Brainwork in the Research Lifecycle: Idea Development Activity with **SCAMPER**

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Problem:

Rising level of stagnation among ABD non-completing candidates.

Investigation results:

A general lack in understanding of how to develop research questions to pursue in research practice.

Assist doctoral students developing research questions to pursue in dissertation.

Theoretical Support:

- Question forming is a creative activity.
- Creative activity is conscious, skillful, and guided hard work.
- Creativity includes <u>improvisation</u> and elements of imitation which can generate appropriate novelty.

-- Keith Sawyer, The Science of Human Innovation

 Humans are wired to fit new information and challenges into existing assumptions, or schema.

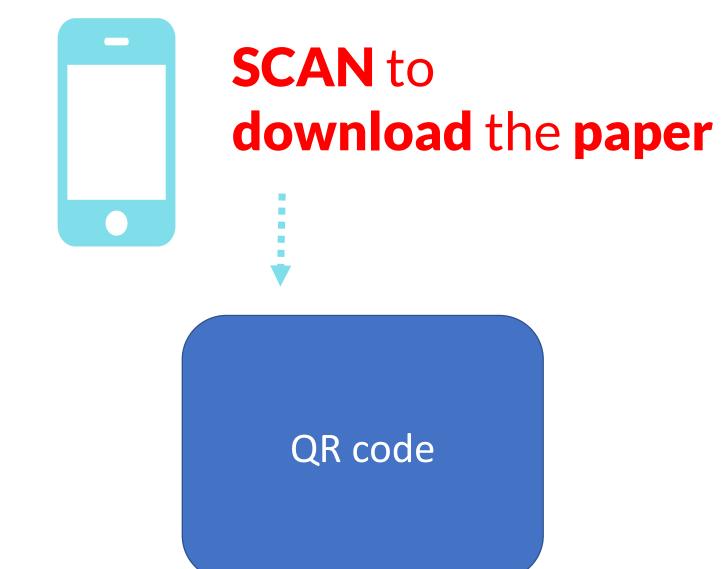
--- Rumelhart, Schemata: the Building Blocks of Cognition

Plan:

- Develop supports to provide practice in question creation.
- Implement supports in all instructional modalities.

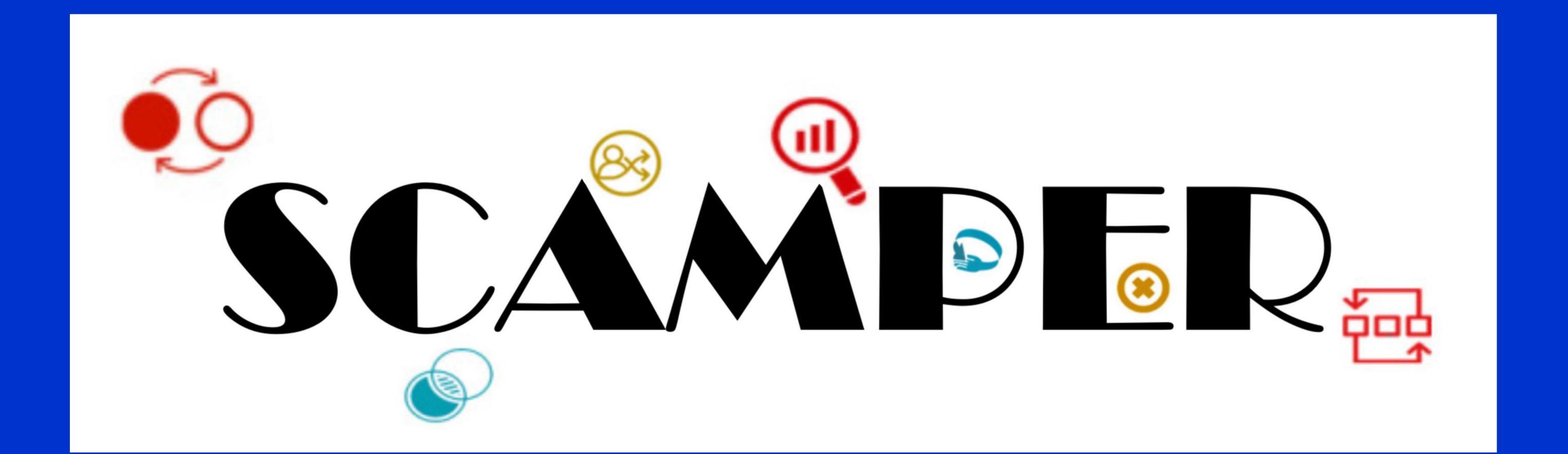
Outcomes:

- Increased time spent in database searching with increased keyword variations.
- Increased perseverance to graduation.
- Increased participation in the mentoring process.



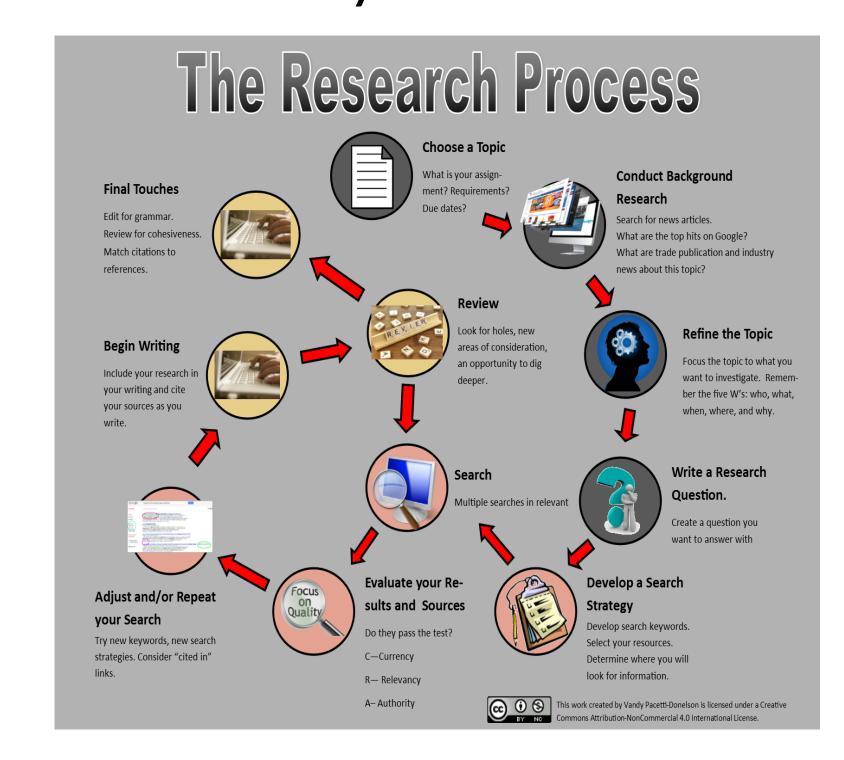


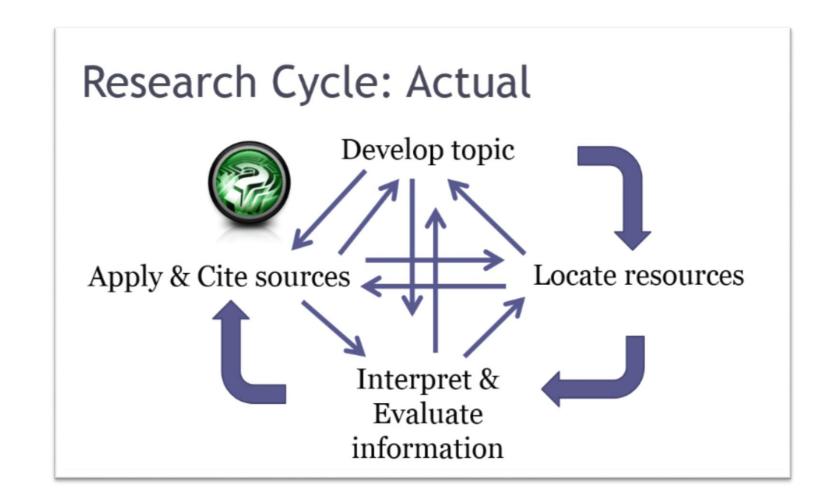
Demonstrating the brainwork (ideation) in the research lifecycle improves searching and increases retention and perseverance.



AMMO Bar

Research Cycle





https://researchguides.uic.edu/intro

SCAMPER MODEL

Bob Eberle, SCAMPER, Games for Imagination Development

TRY THIS:	ASK THESE QUESTIONS ABOUT		
	THING OR IDEA	PROCESS OR SYSTEM	SITUATION OR PERSON
SUBSTITUTE	Can I replace a part with something else? Can I exchange the material for something else? Can I try a different technique? What I take an existing idea and substitute some element of it?	Can I replace any step with another one? Can I exchange any person with someone else? Can I replace any of the resources?	Can I try a different approach to communicating? Can I replace any of the factors contributing the situation?
COMBINE	Can I merge two parts or ideas? Can I combine it with something else or another idea? Can I use more than one material or method? Can I collaborate on it or talk it out with another person?	Can I combine any two steps? Can I combine it with another process or system? Can I combine any roles associated with the process or system?	Can I try a combination of different approaches to communicating? Can I bring another person into the situation?
ALTER YOUR PERSPECTIVE	Can I look at it from another angle? Can I see it in a different context? Can I view it through the eyes of someone else? Can I change my environment?	Can I look at it from another angle? Can I view it through the eyes of someone else? Can I change my expectations?	Can I view it through another's eyes? Can I get more information to better understand the context? Can I interpret the situation in another light?
MODIFY	How can I change it? Can I make it bigger, smaller, taller, wider, faster, slower? Expand it? Can I twist it, stretch it, squash it? Can I change the material, color, or texture? Can I repeat it or make multiple copies?	How can I change it? Can I change the timeline? The resources? The people? The steps? The thinking behind it? The goals? Can I change the rules?	Can I change the terms of the conversation? Move it to a new environment? Try different language? Can I change my behavior or tone? I can try anything to change the behavior or feelings of others?
PUT TO OTHER USES	What else can I use this for? How might other people use it? Is there something out there that serves another purpose that I can adapt to serve my needs or inform my idea?	Is there any other purpose this process or system can serve? Can I adopt a process or system currently used for something else? Can I use any of the resources I have for other purposes?	Can I use this as an opportunity to address a bigger problem or underlying issue? Use it as a chance to build new relationships? Can I learn anything that I can apply to another situation?
ELIMINATE	Is there anything I can take away? Is there a way I can simplify it? Are there any materials or resources I can omit?	Can I simplify it? Can I remove any step, person, or resource? Can I get rid of it all together?	Can I get rid of any factor contributing the situation? Can I simplify the situation?
REVERSE, REARRANGE	Can I flip it around? Turn it upside down? Can I take it apart and put it back together in a different way? Can I think of it in the opposite way?	Can I reverse the steps? Can I put the steps in a different order? Can I rearrange the roles of people or the distribution of resources?	Can I reverse my approach or my reaction? Can I start over with a person or group? Can I position myself differently with respect to others?

