

## SSSMART STRATEGY: Fostering Metacognition

**Metacognition** is the awareness, monitoring, and regulating of thought processes—or thinking about one’s own thinking. Metacognition is important in the many cognitive operations that go into learning, but particularly in reading comprehension.

Metacognition during reading serves several functions: clarifying a purpose for reading; applying background knowledge; focusing attention on key ideas; providing critical analysis; making inferences; monitoring comprehension—and correcting when comprehensions falters. Additionally, metacognition allows students to assume more control of their own learning (Loxterman, Beck, & McKeown, 1994; Palinscar and Klenk, 1992; Payne & Manning, 1992).

The *National Reading Panel Report* of 2000 and the subsequent Reading First initiative called for reading instruction to include comprehension monitoring as one of six strategies with a firm scientific basis for improving students’ understanding and communication about what they read. Also, *Reading Next: A Vision for Action and Research in Middle and High School Literacy*, a 2004 report to the Carnegie Corporation by the Alliance for Excellent Education, cites comprehension monitoring and metacognition instruction among the key elements of effective literacy programs.

Metacognition is getting much attention within education policy because it is essential that students develop cognitive processing skills as our information-based economy requires higher-order thinking from its workforce. This demand coincides with three decades of research on teaching and learning have provided new insights into how the human brain engages in thinking, revealing effective ways to foster metacognition. Research shows that to become metacognitive, students must learn to:

- be actively involved in their own educational experiences;
- internalize thought processes necessary for effectively making decisions and judgments developed with peers; and
- monitor and reflect on their own thinking. (Tinzmann et al, 1992).

### SSSMART Tip

The most effective way to teach cognitive abilities such as metacognition is through **modeling**, and this can happen during large group instruction in the regular classroom by a classroom teacher. By “thinking aloud” and sharing their own thought processes during or after reading, writing, problem solving or other learning activities, teachers provide students with a sense of what metacognition is and how it can be applied strategically. To aid students further, it is highly recommended that a scaffolded approach be used. Following modeling, teachers should provide students with **guided practice** and gradually allow them to assume independent use and application of metacognitive skills during a wide variety of learning experiences, including and especially reading (Baumann, Seifer-Kessell, & Jones, 1992; Kelly et al, 1994; Payne & Manning, 1992; Rosenshine & Meister, 1996).

“Studies investigating the effects of teaching metacognitive strategies to young readers have shown that students metacognitive awareness facilitates reading comprehension.”  
--Loxterman, Beck, & McKeown, 1994

## Ideas for Instruction

- Help students to become metacognitive readers using a **model-coach-reflect** approach advocated by Roger Farr in numerous publications and in his professional development presentations. Following are some guidelines.

### **Model:** Show students what “thinking about thinking” is.

Think aloud while using a sample reading selection from your textbook:

- Establish a purpose for reading;
- Activate related background knowledge;
- Make and revise predictions;
- Ask and answer questions;
- Make personal connections to the text;
- Note images that come to mind as you read;
- Share affective or emotional responses to the text;
- Evaluate your understanding of the text—and use “fix up” strategies to correct;
- Adjust your rate and style of reading to improve comprehension—slowing down when complex ideas are being presented, re-directing focus or re-reading segments of the text when necessary, skimming to seek out specific information;
- Summarize.

### **Coach:** Provide opportunities for students to practice being metacognitive.

Before, during, and after assigned readings, engage students in activities that require them to think about their thinking, responding to text in the ways suggested for modeling above. Ask students open-ended questions and encourage students to generate diverse responses. Effective questions about their reading include:

- What do you already know about this topic?
- What do you want to learn from the text?
- What questions do you have as you read? Can you answer them through the text or through clarifying, re-reading, etc.?
- What pictures come to your mind as you read?
- What do you think will come next in the reading?
- Does the text remind you of anything from your own life?
- How can you use your background knowledge to help you understand what you read?
- What did you learn from the text? Name three things.
- What questions do you have at the end?

Another way to encourage and build students’ metacognition is to set up “**habit stations**” (Zwiers, 2004) in which students engage in focused practice on a particular skill.

1. Organize students into groups and have them bring an assigned text to a designated station.

2. At each station, have students practice using a particular metacognitive strategy, such as making connections to background knowledge or asking questions or summarizing. Provide students with graphic organizers, sticky notes, paper and markers for drawing, journals or other tools to support that way of thinking. (Also see ideas within this resource for building related reading strategies, as students can work on them within a station format.)
3. After about 15 minutes, have groups rotate to another station so that over the course of one or two class periods they have had a chance to practice a variety of skills.
4. Be sure to have students reflect on their station work as well.

**Reflect: Build reflection activities into reading assignments to reinforce metacognitive strategy use.**

It is essential that students have time and space to reflect on their reading experiences and become aware of their own thinking and reading processes. Have students keep a designated **log or journal** in which they can engage in such reflection, and have students **dialogue** about their reflections in pairs, groups, or with the class.

Have students consider:

- How well did you comprehend this text?
- Why did you have the success or difficulty that you did with this text?
- What do you do when you realize you are not understanding a text?
- What strategies can you use to help correct your understanding?

Shoenbeck et al (1999), a team of teachers and researchers who helped propel WestEd's Reading Apprenticeship program, advocate the use of logs to allow students to reflect on their reading process and allow teachers to check in on students' progress, noting problems encountered and how students' resolved them. The authors stress that in their metacognitive logs students' should focus on "how they are reading, rather than on a book's content" (67). They also recommend being directive in how you want students to set up and use their logs. Some approaches they suggest include:

- having students make their own logs using specific materials and format.
- scheduling regular in-class reading sessions and requiring students to use their logs each time;
- collecting logs and keeping them in the classroom to prevent them from getting lost and to allow for regular teacher assessment using the logs;
- requiring students to note dates, book title, pages read, and time spent reading for each session;
- giving students "sentence starters" to help them get going in their thinking. For easy reference, sentence starters can be copied into the front cover of students' logs. Sentence starters might include:
  - My reading experience was....
  - I got confused when....
  - I had questions about....and my questions were....
  - I got distracted by....I started to think about....
  - I got stuck/I stopped when....

- I got back on track by....
- I figured out that....
- To help me understand better I....
- Some words I didn't know were.....
- I first thought....but then I realized that....
- The easiest part was....
- Something I learned about my reading was....

Shoenbeck et al also recommend having students write **letters** to their teacher periodically in which they discuss a particular text and tell about themselves as readers—specifically how their skills, habits, or interests are changing. By having to consider and articulate such aspects of reading, students will become more consciously reflective and metacognitive.

## Bibliography

- Baumann, J.F., Seifert-Kessell, N., & Jones, L.A. (1992). Effect of think-aloud instruction on elementary students' comprehension monitoring abilities. *Journal of Reading Behavior*, 24(2), 143-172.
- Farr, R. (2001). Think-along/think-alouds and comprehending lead to better comprehension. *The California Reader*, 34(10), 29-33.
- Kelly, M., Moore, D.W. & Tuck, B.F. (1994). Reciprocal teaching in a regular primary classroom. *Journal of Educational Research*, 88(1), 53-61.
- Loxterman, J.A., Beck, I.L. & McKeown, M.G. (1994). The effects of thinking aloud during reading on students' comprehension of more or less coherent text. *Reading Research Quarterly*, 29 (4), 353-367.
- National Reading Panel. (2000). *Report of the National Reading Panel: Teaching Children to Read*. Washington, DC: National Institute of Child Health and Human Development, National Institutes of Health.
- Palinscar, A. & Klenk, L. (1992). Examining and influencing contexts for intentional literacy learning. in Collins, C. & Mangieri, J. (Eds.). *Teaching Thinking: An Agenda for the 21<sup>st</sup> Century*, 297-315.
- Payne, B. & Manning, B. (1992). Basal reader instruction: Effects of comprehension monitoring training on reading comprehension, strategy use and attitude. *Reading Research and Instruction*, 32 (1), 29-38.
- Rosenshine, B. & Meister, C. (1996). Cognitive strategy instruction in reading. in Stahl, S. & Hayes, D. (Eds.). *Instructional Models in Reading*. 85-107.
- Shoenbach, R. Greenleaf, C., Cziko, Co. and Hurwitz, L. (1999). *Reading for Understanding: A Guide to Improving Reading in Middle and High School Classrooms*. San Francisco, CA: Jossey-Bass. (published in partnership with WestEd)
- Tinzmann, M. Jones, B., & Pierce, J. (1992). Changing societal needs: Changing how we think about curriculum and instruction. in Collins, C. & Mangieri, J. (Eds.). *Teaching Thinking: An Agenda for the 21<sup>st</sup> Century*, 185-220.
- Zwiers, J. (2004). *Building Reading Comprehension Habits in Grades 6-12: A Toolkit of Classroom Activities*. Newark, DE: International Reading Association.