

ORCA Project, Year 1: Assessing Online Reading Comprehension

Donald J. Leu, The University of Connecticut - Jonna Kulikowich, The Pennsylvania State University - Nell Sedransk, National Institute of Statistical Sciences - Julie Coiro, University of Rhode Island

With: Heidi Everett-Cacopardo, J. Greg McVerry; W. Ian O'Byrne, Lisa Zawilinski, University of Connecticut

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Problem:

The Need For Valid, Reliable, and Practical Assessments of Online Reading Comprehension

- The Internet defines reading comprehension and learning in the twenty-first century (International Reading Association, 2009; Partnership for 21st Century Skills, 2006).
- Online reading requires additional comprehension skills (Castek, 2008; Coiro & Dabblers, 2007; RAND Reading Study Group, 2002).
- We require valid, reliable, and practical assessments to inform online reading comprehension instruction (Kirsch, 2007; Leu, et. al, 2008; O'Byrne, et. al, in press; Quellmalz & Haertel, 2008).

Theoretical Frameworks

New Literacies

The nature of literacy is rapidly changing and transforming as new information and communication technologies emerge (Coiro, Knobel, Lankshear & Leu, 2008; Cope & Kalantzis, 2000; Gee, 2003; Kress, 2000; Lankshear & Knobel, 2006; New London Group, 2000).

The New Literacies of Online Reading Comprehension

Online reading comprehension is a process of problem-based inquiry with the major skill sets clustering in four areas:

Reading to locate online information. (Guinee, Eagleton, & Hall, 2002; Eagleton, Guinee, & Langlais, 2003; Educational Testing Service, 2002).

Reading to critically evaluate online information. (Burbules & Callister, 2002; Fabos, 2008; Tillman, 2003).

Reading to synthesize online information (Bulger, 2006; Glistler, 2000; Jenkins, 2006; Rouet, 2006).

Reading to communicate online information. (Britt & Gabrys, 2001; Leu et al, 2004; Eagleton & Dabblers, 2006).

Research Questions - Project Goals:

Develop, Then Evaluate, Online Reading Comprehension Assessments (ORCA) in Three Formats:

- Multiple Choice
- Open Internet
- Closed, Simulated, Internet

1. How reliable and valid are scores on measures of online reading comprehension for each of three assessment formats?
2. To what extent is each of the four major components of online reading comprehension (Locate, Evaluate, Synthesize, Communicate) well represented in the three assessment formats?
3. What are the relationships between measures of online reading comprehension ability and the components thereof, and four measures of contextual validity: a) offline reading comprehension ability, b) access to the Internet at home, c) level of technology integration at school, and d) the district's economic status?
4. In the eyes of key stakeholders, which assessment format is most practical for school districts and states?

Operational Decisions

Knowledge Domain: Science – Human Body Systems/Parts – Eyes, Ears, Heart, Lung

Assessment Activity: Information Problem Solving Scenarios

- What is a safe volume level for listening to music? (Learn more about a topic)
- What effect do energy drinks have on heart health? (Learn more about a topic)
- Do video games harm your eyesight? (Take a position on an issue)
- Can Chihuahua dogs cure asthma? (Take a position on an issue)

Grade Level: 7th Grade

Communication Tools: Blogs, Wikis, E-mail, IM

Assessment Formats: Multiple Choice, Open Internet, Closed-Simulated-Internet

Levels of Informational Space: More Restricted and Less Restricted

Multiple Choice Assessments (in development)

Figure 1. ORCA Multiple Choice Item: Evaluate "Can Chihuahua Dogs Cure Asthma?"

Question
Given this website's "About" page, what is the expertise of the author of this information?

- A. Medical Expert
- B. Person with Asthma
- C. News Reporter
- D. English Teacher

Forum The Blog Promotional Tools RSS & Widgets Contests Newsletter Contributor Search More

Deborah Anderson
Featured Pets Contributor
Living in Everett, LA

Follow Promote Add to Favorites Contact RSS feed creator

Bio:
Deborah Anderson is a part-time writer who enjoys writing and researching in her spare time, while being fulltime mom to two teenagers.

Published Content Comments

Displaying Results 1 - 200 (of 1427)

Separation Anxiety in Cats
Cats with separation anxiety most likely have to little confidence and too much dependence on their human owners. So does this sound like your cat?
By Deborah Anderson | Published 6/14/2010

Cognitive Dysfunction Syndrome in Dogs
CDS is one of the many changes that dogs will endure as they grow older. CDS, or Alzheimer's in dogs, happens as the dog ages and is caused by the dog's brain functions being affected by chemical and physical changes.
By Deborah Anderson | Published 6/14/2010

Uses for an Old Door

Open Internet Assessments (in development)

Figure 2. ORCA Open Task in Instant Message: Evaluate "Are Video Games Harmful to Your Eyes?"

Can you tell me who created the information at one of the websites you found? What is the web address for this website?

On WikiAnswers, or http://wiki.answers.com/Q/Can_playing_video_games_damage_your_eye_sight the answer was written by a random person. this website allows anybody to write information to answer the questions of others.

Thanks. Is this author an expert on video games or eyesight? How do you know?

This person may be an expert, but they are most likely not one. the website allows for anybody to answer, with an answer that could be either true or false. To conclude, there is no proof that the author is any sort of expert.

Now think about the author's point of view. Why does the author think this is true?

The author gives no reasoning to his nswer but I can infer that he may have used a website similar to this one: http://wiki.answers.com/Q/Can_playing_video_games_damage_your_eye_sight to find his answer.

Table 1. Previous ORCA Assessments

Instrument/#Items	Score Ranges	N	*Validity	**Reliability
ORCA-IM (12)	3-36 of 38	12	66.5%	.85-.95
ORCA Blog (10)	0-3- of 32	89	59.2%	.84
ORCA Scenario I (20)	0-56 of 60	120	51.7%	.92
ORCA Scenario II (20)	0-56 of 60	120	44.1%	.91
ORCA Iditarod (17)	0-33 of 42	220	53.1%	.88
ORCA Iditarod Revised (13)	0-20 of 30	373	41.6%	.73

* % of variance explained by a composite score, a measure of construct validity.

** Cronbach's alpha reliability coefficient, a measure of reliability.

Closed, Simulated, Internet Assessments (in development)

News Feed

Jamie Reader Somebody in my class said that Chihuahua dogs can cure asthma. other people think they cannot. I voluteered to find out the truth. Can anyone send me a couple of sites that support the idea that Chihuahua dogs can cure asthma? Send the two URL's back to me as a comment.

Mon at 12:17pm Comment

Mark Hill I've started working on this and I can work with anyone else who is interested in helping. When you find the two sites you should keep them open since you will need them later.

Mon at 12:17pm

<student's name> Here are the two sites--
First site: www.snopes.com/critters/wild/asthma.asp
Second site: <http://asthma--free.com/asthma-free>
<date time>

News Feed

<student's name> Here are the two sites--
First site: www.snopes.com/critters/wild/asthma.asp
Second site: <http://site with contrary evidence 2>
<date time>

Jamie Reader Thanks <student name>, that helps a lot. Now can you send me a couple of sites that do not support the idea that Chihuahua dogs can cure asthma? Send the two URL's back to me as a comment.

<student's name> Here are the two sites--
First site: www.snopes.com/critters/wild/asthma.asp
Second site: <http://site with contrary evidence 2>
<date time>

Chat

<student name> could you summarize what you learned from these sites?
I learned that asthma is not cured by chihuahua but that...

Contact Information

Donald J. Leu
University of Connecticut
249 Glenbrook Road
Storrs, CT 06269-2033
Email: donald.leu@uconn.edu
Voice: 860.486.0202
Fax: 860-486.2994

Nell Sedransk, NISS
19 T.W. Alexander Drive
P.O. Box 14006
Research Triangle Park, NC 27709-4006
Email: sedransk@niss.org
Voice: (919) 685-9300
Fax: (919) 685-9310

Jonna Kulikowich
The Pennsylvania State University
274 Chambers Building
University Park, PA 16802
Email: jmk35@psu.edu
Voice: 814-863-2401
Fax: 814-863-1002

Julie Coiro
University of Rhode Island
Kingston, RI 02881
Email: jcoiro@mail.uri.edu
Voice: (401) 874-4872
Fax: (401) 874-5471

Project Timeline

- Year 1:** Cognitive Labs/Development of Items in Three Formats
- Year 2:** Pilot Assessments in CT and ME
- Year 3:** Validation Study in CT, ME, NC
- Year 4:** Practicality Study with the Members of the Governing Board of the Regional Educational Lab – New England and Islands (REL-NEI).

Cognitive Labs

- Year 1 cognitive labs included 58, seventh grade students from three different middle schools in Connecticut representing high, average, and challenged economic districts.
- Cognitive labs used think aloud verbal protocols and interview procedures to inform the development of assessment items in an iterative process.
- Individual students engaged in two rounds of cognitive labs each.
- Screen activities and audio were captured using iShowU software for later analysis.
- Weekly team meetings used student think aloud and performance data to revise the subsequent week's items for cognitive labs.
- As we progressed, we increasingly evaluated the Response Capture Object (RCO) that will be used in the pilot and final validation study.
- Fall, 2010 cognitive labs will finalize decisions about all items for all three formats.

