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Scalable Scaffolding for Information Literacy Instruction: A Tale of Two Frameworks Collaboratively Applied

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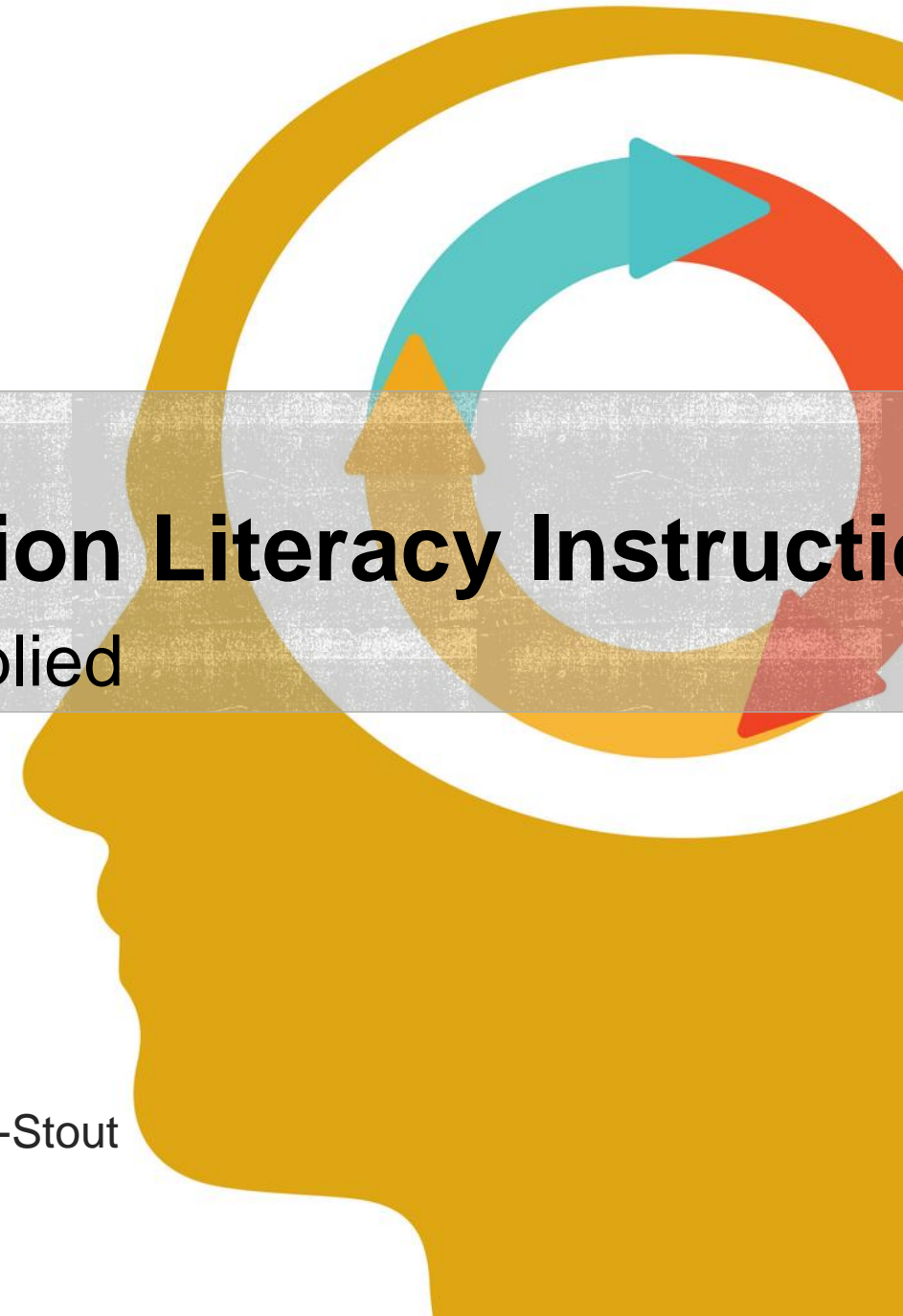
Scalable Scaffolding for Information Literacy Instruction

A Tale of Two Frameworks Collaboratively Applied

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Frameworks:

- Research Skills Development Framework**

Jon Willison & Kerry O'Regan, 2006

<https://www.adelaide.edu.au/rsd/>

- Framework for Information Literacy for Higher Education**

Association of College & Research Libraries, 2015

<http://www.ala.org/acrl/standards/ilframework>

Research Skill Development Framework
A conceptual framework for the explicit, coherent, incremental and spiralling development of students' research skills

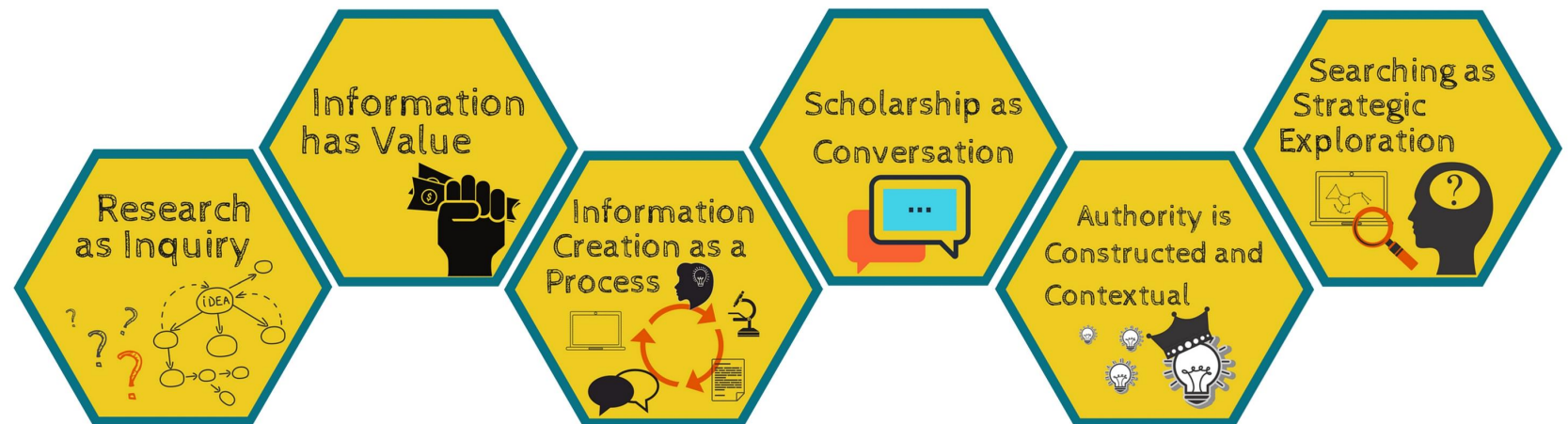
www.rsd.edu.au

Extent of Students' Autonomy

	Level 1 (Prescribed Research)	Level 2 (Bounded Research)	Level 3 (Scaffolded Research)	Level 4 (Student-initiated Research)	Level 5 (Open Research)
What characterises the difference between 'research' and 'research'? More searching and more data generation is just a 'big search'. Research is when students...	Highly structured directions and modeling from educator prompt student research	Boundaries set by and limited directions from educator channel student research	Scaffolds placed by educator shape student independent research	Students initiate the research and this is guided by the educator	Students research within self-determined guidelines that are in accord with discipline or context
a. Embark & Clarify Respond to or initiate research and clarify or determine what knowledge is required, heeding ethical/cultural and social/team considerations.	Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided structured approach to clarify questions, terms, requirements and expectations.	Respond to questions/tasks generated by and implicit in a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, terms, requirements and expectations.	Respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, terms, requirements and expectations.	"Generate questions/aims/hypotheses framed within structured guidelines".	"Generate questions/aims/hypotheses based on experience, expertise and literature".
b. Find & Generate Find and generate needed information/data using appropriate methodology.	Collect and record required information/data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.	Collect and record required information/data using a prescribed methodology from prescribed sources in which the information/data is not clearly evident.	Collect and record required information/data from self-selected sources using one of several prescribed methodologies.	Collect and record self-determined information/data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.
c. Evaluate & Reflect Determine and critique the degree of credibility of selected sources and of data generated, and reflect on the research processes used.	Evaluate information/data and reflect on the inquiry process using simple prescribed criteria.	Evaluate information/data and reflect on the inquiry process using given criteria.	Evaluate information/data and the inquiry process comprehensively using self-determined criteria related to the aims of the inquiry. Reflect insightfully to improve own processes used.	Evaluate information/data and the inquiry process rigorously using self-generated criteria based on experience, expertise and the literature. Reflect insightfully to refine others' processes.	Evaluate information/data and the inquiry process rigorously using self-generated criteria based on experience, expertise and the literature. Reflect insightfully to renew others' processes.
d. Organise & Manage Organise information and data to reveal patterns and themes, and manage teams and research processes.	Organise information/data using prescribed structures. Manage process provided.	Organise information/data using a choice of given structures. Manage a process which has alternative pathways.	Organise information/data using recommended structures. Manage self-determined processes with multiple possible pathways.	Organise information/data using student-determined structures, and manage the processes, within the parameters set by the guidelines.	Organise information/data using student-determined structures and management of processes.
e. Analyse & Synthesise Analyse information/data critically and synthesise new knowledge to produce coherent individual/team understandings.	Analyse and synthesise information/data to reproduce existing knowledge in prescribed formats. "Ask emergent questions of clarification/curiosity".	Analyse and synthesise information/data to reorganise existing knowledge in standard formats. "Ask relevant, researchable questions emerging from the research".	Analyse and synthesise information/data to construct emergent knowledge. "Ask self-determined researchable questions based on new understandings".	Analyse and create information/data to fill knowledge gaps stated by others.	Analyse and create information/data to fill student-identified gaps or extend knowledge.
f. Communicate and Apply Write, present and perform the processes, understandings and applications of the research, and respond to feedback, accounting for ethical, social and cultural (ESC) issues.	Use mainly lay language and prescribed genre to demonstrate understanding for lecturer/teacher as audience. Apply to a similar context the knowledge developed. Follow prompts on ESC issues.	Use some discipline-specific language and prescribed genre to demonstrate understanding from a stated perspective and for a specified audience. Apply to different contexts the knowledge developed. Specify ESC issues in initiating, conducting and communicating.	Use discipline-specific language and genres to demonstrate scholarly understanding for a specified audience. Apply the knowledge developed to diverse contexts. Specify ESC issues in initiating, conducting and communicating.	Use discipline-specific language and genres to address gaps of a self-selected audience. Apply innovatively the knowledge developed to a different context. Probe and specify ESC issues in each relevant context.	Use appropriate language and genres to extend the knowledge of a range of audiences. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ESC issues that emerge broadly.

... spiral through the facets, adding degrees of rigour and discernment as they dig and delve.

Research Skill Development (RSD), a conceptual framework for Primary school to PhD, developed by John Willison and Kerry O'Regan @ October, 2006/November, 2012. Facets based on ANZIL (2004) Standards & Bloom's et al (1956) Taxonomy. * Framing researchable questions often requires a high degree of guidance and modeling for students and initially may need to be scaffolded as an outcome of the researching process (Facet E, Levels 1-3). After development, more students are able to initiate research (Facet A, Levels 4 & 5). The perpendicular line reflects the drivers and enablers of research. Framework, resources, learning modules and references available at <http://www.rsd.edu.au>. For info: john.willison@adelaide.edu.au



What do your students struggle with when doing research assignments?





Research Skill Development Framework

www.rsd.edu.au

A conceptual framework for the explicit, coherent, incremental and spiralling development of students' research skills

Extent of Students' Autonomy

What characterises the difference between 'search' and 'research'? More searching and more data generation is just a 'big search'. Research is when students...

		Level 1 (Prescribed Research)	Level 2 (Bounded Research)	Level 3 (Scaffolded Research)	Level 4 (Student-initiated Research)	Level 5 (Open Research)
Facets of Research	a. Embark & Clarify Respond to or initiate research and clarify or determine what knowledge is required, heeding ethical/cultural and social/team considerations.	Curious Respond to questions/tasks arising explicitly from a closed inquiry. Use a provided structured approach to clarify questions, terms, requirements and expectations.	Respond to questions/tasks required by and implicit in a closed inquiry. Choose from several provided structures to clarify questions, terms, requirements and expectations.	Respond to questions/tasks generated from a closed inquiry. Choose from a range of provided structures or approaches to clarify questions, terms, requirements and expectations.	"Generate questions/aims/hypotheses framed within structured guidelines".	"Generate questions/aims/hypotheses based on experience, expertise and literature".
	b. Find & Generate Find and generate needed information/data using appropriate methodology.	Determined Collect and record required information or data using a prescribed methodology from a prescribed source in which the information/data is clearly evident.	Collect and record required information/data using a prescribed methodology from prescribed sources in which the information/data is not clearly evident.	Collect and record required information/data from self-selected sources using one of several prescribed methodologies.	Collect and record self-determined information/data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines.
	c. Evaluate & Reflect Determine and critique the degree of credibility of selected sources and of data generated, and reflect on the research processes used.	Discerning Evaluate information/data and reflects on inquiry process using simple prescribed criteria.	Evaluate information/data and reflect on the inquiry process using given criteria.	Evaluate information/data and inquiry process using criteria related to the aims of the inquiry. Reflect insightfully to improve own processes used.	Evaluate information/data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines. Reflect insightfully to refine others' processes.	Evaluate information/data and inquiry process rigorously using self-generated criteria based on experience, expertise and the literature. Reflect insightfully to renew others' processes.
	d. Organise & Manage Organise information and data to reveal patterns and themes, and manage teams and research processes.	Harnassing Organise information/data using prescribed structure. Manage linear process provided.	Organise information/data using a choice of given structures. Manage a process which has alternative pathways.	Organise information/data using recommended structures. Manage self-determined processes with multiple possible pathways.	Organise information/data using student-determined structures, and manage the processes, within the parameters set by the guidelines.	Organise information/data using student-determined structures and management of processes.
	e. Analyse & Synthesise Analyse information/data critically and synthesise new knowledge to produce coherent individual/team understandings.	Creative Analyse and synthesise information/data to reproduce existing knowledge in prescribed formats. "Ask emergent questions of clarification/curiosity".	Analyse and synthesise information/data to reorganize existing knowledge in standard formats. "Ask relevant, researchable questions emerging from the research".	Analyse and synthesise information/data to construct emergent knowledge. "Ask rigorous, researchable questions based on new understandings".	Analyse and create information/data to fill knowledge gaps stated by others.	Analyse and create information/data to fill student-identified gaps or extend knowledge.
	f. Communicate and Apply Write, present and perform the processes, understandings and applications of the research, and respond to feedback, accounting for ethical, social and cultural (ESC) issues.	Constructive Use mainly lay language and prescribed genre to demonstrate understanding for lecturer/ teacher as audience. Apply to a similar context the knowledge developed. Follow prompts on ESC issues.	Use some discipline-specific language and prescribed genre to demonstrate understanding from a stated perspective and for a specified audience. Apply to different contexts the knowledge developed. Specify ESC issues.	Use discipline-specific language and genres to demonstrate scholarly understanding for a specified audience. Apply the knowledge developed to diverse contexts. Specify ESC issues in initiating, conducting and communicating.	Use discipline-specific language and genres to address gaps of a self-selected audience. Apply innovatively the knowledge developed to a different context. Probe and specify ESC issues in each relevant context.	Use appropriate language and genre to extend the knowledge of a range of audiences. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ESC issues that emerge broadly.
... spiral through the facets, adding degrees of rigour and discernment as they dig and delve		Research Skill Development (RSD), a conceptual framework for Primary school to PhD, developed by John Wilson and Kerry O'Regan ©, October, 2009/November, 2012. Facets based on: ANZIL, (2004) Standards & Bloom's et al (1956) Taxonomy. * Framing researchable questions often requires a high degree of guidance and modelling for students and, initially, may need to be scaffolded as an outcome of the researching process (Facet E, Levels 1-3). After development, more students are able to initiate research (Facet A, Levels 4 & 5). The perpendicular font reflects the drivers and emotions of research. Framework, resources, learning modules and references available at http://www.rsd.edu.au . For info: john.wilson@edutrade.edu.au				



Info-Cache:

Embark | Clarify | Find | Generate

Video



Embark | Clarify | Find | Generate

Assignment Prompt: Design Report

Design a hiking backpack for a seven year-old female that addresses appropriate developmental and musculoskeletal needs and can be carried for up to four hours.

Create a design report that addresses:

- What materials could be used?
- How much weight it should hold?
- Comparison of five available designs

Provide sketches of ten design ideas. Justify your designs using credible sources and class discussion on material properties.



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Info-Cache:

Analyze | Synthesize | Communicate | Apply



Welcome to EDUC 210
Impacts of Technology on
Learning

Course Objectives

- General Education
 - Think creatively, analyze critically, and synthesize clearly
 - Develop and apply effective reading, writing, speaking, and listening skills
- Course Objective
 - Define technology and its impact on education, individuals, and society within a context of cognitive development.
 - Synthesize current research and literature involving the use of technology in learning and society

Video



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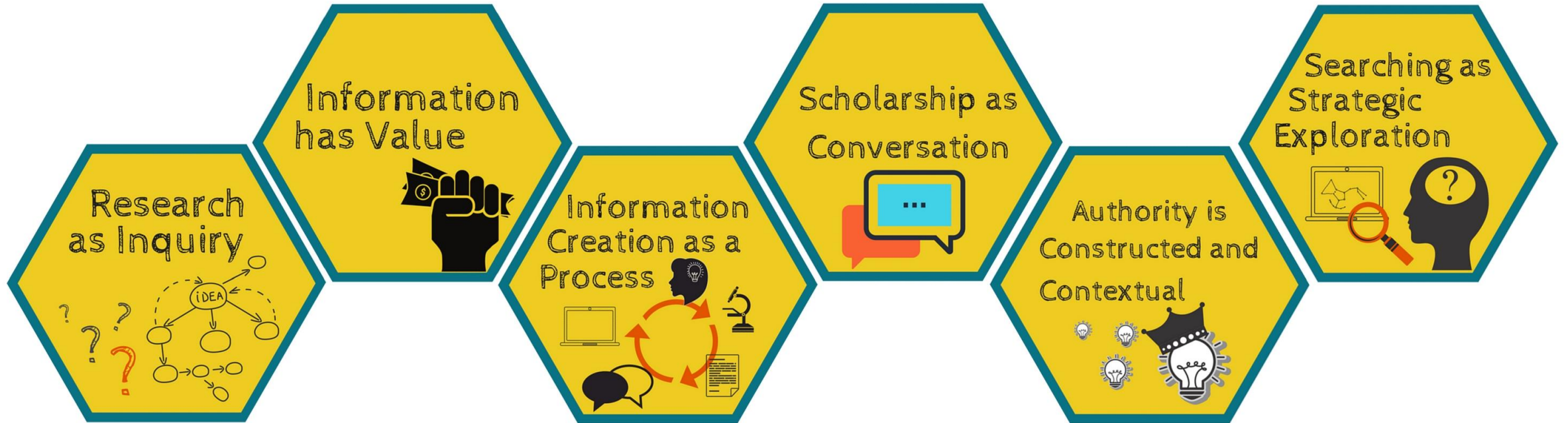
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Framework for Information Literacy for Higher Education

ACRL 2015 | <http://www.ala.org/acrl/standards/ilframework>



Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.



Threshold Concepts

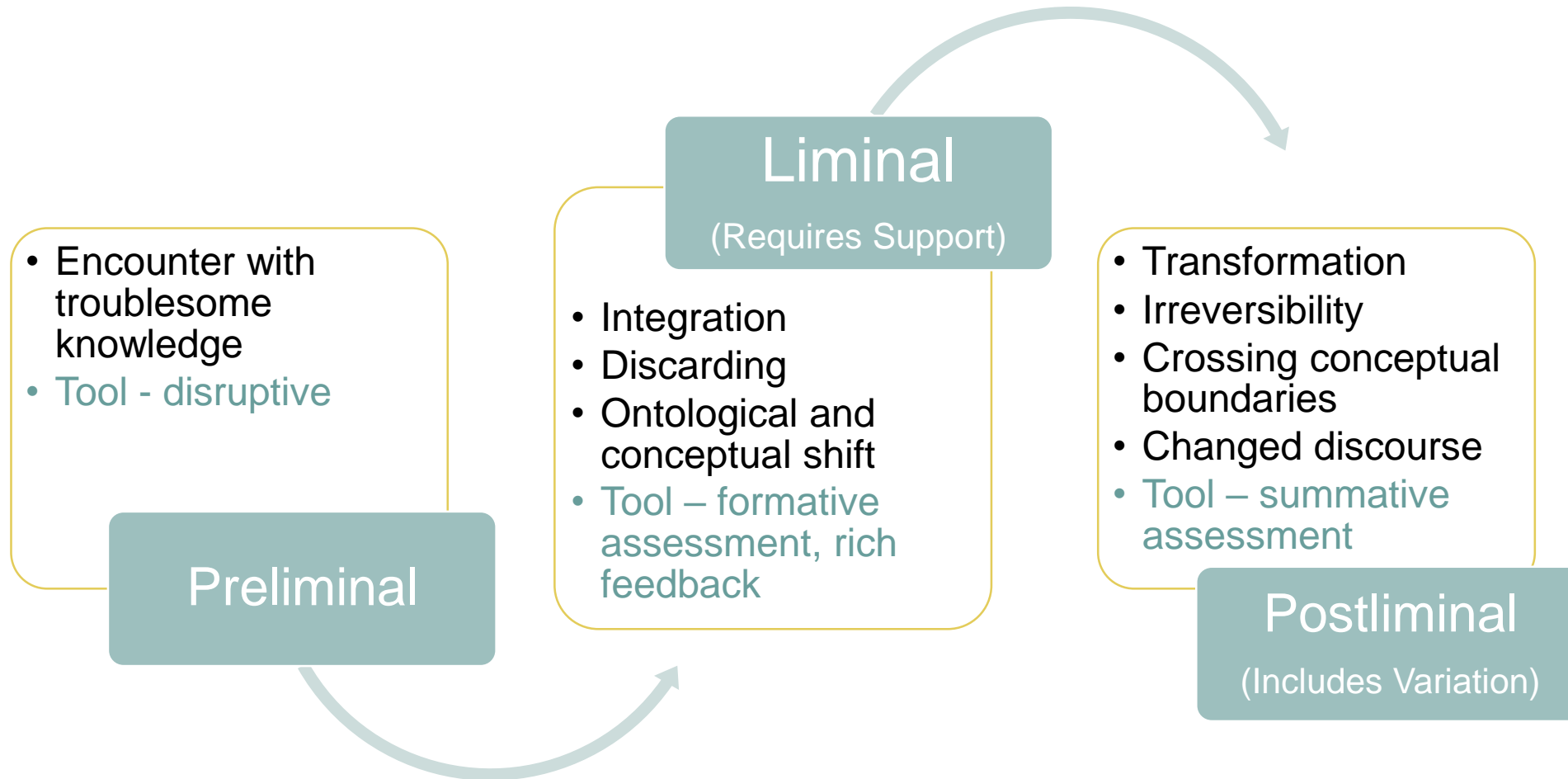
Beginning with the Middle(s) in Mind

- Transformative – linked to identity (“Think like a ____”)
- Irreversible – cannot be unlearned (Aha! moment)
- Bounded – not always transferable to other systems
- Integrative – understanding within the system (perspective-taking)
- (Often) Troublesome – difficult to grasp, not always measurable



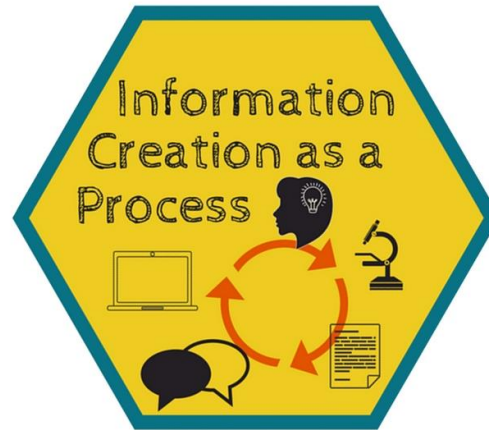
Threshold Crossing

Recursive Development



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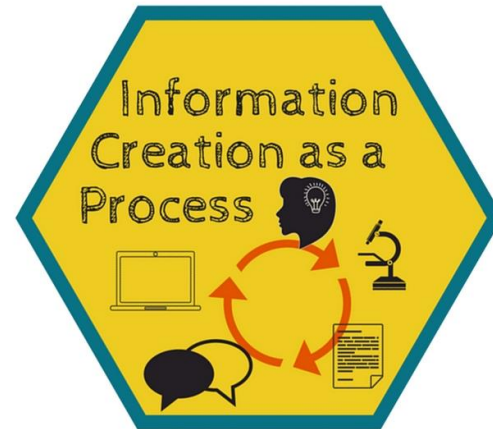


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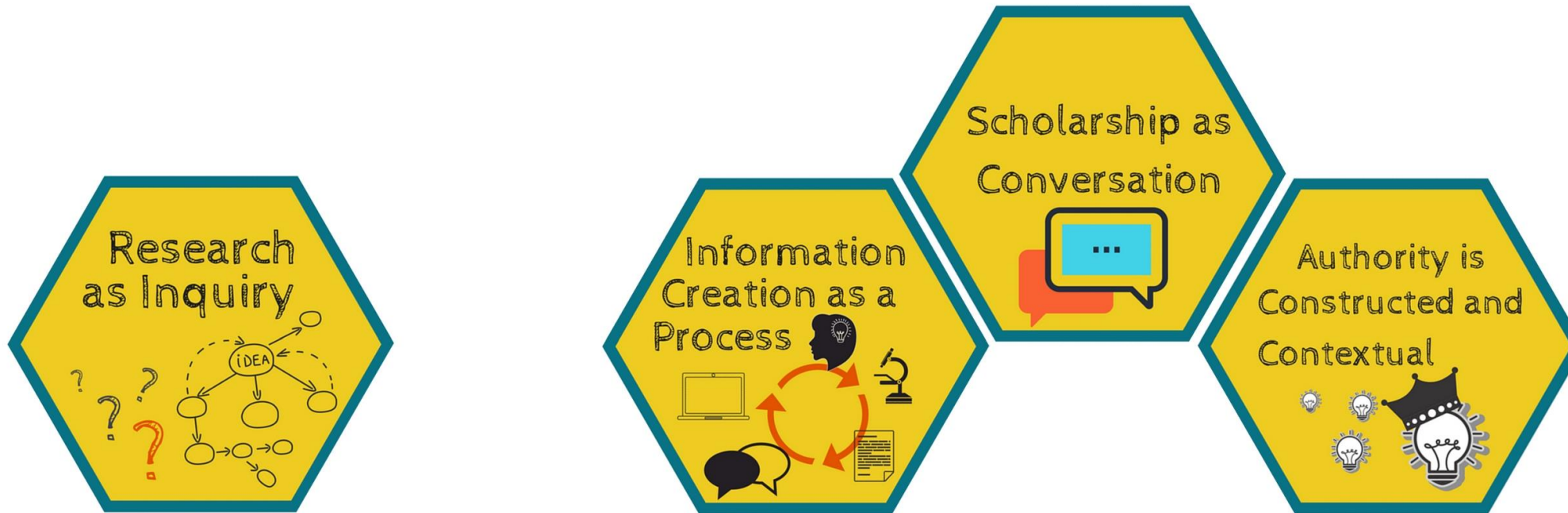


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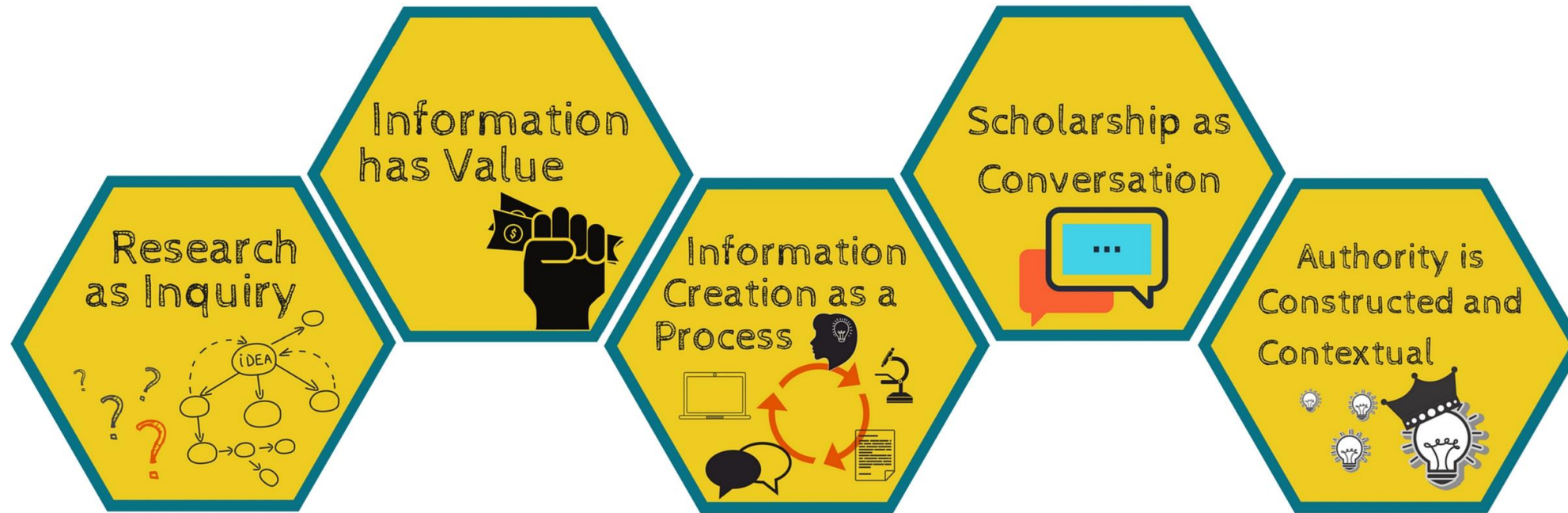


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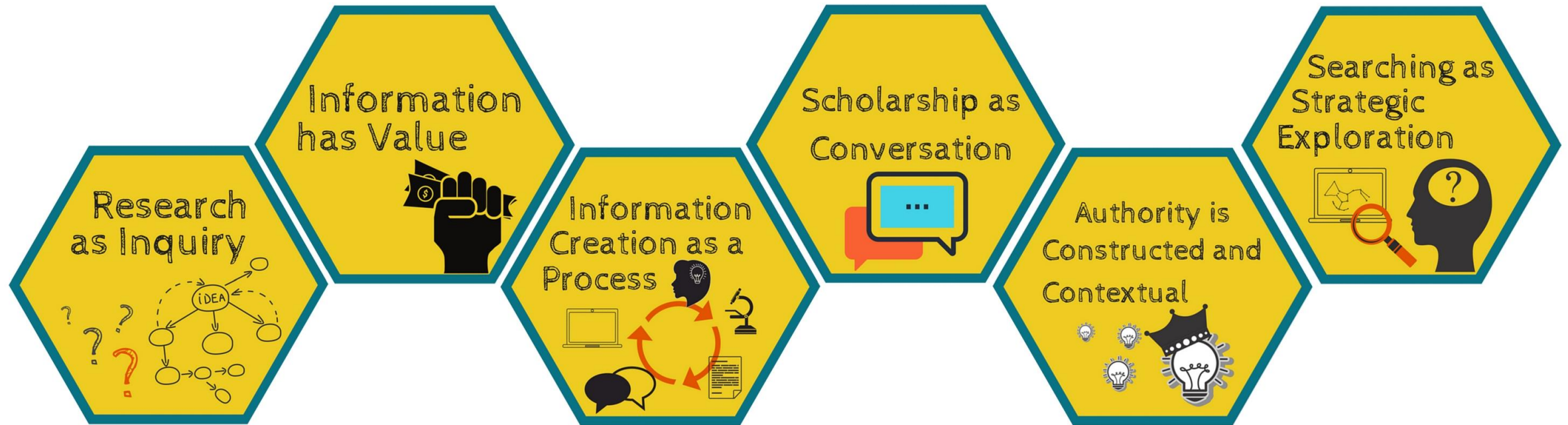


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See Through a Difference Lens:

Information Literacy Threshold Concepts

Video



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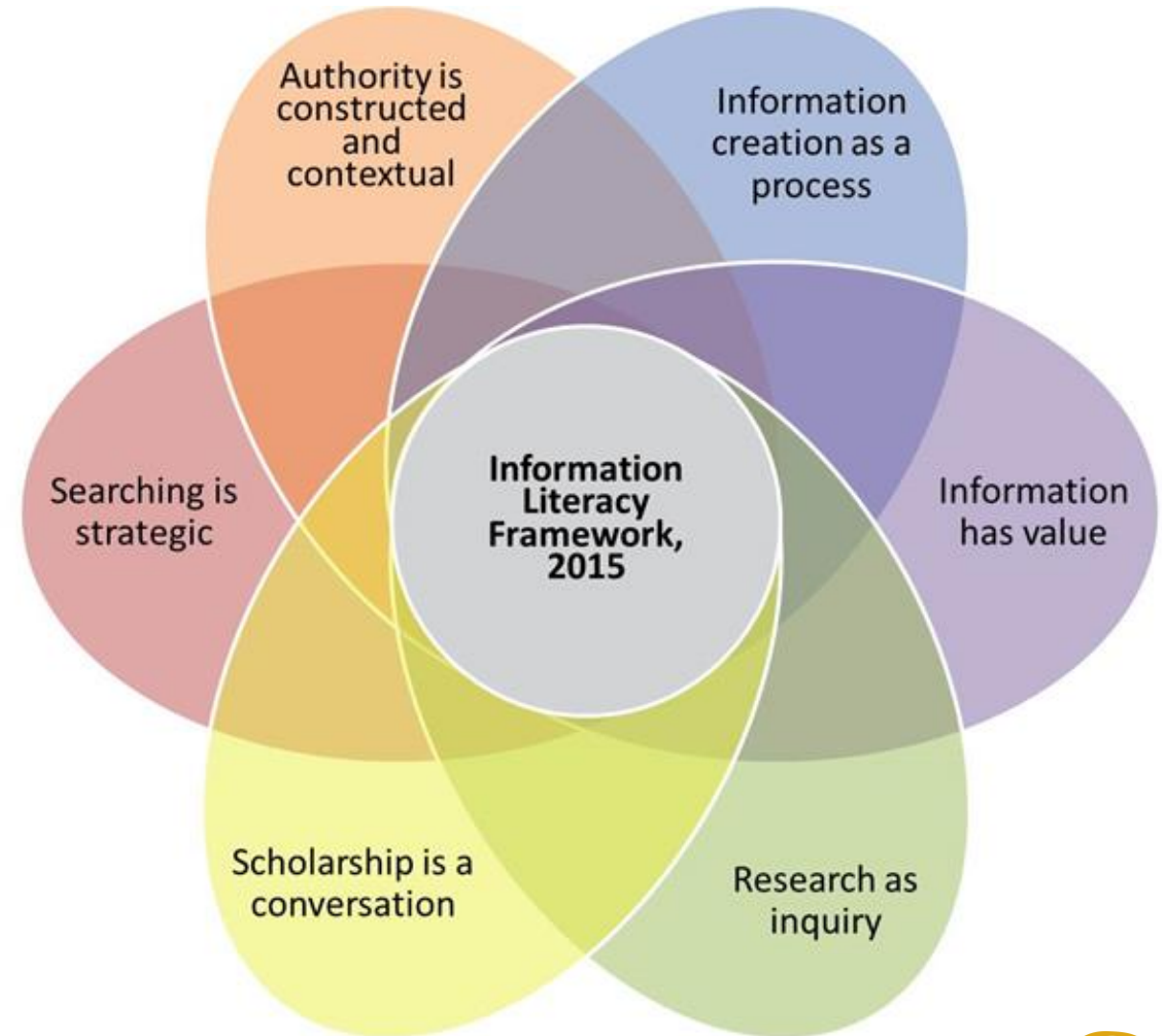
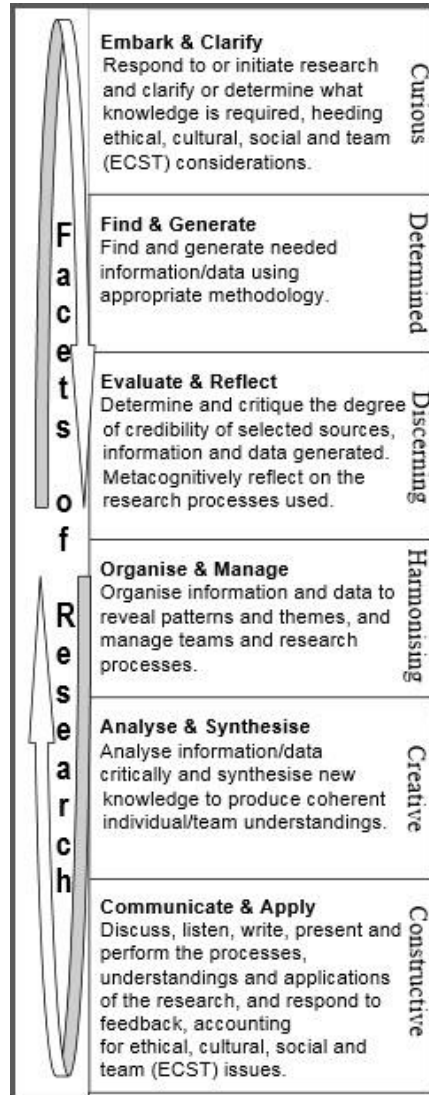
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Linear



Integrative



Learning Objective:

Find a relevant literature (peer-reviewed article)

- Construct and employ search strategies
- ~~Choose and use search tools~~
Clarify and develop a research question in relation to a problem/inquiry
- Access full-text of sources
 - Envision stakeholders/contributors related to the problem/inquiry (if possible)
- Decide when enough information is obtained
 - Anticipate where stakeholders/contributors would communicate (source types)
 - Predict language stakeholders/contributors would use (keywords)
- Choose and use search tools
- Access full-text of sources
- Decide when enough information is obtained

KNOW

- Purpose of different communication genres
- Scholarly conversations exist along spectrums of open/closed and succinct/dispersed
- Role of preliminary searching in search process

DO

Analyze relevant factors to predict where various “voices” would discuss/publish perspectives

BELIEVE

- Scholarship is a conversation
- Searching is iterative

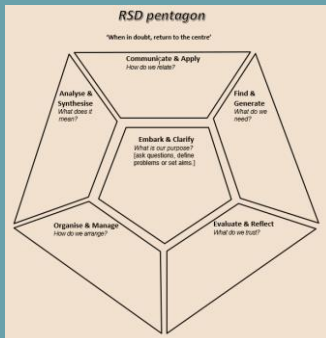
FEEL

- Comfortable with ambiguity
- Persistence



Hiking Wisconsin:

Introducing the Research Process



Implementation

Surprise! Your friends are coming for a weekend visit this coming weekend. It is up to you to plan a day of hiking adventure for you and your family. Plan a hiking activity:

- Minimum of 4 hours in length – not including travel time.
- Suitable for the physical condition of your friends
- Includes appropriate safety precautions (i.e. sunscreen)
- Includes plans for coping with weather conditions this time of year
- At least one meal must be consumed on the trail

Where Used

- Classroom – introducing participants to the research process

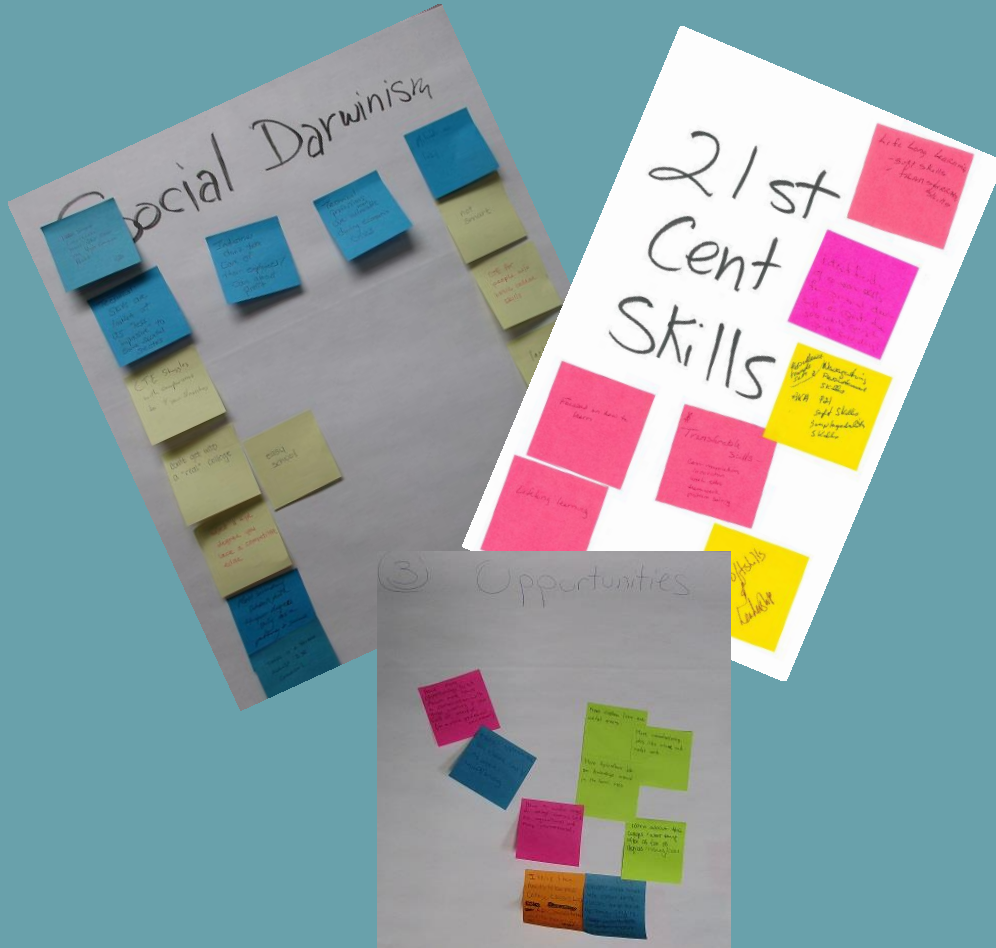
Benefits

- Research/problem solving is necessary and “every day” skill
- Makes thinking visible
- Discussion credibility of sources
- Address assumptions in research process
- Formative Assessment

Picture from: <http://www.travelwisconsin.com/things-to-do/outdoor-fun/natural-attractions-parks/trails-hiking/directory>

Sticky Notes:

Clarifying and Communicating Current Understandings



Implementation

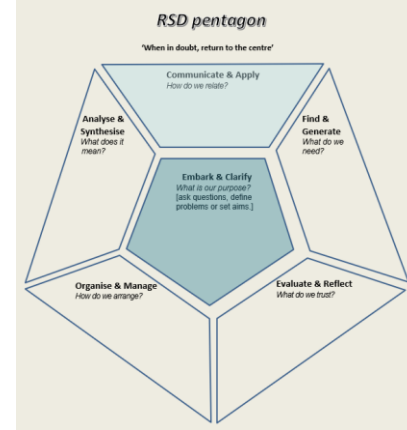
- Pose a question
- Participants respond using sticky notes – in silence
- Group like answers on larger poster paper – in silence
- Discuss in groups
- Share findings with larger groups

Where Used

- Classroom – reading review & processing
- Focus groups – community action
- Summit – present and future visioning

Benefits

- Makes thinking visible
- Discussion starter
- Everyone a voice
- Formative Assessment



Inspired by Tom Wujec: Got a wicked problem? ... @ https://www.ted.com/talks/tom_wujec_got_a_wicked_problem_first_tell_me_how_you_make_toast#t-434656

Make Toast:

Think critically about
impacts & implications



Implementation

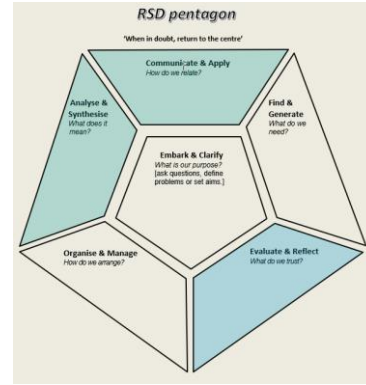
- Wicked Problem – New Media Consortium: Horizon Report
- Draw How to Make Toast = process familiarization
- Select a Wicked Problem from NMC – Horizon
- Apply “Toast Drawing” to selected issue

Where Used

- Classroom – reading review, communicating with others, discussion starter.

Benefits

- Makes thinking visible
- Discussion starter
- Formative Assessment
- Critical Thinking – future impacts



Inspired by Tom Wujec: Got a wicked problem? ... @ <https://www.drawtoast.com/>

Comments/Questions?

Resources

- Teaching Research at UW-Stout/RSD: <http://libguides.uwstout.edu/teachingresearch/rsd>
- Teaching Information Literacy: <http://libguides.uwstout.edu/teachinginfolit>
- University of Adelaide/RSD: <https://www.adelaide.edu.au/rsd/>
- RSD Applications at Monash: <https://www.monash.edu/library/skills/rsd/rsd-applications>

Contact Us!

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