THE ONLINE RESEARCH AND COMPREHENSION ASSESSMENT (ORCA) PROJECT

PROJECT REPORT #3

The New Literacies of Online Research and Comprehension: Assessing and Preparing Students for the 21st Century with Common Core State Standards

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The New Literacies of Online Research and Comprehension:
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We live in new times, as literacy educators, with new literacies. The Internet, a central aspect of literacy and life, continuously generates new technologies for information and communication, repeatedly requiring new literacies (Baker, 2010; Lankshear & Knobel, 2006). Being literate today does not necessarily ensure that one will be fully literate tomorrow since continuously new technologies will always appear, regularly requiring additional new literacies. Thus, when we speak of new literacies in an online age we mean that literacy is not just new today; it becomes new every day of our lives. How we adapt to new literacies in these new times will define us as literacy educators. Most importantly, how we adapt in the classroom will define our students’ future.

During this period of change, nations around the world have begun to develop educational plans, often with a special focus on literacy. Arguably, the most visible have been the Australian Curriculum (Australian Curriculum, Assessment and Reporting Authority, n. d.) and The Common Core State Standards Initiative (2012) in the United States. Initiatives like these seek to provide nations with systems of developmental standards to inform instruction.

In the United States, the Common Core State Standards, or CCSS (2012), replaces the “Big Five” of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension) with a richer, more complex English Language Arts framework. Two elements of the CCSS are likely to impact classroom literacy instruction in profound ways:

1. an emphasis on higher level thinking during reading and writing instruction; and
2. preparation in the new, digital literacies of online research and comprehension that are important for life in the 21st century.

This chapter will explore both of these areas, recognizing that the digital literacies of online research and comprehension require, perhaps, even larger amounts and more complex types of higher level thinking than offline reading and writing. First, the chapter will explain why Common Core Standards have appeared and why the digital literacies of online research and comprehension and higher level thinking are emphasized. It will also share innovative assessments that evaluate students’ ability to conduct research online and write a short report. Finally, it will explore how we might think about evaluating students’ abilities with online research and comprehension in ways to inform instruction.

WHY HAVE COMMON CORE STATE STANDARDS APPEARED NOW?

Why have Common Core State Standards appeared? Why do they include higher level thinking and new digital literacies important for online research and comprehension? One answer to both questions is a simple one - the literacy demands in the workplace have changed because the organization of workplace settings has changed (Kirsch, Braun, Yamamoto, & Sum, 2007; Reich, 2002; Rouet, 2006). Traditionally, industrial-age organizations have been organized in a vertical, top-down fashion where most decisions are made at the highest levels and then communicated to lower levels, limiting innovative or creative contributions throughout the chain of command. This wastes large amounts of intellectual capital within an organization, limits innovation, and, as a result, fails to maximize either creativity or productivity. Because employees at lower levels of the organization tend to simply follow directions they do not require higher level thinking skills or digital literacies.
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Today, global economic competition requires that organizations abandon these traditional command-and-control structures in order to harness all of their intellectual capital, unleash innovation and creativity, and generate greater productivity. Otherwise, in a highly competitive global economy, they are literally out of business.

Organizations in post-industrial economies (Reich, 2002) achieve greater productivity and become more competitive by reorganizing themselves horizontally and organizing much of their work within collaborative teams. In addition to their regular duties, each team is charged with identifying and solving important problems that lead to better ways of producing goods or providing services within their team. High performance workplaces take advantage of the literacy and problem solving skills of every employee to increase creativity, innovation, and productivity (Smith, et al., 2000). This economic change has important consequences for education.

Schools now need to prepare students with a wider range of higher-level thinking and digital literacy skills important to the new workplace settings that have emerged. Skills such as these become important for schools to consider:

- identifying important problems;
- locating useful information related to the problems that are identified;
- critically evaluating information that is found, often online;
- synthesizing multiple sources of online information and evaluating arguments to determine a solution;
- communicating effectively to others with digital technologies; and
- monitoring and evaluating the results of decisions, modifying these as needed.

The transition from an industrial to a post-industrial society has happened rapidly in the U.S. Within a single year, for example, Internet use in U.S. workplaces increased by nearly 60% among all employed adults 25 years of age and older (U. S. Department of Commerce, 2002). Companies have had to rapidly restructure into more flattened, decision making organizations in order to survive. Given the changing nature of the workplace, it is not surprising that the Common Core State Standards have emerged today and include an emphasis on both higher level thinking and the digital literacies of online research and comprehension.

It is important to recognize that these changes for school are not limited to simply creating more productive workers and workplaces. Even more importantly, the Internet provides individuals with opportunities to make their personal lives richer and more fulfilling. This happens while advocating for social justice, refinancing a home, selecting a university to attend, managing a medical crisis, purchasing books, or any one of hundreds of other tasks important to daily life. The Common Core State Standards have emerged as our nation has recognized the changing nature of work and life, and the need for schools to prepare students in new ways.

**HIGHER LEVEL THINKING SKILLS**

The changing nature of work and life make it essential to now prepare students to transcend a simple, factual level of understanding and actually use information in creative and innovative ways to develop new ideas and solve complex problems. This requires higher level thinking skills. What are these? Many (Anderson, & Krathwohl, 2001; Geertsen, 2003; Hobson, Simms, & Knezeck, 2002) consider higher level thinking skills to include evaluation, synthesis, analysis, interpretation, and application. Viewing reading and writing from this perspective suggests it is important to teach students how to use information to create new knowledge and to communicate new ideas far beyond the simple, literal understanding of a passage. This is why the Common
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Core State Standards now include anchor standards (AS) in reading (R) and writing (W) such as these, to name just a few, which include elements of higher level thinking:

AS-R 6. Assess how point of view or purpose shapes the content and style of a text.
AS-R 8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
AS-W 7. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
AS-W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

THE NEW LITERACIES OF ONLINE RESEARCH AND COMPREHENSION

Common Core State Standards also include digital literacies. How does the nature of reading and writing change on the Internet? What, if any, new literacies do we require? We are just discovering the answer to these questions (Afflerbach & Cho, 2008). Online reading comprehension, it appears, typically takes place within a research and problem solving task (Coiro & Castek, 2010). Rather than simply reading for a general purpose, online reading comprehension is specifically focused to solve a particular problem or answer a particular question. In short, online reading comprehension is online research. Of course, you may also do this offline, but it is almost always done online.

Online reading also changes in a second way. It becomes tightly integrated with writing as we communicate with others to learn more about the questions we explore and as we communicate our own interpretations. Email, text messages, blogs, wikis, and many other new tools become important elements of online research and comprehension. Again, you may also do this offline, but it is almost always done online.

In addition, new technologies such as browsers, search engines, wikis, blogs, and many others are used online. Additional skills are required to use each of these technologies effectively. Keyword entry in a search engine, for example, becomes an important new literacy skill because search engines are an important new technology for locating information. Other online technologies require additional new strategies during online reading.

Finally, and perhaps most importantly, online reading may require even greater amounts of higher level thinking than offline reading. In a context in which anyone may publish anything, higher level thinking skills such as critical evaluation of source material and understanding an author’s point of view become especially important online. Moreover, rapid access to many different sources increases the importance of being able to logically integrate multiple source materials. One can quickly see that online reading may require even more higher level thinking than offline reading.

A view of online reading comprehension is emerging as one that requires additional new skills, strategies, dispositions, and social practices as we use the Internet to conduct research, solve problems, and answer questions (Leu, et al., in press). We shall refer to this as online research and comprehension. At least five processing practices occur during online research and comprehension: 1) reading to identify important questions, 2) reading to locate information, 3) reading to evaluate information critically, 4) reading to synthesize information, and 5) reading and writing to communicate information (Leu, Kinzer, Coiro, & Cammack, 2004). Within these five areas reside the skills, strategies, and dispositions that are distinctive to online research and
reading comprehension as well as others commonly found during offline reading in a complex blending that has yet to be fully understood.

Emerging research in the new literacies of online research and comprehension has provided us with a number of preliminary insights:

● Online research and comprehension are not isomorphic with offline reading comprehension; additional reading comprehension skills appear to be required (Afflerbach & Cho, 2008; Coiro, 2011).

● Some challenged offline readers, who possess online research and reading comprehension skills, may read online better than other students who lack online reading skills (Castek, et al., 2011).

● Prior knowledge may contribute less to online research and reading comprehension than offline reading comprehension, since readers may gather required prior knowledge online, as a part of the reading paths they follow (Coiro, 2011).

● While adolescent “digital natives” may be skilled with social networking, texting, video downloads, mp3 downloads, and smashups, they are not generally skilled with online information use, including locating and critically evaluating information (Bennett, Maton, & Kervin, 2008).

● Students often learn many online research and comprehension skills from other students, within the context of challenging activities designed by the teacher (Kiili, Laurinen, Marttunen, & Leu, 2012; Zawilinski, 2012).

HOW ARE WE DOING?

How have we been doing with including these digital and informational literacy skills into our curriculum? We are not, yet, doing very well. While the U.S. awaits full implementation of the Common Core State Standards, state reading standards and state reading assessments have yet to include any online research and comprehension skills. This is surprising, given the fact that several international assessments have already begun to include these skills such as PISA (OECD, 2011) and the Programme for the International Assessment of Adult Competencies, (PIAAC Expert Group on Problem Solving in Technology-Rich Environments, 2009).

Moreover, the following observations have not substantially changed since they were first observed a decade ago (Leu, Ataya, & Coiro, 2002):

1. Not a single state in the U.S. measures students’ ability to read search engine results during state reading assessments.

2. Not a single state in the U.S. measures students’ ability to critically evaluate information that is found online to determine its reliability.

3. In the U. S., no state writing assessment measures students’ ability to compose effective email messages.

4. Few, if any, states in the U.S. permit all students to use a word processor on their state writing assessment.

THE NEW LITERACIES OF ONLINE RESEARCH AND COMPREHENSION ARE NOW BLENDED INTO THE COMMON CORE STATE STANDARDS

Perhaps the failure of states to include any digital literacies in their standards is one of many reasons that the Common Core State Standards have emerged. We see a conscious awareness of the need to include online research and comprehension skills and higher level thinking in one of Common Core’s key design considerations, research and media skills. It states:

To be ready for college, workforce training, and life in a technological society, students need the ability to gather, comprehend, evaluate, synthesize, and report on information
and ideas, to conduct original research in order to answer questions or solve problems, and to analyze and create a high volume and extensive range of print and non-print texts in media forms old and new. The need to conduct research and to produce and consume media is embedded into every aspect of today’s curriculum. (Common Core State Standards, 2012, p. 4)

In addition, Common Core’s college and career ready “portrait of students” also describes the need to include online research and comprehension skills. A key element of this description of college and career ready students is that “They use technology and digital media strategically and thoughtfully.” (Common Core State Standards, 2012, p. 7). They also “… employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline.” (Common Core State Standards, 2012, p. 7) At least half of the Common Core Anchor Standards contain items, in both reading and writing, that reflect the shift to higher level thinking and online research and comprehension. (See Table 1.)

Table 1 ABOUT HERE

**HOW SHOULD WE ASSESS ONLINE RESEARCH AND COMPREHENSION THAT REQUIRES HIGHER LEVEL THINKING?**

At the time of writing this chapter, assessments for Common Core State Standards had not yet been presented. Here, we share an initial model for assessing higher level thinking and online research and comprehension. The assessments are being developed by the Online Research and Comprehension Assessment (ORCA) Project (Leu, Kulikowich, Sedransk, & Coiro, 2009). This project is developing valid, reliable, and practical performance-based assessments of students’ ability to conduct Internet research in science and write a short report of their results. A series of assessments in two different formats (Closed Internet and Scenario-based, Multiple Choice) have been developed, tested in cognitive labs, and pilot tested among 1,200 students. They are now undergoing a final validation trial among representative state samples of 1,600 seventh grade students in two states (Leu, et al., 2012). These assessments are consistent with Common Core Anchor Standards in reading and writing that focus on higher level thinking and the use of digital literacies for online research.

The Closed Internet Format (ORCA-Closed) asks students to conduct research and write a short report within a closed online environment, a simulation of the Internet, including a social network with chat capabilities, a search engine, email, blogs, wikis, and over 400 websites. The scenario-based, multiple choice format (ORCA-Multiple Choice) provides students with the same set of research problems to solve within scenarios where decisions are evaluated from multiple-choice responses. The research problems in both formats come from science and focus on human body systems, a common curricular area for the seventh grade in every state.

During their research, students are evaluated in four areas of the online research and comprehension process: locating information, evaluating information, synthesizing information, and communicating information. You may view a video of one student taking the ORCA-Closed assessment, “Are Energy Drinks Heart Healthy?” by linking to this URL: [http://neag.uconn.edu/orca-video-ira/](http://neag.uconn.edu/orca-video-ira/). The beginning sequence of this research activity is illustrated in Figure 1.
Locating Information

Figure 1 shows the opening sequence of chat messages from Brianna, a system-generated avatar, within a social network. Brianna presents a problem and the research question, directing each student to an email where additional information about the research project may be found. When the student follows Brianna’s directions and clicks on the text “Click here,” an email inbox appears with several possible messages to select from. (See Figure 1.) Here we assess the student’s ability to evaluate the inbox message list and locate the correct email message to open, on the first click. Each student’s actions are captured on a “back end” data capture system and scored.

Figure 1 also shows the window that appears, containing the email message from the principal that defines the problem and research project. The principal asks the student to conduct research online on the question, “How do energy drinks affect heart health?” and then send a short report to the School Board President, Mrs. Kira Marin, via email.

Next, Brianna takes each student through several search tasks to locate relevant information for the research project. In each, students are asked to use keywords and a search engine to locate websites. During this portion of the research project we capture and score students’ abilities to define appropriate keywords for different types of search tasks. We also evaluate their ability to read search engine results by capturing and scoring their “first click” choice from the list of search results. Finally, students are evaluated on their ability to locate the URLs of two different sites and send these URLs to Brianna, via chat, when she requests them. Locate tasks require the higher level thinking skills of evaluation and analysis. We list the four Locate skills that we evaluate below, each related to Common Core anchor skills (AS) in reading (R) and writing (W). (See Table 1.) We also identify the primary anchor skills for reading and writing each skill most closely represents in **boldface**, with related anchor skills in *italics*:

1. Given a problem in science and a specific social context, can the student locate the correct email message in an inbox on the first click? (AS-R 1, AS-R 7; AS-W 6)
2. Given a problem in science and a specified informational context, can the student use appropriate keywords in a search engine? (AS-R 1; AS-R 4; AS-W 6; AS-W 7; AS-W 8; AS-W 9)
3. Given a problem in science and a specified informational context, can the student locate the best site for a task from a set of search engine results on the first click? (AS-R 1; AS-R 7; AS-W 6; AS-W 7; AS-W 8; AS-W 9)
4. Given a problem in science and a specified informational context, can the student locate and communicate the correct website addresses from two different search tasks. (AS-R 1; AS-R 4; AS-R 10; AS-W 6; AS-W 7; AS-W 8)

Evaluating Information

In the course of the research project, another avatar appears and the student is asked to evaluate the source and reliability of one of the websites they located. Evaluate tasks require the higher level thinking skills of analysis and evaluation. We list the four Evaluate skills that we evaluate below, each related to Common Core anchor skills (AS) in reading (R) and writing (W). (See Table 1.) We also identify the primary anchor skills for reading and writing that each most closely represents in **boldface**, with related anchor skills in *italics*:

1. Can the student identify the author of the website? (AS-R 1; AS-W 6; AS-W 9)
2. Can the student evaluate the author’s level of expertise? (AS-R 1; AS-R 4; AS-R 8; AS-W 6; AS-W 7; AS-W 8; AS-W 9)
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3. Can the student identify the author’s point of view? (AS-R 5; AS-R 6; AS-W 1; AS-W 6; AS-W 8; AS-W 9)

4. Can the student evaluate the reliability of a website? (AS-R 4; AS-R 5; AS-R 6; AS-R 10; AS-W 1; AS-W 2; AS-W 6; AS-W 7; AS-W 8; AS-W 9)

Synthesizing Information

For each of the sites that students locate, Brianna asks students to summarize (synthesize) the most important information related to the research question in a notepad that appears. Students are also asked to synthesize information that they recorded in their notepads across two websites and finally provide a final summary, or synthesis, of what they read, across all four sites. In each of these tasks, the information they record in their notepad is captured and scored. Synthesis tasks require the higher level thinking skills of analysis and synthesis. We list the four Synthesis skills that we evaluate below, each related to Common Core anchor skills (AS) in reading (R) and writing (W). (See Table 1.) Primary anchor skills for reading and writing that each most closely represents appear in **boldface**, with related anchor skills in *italics*:

1. Can students provide a summary of one important element from the first website using their own words that is relevant to the topic or that supports the given claim? (AS-R 2; AS-R 7; AS-W 2; AS-W 6; AS-W 9; AS-W 10)

2. Using notes from the notepad or information from the sites themselves, can students use their own words to integrate one detail from each of the first two websites relevant to the topic or that supports the given claim? (AS-R 7; AS-W 2; AS-W 6; AS-W 9; AS-W 10)

3. Using notes from the notepad or information from the sites themselves, can students use their own words to integrate one detail from each of the second two websites that is relevant to the topic or supports the given claim? (AS-R 7; AS-W 2; AS-W 6; AS-W 9; AS-W 10)

4. Using notes from the notepad, or information from the sites themselves, can students use their own words to develop an argument after reading all four websites? (AS-R 7; AS-W 1; AS-W 2; AS-W 6; AS-W 7; AS-W 8; AS-W 9; AS-W 10)

Communicating Information

At the conclusion of their online research project, students are asked to write a short report, presenting their results to the President of the School Board, Mrs. Marin. During the email task, four Communicate skills are assessed and listed below. Each is related to Common Core anchor skills (AS) in reading (R) and writing (W). (See Table 1.) We also identify the primary anchor skill for writing that each most closely represents in **boldface**, with related anchor skills in *italics*:

1. Knowing the social content and the audience, does the student include the correct email address in an email message? (AS-W 6)

2. Knowing the social content and the audience, does the student include an appropriate subject line in an email message? (AS-W 6)

3. Knowing the social content and the audience, does the student include an appropriate greeting in an email message to an important, unfamiliar person? (AS-W 6)

4. Does the student compose and send a well-structured, short report of their research in an email with sources and appropriate argument structure, containing at least one relevant claim and at least two pieces of evidence. (AS-W 7; AS-W 8; AS-W 9; AS-W 10)

**ASSESSMENTS OF ONLINE RESEARCH AND COMPREHENSION: A DOUBLE-EDGED SWORD**
Effective instruction cannot take place without effective assessment to inform that instruction, but only when assessment is used appropriately. Used inappropriately, assessment can corrupt instruction and distort learning towards the mastery of specific, ungeneralizable knowledge. Thus, any literacy assessment is a double-edged sword; its utility is defined by how it is used.

Currently, we have few assessments of online research and comprehension. Without knowing how students perform in these important areas, teachers have little data with which to plan instruction. While assessment is not the only component of effective instruction, it is certainly one important element. Valid and reliable assessments of online research and comprehension, that are also practical for teachers to use, are essential if we are to effectively prepare students for the new opportunities that define work and life in this century.

The initial assessments developed in the ORCA project have demonstrated good estimates of reliability and validity (Leu, et al., 2011). We also believe them to be innovative, taking a performance based approach. Assessments developed in the ORCA project measure actual online research and comprehension performance within the context of a complete research project, including keyword and search engine use as well as email and wiki communication.

Nevertheless, ORCA project assessments are not without their limitations. Most prominent, perhaps, is the need to score many of the constructed response items in the ORCA-Closed by hand. We have worked to streamline this task but many items still require scorers trained to an adequate level of reliability and each assessment takes about ten minutes to score. To this end, we have developed similar scenario-based ORCA-Multiple Choice assessments that are quickly auto scored by our system. We are evaluating this format in relation to the constructed responses of the ORCA-Closed assessments.

It is also important to recognize that any assessment of online research and comprehension will always have a more limited “shelf-life,” compared to assessments of offline reading, since continuously new literacies are involved. The assessments we have developed will become dated over time. Additional technologies and new literacy practices will appear and become essential to the workplace and to daily life, prompting the need for revising the assessments on a regular basis and also, it should be noted, for revising the Common Core Standards regularly.

As the ORCA project continues and as we learn more about the assessment of online research and comprehension, we are likely to discover additional limitations that are equally important. Nevertheless, the current assessments provide a useful starting point to understanding the assessment of online research and comprehension within authentic, performance-based tasks.

If used appropriately, assessments of online research and comprehension may lead to more effective instruction in at least two important ways. First, they may be especially useful in helping teachers and parents see and understand the types of higher level thinking and the types of literacy practices important to online research and comprehension. It is hard to teach something that is unfamiliar. Perhaps seeing activities such as these ORCAs will yield greater understanding by teachers and parents about the types of skills, strategies and literacy practices that are required during online research and comprehension.

Second, good instruction depends on knowing what students can do and what they have difficulty doing. Assessments of online research and comprehension that are connected to Common Core State Standards provide teachers with a better understanding of their students’ abilities in important new areas for literacy development. They will provide starting points for
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instruction in classrooms and can support the development of additional skills, strategies, and practices in classroom lessons and activities. Used inappropriately, however, they will only serve to limit our students’ abilities, not expand them. This would happen, for example, if the topics in these assessments were the only online research topics assigned during the year or if the assessment’s target websites were the only ones used to teach the critical evaluation of source information.

In the very best of worlds, assessments of online research and comprehension will serve to support teachers, parents, and students, showing them what is possible far beyond the specifics of any particular assessment. Good assessments of online research and comprehension demonstrate how skilled online readers may use online research ability to develop a rich and sophisticated understanding of any area of knowledge that interests them and follow any dreams that they have for their future. It is essential that we quickly develop these in order to help both teachers and students make these dreams a reality.

REFERENCES


U. S. Department of Commerce: National Telecommunications and Information Administration (2002). *A nation online: How Americans are expanding their use of the Internet*. 
Table 1
*Common Core Anchor Standards (AS) in Reading (R) and Writing (W) That Reflect Higher Level Thinking and the digital literacies of Online Research and Comprehension*

**Reading**

AS-R 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

AS-R 2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

AS-R 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

AS-R 5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

AS-R 6. Assess how point of view or purpose shapes the content and style of a text.

AS-R 7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

AS-R 8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

AS-R 9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

AS-R 10. Read and comprehend complex literary and informational texts independently and proficiently.

**Writing**

AS-W 1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

AS-W 2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

AS-W 6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

AS-W 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

AS-W 8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

AS-W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

AS-W 10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
Figure 1. The beginning screen sequences in the assessment, “Are energy drinks heart healthy?” To view a video of this assessment, please visit: http://neag.uconn.edu/orca-video-ira/
DISCUSSION QUESTIONS

1. We live in a world filled with continuously emerging new technologies, each requiring additional, new literacies such as Google docs, Skype, Contribute, Basecamp, Dropbox, Facebook, foursquare, Chrome, or any one of thousands of mobile “apps.” Identify the latest new online technology that you have encountered. Which new literacy skills and strategies does it require? Describe how you are acquiring them? What does this suggest for classroom learning?

2. Many consider the skills of online research and instruction to cluster in five areas: 1) defining a problem; 2) locating information; 3) evaluating information; 4) synthesizing information, and 5) communication information. If you only had time to teach one of these areas of online research and instruction, which would it be? Why?

3. Visit http://neag.uconn.edu/orca-video-ira/ and view the 7th grade student completing the assessment of online research and comprehension, “Are Energy Drinks Heart Healthy?” What online research and comprehension skills do you see in this video? How is each important for online readers? Do your students have these skills? What might you do to support their development in your classroom?

4. You want to help your students develop communication skills with email, blogs, and wikis but all are blocked by your school district’s filter. You have conducted online research and discovered two, child-safe products that you like: epals and gaggle. You have set up a meeting with your principal to request that your district conduct a “pilot” of these tools in your classroom. What information will you provide your principal when you make your request and how would you set up and evaluate the pilot use of these tools in your classroom?

TRY THIS!

1. Use any one of hundreds of online lessons that integrate higher level thinking, high quality literature, and online experiences by visiting readwritethink: http://www.readwritethink.org/

2. Teach the evaluation of search engine results by playing “One Click.” Identify a current topic that you are studying in class such as Japan. Use a search engine to conduct a search using this topic as a keyword. Print out enough hard copies of the search results to provide each student, or student pair, with a copy. Begin asking questions that require students to make inferences from the search results page to select the one site that meets the criteria you provide, e.g., “Which site would you pick if you wanted to find information that came from the Japanese government about Japanese history?” Continue asking similar questions and each time a student answers, ask them “How did you figure that out?” This will make visible useful strategies to use during the reading of search engine results. After one or two sessions, ask students, or teams of students, to come up with the “One Click” questions to ask.

3. Have students become better searchers by directing them to the resources at Google: Search Education: http://www.google.com/insidesearch/searcheducation/ This site contains lesson plans, live training session, and a Google a Day Challenge.