LEARNING CONNECTIONS

Language Arts

Improving Student Writing Through E-mail Mentoring

By Mary Burns

Computer technology has become an indispensable tool in writing. Those of us who have spent any time in schools can attest to the prevalence of word processing, concept mapping, Web editing, and electronic presentation software, all deployed, to a large extent, in the collective effort to enhance student writing. The degree to which such tools improve student writing is best answered by the teachers and students who use them. In my efforts to help students advance written communication skills, however, the most valuable tool in aiding students to better formulate ideas, revise and refine conceptualizations, and communicate thoughts was one that is often absent from the classroom—e-mail.

For years as a professional development provider, I consistently exhorted teachers to use, and modeled ways they could use, software applications to engage students in the writing process and improve their ability to structure and express ideas. Paradoxically, though, I never modeled ways student could use the most commonly used professional adult writing tool—e-mail. Why was this? Student use of e-mail was not allowed in the many districts in which I worked. In fact, in comparison to other software applications, e-mail is still relatively scarce in U.S. classrooms. Although numerous writing and writing-friendly software tools are frequently employed, online communication tools such as e-mail (and chat) are proscribed, their prohibition often codified by acceptable use policies that prevent students from using such tools as part of the official school day.

Because of the conventional wisdom governing student safety concerns, I never gave much thought to the absence of e-mail or to the effect of this absence on student writing. And when asked to serve as a writing instructor for an advanced English writing class at a private university in Mexico City, I quickly employed standard technology-based writing tools in my writing curriculum—Word, PowerPoint, Front Page, Inspiration, and Flash—but not e-mail.

Technology to the Rescue

I initiated this writing class by gauging my students' English writing abilities. Students had to have a TOEFL score of at least 550 to take the class, thus indicating some degree of comfort with English. Though generally good, students overall seemed to suffer from a common set of writing difficulties, most commonly, poor paragraph structure, limited vocabulary usage (using the same words repeatedly or not using "interesting" vocabulary), a lack of seriousness or ownership regarding their writing (as evidenced in part by an unwillingness to proofread work), and a lack of reflection or critical analysis in their writing. Falling back on tried technology solutions, my immediate remedy was to employ a set of software tools to address such writing problems.

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Students used concept mapping software to tackle the issues of paragraph structure problems. They wrote their poems, short stories, and essays in Microsoft Word and then used "Track Changes" to proofread and provide feedback on one another's work. We deconstructed readings in the online discussion forum of Blackboard. Students used Web editing tools, electronic presentation software, and multimedia publishing tools to visually enhance and make their writing public, thus, I hoped, increasing their sense of ownership and pride. We even used the statistical functions of Excel to measure their uses of parts of speech and the variety of their word choice. In spite of this varied use of computer technology, most of my students showed only some improvement in their writing, and several—the weakest writers—showed little or no improvement at all. In addition, I noticed an interesting behavior in terms of their technology use—students placed more value on the "show" versus "tell" function of the software. The more technically sophisticated the software they used (PowerPoint, Front Page, Flash), the more writing skills—such as mechanics, usage, grammar, and coherence—were sacrificed to beautiful fonts, dramatic transitions, and whirling animations.

Limited Success

My first unit, creative writing, enjoyed limited success among my students. They didn't enjoy writing found poems, free writing activities, letters to short story characters, or the other activities that my colleagues and writing guides promised would enliven the writing process. In fact, my students seemed to regard their writing portfolio as useless drudgery. I was dismayed to find that in spite of going through several iterations (drafts, revisions, and final products) with their peer editing and feedback groups, the same mistakes prevailed. Most disturbing was a pervasive sentiment that writing didn't matter. After all, I was the only reader and I didn't count. I was just their teacher.

Still worse, my students were becoming openly disgruntled with the class. In something approximating gallows humor (it was the time of the California governor's recall), I joked to my department colleagues that my approval ratings hovered somewhere around those of Gray Davis. I was in definite danger of recall.

I regarded the next writing unit with greater dread: business writing. Surely I would lose these students completely. I abandoned my department-sanctioned curriculum and trawled the Internet looking for creative professional or business writing activities to make cover letters, résumés, and the parts of a letter more exciting. The activities I found seemed dull and formulaic.

My students were clearly bored. In essence they seemed to see no purpose to all of this writing, regarding it instead as some sort of meaningless academic gymnastics whose sole beneficiary was me or some unknown, anonymous Web audience. Worse still, my adherence to the conventional wisdom of using certain technology tools seemed to yield no discernible improvement in performance or enthusiasm. I saw no difference in the quality of their writing, on the computer or off.

In an effort to reengineer the class, I mentally surveyed my students' majors: mainly engineering, business, law, and computer science. An idea struck: I knew people in all of these professions. I e-mailed every professional I knew who had an e-mail address. Would they be interested in serving as a "professional mentor" to my students? The mentoring project quickly crystallized. It would consist of four assignments: First, students would go online and find their ideal job and prepare a report in which they noted the necessary educational qualifications and salary and would compose a letter of introduction to their "mentor," discussing their personal and professional goals and explaining the assignment. Next, they would create a résumé and cover letter outlining their qualifications for this particular job, e-mailing all information to their "mentors," and BCCing me so I could grade the e-mails as writing assignments. The mentor critiqued both, offering feedback and suggestions. Third, the mentor would provide feedback on the student's professional portfolio (a Web site). Finally, the students would compose and send a formal follow-up letter thanking the mentor for his or her help. The main writing tool would be e-mail.

I was amazed at the positive response toward my solicitation. Almost all of my e-mail recipients replied in the affirmative. Interested "mentors" provided me with their professional and contact information, which I assembled into a database. Students searched for the most professionally appropriate mentor and e-mailed me their choices.

Together, students and I brainstormed information they wanted to gather from their mentors and how to best frame questions in English. We worked on some aspects of "netiquette:" e-mail with an appropriate subject line, greeting, and a professional e-mail signature as well as use of tone, abbreviations, acronyms, and language. I was struck by their eagerness to absorb such dry information.

Improving Student Writing

Something fairly profound happened. First, the exercise, which was to encompass no more than four e-mail exchanges, resulted in more frequent communication between most students and their mentors. Students genuinely appeared to enjoy writing to their mentors and did so even when they were not being graded. Mentors also seemed to enjoy the interchanges,

and their e-mails included questions about Mexico, its politics, culture, food, and various professional sectors.

Next, students began to see their communication as meaningful. The importance of writing transcended the class and became a real-world, real-time exercise. In the context of this activity, students were addressing and self-correcting their own writing problems. As such, they began to take special care with their sentence structure, vocabulary, and mechanics, often having their classmates and me proofread their e-mails, and correcting grammar and mechanics mistakes pointed out by their mentors. In addition, students began to voluntarily use Inspiration to map out their written discourse to their mentors. I noticed greater organization in their writing. They used more creative language—albeit with some difficulties normal to second-language learners—as the following e-mail shows:

> I am a student of International Business at the Technology Institute of Monterrey in Mexico City. I am quite an enthusiast about my present major. It has come to my attention that you are a distinguished member of my chosen field and that is why I am writing you. I would like to know a few things about your job and the quest that you had to pass to obtain your prestigious status….
>
> I specifically chose to write you because you are a woman. In my country the preferred worker has always been from the other gender. One of my dreams is to work in any place where men and women are treated equally. I think that place might be the United States. Do you think the United States is the ideal scenery (sic) for a woman to develop as a successful professional?

Third, the activity seemed to inspire a degree of intimacy, introspection, and reflection that I did not witness in previous or subsequent writing activities. Students wrote to mentors about their desire to help Mexico, about their fears of having to immigrate to a country where they might be viewed as outsiders, and about their parents pushing them into professions they did not choose. Similarly, the exchange seemed to inspire equal amounts of thoughtfulness on the part of mentors, as evidenced in this e-mail response from an American engineer to a mechanical engineering student:

> I am very pleased to hear that you are interested in pursuing a career in engineering. The field of engineering requires a life-long commitment to learning. As a member of the engineering community, you are primarily responsible for protecting the public safety, health

One-Stop Research

We, as teachers, conduct Internet research at different levels for classroom instruction. From the lowest level of research, locating background information for teaching, to the highest level of research that engages students with online project-based learning, we begin by first looking for the materials ourselves. Planning meaningful uses for the resources follows locating the materials. I teach my preservice students the importance of approaching Internet research first as a researcher and then as a teacher. When planning to incorporate Internet research with students, I always remind them, "Never skip Level I research."

- Level I: Teacher
  - Background information for the teachers and students writing projects
- Level II: Teacher to Student
  - Resources to be shared with the students
  - Books, authors (maps, photographs graphs, articles, and games)
- Level III: Students and Teachers
  - Online projects, research, and publishing
  - Blogs, WebQuests, e-mail, and publications

One-Stop Research, a Web site sponsored by the National Geographic Society, is an outstanding resource for social studies instruction. It provides a powerful search engine that connects you to a plethora of NGS resources on a wide range of topics. Whether you are looking for current events topics (e.g., Hurricane Katrina) or social studies concepts (e.g., population), you will receive available resources. And your results will be organized by type: photos and art, maps, pictures, articles and information video, games, audio, and video.

Standards: *NETS•T* II, III (http://www.iste.org/nets/)

—Judy Britt, Assistant Professor of Elementary Education, Athens State University, Athens, Alabama

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and welfare in the decisions that you make. At the same time, you must develop over time a sense of the relative importance of issues and learn how to prioritize your analyses. I spent the summer of 1997 as an intern working with an engineering firm. … My sponsor imparted some very wise words to me, which I still reflect on to this day. He said, "It is the engineer's task to look at a complex situation, and determine what is essential and relevant, and what is not." As an engineer, particularly in the modern world, you will be inundated with data. There will be volumes of numbers, statistics, formulas, and methods. You must learn to decide, as (my sponsor) expressed, what is essential to your task, and what is not. Then you must apply your method with strict logic and precision in computation.

Another mentor responded to a student's question regarding equality among men and women in the workplace.

> I'm one of those persons who love a challenge. No man tells me that I "can't do that" for whatever reason. I taught myself how to organize the business, how to treat the customers (from observing successful people), and how to operate the different pieces of equipment … Every business owner had better know his or her business from the ground up. For the particular reason that whenever an employee tries to change something or suggests a specific change or deletion, the owner will be able to assess the necessity of the change.
>
> As far as working in a place where men and women are treated equally, that rarely exists. Especially when you take into account that men and women are NOT equal, and we never will be. I believe that what you may mean is where men and women's abilities with their minds are equal. That would be a closer assessment.

In addition, the e-mail exchanges between Mexican students and American professionals resulted in a greater understanding of the cultural nuances embedded in written communication. Mexican students were far more formal and elliptical in their writing and were often surprised and taken aback by the informality and directness of their mentors. These exchanges resulted in rather rich classroom discussions about the uses of language and modes of communication from a cross-cultural American and Mexican perspective.

Finally, the interaction with professionals in their area of study, and the authenticity of the job application process seemed to instill in students greater self awareness about their responsibilities as learners and a greater reflection regarding their attitudes toward learning in general, and toward written communication in particular. The following is an end-of-unit evaluation from my most "disgruntled" student:

> What did I learn from this unit? I learn (sic) a lot of things and not everything I learn have to do with English. I learn that it is better if I do my work before it is due, not after. I learn that when I get a bad grade it is not my teacher's fault. It is my fault because I must work harder. I learn that if I make an effort the results are going to be better. I see now that if I do not change my attitude I will not get a good job in London … I think you know who I am. I am really sorry for every time I make you feel angry. Up to now I do (sic) not see a point for this class but now I do. ... Thank you for this activity.

ToFU Is Good

Tools for Understanding, or ToFU (http://www.ups.edu/community/tofu) is a Web site for middle and high school teachers of special education and remedial math. Topics covered include fractions, decimals, geometry, functions, and problem solving. ToFU presents an alternative approach to teaching these problem areas by employing a variety of technologies (primarily spreadsheets, calculators, word processors, and presentation software) to build supplementary activities and materials.

The material is divided into three strands: Math Concepts, Integrated Lessons, and Journaling. Math Concepts are designed to extend students' mathematical understanding through visualization and the application of math to everyday settings. The Integrated Lessons integrate technology with mathematical problem solving and written communication. Journaling encourages students to reflect on and articulate their own thinking processes. It also helps make abstract concepts concrete while giving teachers valuable information about how their students are understanding material.

Standards: *NETS•S* 3, 5; *NETS•T* II, III (http://www.iste.org/nets/). *NCTM* Grades 9–12 (http://standards.nctm.org/document/).

—This resource write-up was adapted from 101 Best Web Sites for Secondary Teachers *by James Lerman (ISTE, 2005). Lerman serves as coordinator of the New Jersey Consortium for Middle Schools at Kean University. He is also available for speaking engagements and consulting projects (jwriter@earthlink.net).*

Mathematics

My students' enthusiasm was reflected in their grades. Although a handful of my 32 students failed every other writing unit employed that year, within this business writing/mentoring project, 18 students received an A and 14 a B, by far the highest class average for all four major writing units.

E-mail Implications for Writing Classes

The reasons for the success of this activity and the lessons for writing classes are clear: students were involved in an activity that focused on their professional and personal goals and interests. The elements of writing, such as tone and language, were appropriate to the task at hand—a professional job search. Students were engaged in a dialogue with professionals in their field who treated them as colleagues or potential counterparts and whose stature made their critiques of students' résumés or writing practically, not just academically, valuable. Finally, the purpose of the activity was not writing for the sake of writing, but writing to gather and disseminate information, to share understandings—writing as an authentic, professional, social, and communicative act.

But, without e-mail, this activity, and students' improved writing, would not have been possible. E-mail allowed students to interact with a body of experts with whom they could not have otherwise communicated, allowing them to learn from and with their mentors. The duality of e-mail—the fact that it can serve as both a reflection and communication tool seemed to propel students toward greater introspection and sociability. It made possible an emotional and intellectual connection with a particular person through the act of written communication. The instantaneity of e-mail communication afforded a sense of continuity and "flow," approximating a conversation that allowed mentors and students to share information, experiences, ideas, and opinions.

One large advantage of e-mail over the Web was that it didn't suffer from what I call the "anonymity of the commons." The Web is a public space. Yet it is so vast and decentralized, and its audience so large and diffuse, that student work, even when directed to publishing sites, may not be read, or even if read, readers may not acknowledge the author's work. Thus, the student voice can easily get lost or remain unheard in the vast commons of cyberspace. E-mail, though considered a private or individualized space, afforded my students a targeted audience, who offered feedback and a certain degree of intimacy that is often

Read Write Think: Multilevel and Multimodal

Language Arts

Read Write Think (http://www.readwritethink.org), a Web site sponsored by the National Council for Teachers of English, the International Reading Association, and Marco Polo, is an outstanding resource for language arts instruction. This online resource supports literacy learning in the K–12 classroom for all media including print. As a preservice educator, I introduce this site to my students to demonstrate how powerful Internet tools provide meaningful instructional avenues for language arts.

You can use the interactive tools to supplement a variety of multilevel and multimodal language arts lessons that provide opportunities for students to use technology while developing literacy skills. My preservice students like the Student Materials Index. They can use this interface to plan activities that engage students with multimodal tools for drawing, writing, and creating original works based upon classroom instructional goals. Interactive tools such as graphic organizers and generators for writing letters and poems give students capability to develop writing projects from prewriting to publishing.

Links for standards, Web resources, and student materials provide educators with the basics for planning language arts lessons. Standards for the International Reading Association and the National Council for Teachers of English are easily accessed for lesson development. Web resources provide useful Internet links for a multitude of useful English language arts resources.

You can also use the lesson plan selector to find lesson plans that focus on literacy skills such as fluency, comprehension, integrated curriculum, and process writing. Search by grade levels as well as literacy strands and engagement. Read Write Think provides excellent resources and practices for reading and language arts instruction.

Standards: *NETS•S* 3 (http://www.iste.org/nets/). *ELA* 1–12 (http://www.ncte.org/about/over/standards).

—Judy Britt, Assistant Professor of Elementary Education, Athens State University, Athens, Alabama

lacking on the Web. Though a private or semi-private space, e-mail allowed the student voice to be heard and made public.

More important, from a writing perspective, the sparse nature of e-mail (few bells or whistles) forced students to focus on the act of writing, as opposed to focusing on stylistic features, such as transitions and animations, attributes that can often distract students from the importance of the message itself. This was one of the few instances in my years in the instructional technology arena in which a computer application really was the critical element in learning. Without e-mail, my students' level of engagement, enthusiasm, and most important, learning, would not have been possible.

Yet, in spite of these tangible benefits, numerous districts across the United States circumscribe or prohibit student use of e-mail as an instructional tool. Although grounded in matters of student safety, the interdiction of curriculum-based student e-mail use, especially when employed as an instrument for authentic written communication, deprives teachers of another tool with which to improve students writing. Such policies and practices deny students the developmental opportunities that are a part of both the writing process itself and the reflection that can result from evaluating and incorporating feedback from a valued online peer. The interdiction of student e-mail use prevents students from engaging in the potentially rich and stimulating learning that can occur through online conversations that are well organized, aligned with content, and focused on issues of interest or importance to the student. Sharing data, collaborative problem solving opportunities with students in other locales, access to content area "experts," and the simple but profound opportunity to communicate with someone whose worldview, ideals, and beliefs are different from theirs, are denied students when instructional e-mail use is proscribed.

Legitimate concerns about safety and propriety must be balanced with the learning potential of a tool used well in the hands of a craftsman (the teacher). Amidst the rhetoric of the power of technology to improve learning, I did not see my students transformed by an activity using publishing, word processing, or electronic presentation software. Yet e-mail, by its very nature as a tool of both self-expression and shared communication, promises such transformative abilities, as a student's reflection on the mentoring project encapsulates:

> I loved this activity. My mentor is so cool … In all my other writing classes, I never had activities like this (sic) … Until we wrote to our mentors, I never saw any use for (English writing), but now I do. I know that writing is more than vocabulary and grammar rules. It is about ideas and communicating and how we show who we are and what we feel to people who do not know us … writing involves responsibility and thinking and commitment.

Standards: *NETS•S* 3, 4; *NETS•T* II; *NETS•A* II (http://www.iste.org/nets/). *NCSS* Curriculum Standard I (http://www.ncte.org/about/over/standards).

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Harnessing Movies for Language Practice

When Spanish is your second language, how can you expose your students to native speakers? We decided, after trying various projects in the high school language classroom, that DVD movies provided a great solution.

It was a simple matter to find DVDs that provided Spanish language tracks with English subtitles. Cartoons are great for this exercise because they are short and usually contain simple statements and phrases. We watched the movies, with students taking notes on various phrases they did not understand. (Because we were using the movies directly for instruction, we were within U.S. copyright regulations.) Then we all worked together to figure out any troublesome phrases. Then we watched it a second time with English subtitles.

Two favorites were *Lilo & Stitch* and *Spirit: Stallion of the Cimarron.* After viewing one of these, a student said, "I know we are learning, but this is the most fun I have had in class since kindergarten."

This activity exposed the students to native speakers, giving them the opportunity to hear Spanish as it is really spoken. Full-length features can take up to a week for viewing, translation, and comprehension exercises.

Standards: *NETS•T* III (http://www.iste.org/nets/). *FL* 1.2 (http://www.actfl.org).

—Lyn C. Howell, Assistant Professor of Education, Milligan College, Johnson City, Tennessee, and Robert Rose, Spanish Teacher, Andrew Jackson Elementary School, Kingsport, Tennessee

Foreign Language

Social Studies

Black History Month: A Guide to Web Resources

The United States has been annually focusing on black history since 1926. This observance began as Negro History Week, and became Black History Month in 1976. Black History Month is a time when teachers of all subjects and levels can incorporate history into the curriculum. February not only offers insightful learning of African American history, it allows teachers to teach cross-curriculum lessons that can help make learning more meaningful.

However, many teachers do not take this golden opportunity to let African American history shine, because they lack the knowledge and are never given the proper resources for teaching the content or at least incorporating the content into lessons. That is why I have created a resource guide of online material and information that can help teachers incorporate black history into the curriculum.

The online resources range from the primary level to the secondary level. Each resource has the brief summary of the contents on the page, along with the title of the site and the Web address. Because of the enormous amount of resources available, I have not included all of the resources on this rich topic.

Culture

Archives of African American Music and Culture
http://www.indiana.edu/~aaamc/
This collection at Indiana University can help students locate resources on black culture and music from the early 1900s to the present.

Negro Baseball Leagues
http://www.blackbaseball.com/
Details the history of blacks who were denied the right to play in the major leagues because of the color of their skin.

The Schomburg Exhibition, Harlem 1900–1940
http://www.si.umich.edu/CHICO/Harlem/
This overview of Harlem life from 1900 to 1940 includes a section just for teachers.

General

African American History Challenge
http://www.brightmoments.com/blackhistory/
This interactive online quiz profiles many famous African Americans of the 19th century.

African-American Studies Resources
http://www.princeton.edu/~aasres
This page lists print and online resources compiled by the Princeton University Library.

African American Web Connection
http://www.aawc.com/Zaah.html
A historical account of African American history, as well as other cultural information pages.

African American World
http://www.pbs.org/wnet/aaworld
This section of the PBS Web site offers information on black history, arts, and culture; resources discussing the role of race in society; and profiles of famous blacks.

Afro-American Almanac
http://www.toptags.com/aama/
An online history of blacks in America, including historical documents, a listing of relevant books, and a time line.

Amistad Research Center
http://www.amistadresearchcenter.org
This site provides historical information and digital images of primary sources.

Biography on Black History by A&E
http://www.biography.com/blackhistory/
Provides biographical information on numerous influential blacks.

Black History Calendar
http://www.theblackmarket.com/dates.htm
Each month a new calendar is published that lists events that are important to black history for that month.

Encyclopedia Britannica's Guide to Black History
http://search.eb.com/blackhistory/
A chronological history of African Americans.

The National Rites of Passage Institute
http://www.ritesofpassage.org
A comprehensive Web site of African American History, including African American Military History.

National Underground Railroad Freedom Center
http://www.freedomcenter.org
Includes an educators' section that provides teaching ideas and resources.

Patchwork of African-American Life
http://www.kn.pacbell.com/wired/BHM/AfroAm.html
Provides links to six Web sites for teachers that incorporate technology into the teaching of black history.

The University of Houston's Hyper-Historian on African American Voices
http://www.digitalhistory.uh.edu/black_voices/black_voices.cfm
A chronological African American history.

Martin Luther King, Jr.

A Tribute to Dr. Martin Luther King, Jr.
http://www.liu.edu/cwis/cwp/library/mlking.htm
An overview of Dr. King's life, with links to important events and people throughout black history.

By William Russell

Martin Luther King, Jr., and the Civil Rights Movement
http://seattletimes.nwsource.com/mlk/king/
A comprehensive Web site about King and the Civil Rights Movement.

Military History

African American Military History
http://www.bjmjr.com/aamh.htm
This page, maintained by Bernie J. McRae, Jr., publisher of the quarterly *Lest We Forget* newsletter, provides historical information about the roles blacks have played in the U.S. military.

Integration of the Armed Forces
http://www.redstone.army.mil/history/integrate/welcome.html
An overview of blacks in the military and the roles they played.

All the resources provided should be used appropriately and for suitable audiences. Preview all online resources before using them with students to ensure that they are appropriate for your school or district guidelines and your students' educational levels.

These resources should help you develop high-quality lessons for teaching black history. The resources are adaptable, which allows for cross-curricular learning.

Standards: *NETS•S* 3, 5; *NETS•T* II, III (http://www.iste.org/nets/). *NCSS* Curriculum Standard I (http://www.ncss.org/standards/).

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Digital Storytelling

Language Arts

Educators are constantly researching strategies that will effectively give meaning to the curriculum. I have integrated language arts and technology using digital storytelling by teaching my third graders how to use presentation software and a digital camera to tell a story. I have also helped other teachers by providing a step-by-step outline on how to take pictures with a digital camera and then import them into presentation software and tips on grouping their students and classroom management for this activity.

This has become one of my students' favorite technological activities. Not only does it allow me to integrate the curriculum in a nurturing environment where student's unique learning styles are recognized and validated, it also allows students to think and express themselves in an environment free of fear and negative consequences because there are no wrong answers.

I chose two students who were very excited about the project to make the first movie. Both boys were interested in the Titanic, so they decided to reenact the sinking of the famous ship. The boys used a small model of the Titanic for the ship and blue craft paper for the backdrop. They cut a hole into the paper so that the Titanic could disappear into the ocean. They wadded up white pieces of paper for the icebergs and placed them on the paper. We used stop-motion photography, moving the ship a short distance then snapping a photo. After 50 shots, the ship finally hit the iceberg, broke in half, and began sinking into the ocean. The final shot was of the ocean without the ship.

PHOTO BY GERARDO BARTHOLOMAI

Students photograph their model of the Titanic for their digital story.

I downloaded the pictures to my classroom computer and inserted

By Susan Kraft

them into a presentation that would become the students' digital movie.

Because I wanted to incorporate both language arts and technology, I asked the boys to write a short script. They decided where they wanted to add text and what part of their script they wanted to insert as text.

This activity was so successful that I decided I wanted all of my students to have an opportunity to produce a movie. Initially, I limited the time students could work on their project to approximately 20 minutes a day, and I varied the time of day they could work on their project so that they would not be missing the same subject each day. Once I realized that I had successfully integrated language arts and technology, I concluded that there was no valid reason to limit the time students worked on their projects.

To confirm this revelation, I allotted two boys, who wanted to reenact the disaster of the space shuttle Columbia, approximately one hour each morning for one week to complete their project. Carving out the hour for the boys to work on their movie was relatively simply. I have been using a combination of mini-lessons and small group instruction for years to teach language arts and math. Each week I randomly divided my students into four small groups. During the morning, these small groups rotated through three language arts centers and a math center. I made sure that students who were working together on a movie were in the same small group. Each of the four centers lasted approximately 20 minutes. During the 60 minutes the boys were in the three language arts centers, they researched the crash using periodicals, nonfiction, and a variety of Internet sites. After they completed their research, they wrote a brief script about the disaster, designed a backdrop on poster board, and created a shuttle using Legos. They were allowed to work together in any unoccupied space in the room. When it was time for them to rotate into the math center, they had to leave their project and go to the math center. Once they had successfully completed their math assignment, they could return to their project. I observed the boys carefully to make sure they spent the allotted time reading and writing about Columbia.

I was amazed at the range of topics and the variety of materials students used to create their movies. One group of boys who were interested in Mt. Everest used marshmallows to construct the mountain and Lego men as the climbers. They placed miniature ladders across ravines they had fashioned and photographed climbers walking across the ravines. Some climbers fell to their death. A few climbers actually made it to the summit.

Two girls made up a story about some horses that were trapped in a barn when it suddenly caught on fire. They brought in a toy barn and some plastic horses to use for props. They used crayons and construction paper to create flames. The final scene was of the horses safely escaping.

Two other girls wanted to make a movie about what happened in their classroom during an earthquake. They used a shoe box to create the classroom and tiny plastic dolls for the students. They made furniture out of paper and small boxes. String allowed the dolls and furniture to float around. To my knowledge, none of the students seemed concerned that some movies were more spectacular than others. The only disappointment that was evident was when their allotted time to work on the movie was up.

After reflecting on this activity, I realized that my students had been in control of their own learning. They had decided on a topic in which they were interested, found one or more students who shared an interest in their topic, and they decided what information and what materials they would use to tell their story. I had discovered a new strategy that allowed me to integrate technology and language arts in an environment free of fear and negative consequences.

Standards: *NETS•S* 3, 4; *NETS•T* II, III (http://www.iste.org/nets/).

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Life in a Nest

Science

How many times do we see things happening in the natural world but have little specific knowledge about it? For example, when birds build a nest and lay eggs, how do the parents care for the brood? In this Life Science activity for Grades 4–8, students investigate and search for patterns of behavior of recently hatched robins and their parents and generate possible explanations for such behavior. You will need a video camera, tripod, and plenty of videotape for long-term image capturing.

Two robin parents attend to their brood.

Acquire

Author John C. Park captured 13 hours of digital video of robins in a nest from his dining room window over the course of several days, documenting the birth and growth of the hatchlings until the final bird left the nest. Other creatures to observe include the class pet (especially at night), a spider in a web, or fish in a tank. Or you can check with a zoo near you to see if you can use any animal cam footage they might have.

Analyze

To make it easier for students to sift through all the data, edit the video and select only significant events. Whether students can help with this task will depend primarily on their age and access to equipment. Develop a series of questions to guide student observations.

This is a good time for students to practice basic science process skills. Students should review the edited tapes to classify tasks for both the parents and brood. Tasks for the brood might include resting, waiting, eating, defecating, preening, and exercising. Tasks for the parents might include obtaining food, feeding the brood, cleaning the nest, cleaning each chick, removing debris from the nest, protecting the nest, and resting. Students could view the images to find out how much time the birds spend on each activity and discuss why each event is important.

Questions for students to research using the edited video could include:

- Do both parents care for the brood?
- What is the average time the brood is left alone?
- How do the chicks lose their down?
- When do the chicks know that their parents are in the area? Is it different when they are older?
- What do the parents provide for the chicks to eat?
- On one day, four chicks were in the nest. The next day the nest held only three. What may have happened to the fourth chick?

Create

Students should organize their observations and search for patterns in the data. They can place the observed behaviors in a data table as headers and tally the frequencies of the behaviors. Then, they can use the research questions to investigate relationships among the behaviors.

Communicate

After the students have completed their observations and searched for patterns of behavior, engage the students in discussing the purpose of each behavior. For example, when the students notice the parents spend much time cleaning the nest, ask why this is important. What might happen if the waste is allowed to stay in the nest? This could be done in small groups and then the results could be shared in the larger class environment.

Standards: *NETS•S* 5. *NSES* A (K–4, 5–8), C (K–4), C (5–8)

Resources

All About Birds: http://birds.cornell.edu/programs/AllAboutBirds/BirdGuide/American_Robin_dtl.html

American Robin: http://www.learner.org/jnorth/spring2004/robin/Update042704.html

Project Nest Watch: http://www.bsc-eoc.org/national/nw_finding.html

This article was adapted from an activity by John C. Park, an associate professor of science education at North Carolina State University, in Teaching with Digital Images *(ISTE, 2005, pp. 71–73).*

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