

Chapter 4

The SOAR Strategies for Online Academic Research: Helping Middle School Students Meet New Standards

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ABSTRACT

Students often struggle when conducting research online, an essential skill for meeting the Common Core State Standards and for success in the real world. To meet this instructional challenge, researchers at the University of Oregon's Center for Advanced Technology in Education (CATE) developed, tested, and refined nine SOAR Strategies for Online Academic Research. These strategies are aligned with well-established, research-based principles for teaching all students, with particular attention to the instructional needs of students with learning disabilities. To support effective instruction of the SOAR Strategies, researchers at CATE developed a multimedia website of instructional modules called the SOAR Toolkit. This chapter highlights the real world importance of teaching middle school students to conduct effective online research. In addition, it describes the theoretical and historical foundations of the SOAR Strategies, instructional features of the SOAR Toolkit, and research results from classroom implementations at the middle school level.

INTRODUCTION

The importance of information technologies for twenty-first century academic research is well documented (Coiro, Knobel, Lankshear, & Leu,

2008; Eisenberg, 2008; Julien & Barker, 2009). Nearly three quarters of American college students use the Internet more than the library for research, while less than 10% use the library more than the Internet for this purpose (Jones, 2002). Yet

DOI: 10.4018/978-1-4666-9441-5.ch004

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students and teachers alike report that college students lack the skills necessary to find relevant and high-quality information online (Jensen, 2004).

The nationwide Common Core State Standards (CCSS) initiative was prompted by the desire to ensure that all U.S. students graduate from high school “college and career ready.” That is, students should possess the skills necessary to earn a self-sustaining wage or participate in postsecondary education without remediation.

The CCSS were meant to establish consistent educational standards for U.S. students by specifying what they should know and be able to do at the end of each grade. CCSS for English language arts and mathematics were released in 2010, and have been adopted by 46 states and the District of Columbia.

Online research skills are embedded throughout the CCSS for English language arts, as well as the standards for literacy in history/social studies, science, and technical subjects. The 2010 introduction to the CCSS states:

The need to conduct research and to produce and consume media is embedded into every aspect of today’s curriculum. In like fashion, research and media skills and understandings are embedded throughout the Standards rather than treated in a separate section. (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, p. 4)

College and career readiness in today’s digitally connected world requires that students be able to:

- Use digital tools and online resources strategically;
- Construct sound arguments and critique the reasoning of others;
- Communicate and collaborate effectively; and
- Solve problems, construct explanations, and design solutions.

To achieve these skills, students need instruction and practice in (a) using digital tools and online resources; (b) engaging in argument, reasoning, and problem solving; and (c) collaborating on authentic tasks that require academic reading, writing, and research (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, p. 12).

The expectation that students use the Internet to conduct research for papers and projects recognizes that the web has become a primary source of information in today’s media-rich, information-saturated society (Levin & Arafah, 2002).

To successfully use the Internet for academic research, students (a) ask questions they can test and obtain results they can analyze; (b) carry out online searches efficiently that yield high-quality results; (c) decide whether results are credible; and (d) make connections between different sources (Kingsley & Tancock, 2013). Conducting academic research requires using the Internet as an “inquiry tool” to access digitized information (Frechette, 2002; Windschitl, 1998, 2000). Success depends on students’ abilities to read and understand complex information at high levels (Alexander & Jetton, 2002; Bransford, Brown, & Cocking, 2000), which can be challenging for many students, but is especially difficult for students with disabilities that affect their capacity to read and comprehend text.

The objectives of this chapter are to (a) highlight the real-world importance of instructing students across ability levels to conduct research online; (b) describe one evidence-based approach—the *SOAR Strategies for Online Academic Research*—for teaching middle school students foundational concepts, skills, vocabulary, and procedures necessary for their continued growth toward 21st-century post-secondary and career readiness; and (c) describe the details of a case study conducted in general education middle school classrooms, showing significant pre/post

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