Should Learning Be This Much Fun?

This will be my fifth year teaching and I've enjoyed them all. After attending the 2005 ARRL Teachers Institute, however, I feel my effectiveness has risen to a new level. Let me tell you a little about it.

Troy Baucom, AE6VP

My students love the robots that we built as part of the Teachers Institute instructional package. I used the robot to introduce the concept of the scientific thought process. Basically, I told my class they had to design a way to get an unmanned vehicle to "move" around the surface of Mars, just like the scientists and engineers are doing today. The students discussed the problems the rover may face on Mars, coming up with several different ways the vehicle could be "moved." They came up with a walking rover, a wheeled rover, a rolling rover and a tracked rover. Through some very imaginative experimentation, they concluded that a tracked rover would probably be the best choice. I plan on integrating the BOE-Bot (Board of Ed Robot) into my math lesson plans, as well; I think it will work really well with my geometry unit.

Students experience hands-on Amateur Radio.

Amateur Radio in the Classroom? You Bet!

As for radios, my class is enjoying that aspect too. They love hearing about Morse code and many of them are trying to memorize it. Before we received the HF station, the class and I were "hanging out" on the higher frequencies (VHF/UHF). Thanks to Phil Spooner, KD7CJV, I discovered the world of Internet Radio Linking Project (IRLP). Phil is also a 2005 Teachers Institute graduate — he teaches at Cherry Park Elementary in Portland, Oregon. All I can say is "Wow!" What a perfect fit for the classroom! FM makes is easy for the students to understand what's being said, and with squelch, you can crank the volume with no annoying hiss.

Our first contact via IRLP was with Phil's class. It was an "ice-breaker," as we exchanged names and birth months, and then graphed the results. Shortly thereafter, we designed a more complex project that directly addressed both California and Oregon state math standards. It focused on teaching data analysis and calculating measures of central tendency, requiring the students to measure classmates' heights and relay the data over the radio (using ARRL approved phonetics and radio protocol — an earlier lesson). Once the data was recorded, they calculated the mean, median, mode and range. Amateur Radio allowed us to go beyond textbook calculations and make real world connections — something that is difficult to do in today's classroom. The communications aspect added a level of student engagement that would not have been possible if not for Amateur Radio.

My students with their W1AW QSL cards. They had a *great* time — just look at their faces! I would like to personally thank you for giving my students this opportunity.

From October 2006 QST © ARRL

Students Speak Out

At the conclusion of this project, I asked the students to tell me if they enjoyed the project or not. Every student had a positive response! I'd like to share some of their comments:

Victoria wrote:

> [I enjoyed this project] because usually these types of things are not easy for me to understand. But, when you make it where we are having fun, and still learning, that makes me want to pay attention more. That makes me learn more which leads me to better grades.

Eric wrote:

> I really enjoyed this project. I liked it because I've never really traveled very much. And when we got to talk to another class in a different state, it really made me feel good and excited.

Among other things, Laura wrote:

> I think it's good because the fun things are the things you remember all your life and the boring things are the things that go in one ear and out the other.

Veronica wrote:

> I think lots of teachers should get there radio license so they can teach their class about all these awesome things.

Joseph wrote:

> This project was one of the best projects I have ever had.

Jessica wrote:

> [I enjoyed this project] because it was fun math and we actually got to talk on the radio! Usually we do just regular math…

Olga, a recent arrival from Russia, wrote:

> I enjoyed this project. It was fun to talk on the radio.
>
> She also went on to say that next time …we can call Russia and get the heights of a sixth grade class there and then compare it to ours.

The Lunch Bunch

As the school year progressed, I tried to integrate ham radio into my curriculum as much as possible; this included a lunchtime radio club that met twice a week. My room became the cool place to hang out at lunch. Maybe it's the antenna? I had to think of something to satisfy the throngs of questioning students, so I figured a radio club might work. I arranged for a "real" guest speaker to come in to teach the class how to build a "foxhole" radio, but that activity had to be postponed until next school year. In preparation, the students wrote a short paper making predictions about how radios work. After the demonstration they will build one themselves and then write another paper about what they learned. The papers, of course, are intended to keep them from having too much fun!

Fifth graders in California must take a standardized science test. This is a very intense and important test (and factors heavily in the school's performance rating). A very problematic result is that after a year of detailed study, many fifth graders are turned off to science. I don't like what I see; however, I have seen interest in science rekindled through the use of Amateur Radio in the classroom (and the lunch-time radio club). I feel that is an extremely important aspect of using Amateur Radio in the classroom.

Unlimited Possibilities

Hams often describe their first fascination with Amateur Radio as "being bitten by the bug," Many cite their early explorations with ham radio as central to life choices, including higher education decisions, careers, friendships and a source of adventure, life-long learning and enrichment. As Troy Baucom and Phil Spooner demonstrate, Amateur Radio in the hands of a creative teacher offers unlimited possibilities to open topics for exploration, expand horizons and engage learning. It could be that students at Whitney Elementary are getting a taste of that same magic!

For more information about ARRL's Education & Technology Program and the Teachers Institute on Wireless Technology, visit **www.arrl.org/etp** or contact Mark Spencer, WA8SME, at **mspencer@arrl.org**. This program is entirely supported by contributions, with additional support from Parallax, Inc. Donations may be directed to the Education & Technology Program Fund at ARRL.
— *Debra Johnson, K1DMJ*

The "KIDZ" Are on the Air

In May, we received our club status with the call sign KI6DZB. Interestingly, a student pointed out that if you look close enough, you see the word KIDZ — an aspect we focused on for our QSL cards. I was also fortunate enough to schedule the Red Cross ECRV (Emergency Communications Response Vehicle) for a school visit. The students loved it! They were able to get a lot of hands-on experience with state of the art wireless technology, I was able to promote Amateur Radio (and our radio club) to the entire upper grade, and the Red Cross was able to promote their vehicle and the role Amateur Radio plays in national emergencies. You can see in the pictures how enthusiastic the students are toward Amateur Radio. I'm amazed at how fascinated they are. In fact, our program was going so well, the principal moved us to a larger room in order to better accommodate the use of Amateur Radio in the classroom.

Integrating Amateur Radio into the curriculum has lead to a level of student engagement and excitement that I have not seen in the classroom before! Students that normally have great trouble participating freely do so when the radio is involved. Next year will be the first year Amateur Radio will be used in the classroom from the very beginning. I plan on integrating it into the curriculum much more than I have this year. After that, who knows — the sky is the limit. I guess that's not even true in this case!

Michael Colvin, W6CUJ, of the Sacramento Chapter of the American Red Cross explains the capabilities of the Emergency Communications Response Vehicle to Whitney Elementary pupils in grades 4, 5 and 6.

Photos by the author.

Troy Baucom, AE6VP, has only been licensed for three years and in the classroom for five. He first got interested in Amateur Radio while in sixth grade, but he had no one to show him how to get started. He was again interested in high school, but he didn't know anyone who could help him. Finally, at age 33, the spark hit him again, and he decided to do it on his own — Troy purchased the ARRL Technician class manual, Now You're Talking, *and the rest is history. He's now an Amateur Extra class licensee and founder of Whitney Elementary School's Amateur Radio Club, KI6DZB. He can be reached at* **tbaucom@sanjuan.edu**. QST

From October 2006 QST © ARRL