Visual Teaching Strategies
for Students Who Are Deaf or Hard of Hearing

John Luckner • Sandra Bowen • Kathy Carter

How do we enhance communication and instruction with students who are deaf or hard of hearing? Many educators and researchers suggest that we establish visually rich learning environments. In such environments, teachers would use the following instructional aids:

- Sign, fingerspelling, and speech reading.
- Equipment such as overhead projectors, bulletin boards, computers, and televisions.
- Materials including pictures, illustrations, artifacts, slides, computer graphics, and films with captions.

Why use these methods and materials? Given the auditory limitations that accompany a hearing loss, most students who are deaf are primarily visual learners (e.g., Nover & Andrews, 1998; Reeves, Wollenhaupt & Caccamise, 1995). Lane, Hoffmeister, and Bahan (1996) used the term “visual people” to describe the deaf population (p. 116).

In recent years, we have witnessed a strong push for greater use of sign and American Sign Language (ASL) features in educational settings (e.g., Mahshie, 1995). Though using sign for communication and instruction has many benefits for students, signing, like speech, provides a **transient** signal. The signal moves—it is there, and then it is gone. Consequently, we need to find more visual strategies to help students focus on important information, see how concepts are connected, and integrate prior knowledge with new knowledge.

This article describes some general visual teaching strategies, discusses how to develop and use graphic organizers, provides a sample unit and lesson using graphic organizers, and furnishes many examples of visual materials to use with all students.

**General Visual Teaching Techniques**

We have found it essential to adapt learning environments and use teaching strategies that help students maximize their learning time—essential, that is, if we want students who are deaf or hard of hearing to succeed in school. Here are some general suggestions for choosing visual materials (Hodgdon, 1995):

- Choose visuals students will easily recognize.
- Use larger-size pictures or photographs (5 x 7 or 8 x 10 inches) with younger students.
- Use a variety of visual materials, including written words, line drawing pictures, detailed drawings, computer generated pictures, photographs, photocopied pictures, cutouts from magazines, actual labels and wrappers, signs and logos, and coupons and real objects.

Combinations of words and some form of graphics is usually the best choice. Learn to draw simple pictures yourself—uncomplicated shapes and stick figures can be helpful.

Examples of visual aids that teachers can use in the classroom to enhance the communication and learning process include the use of a classroom rules chart, job and choice menus, transition time cards and charts, task organizers, daily schedules, and the Internet.

**Classroom Rules Chart**

An important element of effective classroom management is establishing, teaching, and enforcing classroom rules. Rules that are posted and referred to often help students function in the complex social and emotional environment of the classroom and provide a framework for the teacher to reinforce appropriate behaviors. You can develop a chart with classroom rules, and pictures, photographs, or clip art can accompany the written rules on the chart to help students learn to manage themselves more independently. Whenever possible, students should assist in developing the rules. Examples of rules for elementary age students might include:

- Always try your best.
- Raise your hand when you need help.
- Keep your work and work area neat.
- Respect one another.
- Pay attention when others are communicating.

**Job and Choice Menus**

Involves students in the daily chores of making a classroom an organized and...
comfortable environment for learning and socializing. For the teacher, student participation reduces the number of tasks that you need to complete each day. Students experience personal responsibility, decision making, and contributing to a common cause. Classroom jobs can be posted with words and pictures or photographs, and the person responsible for completing the task can be rotated on a daily or weekly basis. Choice menus can be established using words, photographs, pictures, or logos for things such as the areas of the room to work in, who to work or play with, activities to do when work is finished, enrichment activities to be completed, or books that can be read related to the unit of study.

**Transition Time Cards/Charts**

Transition time refers to the time it takes to change from one activity to another. You and your students can develop a set of cards or a chart with the specific tasks that need to be accomplished during transition times. Use written words and accompanying pictures or photographs. Examples include: Put your materials away, get your lunch, line up, and walk to the cafeteria quietly.

**Task Organizers**

Some students experience difficulty completing an activity or job because they are distracted easily or they can't remember the order of steps needed for completion. Such students would benefit from a set of pictures in a pocket-size photo album or a chart that lists all the steps to be done with accompanying pictures or photographs. Examples include listing the steps for starting the computer, completing a science experiment, reader and writer workshops, or taking care of a class pet.

**Daily Schedules**

The daily schedule can be used as a guide for structuring the classroom environment, as well as a way to stimulate conversation and language development. Hodgdon (1995) suggested the following steps for creating and using a daily schedule:

- Divide the day into segments reflecting the major activities of the day.
- Give each segment a name that you will refer to consistently.
- Choose a representation system, such as words and pictures or words and photographs, that will be understood easily.
- Determine what the schedule will look like—size and location—and whether it will be a chart, written on the blackboard, or photocopied and given to students individually.
- Decide how the students will use the schedule at the beginning of the day.
- Decide how the schedule will be referred to throughout the day.
- Establish ways to use the schedule to communicate with other professionals and family members.

**The Internet**

The technology of the World Wide Web (WWW) can be used to access an enormous electronic library of pictures, photographs, graphics, and videos. These resources can be integrated across the curriculum to help develop background knowledge, to provide specific examples, or to develop media-rich lessons. Table 1 lists examples of Web sites that have valuable visual information.

**Using Graphic Organizers**

Visual representations of knowledge are referred to by a variety of names including semantic maps, webs, semantic organizers, story maps, or Venn diagrams. We use the general term graphic organizers to refer to representations used to assist in making organizational patterns of text visual (Bromley, Irwin-DeVitis, & Modlo, 1995). When used with students, graphic organizers provide a framework to make thought and organization processes visible (Tarquin & Walker, 1997). This framework provides a foundation for learning by linking background knowledge with the major concepts and facts of new learning.

Graphic organizers allow teachers to omit extraneous information while emphasizing important concepts and demonstrating their connection to each other. This visual representation of information is easier for students to remember than extended text (Bromley...
et al., 1995; Dye, 2000). Most important, the use of graphic organizers allows students to be actively involved in the processes of listening, speaking, signing, reading, writing, and thinking. And, as Table 2 summarizes, teachers can create graphic organizers and use them in a variety of ways. A valuable software program that can be used for developing graphic organizers has been created by Inspiration Software, Inc. They allow you to try the software for a 30-day trial period by accessing their Web site: http://www.inspiration.com.

The following are examples of four basic patterns of graphic organizers, identified by Bromley et al. (1995). Each graphic organizer can be simplified or made more complex by deleting or adding "branches." This flexibility allows students with different levels of knowledge and skill to participate in the same activity.

Hierarchical Patterns

If information includes a main concept and subconcepts, you can organized it in a linear manner, using a hierarchical pattern. Figure 1 shows a hierarchical pattern that provides an outline of the material found in a chapter from Colorado: Crossroads of the West (Downey & Metcalf, 1999, Chapter 11, pp. 161-178). This chapter describes the history of towns and cities in the state of Colorado.

### Table 1. Examples of Web Sites and Addresses with Valuable Visual Information

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Geographic</td>
<td><a href="http://www.nationalgeographic.com">http://www.nationalgeographic.com</a></td>
</tr>
<tr>
<td>The Smithsonian Institute</td>
<td><a href="http://www.si.edu">http://www.si.edu</a></td>
</tr>
<tr>
<td>The History Channel</td>
<td><a href="http://www.historychannel.com">http://www.historychannel.com</a></td>
</tr>
<tr>
<td>Nova Online</td>
<td><a href="http://www.pbs.org/wgbh/nova">http://www.pbs.org/wgbh/nova</a></td>
</tr>
<tr>
<td>American Museum of Natural History</td>
<td><a href="http://www.amnh.org">http://www.amnh.org</a></td>
</tr>
<tr>
<td>Windows to the Universe</td>
<td><a href="http://www.windows.unich.edu">http://www.windows.unich.edu</a></td>
</tr>
<tr>
<td>Archiving Early America</td>
<td><a href="http://www.earlyamerica.com">http://www.earlyamerica.com</a></td>
</tr>
<tr>
<td>Britannica Online</td>
<td><a href="http://www.eb.com">http://www.eb.com</a></td>
</tr>
<tr>
<td>Science A Gogo</td>
<td><a href="http://www.scienceagogo.com">http://www.scienceagogo.com</a></td>
</tr>
<tr>
<td>How Stuff Works</td>
<td><a href="http://www.howstuffworks.com">http://www.howstuffworks.com</a></td>
</tr>
<tr>
<td>National Air and Space Museum</td>
<td><a href="http://www.nasm.si.edu">http://www.nasm.si.edu</a></td>
</tr>
</tbody>
</table>

### Table 2. Creation and Use of Graphic Organizers

<table>
<thead>
<tr>
<th>Created by</th>
<th>When Created</th>
<th>Purpose of Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Before students read the materials in the textbook.</td>
<td>To preview reading material, assess prior knowledge, and to provide an advanced organizer for content.</td>
</tr>
<tr>
<td>Teacher</td>
<td>After students have read the material in the textbook.</td>
<td>To review the reading material, highlighting key points from the chapter. To use as a review or for assessment.</td>
</tr>
<tr>
<td>Teacher and students</td>
<td>During reading of the material.</td>
<td>To highlight main ideas. To provide assistance for difficult reading passages or concepts.</td>
</tr>
<tr>
<td>Teacher and students</td>
<td>After students have read the material in the textbook.</td>
<td>To assess comprehension and to outline key points. To use as a review or for assessment.</td>
</tr>
<tr>
<td>Students</td>
<td>After students have read the material in the textbook.</td>
<td>To enhance or assess reading comprehension and content information or to review for an examination.</td>
</tr>
</tbody>
</table>

Conceptual Patterns

If information has a central idea, category, or class with supporting facts such as characteristics, examples, or descriptors, you can use a conceptual pattern. Figure 2 shows the use of a complex conceptual pattern to organize the events that occurred in Chapter 1 of the book *A Bridge to Terabithia* (Paterson, 1977). This chapter centers around the main character, Jesse Oliver Adams, Jr., and his family.

Sequential Patterns

Displaying the chronological order of events, particularly those having a specific beginning and an end, can be done by using a sequential pattern. The most common sequential pattern is a timeline. These patterns also can be used to represent cause/effect, process/product, or problem/solution-type situations. Figure 3 shows a simple sequential pattern used to identify the specific events that happen to the caterpillar in *The Very Hungry Caterpillar* (Carle, 1969). The caterpillar spends 1 week eating more and more food until finally he becomes a fat caterpillar and builds a cocoon. By ordering each event, a student can easily understand the process of how a caterpillar transforms into a beautiful butterfly.
Cyclical Patterns

You can use a circular formation to display a series of events that occur within a process. There is no beginning or end, just a continuous sequence of events. Figure 4 shows a cyclical pattern that could be used to summarize the cycle of respiration that has been presented in Biology: An Everyday Experience (Kaskel, Hummer, & Daniel, 1992, Chapter 13, pp. 267-277).

Sample Unit and Lesson Using a Graphic Organizer

Here, we have provided an outline of a sample unit of study that uses a variety of graphic organizers. We prepared this unit for middle school students, Grades 6-8. We took the content material for this unit from America's Past and Promise (Mason, Garcia, Powell, & R. Singer, 1998, Unit 1, Chapter 7, Section 2, pp. 132-135). The main concepts discussed in this section are the economy and culture of the southern colonies of the United States. The teacher and students will create the graphic organizer, shown in Figure 5, after the students have read the assigned section. Figure 6 provides an example of the dialogue that may occur as the teacher and students create the graphic organizer.

Figures 5 and 6 show how a teacher and students can use dialogue and graphic organizers to review text material. The graphic organizer shown in Figure 7 (page 43) may also be created in a similar manner.

Final Thoughts

Teaching students how to access the information provided on visual supports can improve student participation and understanding, as well as prepare them to better use the visual supports found in our daily lives, such as packages, menus, logos, maps, and assembly instructions. In addition, teachers and

A TEACHER AND STUDENTS CAN USE DIALOGUE AND GRAPHIC ORGANIZERS TO REVIEW TEXT MATERIAL.
Figure 3. Example of a Sequential Graphic Organizer Using the Events of The Very Hungry Caterpillar

Monday, he ate an apple. → Tuesday, he ate two pears. → Wednesday, he ate three plums. → Thursday, he ate four strawberries. → Friday, he ate five oranges.

Saturday, he ate cake, ice cream, pickle, cheese, salami, lollipop, pie, sausage, cupcake, watermelon. → Sunday, he ate one green leaf. → He spun a cocoon and lived in it for two weeks. → He became a beautiful butterfly.

Figure 4. Example of a Cyclical Graphic Organizer from Biology: An Everyday Experience

Take a breath in through the mouth or/and the nose. → Finally out the mouth and/or the nose. → Air rushes into the lungs. → The diaphragm moves downward. → The ribcage expands. → Oxygen is exchanged for carbon dioxide in the alveoli. → The diaphragm relaxes. → Carbon dioxide is emptied into the bronchial tubes.

References
Create graphic organizer (Figure 5) with the students as they answer questions and discuss economy, from the chapter in the book.

**Teacher (T):** Yesterday we read section 2 from the social studies book. Let's review what you read. (Call on individual students to review main topics and ideas from the reading.)

**Student (S):** Slavery.
T: Yes. What is slavery?
S: When white people owned black people to help them work on their farms.
T: What were the large farms called?
S: Plantations.
T: Were the plantations important to the southern colonies?
S: Yes.
T: Why?
S: That's how they earned money.
T: That's right. The term used to discuss how people earn money to live in an area is called the economy. Let's write a definition for economy on the map. (Write economy and a definition on the map. Definition: The way people use resources to make a living.)
T: Great. Let's take a look at the plantations in the southern colonies and figure out why the plantation owners needed slaves. You have already mentioned that farming and plantations as part of the southern colonies so let's add that to the map too. (Write in farming and plantations.)

What was special about the land of the southern colonies that helped the economy?
S: The soil was good for growing crops.
T: That's right. The southern colonies were able to grow specific crops that the other regions of the states could not grow. One of the reasons was the soil. What was another reason they could grow the crops?
S: The warm weather.
T: Exactly. What crops did they grow?
S: Tobacco and rice. (List the crops on the map as the students mention them.)
T: Yes, anything else?
S: I remember the book also talked about something used in blue jeans.
T: That's correct. The plantation owners also grew a plant used for blue dye. Who remembers what that plant is called?
S: Indigo.
T: Do manufactures still use indigo to dye your blue jeans?
S: No, today they use chemicals.
T: All right, so we have listed tobacco, rice, and indigo. Tell me about growing rice. What is required to grow rice?
S: The rice was grown in the swamps. So they had to drain the swamps and build dikes, before they could plant. Then the rice had to be irrigated and harvested.
T: Good explanation! So why did the plantation owners need slaves?
S: The plantation owners wanted slaves who knew how to grow rice because they had grown rice in Africa before they were brought to America.

T: What did rice have to do with the economy in the southern colonies?
S: They sold rice to other colonies.
T: That's right! They sold or exported the rice to the other colonies. Growing the crops was important to the economy because the southern colonies exported their crops to other colonies. Was it easy to grow rice in the southern colonies?
S: No, it was hard work. That's why they wanted the slaves to do it.
T: The hard work was one of the reasons the plantation owners wanted slaves to help them. As the plantations grew, more slaves were needed to complete all the work. What do you remember from the reading was another reason slaves were needed to grow rice?
T: Another important factor that relates to the economy and to the plantations is trade. (Add trade to the map.) How did they send the crops out and bring the slaves in?
S: By boat.
T: Exactly. Let's look at the map in your book on page 133. Notice all the rivers and waterways which ran through the southern colonies. Why were these rivers the key to the success of the southern economy?
S: They could export the crops and bring in the slaves on boats.
T: Right. Crops were exported and slaves were imported. Let's write a definition for these two terms: export and import. (Write the words and the definitions on the map.)

T: How do exports and imports influence an economy?
S: (Accept all reasonable answers)
T: What resources or products does the United States export now?
S: (Accept all reasonable answers)
T: What resources or products does the United States import now?
S: (Accept all reasonable answers)
T: What do you think would have happened in the southern colonies if they would not have had slaves?
S: (Accept all reasonable answers)
T: Today we have discussed the economy of the southern colonies. Looking at our map, we see there were two important aspects of the economy: farming and trade. The warm climate and the rich soil grew a variety of crops, which generally could not be grown in the other colonies. These farms were called plantations. The plantation owners made a living growing and selling the crops. However, as their plantations became larger, they needed help to work on the plantations. That is the main reason slaves were brought into the southern colonies. The vast waterways of the southern colonies made it relatively easy to transport resources and people. So crops were exported and slaves were imported, and the southern economy grew. Are there questions or comments?
S: Respond to all questions and comments.
T: Today we have discussed the economy of the southern colonies and talked about the importance of slaves to that economy. Tomorrow we will look at the culture of the southern colonies and discuss plantation owners' treatment of slaves.

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BooksNow

*To order the book marked by an asterisk (*), please call 24 hrs/365 days: 1-800-BOOKS-NOW (266-5766) or (732) 728-1040; or visit them on the Web at http://www.BooksNow.com/TeachingExceptional.htm. Use VISA, M/C, AMEX, or Discover or send check or money order + $4.95 S&H ($2.50 each add’l item) to: Clicksmart, 400 Morris Avenue, Long Branch, NJ 07740; (732) 728-1040 or FAX (732) 728-7080.

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Figure 5. Graphic Organizer of America’s Past and Promise Created with Students

**Economy**
(The way people use resources to make a living)

- **Farming/Plantation**
  - **Warm Weather Crops**
    - Tobacco
    - Rice
    - Indigo
      - Sub tropical plants that yield a blue dye
  - **Trade**
    - **Export** (Something sent to another country/state for trade or sale)
      - Crops
    - **Import** (Something brought in from another country/state for trade or sale)
      - Slaves

Figure 7. An Explicit Graphic Organizer Created by Teacher and Students of Materials from America’s Past and Present

**Culture**
(Way of life shared by people who have similar beliefs, customs and methods of doing things)

- **Cavaliers** (Small group of elite wealthy English plantation owners)
  - Slave Codes (Harsh laws that control the treatment of slaves)
    - Not allowed to leave the plantation without permission
    - Not allowed to own property
    - Forbidden to read, write
    - Forced to work
  - **Small Landowners**
    - **Master and Slaves**
      - Choice to buy freedom
      - Taught to read and write
      - Worked together and shared living area