

# Taking the Plunge

## A School District Commits to a Five-Year Plan for Technology-Infused PBL

*By Diane McGrath  
and Nancy Sands*

**Subject:** Implementation of district-wide initiatives

**Audience:** Technology coordinators, technology facilitators, technology integration specialists, district and school administrators

**Standards:** *NETS•T* II; *NETS•A* I, II (<http://www.iste.org/standards/>)

The Davidson County School District in Lexington, North Carolina, has jumped into project-based learning with both feet: they have committed to using PBL in all their schools and classrooms by 2006, and they have received a U.S. federal government Enhancing Education Through Technology grant to help provide the staff development and equipment needed to succeed. In this month's column, I work with Nancy Sands, the district's technology coordinator, to tell you about the

district's experiences, successes, and challenges after nearly four years of commitment to PBL and during their second year of professional development provided by the grant. Next month, we focus in on one example of PBL at the high school level in that district.

### **The District's Story**

The initial inspiration for Davidson County's commitment to PBL came from the North Carolina Department of Public Instruction (DPI). The DPI

developed a state technology plan for 2000–05, and then each district used that plan as a model for their own technology plans. PBL was an important part of the state’s vision. In drafting their plan, Davidson County noted that it had a 4:1 student to computer ratio, so it was time to go to the next level: expanding the “teacher’s role in creating an effective, technology-based learning environment.” They focused on how technology fit into their lofty goals of:

- high student achievement
- safe and orderly schools
- quality teachers, administrators, and staff
- effective, efficient operations
- community and family.

Part of the vision was for 50%–75% of the teachers to integrate PBL into their teaching. PBL was new to most of the teachers. One idea they had to work to change among their teachers was that constructivism (a guiding principle of PBL) is only for young students. The district used the following ideas to guide staff development in and implementation of PBL:

- Even older students learn when they collaborate and build on what they already know.
- Students should be encouraged to engage in dialogue.
- The role of the teacher may be viewed as a project manager rather than the dispenser of information.
- Students actively solve problems rather than passively receive information.

Davidson County began implementing its new plan in the 2000–01 academic year. The biggest success was the high school–level class Project-Based Web Authoring. The projects coming out of this class were excellent. In fact, one on Roman Architecture won the 2002 ISTE HyperSIG Multimedia Mania award

for the upper grades. This course was the brainchild of the district superintendent, Dr. Fred Mock. Fred believed high-level integration of technology was a key component in solving long-term problems of unemployment in the local community by improving students’ skills before they graduated high school and chose whether to enter college.

The overall plan, however, needed some improvement. Davidson County saw quickly that it had been a little too ambitious in its planning. They had introduced WebQuests as a great way to organize units of study. They offered 10 hours of training in how to develop a project-based lesson and post it on the Web. Most of the teachers, however, were not ready to develop a high-quality WebQuest after just 10 hours. They simply needed more instruction to grasp the concepts of the methodology.

The district saw that they needed a different approach to professional development. Staff development involved two areas. The first was PBL methodology, which included constructivist philosophy, PBL strategies, developing teacher expertise using PBL, access to resources to develop instructional materials, cross-curricular integration, using rubrics and authentic assessment. They looked to the Buck Institute for Education, the George Lucas Educational Foundation (GLEF), and the U.S. government for help and funding. (*Editor’s note:* Find these and other URLs under Resources on p. 36.) The second area of staff development involved learning to use advanced technologies, such as Internet publishing, Web page design, presentation software, digital cameras, camcorders, and scanners.

In the 2002–03 academic year, the district selected teams of three teachers using a competitive application process. A committee reviewed the

applications to decide who would be most open to change and who would be able to work in collaborative groups. The teacher teams received a high-end computer with DVD burner, digital video camera, digital still camera, data projector, and a cart that can move the equipment among the three teachers. Eeva Reeder came from GLEF to train the teachers in the basic tenets of PBL. The district also ensured that its instructional technology personnel were trained in the use of the equipment given to the teachers. The teams then came together during the summer to organize their PBL units and post them on the Web. The training was completed at the end of the 2002–03 school year, so this is their first year using PBL with students. The district is continuing the professional development using Intel’s Teach to the Future program during the 2003–04 school year.

Teachers who were not in these teams receive training in PBL and mentoring from the district instructional technology specialists.

Davidson County also provided in-depth training to its school media coordinators, who then work to help classroom teachers have successful PBL experiences by making resources available, organizing teams to work collaboratively, and providing leadership. In Davidson County schools, school media coordinators are envisioned as instructional leaders. By helping teachers use PBL, media coordinators realize an important aspect of that vision.

### What Other Districts Need to Know

Three critical factors for success have emerged from Davidson County’s experiences:

- Evaluation
- Support at all levels
- Funding

**Evaluation.** Davidson County focused their evaluation on teacher advancement of technology skills. But they made sure never to separate technology skills from PBL. They received permission from Dr. Sheila Cory from the North Carolina Principal's Program to use the Taking a Good Look at Student Learning (TAGLIT) instrument to assess teachers' use of technology. They found from a pretraining assessment that teachers needed training in using multimedia tools. So they taught teachers to use digital cameras, with a focus on using them "to increase student learning by providing real-world, hands-on instruction," a goal in their tech plan.

**Support.** Davidson County found that it was important to have support for this new initiative from district staff, principals, and teachers. The district serves 19,000 students, and the district's instructional technology employees were simply not enough to implement the entire technology plan. So, they decided to enlist the support of the principals.

The district began by inviting presenters to its biennial technology leadership conference in 2002. Gerry Smith, founding principal of River Oaks Elementary School in Canada, shared real-life stories of PBL's positive effects on student learning as the keynote speaker at the conference. They also invited presenters throughout North Carolina to share their PBL success stories. Then, the district offered training sessions during curriculum meetings attended by school and district administrators. Finally, the district has asked its school administrators to share their success stories at statewide conferences.

The district has found that these experiences have really helped them get the support of the school administrators they need. In fact, their success is exemplified by Kevin Firquin, the principal of Central Davidson Senior

High School. He is one of those people whom lots of people like. He is funny, witty, genuinely loves kids, and is in love with education. When he is excited about something, he shares it. He gave a big presentation to his staff about how easy this was going to be and how great it was going to be for the students. Because everyone was doing a little bit, when added together, it would be a huge accomplishment. This is exactly the type of top-down excitement and sharing of information that the district believed would convince teachers to step outside their comfort zones and embrace PBL.

**Funding.** Finally, school districts need financial support to engage any major change in instruction. Davidson County's Enhancing Education Through Technology grant is not a huge amount of money, but it is dedicated to staff development and it is promised for five years of funding. The grant provides teacher stipends or substitute pay, it offsets the cost of equipment that is used as an incentive, and it helped pay for the GLEF consultant during the 2002–03 school year.

The district was also able to use state technology funds to help support their plan.

### Tell Us Your School's Success Story

We have looked at a school system's large commitment to professional development for teachers using PBL methods that also integrate technology. Next month, we will look at one successful high school interdisciplinary project that resulted from this commitment to use PBL in all of their schools.

Consider sharing with us, by e-mailing Diane or writing a letter to the editor, successes you have had in professional development using PBL and technology or school- or district-wide commitments to PBL and technology.

### Resources

Diane McGrath's PBL Web site (<http://coe.ksu.edu/PBL/>) will take you directly to the Web resources discussed in this column, as well as resources that have been mentioned in other columns. So check in early, and check in often.

Buck Institute for Education: <http://bie.org/>  
Davidson County Schools: <http://www.davidson.k12.nc.us>  
Education World Administrators Center: The Grants Center: [http://www.educationworld.com/a\\_admin/grants/](http://www.educationworld.com/a_admin/grants/)  
Enhancing Education Through Technology Grant—Projects and Lessons created by Davidson County Teachers: <http://www.davidson.k12.nc.us/pbl/eett/eett.htm>  
Enhancing Education Through Technology State Program: <http://www.ed.gov/programs/edtech/>  
The Foundation Center: <http://fdncenter.org/>  
GLEF: <http://www.glef.org>  
Grants & Contracts—ED.gov: <http://www.ed.gov/fund/landing.jhtml?src=rt>  
Intel's Teach to the Future: <http://www.intel.com/education/sections/section1/>  
Multimedia Mania: <http://www.ncsu.edu/mmania/>  
Project-Based Learning in Davidson County Schools: <http://www.davidson.k12.nc.us/pbl/pbl.htm>  
TAGLIT: <http://www.taglit.org/>  
Web Authoring Across the Curriculum—A Course for High School Students in Davidson County Schools, North Carolina: <http://techcenter.davidson.k12.nc.us/web.htm>



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