Strategy Instruction in Writing in Academic Disciplines

Charles A. MacArthur

Over the past three decades, a substantial body of research has demonstrated that instruction in cognitive strategies can help students to develop more sophisticated strategies that improve their performance in reading, writing, and mathematics (MacArthur, 2011). In the area of reading, the National Reading Panel report (2000) as well as other meta-analyses (e.g., Gersten, Fuchs, Williams, & Baker, 2001) have found that instruction in reading comprehension strategies is effective. In writing, two recent meta-analyses, one of writing instruction for adolescents (Graham & Perin, 2007a) and one of strategy instruction itself (Graham, 2006) have both reported large effect sizes for strategy instruction.

Research on strategy instruction in writing has included a variety of strategies for planning and revising. Most research has focused on general writing tasks, including persuasive, narrative, and general expository texts. However, writing and reading tasks vary substantially by domain, both across professional domains and across academic disciplines (Bazerman & Rogers, 2008). In particular, growing bodies of literature describe the reasoning processes of experts and novices in history (Stearns, Seixas, & Wineburg, 2000; Wineburg, 1991b, 2001) and science (Klein, 2006; Sodian & Bullock, 2008; C.B. Zimmerman, 2000), and other reports describe the rhetorical demands of writing in literary studies (Fahnestock & Secor, 1991; Wilder, 2005). The aim of this paper is to review recent work that has attempted to apply understandings of domain-specific reading and writing processes to develop strategy instruction approaches in the disciplines of history and literature. The overall argument is that the principles and methods that have been developed in the field of cognitive strategy instruction could help us do a better job of teaching complex cognitive processes in disciplinary fields.

In the first section following this introduction, I review the basic components of cognitive strategy instruction together with their theoretical foundations. I also briefly discuss variations in models of strategy instruction par-
ticularly with regard to self-regulation and social support. In the second section, I address applications of strategy instruction to writing-to-learn in history, briefly discussing research on cognitive processes in the discipline and describing research with my colleagues and by others. In the third section, I describe one study that applied strategy instruction to literary analysis. The fourth section considers one approach to learning through writing in science that is consistent with strategy instruction principles. Finally, I consider other potential applications and make concluding comments.

1 Cognitive Strategy Instruction in Writing

The fundamental idea behind strategy instruction is that it is possible to understand the conscious cognitive processes used by people who are proficient in complex tasks and to teach those processes explicitly in simplified form to less proficient learners. Cognitive strategy instruction draws on several theoretical sources to address three key issues. First, cognitive models of expert and novice performance help us understand what strategies might be useful to teach. Second, theories of self-regulation are important in understanding the development of independent performance. Finally, social constructivist theories that emphasize the active construction of understanding in social contexts are critical in understanding the development of strategic cognitive processes.

1.1 Cognitive Models

Strategies are derived from cognitive models of expert, or proficient, performance. In reading, for example, Pressley and Afflerbach (1995) summarized the results of research on the cognitive processes of proficient readers, and Pressley (2000) applied that review in discussing promising comprehension strategies for instruction. In writing, a rich research literature has described the cognitive processes of proficient writers (Hayes, 1996; Hayes & Flower, 1980; Rijlaarsdam & van den Bergh, 2006). For example, the original model of Hayes and Flower (1980) described planning processes, including goal setting, content generation, organization, and revising processes, particularly evaluation. Strategy instruction has addressed all of these aspects of writing. To be useful to learners, strategies need to be specific enough to guide performance on complex tasks but also general enough to transfer to a relatively broad range of situations. The most commonly studied strategies involve the use of text structures to help generate and organize content. For example, the Cognitive Strategy Instruction in Writing model developed by Englert and her colleagues (Englert, Raphael, Anderson, Anthony, & Stevens, 1991) taught students to use graphic