Using Multiple Technologies to Teach Writing

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New digital technologies play a major role in teaching writing for the 21st century.

The process of writing—and teaching writing—is in the midst of a tectonic change (Yancey, in press). The change is in the new technological tools writers use, and in how these tools affect composition and the relationship between writer and audience. As they have for hundreds of years, student writers still compose with pencil and paper. But in addition, writers now compose through new media like e-mail, listservers, and creative software packages. Writers use digital technologies to write many new kinds of texts, such as web logs, hypertexts, and electronic portfolios. Helping writers develop fluency and competence in a variety of technologies is a key part of teaching writing in this century.

Acquiring Textured Literacy

Examining specific ways in which teachers are bringing new technologies and related practices into the classroom reveals how the writing curriculum of the early 21st century is both an extension of what has come before and an expansion of it. One new element in this expanded writing curriculum is helping students acquire what I call textured literacy—the ability to comfortably use and combine print, spoken, visual, and digital processes in composing a piece of writing. Teachers often begin acclimating young students to new writing technologies in a fairly straightforward way, by encouraging them to alternate between using a pencil and simple word processing. As Patricia Norfleet explains, elementary students

> pick up the keyboard just like they used to pick up a piece of paper and pencil. When I am in one of those classrooms . . . I see students working on the various stages of the writing process, some using the keyboards, some editing and revising with pencil, some conferencing with the teacher using a printed copy of their writing, and some “beaming” their work to the printer for publishing. (2003, p. 266)

This model of composing, of course, is similar to the model educators use in pencil-based writing workshops. Students compose at the keyboard, use verbal feedback

from teacher conferences and peer editing for assistance in revision, and sketch out revisions in pencil before returning to the keyboard. This kind of writing environment moves students toward a more sophisticated, multilayered composing process than is possible without using digital technology. When writers start out early moving back and forth between different tools and composing processes, this way of working becomes normal and comfortable to them. Facility with word processing sets the stage for using different formats (for example, bold-facing, italicizing, underlining, and using bullets). Knowing how to bring such graphic elements into the writing process is what I call visual literacy.

In other classrooms, students use digital technology to enhance the writing portfolios that culminate a grading period. Teacher Lizette Piccillo (2003), for instance, asks her high school students to create an electronic portfolio incorporating a technique that taps into Internet technology: hyperlinking. Hyperlinking means linking one computer file to another computer file or website. Students save each piece of writing that they have chosen for their portfolios as a separate file in a word-processing program and then create a table of contents for the portfolio. Next, students hyperlink each title listed in the table of contents to the file containing that piece of writing so the user can move back and forth between the table of contents and each piece listed. Once students link all the files to the appropriate titles on the table of contents, their digital portfolio is complete.

Admittedly, this is only a start—but it's a very good start. From there, as Elizabeth Beagle discusses in her review of digital portfolios (2003), students can add color, images, and audio files to their portfolios for a product that more fully exploits the resources available through computer technology. In some of my classes, students have created portfolios that link to any number of websites—such as Listmania, a website hosted by Amazon.com on which readers list their personal “top 25” reading lists (Yancey, 2004).

Students can apply the writing techniques used to create digital portfolios to other academic writing tasks. For example, some teachers ask students to use hyperlinks in their academic essays to connect to additional research, refutations of an argument, or information that is relevant to the essay but not appropriate to include in the body of the text. Hyperlinking is an excellent way to include additional material without interrupting a text's coherence.
Using Visual Imagery

Another aspect of digital technology that aids writing is the fact that word processors and graphics software programs make it easy to integrate visual images with words. The access to imagery provided by technology also enhances writing by helping students visually diagram and demonstrate their own learning processes in texts that we often call reflections. Using both words and visuals makes it easier for many students to focus on, analyze, and improve their writing methods.

For example, student Josh Reynolds created a model of his composing process using visual icons to inspire and organize his ideas. The model used in his reflection (see fig. 1, p. 40) captures the act of composing as many of us recognize it. In addition to representing how he writes, Josh's visual model can help him analyze his writing process and see where it might be short-circuited, or consider how he might want to expand it. For instance, the model shows an absence of prewriting activity other than procrastination. If Josh developed some prewriting strategies, he might find writing less frustrating. Similarly, Josh asks his friend to look for errors, but Josh might find it more helpful to ask for more substantial kinds of assistance—like feedback on his introduction or comments on the quality of evidence he provides.

In his portfolio, Josh used visual highlighting to draw attention to changes he made to his drafts. He showed earlier drafts of each finished piece, highlighting in yellow the revisions he made and explaining why he made each change—sometimes on his own initiative and sometimes in response to suggestions made by classmates. Through this technique, Josh showed in detail the social nature of his writing process. These changes are usually invisible to the teacher. When teachers can literally see what goes on in students' revision processes, they can better guide each student's particular journey as a writer.

Examples of Envisionment

To raise students' comfort level with new writing technologies, teachers must help students use technology skillfully without being wedded to any specific digital tool or software package. As Patrick Konopnicki and Linda Lavendar (2003) remind us, "computer technology changes daily and in 10 years the cutting-edge technology tools of today will be obsolete" (p. 281). We need to teach how technologies can be newly applied, a process Donald Leu and his colleagues call envisionment (Leu, Kinzer, Coiro, & Cammack, 2004). Envisionment is the ability to use a given technology for a purpose other than its intended purpose. Computer technologies can enhance student writing in ways beyond, or even unrelated to, a given product's intended purpose—not least by drawing reluctant students into writing through the lure of a medium considered fun and "cool." Three examples show how envisionment operates in teaching writing.
High school teacher Alan Perry observed that his students often started their research papers too late in the process to learn or perform well, so he expanded the prewriting process by having students create a slide presentation on their research and ideas before they started writing their paper. He now requires all students to present to their peers, three weeks before the final paper deadline, a 7- to 10-minute slide presentation that explains the purpose and initial findings of the research. The presentation must cite two books, one Internet resource, and one periodical that the student is using for research (Perry, 2003).

Perry's student surveys revealed that 90 percent of the students liked working together on the presentations and believed that they learned more than they would have if they had not presented to their peers. Perry also found that the grades were higher than usual. Some students even turned in their research papers early. Although the creators of slide presentation software did not intend such products to be used as a tool for prewriting and drafting school papers, Perry's students learned to use the software in this way. The assignment also allowed students to present to a real audience.

In another envisionment success story, an elementary school teacher observed that several of her students were reluctant writers. They were eager...
students in many ways, but they simply didn't like to write. To motivate these students, the teacher invited them to compose in a presentation software package. Not surprisingly—given that this software program includes color, choice of font style and size, animation, and special effects—the kids found that they liked this way of writing, and their writing improved as a result. So, although this software was meant to be used as a digital visual aid for oral presentations, it functioned especially well as a composing tool for young writers.

A third scenario involves yet another motivation for composing. College-age students, like all writers, often find themselves “blocked” on at least one writing assignment. Sometimes these writers can't compose because they can't imagine an audience that they might successfully address. The only audience the students can think of knows more than they do on the topic, which inhibits their writing. One means of solving this problem is to ask these blocked writers to compose an e-mail or instant message to send to someone who is interested in the topic but who is not an expert. An e-mail has an audience built in to the program, so a writer naturally writes to that audience. There's also a good chance the audience will e-mail back, providing the composer with questions that can motivate and guide a second draft. E-mail programs were not designed as spaces to compose rough drafts, but they can serve that purpose well.

**Rising to the Challenge**

From a technological perspective, it was probably easier to teach writing 100 years ago—and it was certainly cheaper. Teaching student writers to navigate between digital and predigital technologies in their writing—and even to use new technologies to reflect on their writing process—makes for an ambitious, complex writing curriculum. But it's the curriculum we need to deliver if we want to prepare students to write in the 21st century—which, as it happens, has already arrived.

**References**


Yancey, K. (in press). Made not only in words: Composition in a new key. *College Composition and Communication*.

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