

**Note:** This is the last of a series on the Big6™, the most widely used approach to information problem-solving in the world. Students go through the Big6 stages—consciously or not—when they seek or apply information to solve a problem or make a decision. In addition to considering the Big6 as a process, the Big6 can be viewed as a set of basic, essential life skills that can be applied across situations—to school, personal, and work settings, and in school to all subject and grade levels. Students use the Big6 Skills whenever they need information to solve a problem, make a decision, or complete a task.

Each article includes a brief overview of one Big6 stage by Mike Eisenberg, followed by articles by two exemplary Big6 teachers, Barbara Jansen and Rob Darrow, offering practical uses of the Big6 in elementary and secondary situations, respectively. Melinda Tooley concludes the set by introducing a specific function of the new software product, Big6™ TurboTools, relevant to that Big6 stage.

Evaluation is the culmination of the Big6 information problem-solving process. In the Big6 approach, we emphasize that information problem-solving is not a linear, lockstep process. Students often jump around while working on an assignment.

For example, a student may get an assignment and then immediately pick up a book to read about the topic area (Big6 #4—Use of Information) and then head over to the library media center to find other resources (Big6 #2—Information Seeking Strategies and Big6 #3—Location and Access). The student may then review the assignment itself (Big6 #1—Task Definition) and think about areas in which she or he needs help (Big6 #6—Evaluation). Deciding help is needed to organize and present the assignment, the student starts an outline (Big6 #5—Synthesis) and arranges to meet with the teacher.



We encourage students to move back and forth in the process. It's also helpful for students

By Michael B. Eisenberg

to know where they are in the process, how well they are doing, and what they need help with. This type of self-awareness and understanding is all part of the Big6 stage 6—Evaluation. When students engage in Evaluation during their information problem-solving process and then loop back to improve, it's called *formative evaluation*. When students engage in Evaluation at the end of an assignment, or after an assignment is completed, by reflecting back to learn for the future, it's called *summative evaluation*. Both types of evaluation are crucial to long-term student success.

Besides formative and summative aspects, Evaluation has two other points of emphasis:

- 6.1 Judge the product (effectiveness)
- 6.2 Judge the process (efficiency)

Evaluating effectiveness means looking at the result, or culmination of the information problem-solving process. This result might be a paper, report, project, or even a test. Evaluating effectiveness also entails judging how well one did in meeting the goals of the information problem-solving process.

In effectiveness, students learn to judge their products. Students can learn to diagnose the effectiveness

of their effort when they learn to do things such as:

- Compare the requirements to the results.
- Check the appropriateness and accuracy of the information they use.
- Judge how well their solution is organized.
- Rate the quality of their final product or performance compared to their personal potential (i.e., Did I do the best that I could?).
- Judge the quality of their product to a predefined standard.

The other part of evaluation is efficiency—saving time and effort in the process. Most students certainly want to save time and

## The Big6™

### 1. Task Definition

- 1.1 Define the information problem
- 1.2 Identify information needed in order to complete the task (to solve the information problem)

### 2. Information Seeking Strategies

- 2.1 Determine the range of possible sources (brainstorm)
- 2.2 Evaluate the different possible sources to determine priorities (select the best sources)

### 3. Location and Access

- 3.1 Locate sources (intellectually and physically)
- 3.2 Find information within sources

### 4. Use of Information

- 4.1 Engage (e.g., read, hear, view, touch) the information in a source
- 4.2 Extract relevant information from a source

### 5. Synthesis

- 5.1 Organize information from multiple sources
- 5.2 Present the information

### 6. Evaluation

- 6.1 Judge the product (effectiveness)
- 6.2 Judge the information problem-solving process (efficiency)

effort. We suggest reminding students that the goal in school is to do as well as possible, with as little time and effort as possible. Students may be surprised to hear that saving time and effort in schoolwork is okay, as long as the result is a quality process and product. How can students be efficient and still be successful? The answer: hone their Big6 skills.

Determining efficiency is as complex as dealing with effectiveness. Improving efficiency involves evaluating the nature, tendencies, and preferences of one's personal information problem-solving process. This is sometimes referred to as metacognition, recognizing how we learn, process information, and solve problems. From a Big6 perspective, we can help students learn how to assess the efficiency of the process they use to reach decisions and solutions. Students can learn to assess their efficiency when they:

- Engage in self-reflection on the overall process of completing an assignment.
- Determine their strengths and weaknesses in relation to each stage of the Big6.
- Reflect on what stage of the Big6 process took the most time or effort.
- Discuss what and how they might do differently next time.
- Share tips about saving time and effort.
- Understand the value of using a process to solve information problems, reflecting and responding to predetermined criteria.

When students evaluate themselves, they assume control and responsibility for their own work and become active participants in their own learning. The role of the teacher shifts to guide, coach, and facilitator, rather than the center of all knowledge and ultimate arbitrator.

Feelings are also important in Evaluation. Students may lack confidence and pride in their

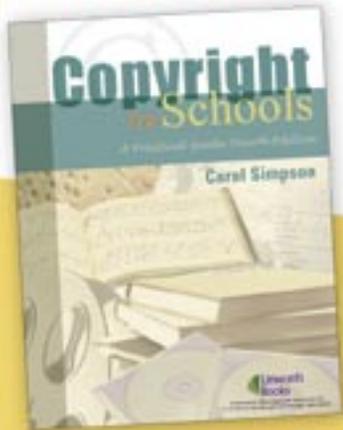
work because they don't really know whether or not they have done a good job. Or, feelings of confidence and pride are replaced with frustration and disappointment when they get an assignment back with a poor grade when they expected to do well. From a Big6 perspective, we want students to apply the same Evaluation criteria as teachers do to their work. Students can learn to look at their work through their teachers' eyes, and therefore build on strengths and identify areas for improvement. Students gain insight into specific areas to improve their performance. This can boost confidence and pride and result in a higher level of academic success.

Students of all ages can engage in Evaluation activities. For example, with younger students, we teach "Before you are about to turn in your work, stop a minute and think: Is this okay? Is this what I want it to be? Did I do what I was supposed to do? Should I work a little more, make a change, do something else, or is it good enough?" The same method can be used with older students. Teach students to evaluate their process when they think they are ready to turn in a project. This reflection is a key part of students improving as information problem-solvers. ■

**Michael B. Eisenberg is Dean of the Information School of the University of Washington. Mike, and his co-author Bob Berkowitz, created the Big6 approach to information problem-solving, and has worked with thousands of students (preK through higher education), as well as people in public schools, business, government, and communities to improve their information and technology skills. Mike has written numerous books and articles on aspects of information science and librarianship, information literacy, library media work, and information technology. He can be reached at mbe@u.washington.edu or www.ischool.washington.edu/mbe. Visit www.linworth.com for Big6 titles, posters, and bookmarks.**

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