

Angela Boltman
Introduction by Allison Druin



Two Weeks in the Life of a Technology Teacher

It seems as if you can't go a week without reading in the newspaper, or hearing on the evening news something about schools, technology and how teachers mix them all together. How people use technology to teach our children is something that seems to concern more of us every day. Unfortunately, though, from these small bites of mass media information it is hard to imagine what it might be like to be a technology teacher in a local elementary school. In my case, I've had the good fortune of working with a number of teachers in local elementary schools in New Mexico, New York, Massachusetts, and most recently Maryland. Thanks to my time with them, I have come to

respect them enormously for their patience, creativity, energy, and sense of wonder.

One special technology teacher I particularly enjoyed working with was a woman named Angela Boltman. She has been a technology teacher for the past 3 years in a low-income public elementary school in Albuquerque, New Mexico. She also happened to be a CHI98 CHIKids co-chair and has begun to become familiar with the HCI community. Recently, I asked her if she would jot down some thoughts for a few weeks while she was at school. Below is her journal. It offers a taste of what it feels like to hear a child giggle at a computer; what it feels like to wonder why a software manufacturer wrote software the way they did; and what it feels like to worry about losing a computer lab to fire. Angela is only one teacher at one school, but there are many other teachers out there that have thoughts, questions, and concerns similar to Angela's. There are also many that have different experiences all together. I believe one way to understand how to support our teachers with new technology is to listen to them. This is a start:

October 6, 1997

We're a low-income school with many kids/families in crisis. I think I'm providing them with as good an exposure to technology as any well funded elementary school, but then I have to wonder. Today a second grader (a 7 year old student) in computer lab asks "Do I need to use my earmuffs today?" I explain they're called headphones. Just when I think I'm giving these kids a good grounding in technology...

But also today, Jeffrey a kindergartner (a 4 year old student), after his first time in the computer lab, raises his hand and says "I know computers now". I'm reminded how empowering computers are for children – it makes them feel capable and smart.

October 7, 1997

I learned today that for young children, technology is a kind of fantasy-play experience. The kindergartners (students 4-5 years old) used "Bailey's Book House" today. Bailey's is a program designed to work on their language arts skills. At the end of class, I told the kids that Bailey has a brother named Sammy ("Sammy's Science House"), who knows all about science. And that Bailey and Sammy have a sister named Millie ("Millie's Math House"), whose really good at Math. They were so excited – they couldn't help but start talking about their brothers and sisters.

Kindergartners have a very difficult time with the mouse. Clicking and dragging is very difficult to do because their fine motor skills are still developing. It's hard for them to realize that their hands will move the mouse that moves the pointer that does things for them. They are drawn to touching their monitors when they want something on the screen to change.

October 8, 1997

I'm continually amazed how much kids want to help each other – especially when it comes to technology. Today, I asked Jenny, a third grader (8 years old), who

had finished ahead of the other kids to be my helper – to go around the room and help anyone who needed it. Well, 32 seconds later, I had 24 kids all wandering around the room looking for someone to help. Choosing a helper speeds the kids up for me – and when I have another class coming in for class in ten minutes, it's surely a great help.

Kindergartners are the most difficult grade level for me. It's partly because their fine motor skills are developing, and it's partly because it's highly difficult for them to conceptualize what they are doing. Off computer activities that help bridge the gap are really important for this grade level. Today, one class of Kinders that saw me in the hallway all shouted out excitedly, "Ooh, do we have puter today?". I'm thinking, "puter"? Maybe that's a new item on the lunch menu. And then it dawned on me, they meant *computer*. They've come to call computer class "puter class", because words with multiple syllables can be a little difficult for them. I guess that makes me the Puter Lady.

October 9, 1997

Kids really have a respect for technology and those of us fortunate enough to be related to it. When I walk the halls, they huddle around each other and say "Oooh, there's the computer lady..." or they run over and give me a big hug. I'd love to think it's because of my dazzling teaching skills, but if truth be told, it's because they have an awe about technology. They look forward to every opportunity to get on a computer. They have a natural enthusiasm. That makes the way we teachers use technology truly important – we can capitalize on their natural enthusiasm by giving them great technology experiences or we can stunt that enthusiasm and turn them off to technology.

October 10, 1997

I realized something today that is so cool. Technology brings kids together. We mainstream all our special education kids with our regular education kids. And you know what, it dawned on me today that

I can't tell them apart in my classes. Technology brings them together and has a way of blurring the lines. All kids are enthusiastic about technology and can "do" technology. They all feel they can do it. I don't think there's a kid in this class that feels stupid when it comes to technology. I wish I could say that for all of their classes or subjects.

I also learned something today about kids and printing/saving their work. Some kids truly need to print their work to realize that they have accomplished something; other kids can truly conceptualize that when they have saved their work to a disk that their work is really still there and still accessible. I've also realized that kids are very discriminatory about their work. Like an artist who writes many songs, but only chooses 10 to publish, kids have an innate sense about what work they've done that feels important, and what work they've done that they don't really like. Kids are choosy.

October 13, 1997

So I have five minutes before my next class walks in and I see the screens of all my computers flicker on and off, simultaneously. And a second later, the lights flicker on and off and I look up at the lights and see *smoke* pouring out of them. My first thought is "NO, absolutely not, *not my lab*, not after all the grants I wrote to get the money together for this! Not theft, not fire! No way!" My second thought is "Get moving – shut the computers off and the lights off". So of course classes are canceled, the proper electricians etc. were brought out, and my principal advises me to leave the lab. And I think "No way, I'm going down with my lab" The frightening thing is I mean it. Well, as it turns out, the ballast went out. What could have been an electrical fire turns out not to be. Just a typical old day in a public school!

October 14, 1997

Am I hexed? So it's calm and peaceful in my lab, just another day. And BAM! – one of the three counters (with 8 computers and a printer on it) *collapse*! Yes, sliding computers and keyboards. Luckily, there were only two kids (it was snack time in our after school program) sitting at that row. Although shaken, they were unhurt. Catching one computer and then racing to catch the other. Just another day. What's next – fire or earthquake? Jokingly,

one of my fellow teachers and I contemplated the next "challenge" to befall our lab. I said I'd prefer earthquake because I can tell the kids to ignore it and to just keep working. Marcia, one of my fellow teachers, smartly said "no, because if there's an earthquake, you can't tell the kids to get under the counters!" Always an adventure in public school education.

October 15, 1997

Today I had 25 Kindergartners using "Living Books" on the computers with headphones. I used the headphones because I'd go nuts with 25 different stories playing at the same time – though I don't think it would bother the kids much. Even with the headphones on, I did hear something. It was the sound of giggling as they read the stories and clicked to see animations.

A student named Josh, called me over to his computer today and said excitedly "I did this all by myself!" I realized how important it is that kids get the opportunity to create something with very little adult help. Kids truly are explorers when it comes to technology.

The best programs are the ones where the technology asks them to do something. Today some of the classes used "Sammy's Science House", an Edmark product. To see such excited kids saying "I just built an airplane..." "I just made a movie..." was great. Kids are the most excited when they can use a computer to make something. They're learning so much and they don't know it. I love that!

October 16, 1997

I love my LCD Panel! Particularly with Kindergarten kids (who so need) visual learning tools) for things like showing kids how to save and print, to close windows, and eject CD-ROMs. But I've realized that I don't want to use it show kids actual programs. Once young kids get a sense of clicking and dragging and get even a vague familiarity with the computer, then they want to explore on their own. They should be encouraged to explore – we should not do for them what they can do for themselves. Today, I asked every class if they wanted me to show them the "ins and outs" of a particular program or did they want explore on their own. Democratic vote. All classes chose exploring – every one. It may mean a little extra work for me helping individual kids, but if it gives the kids more control of their experience, it's worth it.

It dawned on me today that the level of sound in this room has never been a problem. When I first opened this lab, I wondered if I would constantly have to remind twenty five kids to keep their voices down. From day one, I encouraged them to share with their neighbors, to ask questions of their neighbors if they need help, etc. I decided that I wanted this to be a social experience for these kids. So, naturally, I wondered if the level of noise would become a problem. But what I noticed today was that sound is never a problem. When kids are actively engaged, sound is never an issue – and the talking that does happen is constructive, social, and a wonderful part of their experiences.

October 17, 1997

I wish I could make small changes to the software programs on the market today. I learn so much about what kids like and need by watching them use the computers. And it's the little things that stand out. For example, "Kid Pix", a great drawing that kids seem to love (I've decided it's genetic) has a way for kids to stamp in letters. But all the letters are capital letters. That really throws the Kindergarten kids off – I wish we could choose uppercase and lowercase. Or take many of the products on the market where kids make a building or a car, and they want to print it out – there's no place for them to put their name on it first. So I have 25 kids making stuff, printing at just about the same time, and havoc getting all the printed items to the right person. Sometimes I think software designers make their software as if one child in one room with one printer will be using it. But schools all over the country have local area networks and Web access – labs and classrooms with shared printers. If kids love to print and should be printing their creations, we need to give thought to making that manageable in large environments.

I see 600 kids a week. I have a lab to maintain, classroom computers and printers to repair, classroom teachers to train, software to install, grants to write, and a thousand meetings to go to. I'm exhausted!!

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