

# Internet Strategies

**B**ecause of the limitless knowledge that is literally at your fingertips, the Internet can be an excellent tool for use with gifted students to differentiate curriculum within a general education setting and also in gifted education classes. However, like any tool, its effectiveness depends on how it is used. This article describes six pedagogical strategies for using the Internet to enhance learning for gifted students (Johnson, 2006). These activities are open-ended, allow for choice, and have the potential for complexity and high-level thinking, thus making them particularly well suited for intellectually gifted and

highly creative students. Also, they can be adopted and adapted to meet the needs, interests, and age level of your own students.

## Extending Textbooks

Oftentimes gifted students in general education settings are asked to read books that are much too easy for them in terms of reading level and content. The Internet can be a quick and easy way to enhance gifted students' reading assignments. First, find a list of terms related to the assigned reading (see Figure 1 for an example). Next, ask students to use the Internet

to find out what some or all of them mean. It generally works best if you give students some choice by asking them to respond to a certain number. For example, a teacher might say, "Find at least four concepts below that seem interesting. Use the Internet to find out more about them." With all Internet searches of this kind, it often works best to use the word "definition" or "define" along with your search term. This addition provides a fairly precise description of the concept.

Students then are asked to complete an I-learned chart (see Figure 2). The I-learned chart asks them to synthesize and describe three interesting or impor-



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by Andrew Johnson

tant ideas for the assigned chapter and the Internet. I let students determine what is interesting or important and try to discourage ideas that simply restate information found on the Web. One of the bottom squares of the I-learned chart values students' own background knowledge and experience. The other bottom square invites them to find human resources such as a teacher, a community expert, or a friend. Finally, students are asked to synthesize the four types of knowledge and look for one big idea.

For gifted students, the I-learned chart also can be used as the basis for an independent study. Here students

select an area of interest related to a textbook, narrative storybook, chapter, or unit that is being studied. They then use the Internet and other sources to explore this area. Depending on the age of your students, these other sources could be academic journals, books, or community experts. You can expand the required number of ideas under each section from three to five or more; however, remember that requiring more of something does not always mean more rigor or complexity. You also can require that students get additional knowledge from a written source in the bottom right quadrant.

After students have explored their area of interest, they should share their findings with their classmates. Let the students be creative in how they share this information with classmates. Their report could be in the form of a small-group discussion, large-group oral presentation, Web site, pamphlet, poster, report with illustrations, written brochure, or a traditional report or book chapter. The I-learned chart provides structure and accountability, and the supplementary information adds depth and dimension to the learning experience.

For example, Ms. Ping's fourth-grade class was reading *Artemis Fowl* (2001)

Internet Search Terms		
existentialism	liberation	pragmatism
humanism	conservative	progressivism
idealism	holism	other
feminism	philosophy	
liberalism	purpose schools	

Figure 1. Internet search terms for philosophy.

Things I learned about *philosophy* from:

this chapter	the Internet
1.	1.
2.	2.
3.	3.
my own experience, observations, or ideas	ideas or knowledge of others
1.	1.
2.	2.
3.	3.

*Big idea, observation, or inference:*

Figure 2. I-learned chart.

Topic:	
Things We Know About the Topic	Answers to Key Questions
	1. 2. 3. 4. 5.
What does this tell you about the topic?	

Figure 3. Graphic organizer for extend and infer.

by Eoin Colfer. Pat, a gifted student, was interested in fairies and fairy culture in Ireland. She used the Internet along with books and other sources to explore the history of Irish mythology, religion, and legends. Pat used the I-learned chart to provide structure for her initial inquires. She then used posters to create an illustrated guide to Irish

fairies. After describing her findings to her classmates, Pat's posters were displayed around the room.

### Topic Hotlist

The topic hotlist is used to create a focused Internet learning experience. Here students review specific aspects

of Web sites that you have previewed and selected in order to develop or reinforce specific ideas related to your unit of study. Three steps are used in creating this kind of activity: First, bookmark or create a handout that lists 3–10 Web sites that enhance a concept or topic you are studying. Second, create a handout with specific tasks or questions related to each Web site. Finally, have students work in pairs or small groups to visit each Web site and complete the handout.

### Extend and Infer

Extend and infer is designed to extend background knowledge related to a specific topic. It invites students to go beyond the facts to describe what they might mean. This activity is more appropriate for intermediate and middle school students. The steps are listed below:

1. Identify a topic related to a unit currently being studied that you wish to enhance or extend.
2. Find 3–10 Web sites that hold information essential to understanding this topic.
3. Create one key question for each Web site.
4. Design a handout for students that lists each Web site address and its key questions.
5. Using the graphic organizer in Figure 3, have students work in pairs to list important things they already know about the topic in the column on the left before they begin using the computer.
6. Students then enter the Web sites and answer the key questions. One person is the surfer and the other person is the recorder. Their answers should be recorded in the column on the right.
7. Finally, students use the bottom box to describe what the informa-

tion in the two columns tells them about their topic. The goal is to extend what they know about the topic and then to infer to a greater conclusion.

This activity can be extended further by asking gifted students to identify Web sites and design key questions for other students. With students, identify three to five criteria to use in selecting Web sites before they begin their search.

### Internet Inquiry

Internet inquiry allows students to investigate a topic that is of interest to them. It can be conducted as an independent study individually or in small group using the following steps:

1. *Students ask a question.* You may need to provide some structure here initially by providing a list of questions from which they can choose. One way to help them identify a question is to have them work with a partner or in small group to identify three to five topics that interested them. Then, pick one topic and put it in the form of a question. After you have modeled this question-asking step initially, students are soon able to form their own questions.
2. *Students gather Internet data.* They get information or data related to their questions by visiting Web sites. Primary students should visit 2–5 Web sites, intermediate students should visit 3–8 Web sites, and middle school students should visit 5–10 Web sites.
3. *Students take notes and look for patterns.* They use notes to record the interesting or important information they find on the Web sites. After all of the Web sites have been visited, students exam-

*Steps:* (a) ask a question, (b) gather data, (c) take notes and look for patterns, (d) answer the question, and (f) communicate important ideas to others.

*Key:* 4 = outstanding, 3 = very good, 2 = average, 1 = low

Criteria	Rating
1. Responsibility: The researcher was able to (a) come up with a question or idea, (b) the research was completed in the prescribed time, and (c) the researcher gathered appropriate sources for notes.	
2. Knowledge: The research (a) is interesting and informative, (b) demonstrates a knowledge base, and (c) uses an appropriate kind and number of sources.	
3. Thinking: The research (a) finds important ideas or themes, (b) uses knowledge (notes) to answer the research question, and (c) shows the researcher as a reflective learner.	
4. Communication: The presentation (a) communicates background knowledge and new ideas effectively; (b) uses the elements of effective oral speaking; (c) is clear, logical, and organized; and (d) is interesting.	
Comments or ideas:	

Figure 4. Rating checklist for independent Internet inquiry projects.

ine their notes to look for common themes or patterns in order to create groups. The important ideas from their notes then are organized into groups and unimportant ideas are discarded.

4. *Students use the notes (data) to answer the original question.* They should be encouraged to add their own insights, ideas, or additional findings.
5. *Students present or communicate their findings or ideas to an audience.* They can create a demonstration, speech, drama, commercial, report, video, drawing, sculpture, research report, experiment, a Web site, or a poster display using graph and tables.
6. *Use the rating checklist in Figure 4 to guide students' inquiry and to provide feedback and assessment on their final project.* This form may be modified for use with primary-age students by having fewer or more simplified criteria.

Like the I-learned chart above, the Internet inquiry can be used to enable gifted students to conduct independent research on a topic of their choosing related to a textbook, narrative storybook, chapter, or unit that is being studied. Eventually, you also might ask gifted students to design and describe their own criteria and rating checklist for their inquiry projects.

### Subject Sampler

The subject sampler exposes students to a variety of Web sites organized around a particular theme or topic taken from your area of study. They respond to each Web site from a personal perspective. A personal response is one that does not have a correct answer (see Figure 5). The steps for this are as follows:

1. Identify a theme or topic related to the area of study.
2. Find a variety of interesting, unique, or intriguing Web sites

For each Web site, students should respond using only *one* of the prompts below:

1. What did this site remind you of or make you think of?
2. What did you find interesting or important?
3. What ideas or things from this Web site might you use or see in your everyday life?
4. What ideas or pieces of information were most interesting or important?
5. What new thing or things did you learn here?
6. What old thing or things did you remember here?
7. List three interesting or important things you found on this Web site. Rank them from most interesting to least interesting.
8. What would you like to know more about?
9. List three new or interesting words you found on this site.

Figure 5. Prompts for personal response to Web sites.

for/yes	against/no

Figure 6. Chart for Internet T-talks.

that are related to your topic or theme.

3. Bookmark these Web sites or list them on a sheet of paper.
4. Students meet in small group and decide which sites they will visit. Allow them to choose which sites they wish to visit, however, give them a minimum number for which they are required to respond to the questions found in Figure 5.
5. Individually, students visit the Web sites and record their responses in a learning log or on a separate piece of paper.
6. Students meet again in small group to share their personal responses.

To extend this further, gifted students might identify a set of criteria and select Web sites for inclusion in the subject sampler. You might ask

them to add their own questions to the list of response prompts. Additional response prompts might include looking for instances of bias or analyzing the credibility of their sources.

### Internet T-Talk

The Internet T-talk is a strategy adapted from an idea by Donna Alvermann (1991) and is used to explore and discuss both sides of an important or controversial issue. It also provides an opportunity for all students to express their ideas and it allows for multiple viewpoints to be expressed. With adaptation, it can be used in kindergarten through high school. These are the steps:

1. *Identify a controversial issue or topic.* The first step in conducting an Internet T-talk is to identify an issue or topic. This issue or topic could be related to your

current unit or it could be a current event.

2. *Provide students with basic background information related to the issue or topic.*
3. *Put the issue or topic in the form of a dualistic statement.* A dualistic statement is one that can be answered yes or no in relation to one's agreement (e.g., The Ten Commandments should be allowed to be displayed in front of the courthouse in Alabama).
4. *Pairs are formed and supporting ideas are found and recorded.* Students use the chart in Figure 6 to record their ideas. Provide structure by asking students to come up with a specific number of ideas on each side of the issue. For example, they must list a minimum of three ideas to support each side regardless of their current position. Let students know that they do not have to agree with the ideas they generate at this point; however, being able to think on both sides of the issue will help them make a stronger case for their eventual position.
5. *Each pair combines with another pair to form a small group.* In small groups, they should not state their opinion until both pairs have a chance to share all of their supporting ideas on both sides of the dualistic statement.
6. *Work to reach a consensus.* At this stage, each person in the small group is invited to share his or her position. The task is to work to come to a consensus on a new statement to which all or most can agree. This task generates the most vigorous discussion. Depending on the age of your students, this can last from 10 minutes to an hour. Often, the dualistic statement may need to be modified to find a position with which everyone can agree. Just like

life, there are times when consensus cannot be reached.

7. *Share consensus statement and supporting ideas.* One person from each of the small groups shares the group's consensus statement and supporting reasons with the whole class. Finally, students are asked to write their individual views and supporting reasons in a journal or learning log or the whole class can use this information as the basis for further discussion.

This activity can be extended considerably for gifted students. After doing the T-talk as described above, students identify a classmate who holds an opposite opinion. (They can work independently or in pairs.) Next, they use the Internet and other sources to gather important information to support their point of view. Finally, they engage in a formal, structured debate (individually or in teams of two). Classmates can keep track of points made and countered and determine a winner.

## Teaching Students to Evaluate Web Sites

Because there is so much information available on the Internet, students also must be able to evaluate sources. This involves assessing the quality and credibility of the information found. Five criteria can be used for this evaluation: accuracy, authority, objectivity, coverage, and currency (Kapoun, 1998). The Web site evaluator in Figures 7 and 8 can be used to provide structure for students here.

### Authority

In establishing authority, you are looking to establish the expertise and experience of the author. Questions

**Web Site Evaluator**

Web site: \_\_\_\_\_  
 Topic: \_\_\_\_\_  
 Key: 3 = outstanding; 2 = average; 1 = low; 0 = poor or can't tell.

**Authority**

1. The author is a credible source. \_\_\_\_\_
2. The author has the experience and expertise in this area. \_\_\_\_\_
3. The author is with a recognized school, university, or national organization. \_\_\_\_\_
4. The Web site contains references or a bibliography. \_\_\_\_\_
5. The Web site is linked to other credible sources. \_\_\_\_\_

**Accuracy**

6. The information seems to be correct or true. \_\_\_\_\_
7. The facts are consistent within the Web site. \_\_\_\_\_
8. The information seems to support what I know to be true. \_\_\_\_\_

**Objectivity**

9. Information is presented without bias. \_\_\_\_\_
10. The site contains facts (no opinions). \_\_\_\_\_
11. The language is objective (no emotional buzz words). \_\_\_\_\_
12. The site is neutral (is does not try to promote, sell, or persuade). \_\_\_\_\_

**Currency**

13. The Web site was written recently. \_\_\_\_\_
14. The information seems current. \_\_\_\_\_

**Coverage**

15. This Web site seems complete. \_\_\_\_\_
16. This site contains the information that I need. \_\_\_\_\_
17. My questions are answered and I understand the topic. \_\_\_\_\_
18. The ideas are explained and supported. \_\_\_\_\_

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Impressions, ideas, or conclusions:

Figure 7. Web site evaluator for older students.

to ask in establishing authority include the following: How credible is the author? Are the author's credentials listed? What makes him or her an expert? Is this person qualified to write this document? Is the author affiliated with a recognized school, university, or national organization? Are there references cited? Does it contain a bibliography? Can you contact the author? Does it contain links to other sources you consider credible? Has the Web site been reviewed or vetted by others?

### Accuracy

Accuracy is the degree to which the information on the Web site is correct or true. Questions to ask here include: Can the information be verified using another source? Is the information provided in its proper context? Is any important information missing? Are the facts consistent? Does the information collaborate with other information you know to be true? Is it believable?

**Web Site Evaluator**

Web site:  
Topic:

Key:    A = outstanding;  
          B = average;  
          C = low;  
          F = poor or can't tell.

*Authority.* The author seems like an expert. \_\_\_\_\_

*Accuracy.* The information seems to be correct or true. \_\_\_\_\_

*Objectivity.* The information contains just facts and does not try to persuade.  
\_\_\_\_\_

*Currency.* The information is new. \_\_\_\_\_

*Coverage.* The Web site is complete and helps me understand. \_\_\_\_\_

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Impressions, ideas, or conclusions:

**Figure 8. Web site evaluator for younger students.**

**Objectivity**

Objectivity is the degree to which bias is used to select or present the information on the Web site. In an unbiased Web site, the author presents the information as he or she finds it. The information then serves to form the author's beliefs. In a biased Web site, the author selects information to support a particular point of view. Here one's belief systems are used to determine what information is presented. This is where it is important to know the type and purpose of a Web site. Questions to ask include: Is the Web site trying to persuade you or sell you something? Does it promote a particular religious, social, or political point of view? Does it contain emotional buzz words that are designed to appeal to your emotions? Does it contain opinions?

**Currency**

In establishing currency, you are looking to see when the information was written. Depending on the topic, the latest information is generally better than older information. Questions to ask include: When was the page first placed on the Web? When was the information written? Are there any dates on it? Is there anything to indicate that the material is updated or kept current?

**Coverage**

Coverage is the degree to which the information presented is complete. Questions to ask include: Is the Web site still under construction? Is it clear what topics the Web site seeks to address? Does the site succeed in addressing these topics? Does the site

provide you with the information you are looking for? Does it answer your questions? Are the ideas that are presented well stated, explained, and supported? Do you feel like you understand?

**Final Word**

We are still in the infancy as far as using technology to enhance education. This article presented six ways in which the Internet can be used to enhance learning for gifted students. For additional information and resources related to all aspects of Internet literacy in a classroom, visit Yahoo! Kids (<http://kids.yahoo.com>) and enter "Teacher's Guide" in its "search" option. This site contains a wealth of information related to teaching Internet literacy, developing acceptable use policies for schools, citing Internet sources, and evaluating Web sites. It also contains a variety of teacher lesson plans, activities, and other sources for all curriculum areas.

**GCT**

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