced.

Four or more hours a day, for four years.

Not long after graduating from school, after completing further studies at a conservatory, Richard became first horn of a major symphony orchestra.

Richard was followed soon by Fred, whose love was drums. Drums in the morning, drums in the afternoon, drums at night. Emergency action was in order. We fixed up a drum room for him in the basement, and gave him the key to the school so he could play early, late, and on weekends.

We discovered that the basement wasn't all that isolated acoustically from the rest of the building. It was often like living near a jungle village, with the constant beat of drums in the background.

Fred moved on at the age of eighteen after two years. We loved him, but many of us wished him godspeed.

It isn't only music that brings out the stubborn persistence we all have inside us. Every child soon finds an area, or two, or more, to pursue relentlessly.

Sometimes, it isn't even material they enjoy. Year after year, older students with their hearts set on college drive themselves steadily through the SAT's, the infamous "aptitude" tests which measure children's ability to take SAT tests -- and which colleges everywhere seize upon to help them make their hard admissions decisions. Usually, the kids find a staff member to help them over rough spots. But the work is their own. Thick review books are dragged from room to room, pored over, worked through page by page. The process is always intense. Rarely does it take more than four or five months from beginning to end, though for many this is their first look at the material.

There are writers who sit and write hours every day. There are painters who paint, potters who throw pots, chefs who cook, athletes who play.

There are people with common everyday interests. And there are others with exotic interests. Luke wanted to be a mortician. Not your most common ambition in a fifteen year old. He had his reasons. In his mind's eye, he could clearly see his funeral home ministering to the needs of the community, and himself comforting the grieving relatives.

Luke threw himself into his studies with a passion: science, chemistry, biology, zoology. By sixteen, he was ready for serious work. We took him out into the real world. The chief

pathologist at one of the regional hospitals welcomed the eager, hard-working student into his lab. Day by day, Luke learned more procedures, and mastered them, to the delight of his boss. Within a year, he was performing autopsies at the hospital, unassisted, under his mentor's supervision. It was a first for the hospital.

Within five years, Luke was a mortician. Now, years later, his funeral home has become a reality.

Then there was Bob.

One day, Bob came to me and said, "Will you teach me physics?" There was no reason for me to be skeptical. Bob had already done so many things so well that we all knew how he could see things through to the end. He had run the school press. He had written a thoroughly researched (published) book on the school's judicial system. He had devoted untold hours to studying the piano.

So I readily agreed. Our deal was simple. I gave him a college textbook, thick and heavy, on introductory physics. I had taught from it often in the past, even used an earlier version when I was a beginner. I knew the pitfalls. "Go through the book page by page, exercise by exercise," I told Bob, "and come to me as soon as you have the slightest problem. Better to catch them early than to let them grow into major blocks." I thought I knew exactly where Bob would stumble first.

Weeks passed. Months.

No Bob.

It wasn't like him to drop something before -- or after -- he had gotten into it. I wondered whether he had lost interest. I kept my mouth shut and waited.

Five months after he had started, Bob asked to see me. "I have a problem on page 252," he said. I tried not to look surprised. It took five minutes to clear up what turned out to be a minor difficulty.

I never saw Bob again about physics. He finished the whole book by himself. He did algebra and calculus without even asking if I would help him. I guess he knew I would.

Bob is a mathematician today.

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