Abstract

Staff development, embedded in an electronic bulletin board environment, is both constructivist and collaborative. The article describes how the authors use electronic bulletin boards as a staff development tool. During staff development, the bulletin board format provides scaffolded experiences, enabling teachers to collaborate within a protected online, chat-room environment. Within the bulletin board scenario, teachers experience problem-based learning activities similar to those they will create for their own students. During the sessions, teachers co-construct meanings from their bulletin board experiences. They learn how to 1) work with technologists to create bulletin boards, 2) register their students to use bulletin boards, and 3) assess student work. Teachers have adapted and implemented this model in their own classrooms.

Technology integration has become a critical issue in professional development of teachers to enable them to meet the demands of educating students in the 21st century. When professional development scenarios are fun, compelling, and collaborative, they allow teachers to unleash their creativity and to collaborate as they expand their content and pedagogical knowledge in a relaxed environment. Electronic Bulletin Boards (EBB) catalyze the growth of teachers’ pedagogical, technological, and content skills by connecting them to other teachers and involving them in compelling, problem-solving scenarios.

For the purposes of our professional development model, we define electronic bulletin boards as password-protected environments where individuals can post and retrieve messages, as well as collaborate and problem solve. In this type of
staff development, a group of teachers, work collaboratively to develop and implement technology-integrated learning activities for students. Choosing a constructivist model for staff development that parallels the classroom environment, promotes teacher partnerships. It encourages adaptation and implementation of the model and brings into play teachers’ imagination, ingenuity, and inventiveness.

**Behind the Scenes, Before the Teachers Arrive**

Before teachers arrive for EBB training staff developers:

1. Create engaging problem-based scenarios,
2. Set up the electronic bulletin board, and develop links and resources to assist the participants.
3. Use a webquest like format, where participants assume roles, engage in tasks, access resources, and collaboratively respond to the problem.

To facilitate the communications between the EBB participants, trainers set up the number and types of electronic bulletin board rooms needed for the participants’ interactions. In this scenario, there are ten rooms. Level-one rooms are committee rooms, level-two rooms house liaison officials, and level-three rooms are government offices as shown in Figure 1.

**Figure 1.**

![Diagram of electronic bulletin board rooms](image)

Next, trainers post instructions in the committee rooms and provide links to web
pages and other resources. These messages and web activities provide scaffolding for the sequence of activities. As observed by Harris (2002) successful telecommunication/telecollaborative projects require “interaction online between or among participating classrooms, often over an extended period of time,” and they require active and ongoing coordination to be successful (p. 5).

Preparing the WebQuest and Linking it to the EBB

The trainers prepare the EBB up so that teachers can link to a WebQuest to solve a real world problem. In the Statewide Emergency training scenario, the governor asks community leaders to develop a plan for assessing the impact of a recent outbreak of smallpox, as shown in Figure 2.

Figure 2.

The WebQuest task requires committee members to learn about how a smallpox epidemic can impact the health, education, transportation, and the economy as shown in figure 3. The participants are asked to develop a plan to manage the outbreak

Figure 3.
Committee members research the issues using the links provided in the WebQuest. After each committee has arrived at a plan of action, it selects a liaison officer to represent the group at level-two.

In the level-two rooms, liaison officers from each of the four committees submit their group plan and receive plans from the other three committees. They also post requests for clarification about the other committees' plans and respond to questions about their own committee plan. Liaison officers return to their level-one committee room with the four separate plans. Then they post the four separate plans on the EBB in their committee room and ask their members to review the alternative plans. Each committee consolidates the separate plans into a master plan, which the liaison officer shares with the other liaison officers at level-two, as show in Figure 4.

Figure 4.
Clarification and revision of each committee’s master plans also occur in the level-two room. The four liaison officers fuse the four committees’ master plans into a single plan and send the consolidated plan back to the committee for review and approval. Meanwhile, level-one committee members further research the issues and create graphical representations of their master plans, which can be posted as attachments to bulletin board messages. Liaison officers post their committee’s graphics at level-two to facilitate communications between the committees. The co-constructed master plan incorporates the ideas from each of the committees. It is submitted to the cabinet at level-three. Committees submit their finalized graphic representations at level-two, where liaison officers review, clarify, and then forward the graphics to the cabinet at level-three.

At the cabinet level, the master plan and the graphics are coordinated and sent back to the liaison officers and committees for final approval. Cabinet members post the links to the location of the final multimedia product on the EBB in the governor’s office. This multimedia presentation may be a combination of WebPages, a PowerPoint presentation, videos, and graphics. Products can be modified to meet the needs and technology available at the schools.

The Training Commences

During EBB staff development, teachers register and create passwords on the EBB server, where the trainers have posted nested activities. As the educators advance through the training scenario, they participate in the types of interactions that their students will experience. Following the session, they participate in a debriefing.

We project the bulletin board logon screen onto a wall and model how teachers
will log into the bulletin board, register, and set up passwords. Each teacher establishes an email account and obtains bulletin board access. Having done so, teachers respond to the posting in their respective committee rooms. They write a letter of introduction, post it to the EBB, and then proceed with the structured activities as detailed on the WebQuest.

From Training to Implementation

By using a constructivist model to blend the talents of technology mentors with teachers, we can reduce the training to implementation time. Roblyer (2000) asserts that the successful training session involves hands-on activities, continuous training, modeling and mentoring, and the availability of follow-up training. Furthermore, teachers benefit from coaching by experts as well as discussions and demonstrations by their peers (Sparks, 2001). Teachers wishing to implement the EBB model in their classroom will need to set up an electronic bulletin board on a server. We help them determine how they might use their district’s technology center, university labs, or regional development labs to assist in accomplishing this. Teachers have a propensity for tinkering with professional development models in order to customize the information to meet their classroom needs. We encourage this and offer the EBB model as a format for discussion, customization, and implementation. We believe that co-construction of shared projects strengthens the model and facilitates implementation.

After the initial EBB training, teachers need further assistance in customizing, designing and implementing electronic bulletin boards in the constructivist classroom. During the planning stage, the mentor helps the teacher establish a timeline and resources required, including access to and registration for an electronic bulletin board. The mentor may help the teacher to develop a WebQuest or problem based learning scenario and install it on the electronic bulletin board. Additionally, the mentor helps the teacher to set up rooms or folders on the bulletin board. These rooms or folders reserve discussion areas for small groups of students, link students to experts, and provide places to post their final projects. Throughout the implementation process, the technology mentor provides support and ongoing assistance, while subject area teachers operate from their areas of strength in pedagogy and content. Among the advantages to accrue from technology-based training using the Internet and electronic bulletin boards are a) efficient organized delivery, b) cost-effective training, c) global accessibility, d) entrée to communication tools, and e) access to a plethora of materials (Driscoll, 1997). We propose an expanded use of sheltered, electronic bulletin board, which combine the talents of technology mentors, the content and pedagogical knowledge of teachers, and the expertise of businesspersons, scientists, artists, musicians and others.

Discussion and Reflection

Upon completion of the activities, teachers had an opportunity to reflect. Teachers liked components of the WebQuest, provided colorful visuals including
graphics and animation. These visuals helped clarify the task, process, tools, resources, and products. A teacher, who felt that visual content was an important hook for low-level readers, indicated WebQuests are “engaging, motivational, and involve high level thinking”, and EBB provides a protected space for collaboration. Participants found book-marked resources valuable, especially for students who “lacked Boolean search strategies or had difficulty beginning their research.” Other features teachers liked were the rubrics and tables, which provided spaces for committee members to place their research notes and website documentation.

One teacher described the training as “an elegant form of professional development, which builds the teachers’ capacities to work together asynchronously over distances toward a common goal.” Her observations mesh with Little’s (1993) view of professional development as "meaningful intellectual, social, and emotional engagement with ideas, with materials, and with colleagues both in and out of teaching" (p.138).

They also address issues of curriculum differentiation, scaffolding learning, and assessment. Teachers engage in discussions about how they might adapt the model across grade levels, content areas, and school boundaries. Participants learn how to work with a technology coordinator to set up an electronic bulletin board on their own server. They also discuss what types of resources are required to supplement their students’ research, communication and product formation.

Levels of prior computer use varied widely among the teacher participants, but most had Internet, email pass worded access experience. Therefore, participants registering for the bulletin board and accessing the committee rooms reported few problems. Teachers found composing a letter of introduction too open-ended, but were pleased that guidelines posted on the bulletin board allowed them to use pen names, and prohibited sharing of phone numbers or addresses, or use of last names. Teachers discussed other guidelines that they would add when using the scenario with their students.

Participants observed that the quality of the problem-based scenario depends on the problem, the task division, and the quality of the links to resources. Many suggested that working with another teacher to co-construct their own project would require planning time for developing a scenario, locating appropriate resources, determining how the product would be evaluated. They often chose to collaborate and customize their own EBB to match their scope, sequence, and the content requirements of their grade level. “When planning across campuses, we have a responsibility to our principals, and to the kids, to the parents to heighten our attention to make sure that our lesson plans are successful.

**Classroom Implementation**

Because the teachers could easily monitor the progress in each of the committee rooms, they were able to post a variety of messages to support,
clarify, or redirect the committee’s efforts. “Students begin to see the impact of their communication on other students. It encourages them to rewrite for clarification and to expand their ideas.” Teachers also observed that EBB monitoring made classroom implementation less worrisome. “It is more convenient to evaluate the students’ bulletin board exchanges than it is to evaluate email exchanges because you can see all [of the messages] listed at one time.” One teacher observed,

“The bulletin board takes advantage of the natural inclination that kids have. Kids are interested in other kids and want to talk to them. In this case, though, they are going idea to idea. I had one student who had no arms. This method of collaboration erases culture, gender and disabilities.”

The EBB allows for asynchronous communications because submissions can be posted and read at any time. It allows students from different schools to participate in the group projects. “My students were on a regular schedule, and my co-teacher’s school on a block schedule. It would have been impossible to do this in real time.” Teachers, whose students were on an A-B block schedule, found that they could use EBB’s to connect students in their own alternate day classes. Participants reported that working with mentors, emissaries, and students from other schools added depth to the project. “Being able to talk to students who are not in their own classrooms adds a feeling of seriousness to the project.

A librarian and history teacher developed a bulletin board, which linked fourth grade and eighth grade American history students. The eighth graders assumed the persona of American heroes and responded in the “voice” of the hero to questions posed by the fourth graders. “The eighth graders found it difficult because several students pretended to be the same hero. They had to make sure that they used the same voice in answering the students’ questions. They had to be careful because the fourth graders noticed any discrepancies.” Teachers reported that the collaborative experience built students esteem, developed confidence in the ability to learn in an open, flexible, and supportive environment.

Another team of teachers developed projects integrating math, science, and art which involved collaboration among middle schools in two different districts. Students created drawings, constructed models, took pictures of their creations, and sent them to their partners at the companion school. Subsequently, the two schools co-constructed sculptures. Teachers entered the fruits of their students’ labors into competitions.

Electronic bulletin boards are an amazingly versatile tool for teacher training and classroom implementation. When teachers commit to carefully planning the scenarios and the related resources, and when the technology is in place, then only the imagination, ingenuity and inventiveness of teachers and their students limit processes and products.
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References


