We ought to talk less and draw more. I, personally, should like to renounce speech altogether and, like organic nature, communicate everything I have to say in sketches.
—JOHANN WOLFGANG VON GOETHE

chapter 5

Teaching Writing in a Visual Culture Across Disciplines

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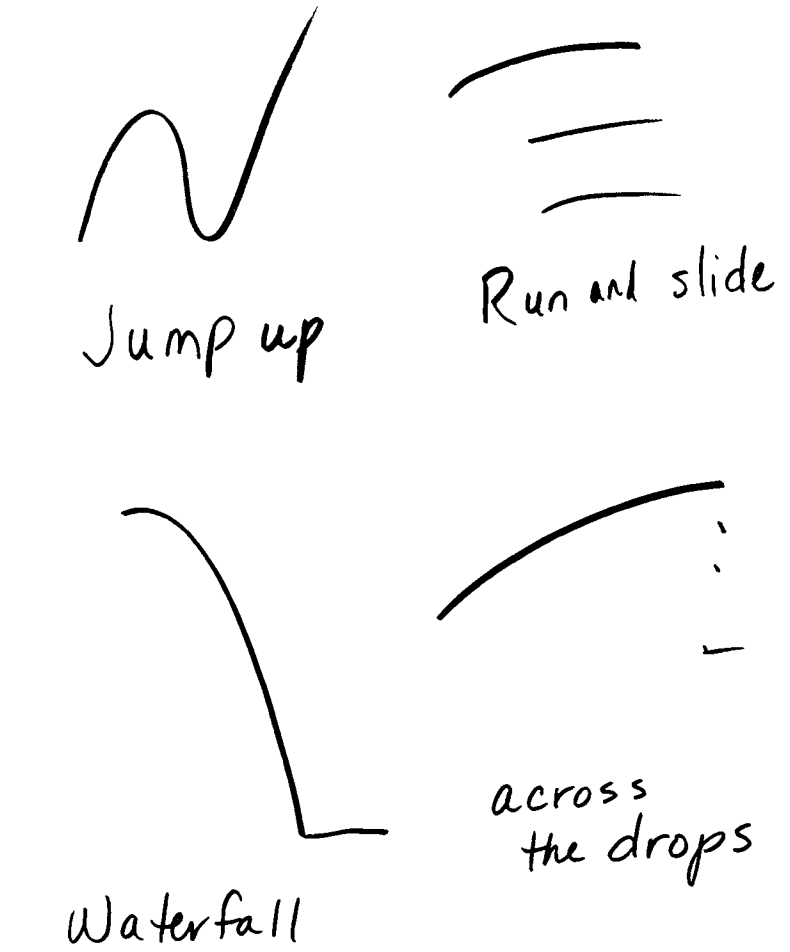
Over the years many of us have learned how to teach our own subject better by observing and listening to teachers in other disciplines. Through collaborative work and team teaching with colleagues across the secondary curriculum, I have discovered new approaches to learning. I am more aware of the importance of teaching writing in a visual culture since I have been seriously focused on the role of visuals in student learning. As my colleagues and I consider the purpose of writing assignments, we notice similar sensitivities to the relationship between visual images and written texts. Writing assignments in their courses also reflect this new awareness in both the writing prompts and the assessments. The following examples are from a variety of disciplines.

English as a Second Language

For many years, Catherine Neuhardt-Minor, an art teacher, and I have combined visuals and language to communicate with the exchange students who visit our school every year from a school in Japan. The students' stay is only three or four weeks, so their exposure to American English is limited. Our purpose is to enable students to create a symbolic vocabulary and translate it into a written language. We give students pieces of white paper and various writing implements (pens, felt tip markers, crayons), and demonstrate how to design marks for

Figure 5–1



the sounds they hear. Then we make a series of noises, usually high and low polysyllabic sounds that may be long or short in duration. Students sometimes laugh at the sounds, but since their language is so pictographic, it usually does not take them long to come up with beautiful, flowing marks to represent the sounds they hear. The class then shares their marks, and we encourage them to make the sounds that go with the marks. Now these marks become symbols, and after we model a few examples, we ask students to give words to their symbols. (See Figure 5–1.)

Sometimes the words are not English or any other familar language; at other times they may form a phrase inspired by the marks themselves. As long as the symbols and the words are meaningful to the writer, we encourage them to share their efforts. While we are all doing this exercise, the Japanese students are flipping frantically through their Japanese-English dictionaries to find the words they want. The students then write their words on the board, and we help rearrange and add to them by asking questions and getting input from other students. Finally, the students share their finished drafts. We hang them on the wall for all the Japanese exchange students and our American students to see. One year the students put the Japanese translation of their work beside the English version and (see Figure 5–2) gave it to us as a gift (it still hangs on the wall in the Caldwell Writing Center). This aural-visual-verbal collaborative exercise enables ESL students to communicate beyond language. Putting words to symbols that cannot be judged either correct or incorrect also enables the students to feel free to experiment in ways they wouldn't otherwise—and we all have fun learning together.

Art

Catherine Neuhardt-Minor has used many writing-to-learn activities with students in her art classes (see Neuhardt-Minor in *Programs and Practices*). The following two assignments involve a variety of ways of looking at visual images and interpreting the words of others through visual art.

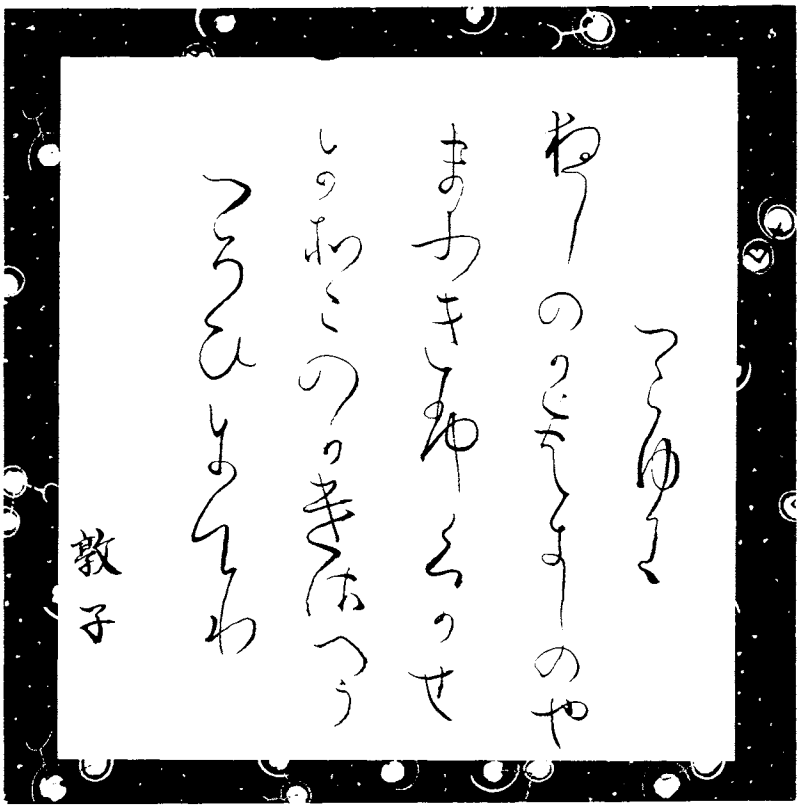
Assignment One

In the first exercise students critically examine their own visual work, use appropriate vocabulary, and accurately portray the visual through language. Students write detailed descriptions of their own pencil drawing for a classmate to interpret visually with a new color drawing. They are asked to use as many elements (line, shape, value, texture, and so on) as possible and also encouraged to discuss scale, proportion, variety within unity, repetition, rhythm, balance, and directional forces. Their audience becomes real, and their purpose is to present a written description that can be interpreted visually.

In an assignment like this, students use verbal cues to convey the visual. They describe why they draw the way they do ("Instead of going for realistic shading, I shaded each surface . . . as if it were lighted by a separate, independent light source"), proportion and scale ("The hall seems to sail into perspective, with the corners of the wall going

Figure 5–2

In the summer Yoshino River with beautiful flowers that are blowing in the wind. The shadow of a flower in the bottom of the river is changing.



toward one point with the glass door at the end"), and variations on light and dark ("These puddles are generally gray in color, but the tone varies from puddle to puddle; the bottom puddle is slightly darker than the other two").

Assignment Two

The next assignment is an extension of the first. Students are asked to make a color drawing of the written description they have been given by their classmate. They may use any color medium available and are encouraged to do a great deal of thinking before they begin. They are

also reminded that they are transposing a verbal description back into a spatial form. They also have to consider how they translate value (light and dark) to color.

This assignment again emphasizes language and the use of appropriate vocabulary to transfer meaning from writer to reader. In completing their own drawing, readers must interpret literally and figuratively the description they have been given. The first time an art teacher uses assignments like these, students may not understand the complexity of critical thinking or the creativity required to verbalize, comprehend, assimilate, and create. Notice also that in both assignments Catherine is judging not students' artistic ability but their critical thinking and their knowledge of the elements of art.

Science

Science is full of visual literacy. Every model, diagram, fetal pig, plant, or light optics computer program involves a visual and a verbal interpretation. Real-life examples like the tactile ones used in laboratory experiments or classroom activities, encourage students to put words to what they experience. Some of the assignments designed for specific science classes may be adapted for any of the sciences as well as for classes in any discipline.

Assignment One

In Peter LaRochelle's biology class, teams of students write descriptions and then create symbolic representations of the mechanism and orientation of active transport systems (sodium-potassium and proton pumps) on the mitochondrial membrane. Students develop an understanding of two active transport mechanisms through writing, cooperative learning, and peer evaluation. Then their understanding is evaluated through diagrammatic representations of written descriptions. Each team is given the name of one of the active transport systems. Students first write individually for ten minutes, then work collaboratively for five minutes to produce the best cooperative explanation possible. Teams exchange explanations with a group that has described the other active transport mechanism. Then, with three color markers and a large sheet of newsprint, each team is given fifteen minutes to draw the explanation they have received. When they have finished, the teams share their drawings with others by posting them around the room and describing them. This writing-to-learn activity enables students to review, rethink, and evaluate

material they need to understand. Their individual written descriptions are evaluated as quiz grades and the best drawings are displayed in the hallway.

Students have learned the value of visual interpretation and verbal description. Months later, some students comment on the power of visual images in helping them to interpret material that they would previously have memorized and forgotten. They also mention how helpful it is to create metaphors that work for them; they may have learned less from their own group's efforts than from one of the other presentations hanging on the walls.

Assignment Two

In Michael Lowry's eighth-grade conceptual physical science class, students submit five portfolios during the school year. Four are used as formative assessment tools to focus on what and how students are learning, what the teacher may do to improve student learning, and how students see themselves as learners. The last portfolio is more reflective and functions as a summative assessment tool to determine what and how the students have learned, how they have grown as learners, and how the teacher has helped in each student's learning process. The unique aspect of this portfolio approach is that it combines visual and written communication in the learning process. The first requirement listed is "A visual (picture, diagram, drawing, etc.) and written description of a conceptual physics process. These should be pictures demonstrating 'physics in action.' Some of these will be used for classroom lessons" (Lowry 1996, 1).

To emphasize the relationship and importance of the visual in writing, the evaluation criteria include the quality of the portfolio: "The student demonstrates that he [or she] has taken time and applied his [or her] knowledge to superior written and visual responses to the assignments" (3). Further reinforcement of the value of the visual in the writing comes from multiple evaluations, one by the science teacher and one by the writing center director.

From these portfolios the teacher and writing center director have put together a list of student recommendations (Lowry and Childers 1997). On the first portfolios, students suggest

"Continue to work problems on the board to see how classmates work them out."

"Do more writing assignments that are short."

"Keeping a review journal isn't a bad idea."

"Visual creations as well as being told about things works well."

Once they become sensitive to the role of the visual in writing,

young students respond with their own ideas about how important the visual is to writing and learning.

Assignment Three

In several biology classes, students complete a plant study and share their observations with peers, other students (younger and older), and adults (parents, teachers, members of the community). The biological study involves doing research and creating at least one image (photograph or artistic rendering) of four living plants in their own neighborhood or school environment. Each class prepares a class notebook that includes all the documentation organized and presented in a physical design agreed upon by the class. These notebooks are evaluated by external evaluators, and the winning notebook is then revised according to the evaluations and published for use in class presentations to younger students.

Students in each class have become very interested in the role the visual plays in the written presentation of information. Independently, classes have settled on entirely different designs. One class, for example, has decided that the visuals should be on the lefthand page and large enough to balance the written description on the righthand page. They feel that, since many students are more visually oriented, they would want to see what they are looking for in their own backyards and then read the text. Another class, in contrast, has insisted that the visuals should all be located at the back as an appendix so that the notebook forms two separate documents, a written one and a visual one. They claim that students trying to identify plants should have the visual representations grouped together so they can compare different plants in the notebook with the ones they are observing. The third class has chosen the direction most scientific books use—having pictures and text on the same page—because this offers more options for various learning styles. The amazing part of this design process is that students do much more thinking about content, audience, and purpose for the notebooks than they would without the inclusion of visuals. In addition, computers and the Internet have opened new visual areas.

History

In a sample lesson for history teachers this year, I gave an assignment that all can adapt to their own classes. The specific examples that I used were photographs from the Borneplatz in Frankfurt, Germany.

Figure 5–3
Road sign, Borneplatz, Frankfurt, Germany

I had taken a series of pictures of the cemetery marker describing the bombing of the synagogue at the beginning of World War II, the memorial sycamore trees around the symbolic block made with numbered stones from the remains of the synagogue, and the street signs in front of the memorial listing the various names of the Borneplatz and the years that it had been called each name (see Figure 5–3). As the last slide remains on the screen, I ask the history teachers to write a historical diary, journal entry, or letter reflecting some period in the life of this place. Since all have far greater knowledge than I of the historical events of World War II, I assure them that whatever they write will be a learning experience for me. They write for five or ten minutes. Afterwards, I notice the emotional impact of the photographs on what they have written. The image has permitted them to stray from the usual historical essay or research format. When I ask if they can use such an activity, most offer possibilities. They insist that photographs would offer them a chance to introduce a new historical period by having students write down their reactions, to review material students have previously covered as part of the prewriting for a written assignment, and to present a controversial issue for a persuasive essay.

Political cartoons that stimulate thinking and writing would also work extremely well. And who can ever forget the photojournalism of *Life* magazine during any major crisis? These exercises are far from fluff in history classes.

Here again, the Internet and CD technology offer added access to visual resources. The *Grolier Encyclopedia* CD-ROM, for instance, shows the footage of the Kennedy assassination, a Vietnam battle scene, and Maya Angelou reciting a poem at Clinton's inauguration. History comes alive and makes written response more concrete for our students when they have such visual triggers and connections.

Mathematics

I like the way visuals and writing work together in mathematics classes. In some cases the visual comes first, while in others the writing describes the visual the student must produce. The order depends on the purpose of the assignment. For instance, when a mathematics teacher wants students to learn specialized vocabulary for a particular mathematics course, he may have them try to describe a graph to a peer, who must then reproduce the graph from that written description alone. Students quickly see the need for appropriate terminology in talking about graphs (see Nickel 1994).

Assignment One

One way teachers of mathematics can apply visual awareness to writing is to have students write a letter home or to a younger student. In the letter, the students must describe a mathematical function using images to clarify the reader's understanding.

Assignment Two

In his geometry classes, David Perkinson uses the computer program Geometer's Sketchpad for writing-to-learn activities. Students visualize mathematical concepts and keep journals describing what they have done. As David describes it, "The writing exercises help me understand what aspects of the process need to be clarified further but also help the students move from (in Piaget's terms) the concrete operational stage to the formal operational stage" (Perkinson, 23). In this way, David thinks "students can connect the concrete application of the mathematical skills to the abstract understanding of the mathe-

matical concepts." As he experiments with using visuals to teach writing in mathematics, David concludes, "Visual activities naturally provide a context for the study of the concepts, and the use of writing exercises enables the students to move from a superficial memorization of skills to a deeper understanding of abstract concepts" (24).

English and Other Areas

As an English teacher, I want to be sure to mention an activity that my colleagues Cleve Latham and Hank Hopping added to their junior English classes last year. In his introduction to Walt Whitman, Cleve gave students a demonstration of how to use the computer program PowerPoint to present written information in a visual format. Then he and Hank asked students to select an American writer and prepare a visual/written presentation emphasizing key points about the writer and his or her writings. Students spent time doing research in books and on the Internet to get information they wished to include in their written presentation using the appropriate visuals. Yes, some presentations did not demonstrate great writing, thinking, or use of visuals, but there were also a few that benefitted the entire class. The students also learned to write concisely in order to fit the key information into the PowerPoint format. Josh, for instance, gave a presentation on horror fiction that demonstrated all the appropriate techniques of both a good essay and a good speech. This kind of assignment certainly has a place in the English class to help students organize their thoughts and present them in an appropriate manner.

In addition to these few examples of teaching writing in a visual culture across disciplines, other subject areas such as foreign languages and music should not be overlooked. Each offers rich resources of teaching writing. One foreign language teacher I know uses cartoons with empty bubbles in each frame. Students fill in the bubbles with the dialogue in that language, demonstrating their interpretive knowledge of visual images, then translating that into speech.

In teaching music, set aside music videos and instead consider how music is *composed* on a computer. Because the computer supplies visual images of sounds, it is possible to add lyrics within an ever-changing format. I have watched my stepchildren move sounds on the monitor into the correct position for timing, melody, and lyrics to work together. They are "reading" what they are creating with visuals, sound, and words.

In gender issues and human development classes, photographs and works of art are useful in stimulating writing about human

interactions. Stereotypes, inappropriate actions, and moral issues are clarified when students have the opportunity to visualize and then verbalize their reactions. With some ingenuity, a little thought, and consideration of the variety of learning styles in any classroom, teachers may realize the importance of connecting the visual with writing as a means of discovery, renewal, organization, focus, review, and evaluation.