TRAINING TEACHERS FOR THE INFORMATION GENERATION

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Jane Healy (Tell, 2000) cautions us that, "political pressures to toss computers into classrooms and to get internet connections before people even know what to do with them is an attempt to run around the teaching profession. To assume that adding a computer and software to a classroom will automatically make kids learn better is a perfect example of how little our culture understands the dynamic interaction between teacher and student" (pg. 9). How then shall today=s teachers be prepared to deliver education in tomorrow morning=s classrooms? Any response to this question is hazardous in view of the fact that technological change has increased at such an accelerating rate that proposals for pre-service and in-service teacher preparation in technology have a brief shelf life. Daunting though the task may be, one must take aim at such a dynamic, moving target and fire away.

Recently, I collaborated with our university instructional specialist to redesign a graduate level course in Instructional Technology Management.
After some careful thought, I posed the following question to the instructional specialist. How could these teachers experience the expectations they would potentially hold for their own students? More specifically, what is the most meaningful delivery system to assist teachers= acquisition of information technology techniques to foster active inquiry, collaboration, and supportive interaction in their own classroom? We determined to allow the teachers in this class to develop their own web pages to assist the enablement of their students to take responsibility for their own learning.

COURSE RELEVANCE ISSUES

As a preliminary step in assuring course quality, relevance, and teacher ownership, we conducted an on line survey. Results of the survey showed a broad range of perceived capability from novice to intermediate skill levels. No one considered herself an expert and no one knew anything about web page development or how a personal web site might be used in a classroom. However, there was a welcome, general agreement that there was not a strong correlation between their deficiencies and their perceived intelligence. They just needed some time and patient assistance.

Based on the data from the survey we gave birth to a course outline designed to provide the teachers with the skills necessary to generate exciting web pages to be used by students, other teachers in their respective schools, parents, and members of the community. A rubric was jointly constructed and negotiated with the teachers to formulate a set of criteria for the contents of each web site. Exemplary web sites were those which included opportunities for students, other teachers, parents, and members of the community to: (1) view teacher made slide show presentations including such data displays as charts, tables, and spreadsheets, (2) engage in inquiry based learning activities with external links to web sites containing primary source documents, (3) view student made projects or field trips using scanned images or digital photography, (4)

read student made publications of writing using a desktop publishing format, (5) receive information regarding assignments, classroom and school wide events, field trips, classroom and school policies, and (6) engage in a wide variety of distance learning opportunities especially designed for students with extended absences. Creation of interactive asynchronous bulletin boards and calendars were optional enrichment activities for the technologically adventurous.

ONGOING OBSERVATIONS

One particular observation about the activity system of this course was the authoritative capacity of technology to enable teachers to accomplish many of the organizational, curricular, instructional, and assessment goals espoused by thousands of educators in the twentieth century. With some diligence these teachers found themselves conspicuously breathing the rhetoric of best practices for reflective practitioners. Teachers were forced to ask for guided assistance from me as well as from other more competent peers. There was an apparent endless flow of Aaha:s@ as teachers reflected on the most creative ways to engage their students given the plethora of resources that existed to supplant traditional textbook curriculum and instruction. Collaborative ideas surfaced about new and better ways to organize the classroom setting to accommodate the integration of technology. Teachers began to think about organizational and time management strategies to provide all of their students access to teachers: web sites. A pair of teachers from the same school collaborated on a web site to provide their students opportunities to experience interdisciplinary curricula. Other teachers who worked with children on the same developmental level exchanged ideas and helped each other find educational links for specific age appropriate content.

A GOOD EXAMPLE

Cindy, a 7th grade Math and Science teacher with no prior knowledge about web page construction, developed an outstanding web site to provide information for students, parents and colleagues. Her pages also included links to numerous activities designed to create a classroom environment that encourages peer discourse and collaboration, investigation, and a visual display of ideas (McLoughlin and Oliver, 1998). For example, an internal link to a page entitled "super science" offers students explicit instructions concerning their involvement in a variety of science projects. Within the context of the project there are links that provide examples of student log books, descriptions of experiments with scanned pictures of student work, and research papers. The "super science@ page also furnishes a list of external links lending ideas, inquiries, and rubrics for science fair projects. Additionally, the "super science" page contains internal links to various slide show presentations generated by Cindy to enhance the knowledge of her students.

Clearly Cindy designed her web site with a desire to enable her students to have a visible voice in her classroom. An internal link to student pages permits her students to have such a voice. One such page entitled "Matt's Blackholes" hypnotizes the viewer with a striking blinking star background superimposed with colorful planetoid

images and a futuristic space ship. The page contains information on black holes and a diagram illustrating the parts of a black hole. Matt has provided a link to his e-mail address at the bottom of his page so that other students can have further discussions with him.

ADDITIONAL REQUIREMENTS

A second iteration of this course involves the addition of teacher made webquests. Webquests (Dodge, 1997) are inquiry-oriented activities in which some or all of the information with which learners interact comes from resources on the Internet. Teachers in the course are required to design long term Webquests that will typically engage the learners between one week and a month in a classroom setting. After completing a longer term WebQuest, a learner would have analyzed a body of knowledge deeply, transformed it in some way, and demonstrated an understanding of the material by creating something to which others can respond either on- or off-line. WebQuests are deliberately designed as high interest, doable tasks that make the best use of a learner's time through direct access to sources including web documents, experts available via e-mail or realtime conferencing, searchable databases on the net, and books and other documents physically available in the learner's setting.

CONCLUSIONS

Our formal and informal discussions with teachers who have completed the course reveal that they need more structured time to develop skills working with new technology based educational tools. These tools need to be presented in a context of learning in which the overall objective requires an authentic demonstration in a performance context. Teachers must be convinced by their own successes that new technological tools have an every day practical application. Teachers need more opportunities built into their daily schedules to engage in reflective thinking with other teachers to share new ideas, to revel and delight in the positive effects of their efforts measured by student progress in cognitive as well as affective outcomes, and to share new discoveries in the ever changing world of technology. Furthermore, the heart of our conversations represents a clear departure from traditional developmentalist thinking about what education should be for various age levels. Maybe younger children are quite capable of engaging in inquiry and critical thinking skills, while secondary students can revisit the enjoyment of integrating artwork and collaborative effort into real world application activities in their single subject disciplines.

REFERENCES:

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