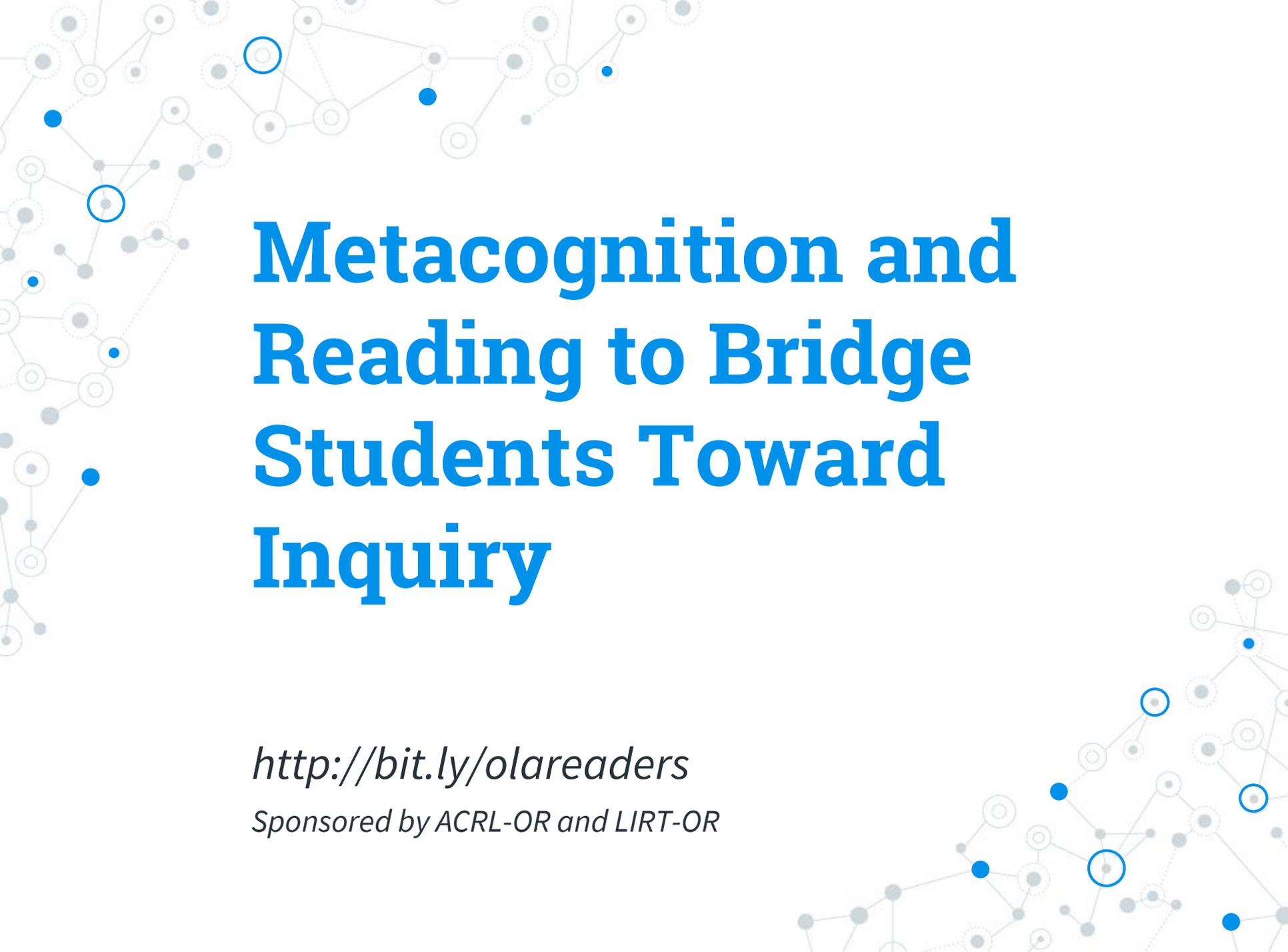


OLA 2018

**Bill Bogart, Pam Kessinger,
Theresa Love**

Portland Community
College

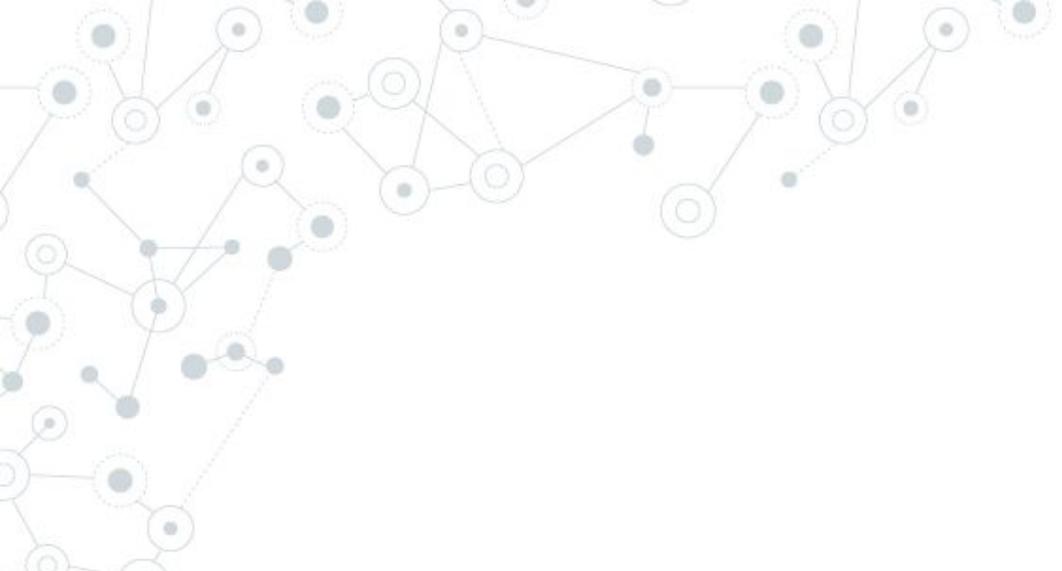




Metacognition and Reading to Bridge Students Toward Inquiry

<http://bit.ly/olareaders>

Sponsored by ACRL-OR and LIRT-OR



Agenda

Four sections and three breaks

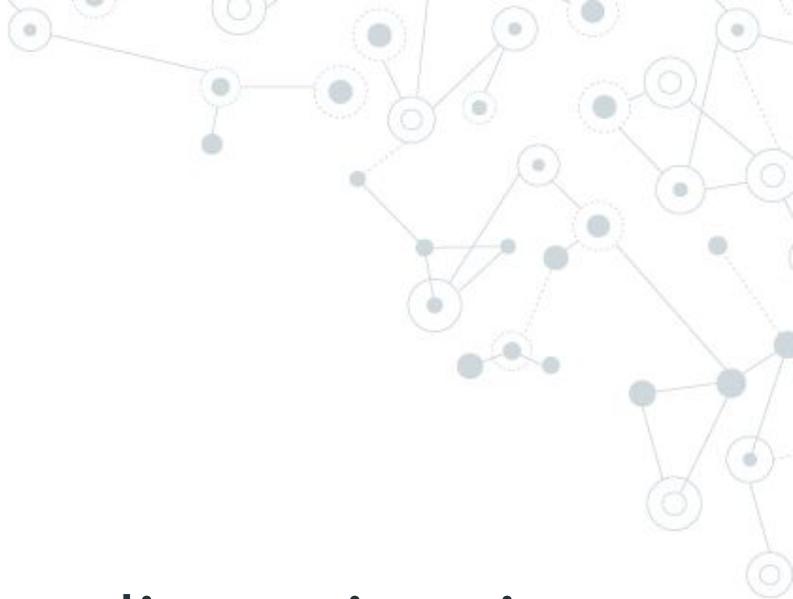


Overview of the four sections

- ① Reading Apprenticeship Framework;
Reading and Information Literacy
- ① Information Seeker History
- ① Making thinking visible and moving beyond
“competencies”



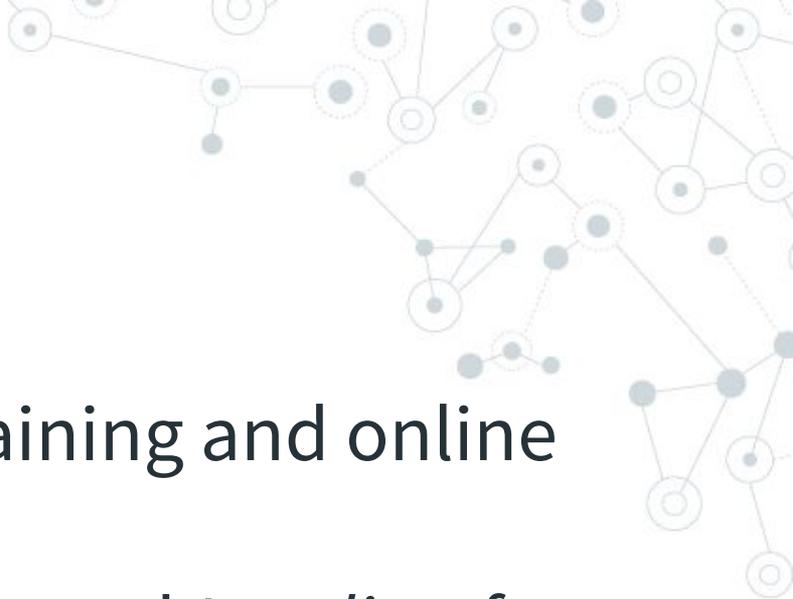
① Information Literacy Continuum



Introductions

- ◎ Name
- ◎ Job or organization
- ◎ One or two words about reading or inquiry





Reading Apprenticeship

- ◎ WestEd, in Oakland for training and online courses
- ◎ *Reading for Understanding and Leading for Literacy*



A decorative network diagram in the top right corner, consisting of various sized circles (nodes) connected by thin lines (edges). Some nodes are solid grey, while others are hollow with a grey outline. The connections form a complex, interconnected web.

Metacognition in information literacy

Library instruction to inquiry

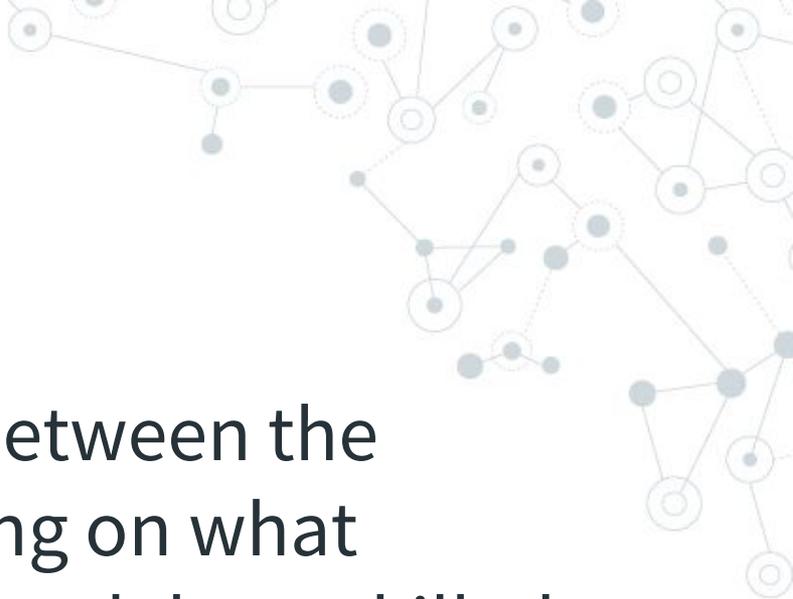




1.

Reading Apprenticeship Framework

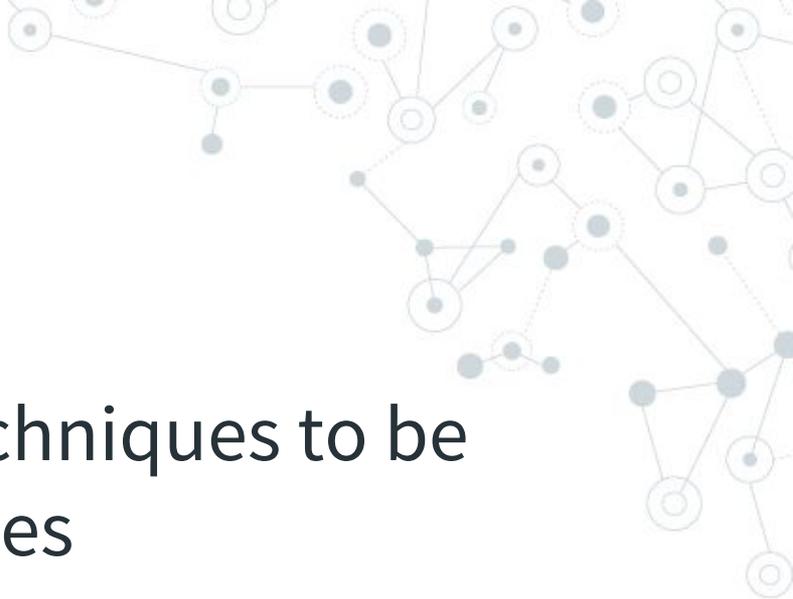
Reading and Information Literacy



What is Reading Apprenticeship?

“A partnership of expertise between the teacher and students, drawing on what content area teachers know and do as skilled discipline-based readers and on learners’ unique and often underestimated strengths”





RA Framework

Is not a set of methods or techniques to be used in isolation, or quick fixes

A classroom paradigm, not limited to a specific subject (applies to all disciplines)

That classroom can be in the Library



THE READING APPRENTICESHIP® FRAMEWORK

SOCIAL DIMENSION

- » Creating safety
- » Investigating the relationship between literacy and power
- » Sharing text talk
- » Sharing reading processes, problems, and solutions
- » Noticing and appropriating others' ways of reading

COGNITIVE DIMENSION

- » Getting the big picture
- » Breaking it down
- » Monitoring comprehension
- » Using problem-solving strategies to assist and restore comprehension
- » Setting reading purposes and adjusting reading processes

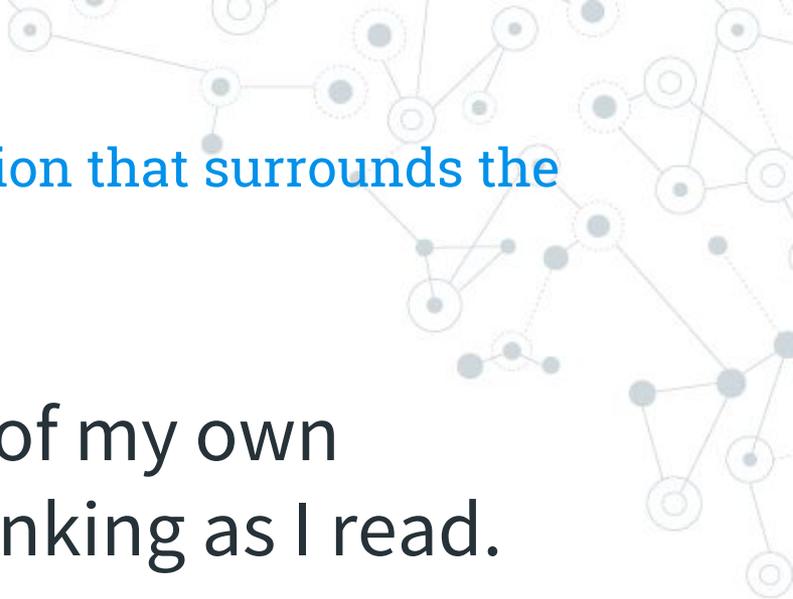
PERSONAL DIMENSION

- » Developing reader identity
- » Developing metacognition
 - » Developing reader fluency and stamina
 - » Developing reader confidence and range

KNOWLEDGE-BUILDING DIMENSION

- » Surfacing, building, and refining schema
- » Building knowledge of content and the world
- » Building knowledge of texts
- » Building knowledge of language
- » Building knowledge of disciplinary discourse and practices

METACOGNITIVE
CONVERSATION



What is the metacognitive conversation that surrounds the RA dimensions?

Metacognition is awareness of my own thinking --seeing my own thinking as I read.

The Metacognitive Conversation could be interaction with self, the class, the instructor discussing...

- What am I doing?
- Where did I do it?
- How did it impact my understanding?

Activity: Metacognitive Log

Read the *Reading Apprenticeship Framework* handout.

Short freewrite in an Evidence/Interpretation Log





Metacognitive Prompts for RA Framework

While I was reading,

I had an insight...

I felt confused when....

I made a connection....

I started to think about....

I got stuck when....

I stopped because....





Group Report Out

Any confusions?

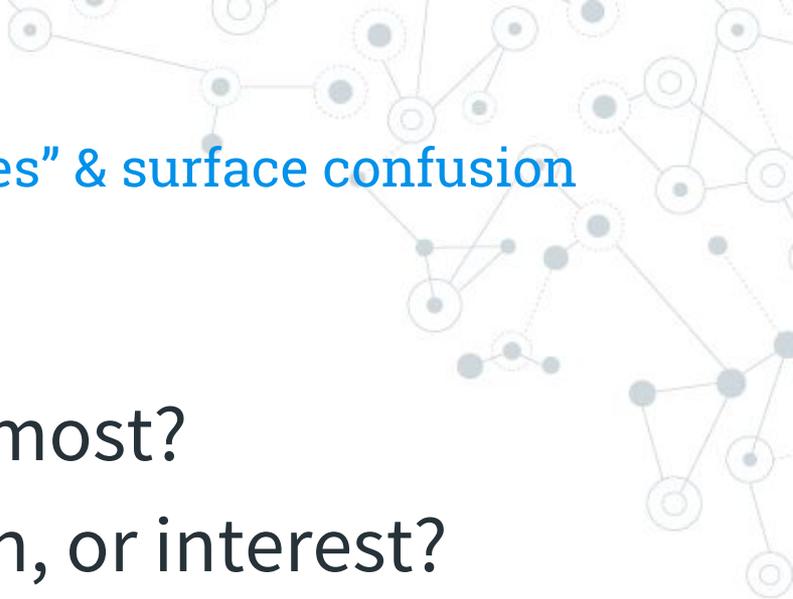
Ah-has?



Activity: Golden Lines & Metacognitive Log

Think-pair-share Mary
Broussard's chapter
sample,
“Reading and the
Framework”





Prompt: Find two or three “golden lines” & surface confusion
(think)

Which line spoke to you the most?

- ⊙ What was your connection, or interest?
- ⊙ How is the idea significant to you?

What was confusing?



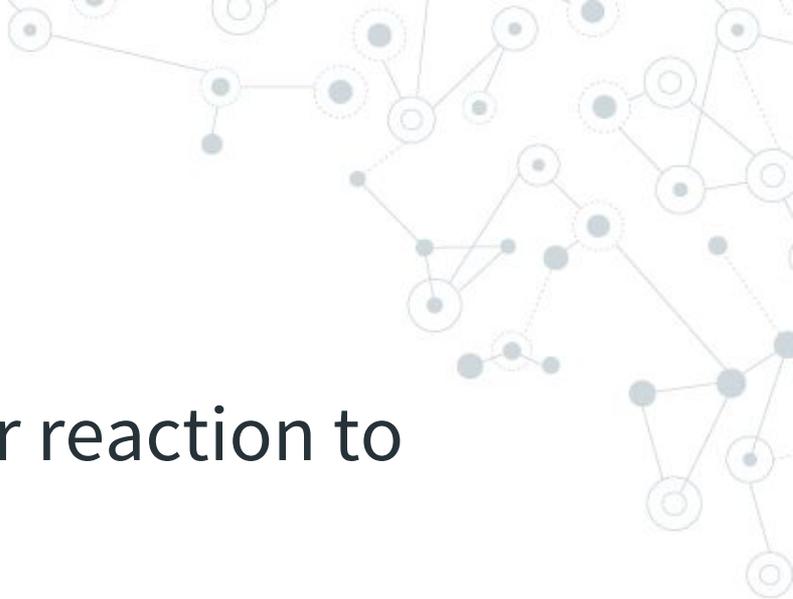


Pair

Golden line?

Connection, interest, confusing, significant?



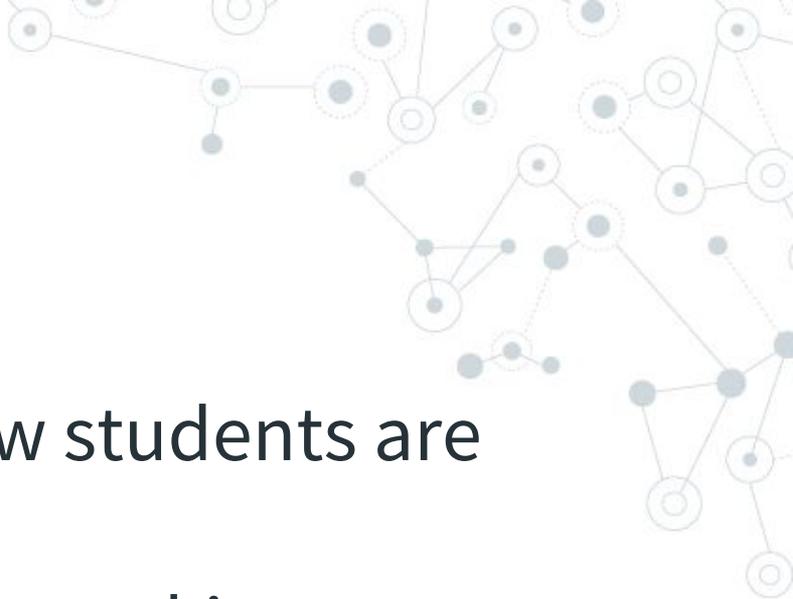
A decorative network diagram in the top right corner, consisting of various sized circles (nodes) connected by thin lines (edges). Some nodes are solid grey, while others are hollow with a grey outline. The connections form a complex, interconnected web.

Share: Golden Lines

What was your connection or reaction to a “golden line?”

What was potentially confusing?





General discussion (synthesis)

- ◎ Where do you observe how students are reading?
- ◎ When do you see students working on comprehension?
- ◎ Librarian's role for students' reading?

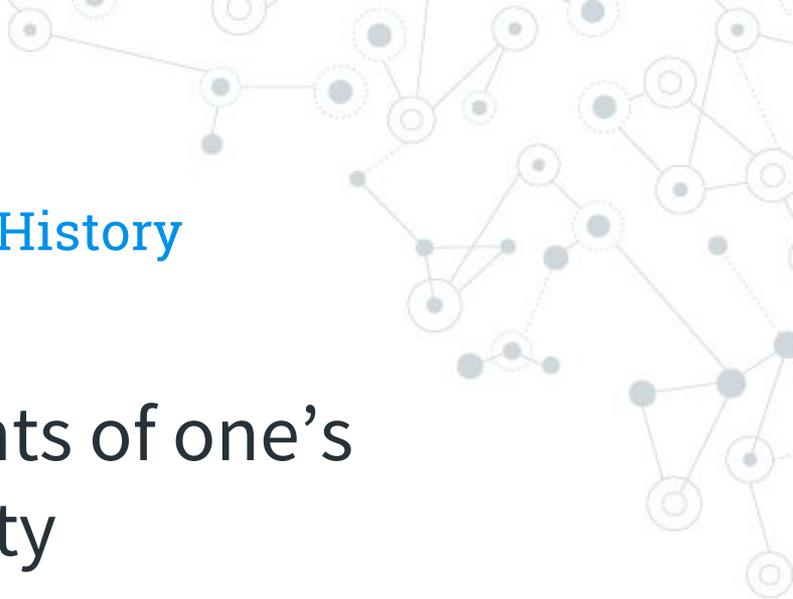


BREAK
10 minutes



2.

Next: Metacognitive strategies
of expert readers and information
seekers



Outsider/Insider: Information Seeker History

- ◎ Recognizing the precedents of one's information seeker identity
- ◎ Beginning metacognitive awareness



Personal Information Seeker History

- ◎ Before, and outside of, academic work
- ◎ Purposeful searching v. general awareness
- ◎ Beyond “basic skill”

Student misperception: *if not easily found, it doesn't exist.*

Personal Information Seeker History: PROMPTS

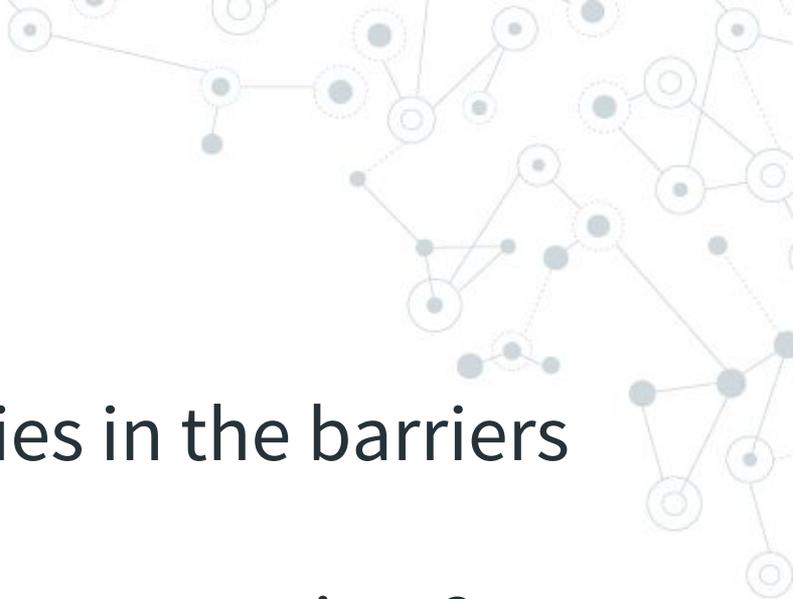
- ① What information seeking experience stands out for you? High points? Low points?
- ① Were there times when your information seeking experience or the information sources (including persons) made you feel like an outsider? An insider?
- ① What supported your information literacy development? What discouraged it?



Share with a partner

- ◎ Share your story with a partner
- ◎ Each partner listens to the other





Pairs discuss

- ◎ What were some similarities in the barriers and supports?
- ◎ What are some differences or surprises?





Share - whole group report out

- ◎ Learn about yourself? Your partner?
- ◎ What supported your development as an information seeker?
- ◎ Discouraged your development?
- ◎ Commonalities, or surprises?

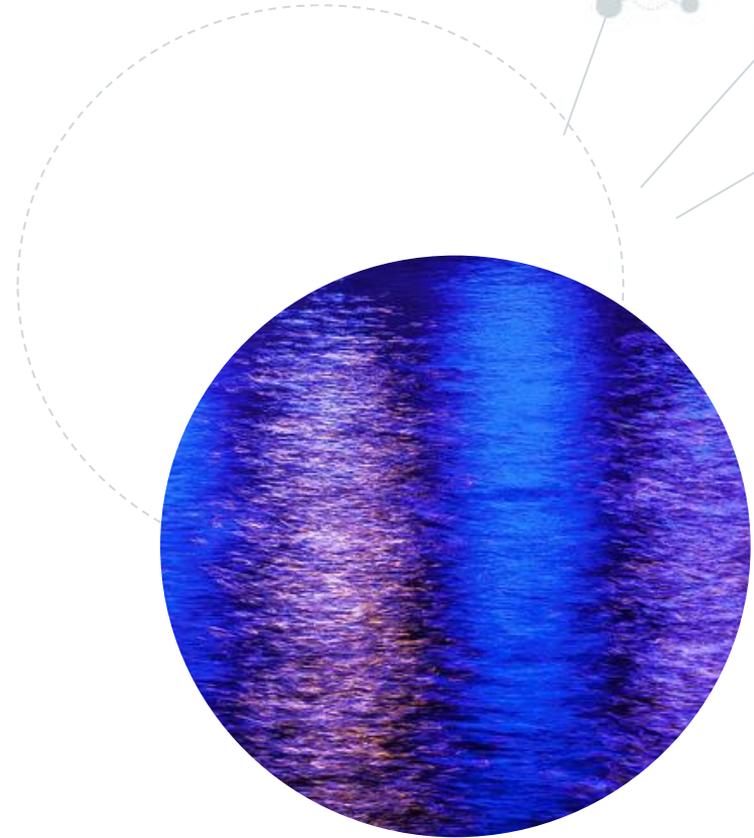


Activity: Reflection Notetaker

Take a few minutes to reflect and write:

How might librarians use exploring personal information seeker histories?

What modifications would you make?





BREAK
10 minutes



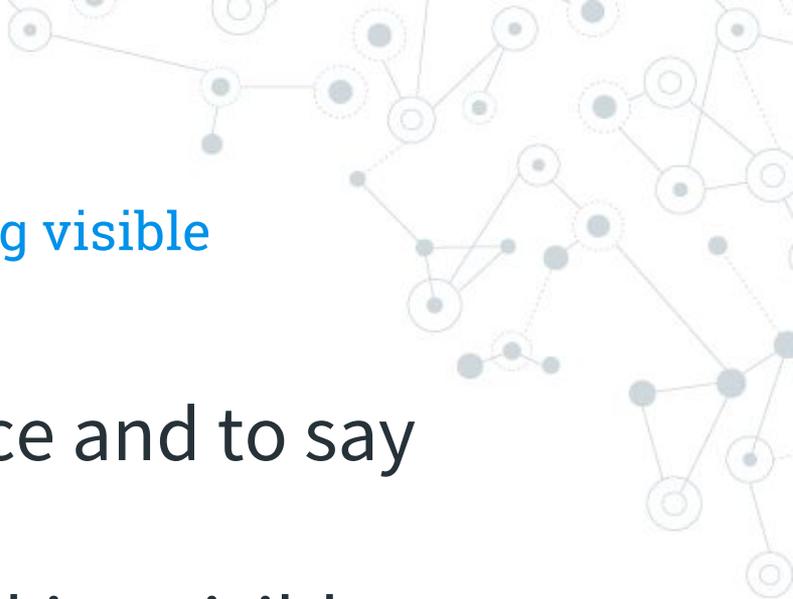
3.

Next:

Making thinking visible

and

Contrast “Competencies” to
“Frames”



Think Aloud routine: making thinking visible

- ◎ We want students to notice and to say when they are confused
- ◎ Practice making your thinking visible, to model effective ways of reading in various disciplines
- ◎ Name the cognitive strategies you use to comprehend text and interpret result sets
- ◎ Notice text structures of various genres

Activity: Observe, and take notes

Listen to a *Think Aloud*:
“Digital phenotype” by
Sachine Jain



COMMENTARY

The digital phenotype

Sachine H Jain, Brian W Powers, Jared R Hawkins & John S Brownstein

In the coming years, patient phenotypes captured to enhance health and wellness will extend to human interactions with digital technology.

In 1982, the evolutionary biologist Richard Dawkins introduced the concept of the “extended phenotype”, the idea that phenotypes should not be limited just to biological processes, such as protein biosynthesis or tissue growth, but extended to include all effects that a gene has on its environment inside or outside of the body of the individual organism. Dawkins

0.000
0.001
Can't sleep cause I can't stop thinking
When you have so much that you can't sleep
Class 1
Class 2
Class 3

The digital phenotype

Sachin H Jain, Brian W Powers, Jared B Hawkins & John S Brownstein

In the coming years, patient phenotypes captured to enhance health and wellness will extend to human interactions with digital technology.

In 1982, the evolutionary biologist Richard Dawkins introduced the concept of the “extended phenotype”¹, the idea that phenotypes should not be limited just to biological processes, such as protein biosynthesis or tissue growth, but extended to include all effects that a gene has on its environment inside or outside of the body of the individual organism. Dawkins stressed that many delineations of phenotypes are arbitrary. Animals and humans can modify their environments, and these modifications and associated behaviors are expressions of one’s genome and, thus, part of their extended phenotype. In the animal kingdom, he cites dam building by beavers as an example of the beaver’s extended phenotype¹.

As personal technology becomes increasingly embedded in human lives, we think there is an important extension of Dawkins’s theory—the notion of a ‘digital phenotype’. Can aspects of our interface with technology be somehow diagnostic and/or prognostic for certain conditions? Can one’s clinical data be linked and analyzed together with online activity and behavior data to create a unified, nuanced view of human disease? Here, we describe the concept of the digital phenotype. Although several disparate studies have touched on this notion, the framework for how digital technologies will be integrated into the patient journey and play a role in precision

Sachin H. Jain is at Caremore Health System, Cerritos, California, USA; Brian W. Powers, Jared B. Hawkins and John S. Brownstein are at Harvard Medical School, Boston, Massachusetts, USA; Sachin H. Jain is at Boston-Virginia Medical Center, Boston, Massachusetts, USA, and Merck and Co., Inc., Boston, Massachusetts, USA; and John S. Brownstein and Jared B. Hawkins is at Children’s Hospital Boston, Boston, Massachusetts, USA.
e-mail: shjain@post.harvard.edu



Figure 1 Timeline of insomnia-related tweets from representative individuals. Density distributions (probability density functions) are shown for seven individual users over a two-year period. Density on the y axis highlights periods of relative activity for each user. A representative tweet from each user is shown as an example.

medicine has yet to be described. We attempt to define digital phenotype and further describe the opportunities and challenges in incorporating these data into healthcare.

Defining the digital phenotype

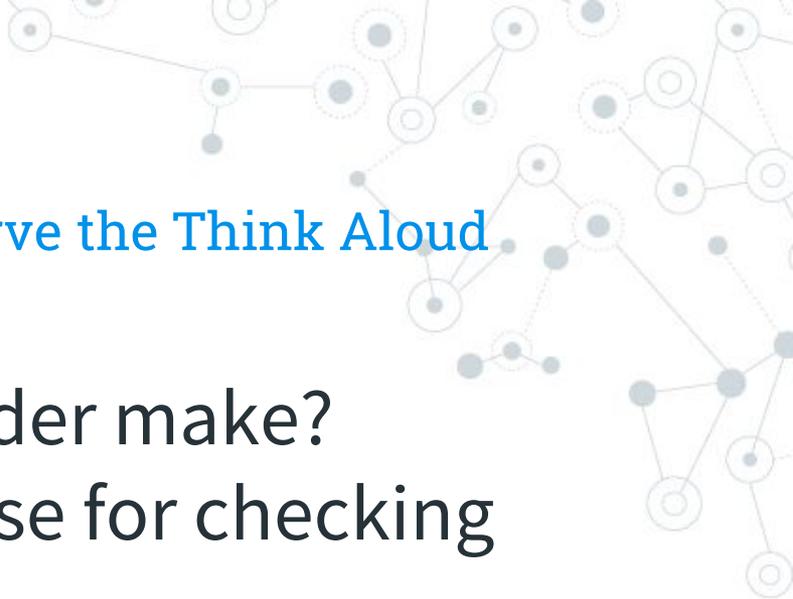
The growth and evolution of digital products and their application to health supports this interpretation of the extended phenotype. Through social media, forums and online communities, wearable technologies and mobile devices, there is a growing body of health-related data that can shape our assessment of human illness. Such data have substantial value above and beyond the physical exam, laboratory values and clinical imaging data—our traditional approaches to characterizing a disease phenotype. When gathered and analyzed appropriately, these data have the potential to fundamentally alter our notion of

the manifestations of disease by providing a more comprehensive and nuanced view of the experience of illness. Through the lens of the digital phenotype, an individual’s interaction with digital technologies affects the full spectrum of human disease from diagnosis, to treatment, to chronic disease management. Early examples of digital tracking include the use of cell phone activity to measure one’s activity levels and the association with depression by the Boston-based startup company Ginger.io. There are, of course, limitations to what can be measured and by whom when considered in the context of personal privacy.

Exploiting the digital phenotype

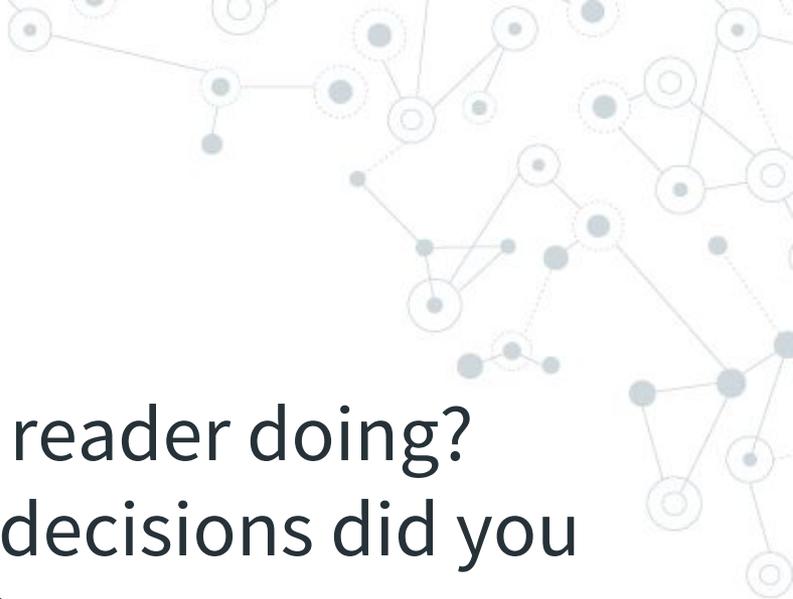
As a corollary to traditional forms of disease expression, digital phenotypes can expand our ability to identify and diagnose health conditions. Some of the earliest and most





Take notes on the article as you observe the Think Aloud

- ◎ What moves does the reader make?
- ◎ What strategies do they use for checking comprehension?
- ◎ What decisions does the reader make?
- ◎ Where does the reader get stuck?
- ◎ How do they get unstuck?



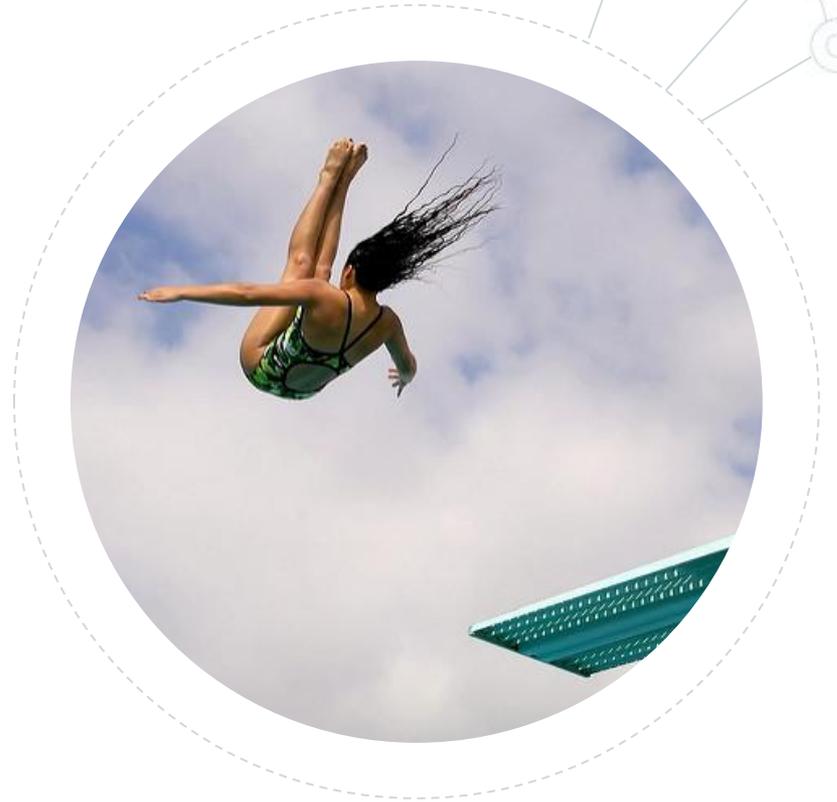
Whole group debrief:

- ◎ What did you observe the reader doing?
- ◎ What types of thinking or decisions did you observe the reader make?
- ◎ How did the moves the reader made help their understanding?

Activity: Partners do Think Alouds

Partner reads out loud for one minute:

Greene, Kate. “[Waves of Electrons](#)”





Pairs: Think Aloud

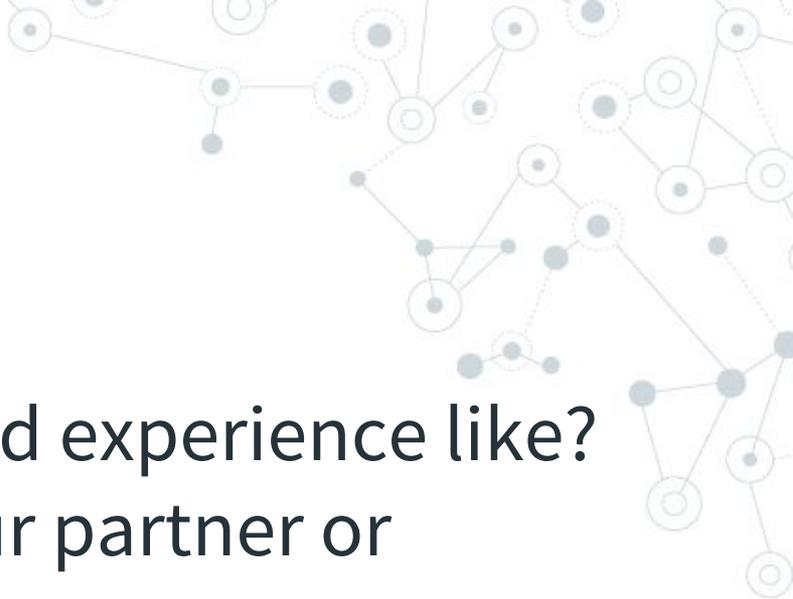
Partner A: Think aloud for 1 minute

- ◎ Make your thinking visible: What do you look at first? How do you find a main idea? Where do you get stuck? What do you do to persist?

Partner B: Record moves on text while you observe

Switch Roles

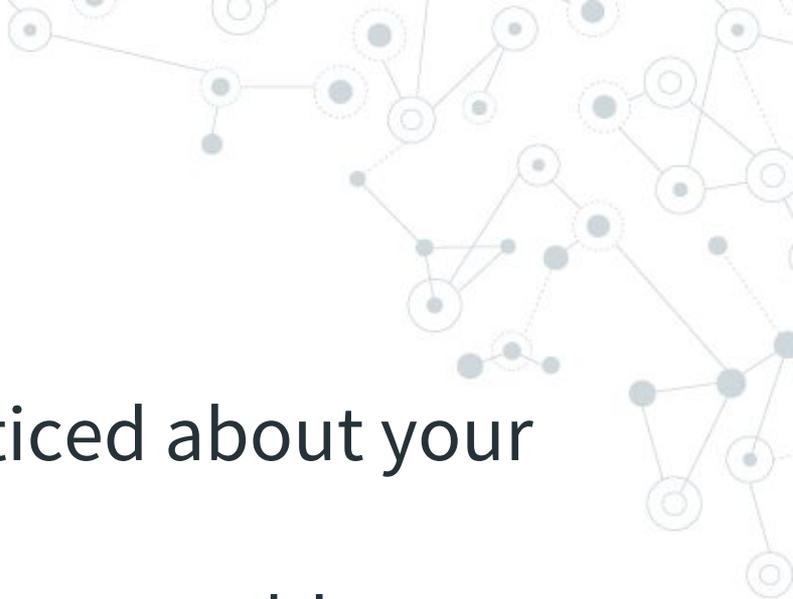




Pair Share

- ◎ What was your think-aloud experience like?
- ◎ What did you observe your partner or yourself doing?
- ◎ How does this routine make thinking visible?





Whole group debrief

- ◎ Examples of what you noticed about your partner's thinking?
- ◎ Did you learn something you would not have done on your own?
- ◎ Examples of strategies used to make meaning, to comprehend?



Whole group debrief

- ◎ In what other situations could you model a Think Aloud, or use the principle of making your thinking visible?



Activity: Observe, and take notes

Listen to an Information
Literacy Think Aloud:
*Database search result
set*



Refine Results

Current Search

Find all my search terms:

[cloning pets cost](#)

Limiters

 Full Text

Limit To

 Full Text Peer Reviewed Image Quick View

2000

Publication Date

2005

[Show More Options set](#)

Source Types

 All Results Magazines (6) Newspapers (1)

Search Results: 1 - 7 of 7

Relevance

Page Options

Share

BOLDED terms

1. Breeder's Notebook.



Periodical

By: Coile, Caroline. *Dog World*. Jul2002, Vol. 87 Issue 7, pp. 2p. 1 Color Photograph. Abstract: Discusses issues surrounding the cloning of pets. Method for saving dog cells for cloning; Description of the process of cloning; Responses to the prospect of cloning pets. INSET: WHAT DOES IT COST?. Reading Level (Lexile): 1110. (AN: 6753479)

Subjects: CLONING; PETS[HTML Full Text](#) [PDF Full Text \(450KB\)](#)

2. Company Seeks the Ultimate Copycat.



News

By: Hardj, Joel. *Chronicle of Higher Education*. 4/14/2000, Vol. 46 Issue 32, pA12. 1/4p. 1 Color Photograph. Abstract: Reports on the establishment of the Genetic Savings and Clone, a company devoted to cloning pets. Co-founding of the firm by several Texas A&M University professors; Cost of cloning; Target market. Reading Level (Lexile): 1170. (AN: 3069398)

Subjects: GENETIC Savings & Clone Inc.; CLONING; PETS[HTML Full Text](#)

3. CopyCats.



Periodical

New Internationalist. Jan/Feb2005, Issue 375, p8-8. 1/3p. Abstract: Reports on the popularity of pet cloning in the U.S. citing the operations of the California-based biotechnology company, Genetic Savings and Clone and the gene banking facility, PetBank. Cloning technology for pets; Prospects for a canine cloning service in 2005; Cost of pet cloning. (AN: 16334995)

Subjects: UNITED States; CLONING; PETS; GENETIC engineering; BIOTECHNOLOGY; GENETIC Savings & Clone Inc.; GENE libraries[PDF Full Text \(577KB\)](#)

4. Copycats, Soon Dogs.



Periodical

By: Breslau, Karen. *Newsweek (Pacific Edition)*. 5/10/2004 (Pacific Edition), Vol. 143 Issue 19, p8-8. 1/3p. 1 Color Photograph. Abstract: Reports on pet cloning available from Sausalito, California company, Genetic Savings & Clone. Discussion of the ethics of pet cloning; Problems that arose with the company's first cat clone named CC; Cost of pet cloning. Reading Level (Lexile): 848. (AN: 13108743)

Subjects: SAUSALITO (Calif.); UNITED States; CLONING; GENETIC engineering; PET owners -- Services for; BIOETHICS; GENETIC Savings & Clone Inc.; CAT owners; DOG owners; PETS[HTML Full Text](#)

Copycats, Soon Dogs.

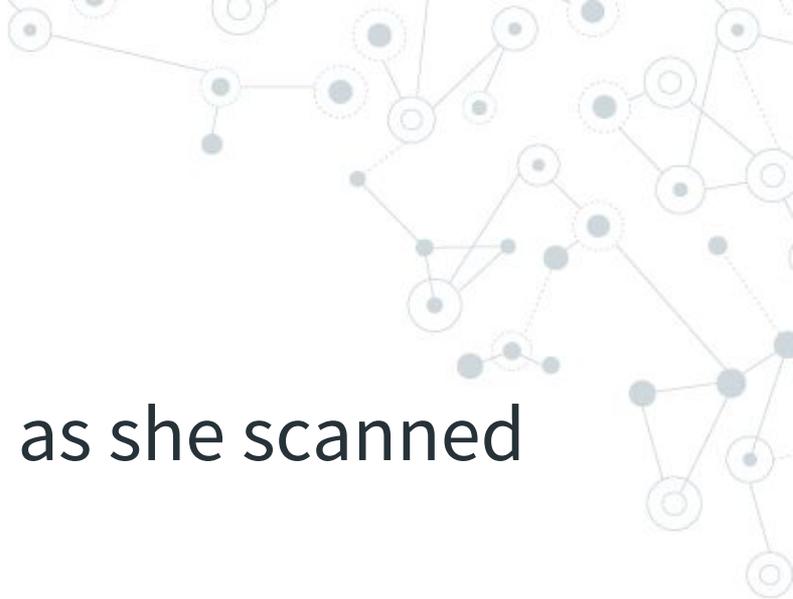


Periodical

By: Breslau, Karen. *Newsweek (Atlantic Edition)*. 5/10/2004 (Atlantic Edition), Vol. 143 Issue 19, p7-7. 1/4p. 1 Color Photograph. Abstract: Reports on pet cloning available from Sausalito, California company, Genetic Savings & Clone. Discussion of the ethics of pet cloning; Problems that arose with the company's first cat clone named CC; Cost of pet cloning. Reading Level (Lexile): 848. (AN: 13112768)

Subjects: SAUSALITO (Calif.); UNITED States; CLONING; GENETIC engineering; PET owners -- Services for; BIOETHICS; GENETIC Savings & Clone Inc.; CAT owners; DOG owners; PETS[HTML Full Text](#)

Next steps--
Email #4
Question # of results
Try different database, like
Biology
More specific search words
Different aspects
More current



Whole group debrief

What did the librarian notice as she scanned the results?

What “moves” did the librarian make?

What decisions?

What confusions, or questions did the librarian surface?

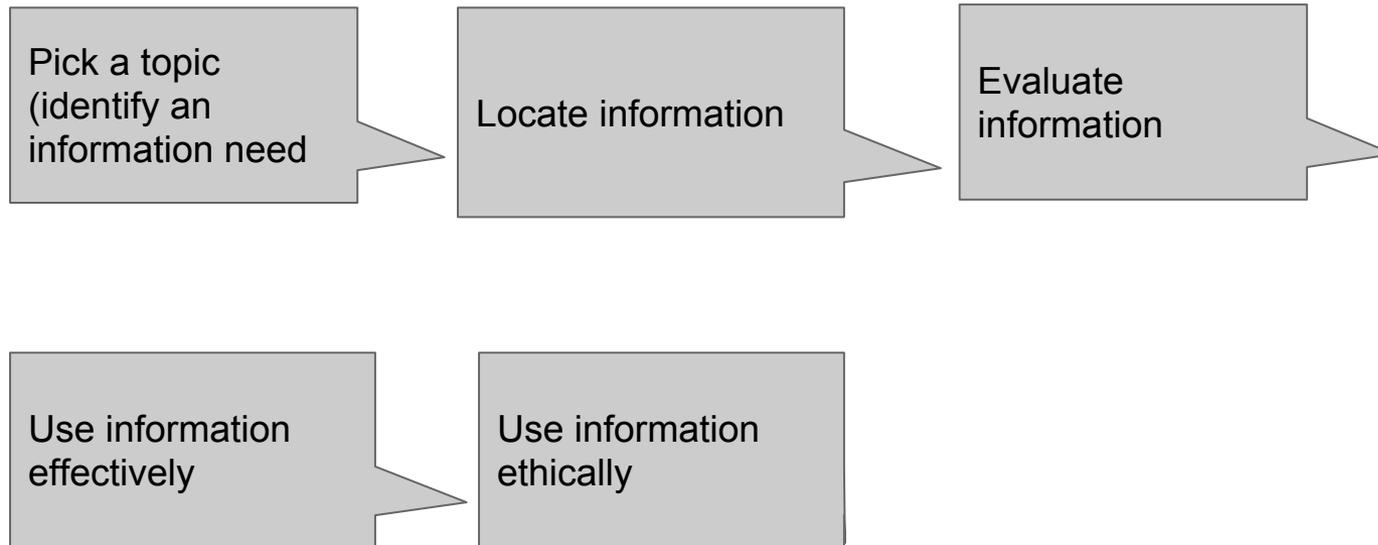


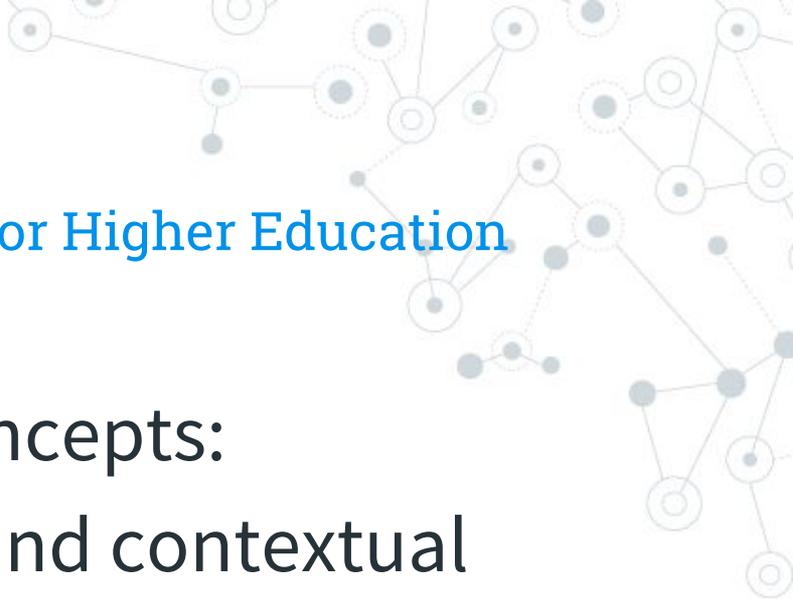
Metacognition and Inquiry: Not *linear*



IL Competency Standards (2000)

Implied a linear process for information searching and retrieval





Framework for Information Literacy for Higher Education

Six frames from threshold concepts:

- ◎ Authority is constructed and contextual
- ◎ Information Creation as a Process
- ◎ Information has Value
- ◎ Research as Inquiry
- ◎ Scholarship as Conversation
- ◎ Searching as Strategic Exploration





Framework for Information Literacy for Higher Education

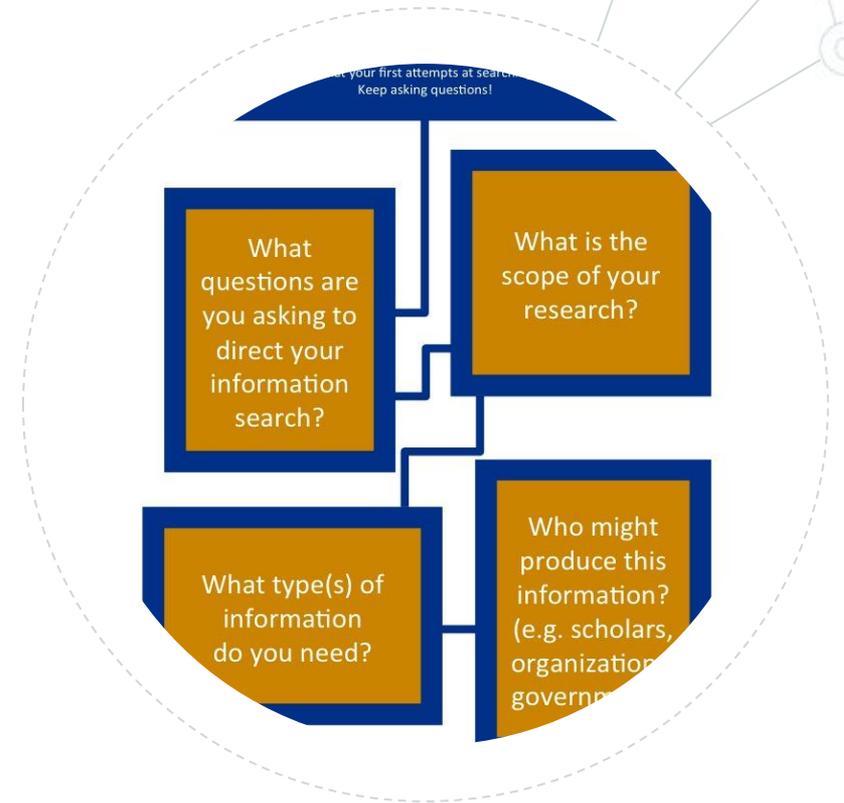
Deep dive into concepts about how information is created and can be used

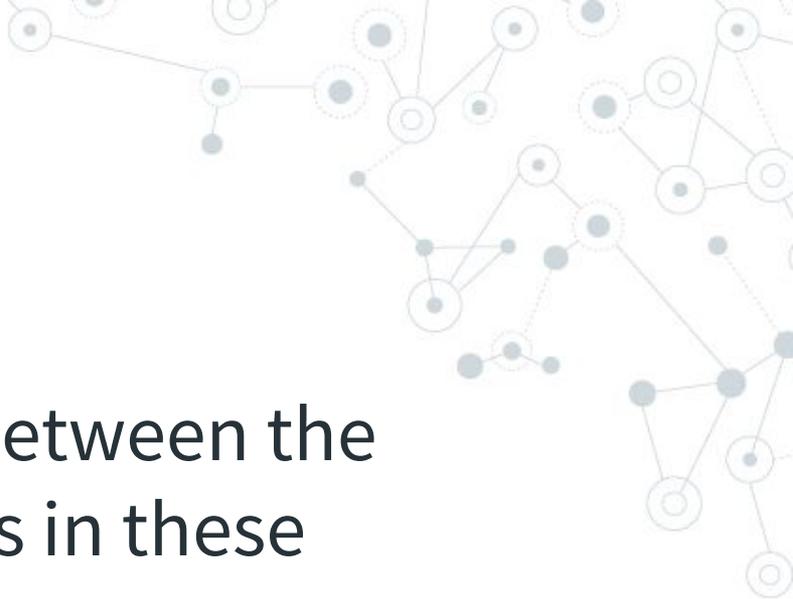
- ◎ Not prescriptive, nor complete
- ◎ Each Frame works more like lens through which to **discover** understandings
- ◎ Focus is on transferable understandings
- ◎ Complex view and “integrated abilities”



Activity: Compare I.L Standards to Frames.

Read the the handout:
*Comparison Example
of Competency View to
Frame View*





Pairs

- What differences do you see between the Standards and the Frames in these examples?
- In the Framework example (lower right-hand box) of the Knowledge Practice, and the Disposition, which words might imply metacognitive thinking? Or decision making?





Whole group debrief

Metacognitive thinking?

Decision making?

What are the fundamental shifts from the competencies to the frames?

How might the Reading Apprenticeship Framework help to model some of these shifts?



A decorative network diagram in the top right corner, consisting of various sized circles (nodes) connected by thin lines (edges). Some nodes are solid grey, while others are hollow with a grey outline. The connections form a complex, branching structure.

Key idea

The Framework emphasizes the process of inquiry, and asking questions throughout the process





BREAK
10 minutes

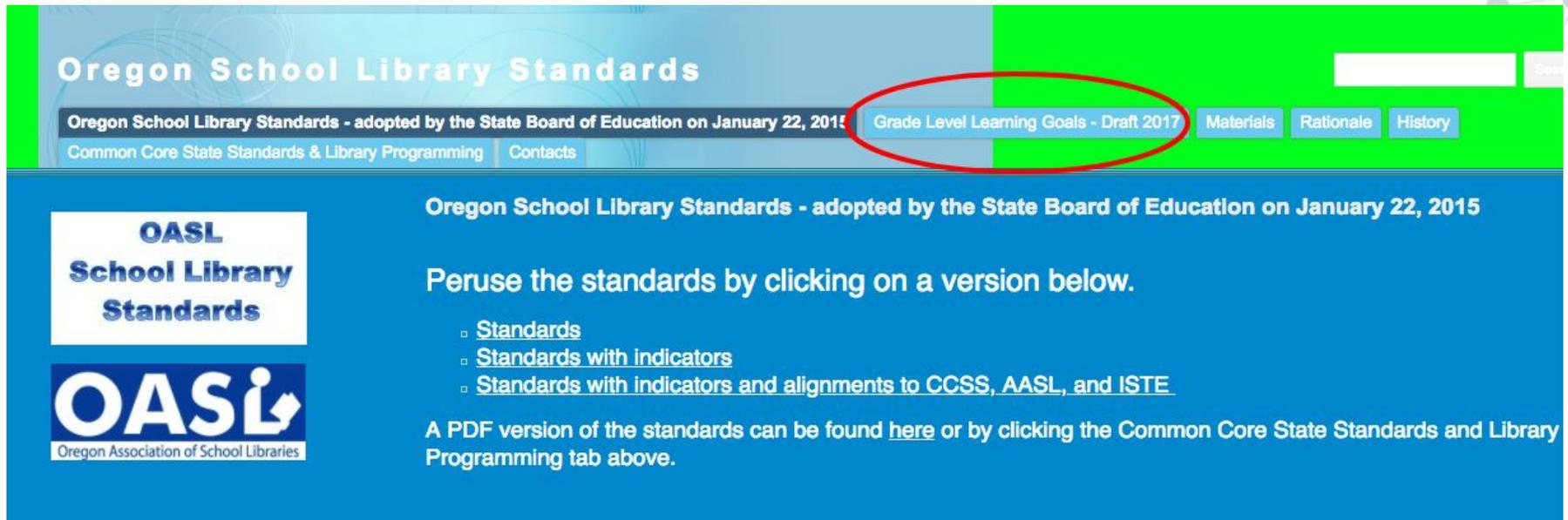


4.

Next:

Information Literacy Continuum

Oregon School Library Standards



Oregon School Library Standards

Oregon School Library Standards - adopted by the State Board of Education on January 22, 2015

Common Core State Standards & Library Programming | **Grade Level Learning Goals - Draft 2017** | Materials | Rationale | History

Contacts

OASL
School Library
Standards

OASL
Oregon Association of School Libraries

Oregon School Library Standards - adopted by the State Board of Education on January 22, 2015

Peruse the standards by clicking on a version below.

- [Standards](#)
- [Standards with indicators](#)
- [Standards with indicators and alignments to CCSS, AASL, and ISTE](#)

A PDF version of the standards can be found [here](#) or by clicking the Common Core State Standards and Library Programming tab above.



Oregon Library Standards and Learning Goals

Four Strands in the Standards:

- ◎ Information Literacy
- ◎ Reading
- ◎ Social Responsibility
- ◎ Technology Integration



Oregon Library Standards and Learning Goals

Interdisciplinary practices align across frameworks and standards:

- ◎ Find
- ◎ Evaluate
- ◎ Self-select
- ◎ Use
- ◎ Collaborate
- ◎ Share
- ◎ Be safe and ethical
- ◎ Reflect
- ◎ Read and experience

A lot of Learning Goals

- ◎ Each Strand has three Standards
- ◎ Each Standard has three sets of multiple *Indicators* (90 Indicators, total)
 - Information Literacy. 38 Indicators
 - Reading. 24 Indicators
 - Social Responsibility. 9 Indicators
 - Technology Integration. . . . 19 Indicators
- ◎ Each indicator now has one or more *Learning Goals* (across 14 grades equals ~**1260** Learning Goals)
- ◎ *180 Learning Goals for Community College*

Activity: Read Learning Goal sequence

Read the handout: 4th-14th Learning Goals



INFORMATION LITERACY: GRADES 4, 8, 13, 14					
STRAND: INFORMATION LITERACY – Standard 1: Use skills, resources, and tools to inquire, think critically and gain knowledge					
INDICATOR:	Grade 4	Grade 8	Grade 12	Grade 13	Grade 14
LIB 1.1.8 – Apply prior knowledge to new learning	Use prior learning to make connections to a new problem, question, or topic	With support, use prior learning to make accurate and appropriate connections to a new problem, question, or topic	Brainstorm prior knowledge (using a semantic web, word cloud, list, concept map, etc.) related to a new problem, question or topic, and evaluate own experiences for applicability	Use divergent thinking (brainstorming, lateral thinking) and metacognitive reflection to surface prior or associated knowledge related to a new problem, question, or topic, and identify and select relevant prior experiences to apply to new knowledge	Use divergent thinking (brainstorming, lateral thinking) and metacognitive reflection to surface prior or associated knowledge related to a new rhetorical or discipline specific problem, question, or topic, and identify and select relevant prior experiences to apply to new knowledge



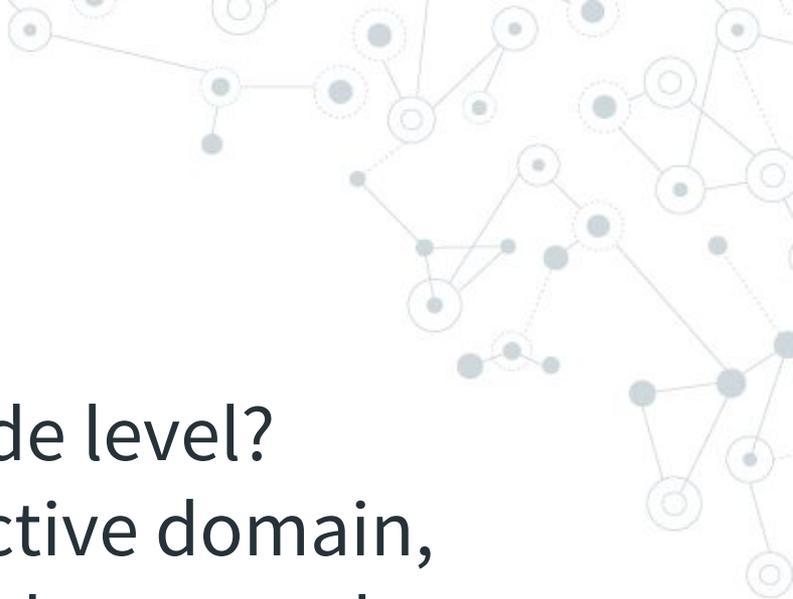
Pairs

Discuss together

- ◎ What moves, or jumps, are made between each level?
- ◎ What scaffolds would be necessary to make the move?
- ◎ Where do you see reading playing a role?

.





Whole group debrief

- ◎ Observed about each grade level?
- ◎ What “dispositions” (affective domain, habits of mind) would students need to value new understandings?



THE READING APPRENTICESHIP® FRAMEWORK

SOCIAL DIMENSION

- » Creating safety
- » Investigating the relationship between literacy and power
- » Sharing text talk
- » Sharing reading processes, problems, and solutions
- » Noticing and appropriating others' ways of reading

COGNITIVE DIMENSION

- » Getting the big picture
- » Breaking it down
- » Monitoring comprehension
- » Using problem-solving strategies to assist and restore comprehension
- » Setting reading purposes and adjusting reading processes

PERSONAL DIMENSION

- » Developing reader identity
- » Developing metacognition
 - » Developing reader fluency and stamina
 - » Developing reader confidence and range

KNOWLEDGE-BUILDING DIMENSION

- » Surfacing, building, and refining schema
- » Building knowledge of content and the world
- » Building knowledge of texts
- » Building knowledge of language
- » Building knowledge of disciplinary discourse and practices

METACOGNITIVE
CONVERSATION

THE READING APPRENTICESHIP® FRAMEWORK

SOCIAL DIMENSION

Pairs share ideas from notetakers
Expect partners to assist each other;
movement in room; talking

PERSONAL DIMENSION

Brainstorm, write topics and aspects of them that resonate.
Voice when stuck or when something doesn't work

COGNITIVE DIMENSION

Think-Aloud modeling of search results decisions

METACOGNITIVE CONVERSATION

KNOWLEDGE-BUILDING DIMENSION

Before searching: brainstorm concepts, ideas, words. Partners add ideas or words, especially for different perspectives.
Concept map during Ref interview

Partners add to each other's background knowledge, or concepts lists. Note 'new' facts from encyclopedic source. Note specialist terms from scholar.google.com

Please fill out the evaluation form

<http://bit.ly/acrl-or-eval>



Thanks!

Any questions?

You can find us at:

bbogart@pcc.edu

pkessing@pcc.edu

tlove@pcc.edu



Selected sources

Aspray, William., and Hayes, Barbara M. *Everyday Information : the Evolution of Information Seeking in America*. MIT Press, 2011.

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[Bucknell Univ. I.L. Frames](#) slide/poster

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