Starting the conversation:
A 3-part series on comprehensive searching for KS

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Objectives

01
Describe the knowledge synthesis conundrum

02
Explain our teaching philosophy and approach

03
Discuss our iterative & reflective process to content development

Knowledge Syntheses (KS)

- Systematic reviews, scoping reviews, and other kinds of "methods–driven reviews"

- Valuable

- Necessary

- >8000 published/year

- Generally poorly reported (but getting better)

A story to get us started…

SYNONYMS

SYNTHESIS TYPE

SKELETON STRATEGY

INCLUSION/EXCLUSION
(in this case, the student didn't know what would make an article relevant or irrelevant... RED FLAG... reference interview pivots and I try to empower the student to push back on supervisor)

DATABASE + INTERFACE

STRUCTURED APPROACH

REFERENCE MGMT

Handwritten notes:

physical activity

body image
body disatisfication
body dysmorphia

body schema.twjkf

OPERATIONALIZE

physical activity — body image — AND
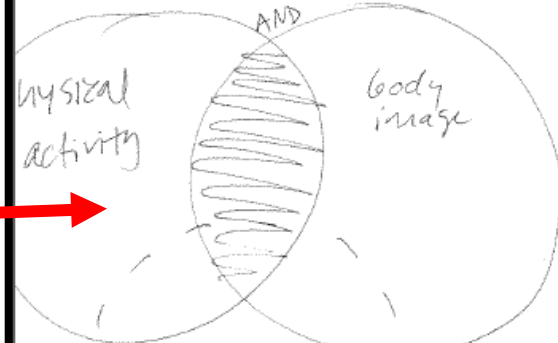
Synthesis
→ Quantitative? Meta-analysis (intervention)
→ Quantitative? Descriptive — narrative synthesis
→ Qualitative — meta-synthesis — thematic analysis

Inclusion Criteria   v   Exclusion Criteria

Database
* Medline — OVID
* CINAHL — EBSCO
* PSYCINFO — OVID
SCOPUS —
SOCIOLOGICAL ABSTRACTS — PROQUEST
Physical Education Index — PROQUEST
* SPORTDISCUS — EBSCO

physical activity — subject heading / text words
body image — subject heading / text words

* ENDNOTE (reference mgmt)

Who are the characters in our story?

Student

- Has done literature reviews before, so this seems pretty easy!

- Why not turn your thesis into a publication?!!

- BONUS: No human participants; no research ethics board application

Supervisor

- "Coupled with the growing recognition of the value of SRs, investigators may be strongly motivated to publish a large number of SRs, regardless of whether they have the necessary skills to perform them well"

Page, M. J., Shamseer, L., Altman, D. G., Tetzlaff, J., Sampson, M., Tricco, A. C., ... & Moher, D. (2016). Epidemiology and reporting characteristics of systematic reviews of biomedical research: a cross-sectional study. *PLoS medicine, 13*(5), p. 25

Librarians

Corruption of the evidence base

Contributes to larger problems of "research waste" and "reproducibility crisis"
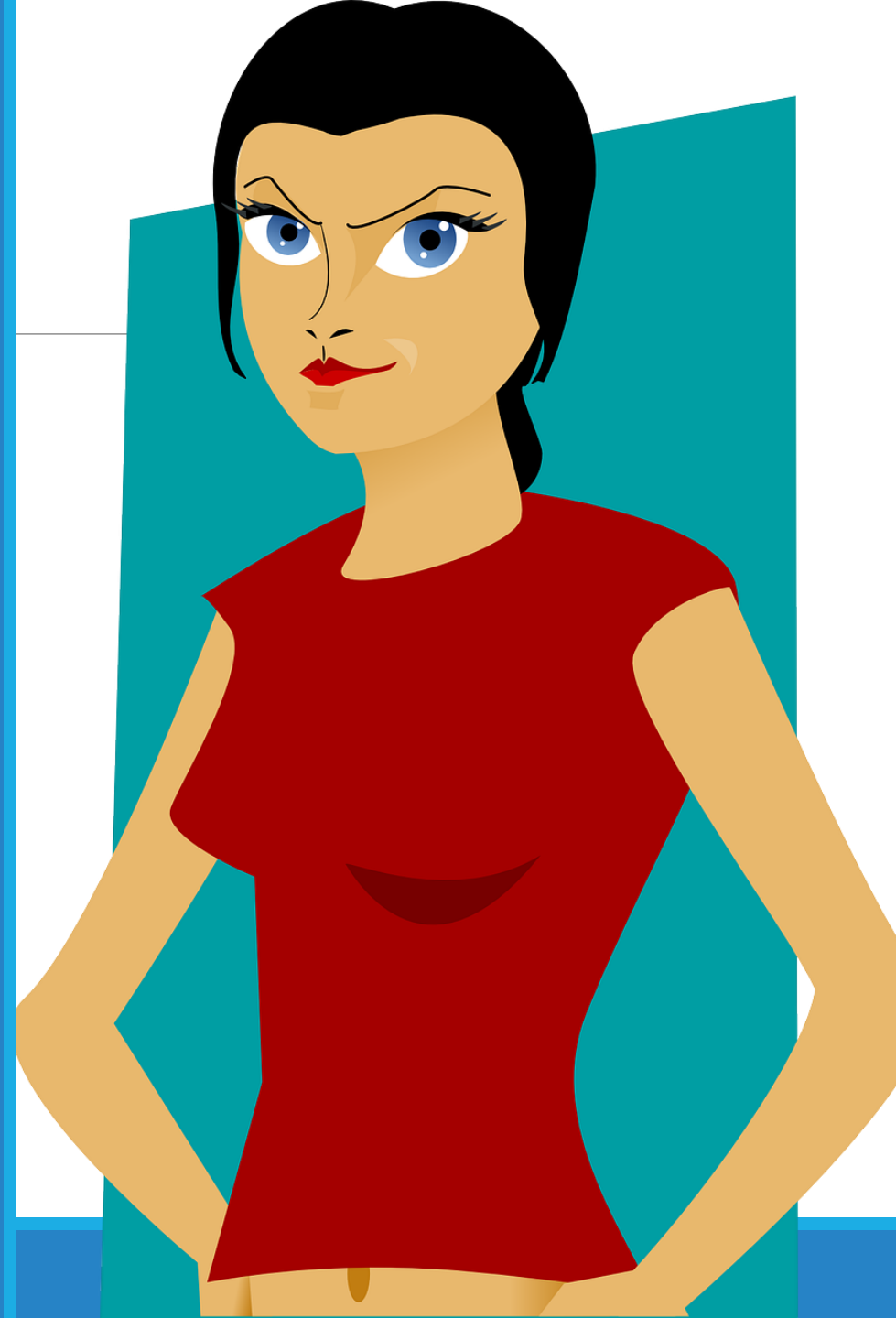
Systematic & Scoping Review Service (SSRS)

Two tier service model
- For Faculty: partner with researchers to produce search strategy and write search methods
- For Students: offer consultation & feedback

We started a conversation…

Gerstein turns attention to student needs

Reviews as comps/thesis work

Increased attention on poor quality of reviews

~600 1 hour consults/year

Lack of research support at UofT for conducting reviews

Workshop

Learning Objectives

- Turn a research question into a searchable question
- Practice using an objective, structured method for developing sensitive search strategies required for knowledge synthesis
- Identify potential sources for bias in their search and develop strategies to mitigate them
- Prepare database search strategies and compose search methods, such that they can be repeated and to ensure proper reporting

Teaching Objectives

- Practicing instruction design principles
- Incorporating active learning
- Authentic & intentional engagement
- Focus on processes, not tools
- Instructor collaboration
- Professional development opportunities for GSLAs
- Assessment & continuous improvement

HOW

Pilot Workshop Series

3 X 2 HOUR SESSIONS

2 GPS CREDITS

Pilot

Session 1: Comprehensive Searching

✓Students want to learn content
✓Opportunity to practice
X   Not enough time

Session 2: Translation & Going Grey

✓Students want to learn content
✓Opportunity to Practice
X Primary translation activity was not productive
X NOT ENOUGH TIME

Session 3: EndNote

✓Students want to learn content
X Not prepared for Advanced EndNote content
X EndNote is not a free program

Session 1 : Question Development Activity

Comprehensive Searching Workshop I- Worksheet

PREPARE SEARCH QUESTION

RESEARCH QUESTION:
Does interacting with therapy animals reduce stress and improve quality of life of older people living in nursing home facilities?

TASK 1: What are the minimum, <u>searchable</u> concepts in the question? **Maximum** 3 concepts. What would the inclusion/exclusion criteria be?
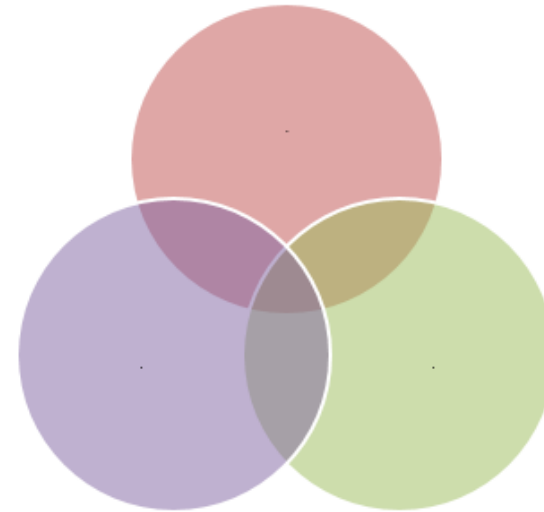
INCLUSION CRITERIA:

EXCLUSION CRITERIA:

TASK 2: Identify synonyms for the concepts identified above

Concept 1		Concept 2		Concept 3 (Optional)
OR	AND	OR	AND	OR
OR		OR		OR

lessons learned

skill vs resource instruction

iterative process of instructional design

Reflect & Debrief

Next session planning

Design activities

Assessments

After instruction debrief

Brainstorm areas of improvement
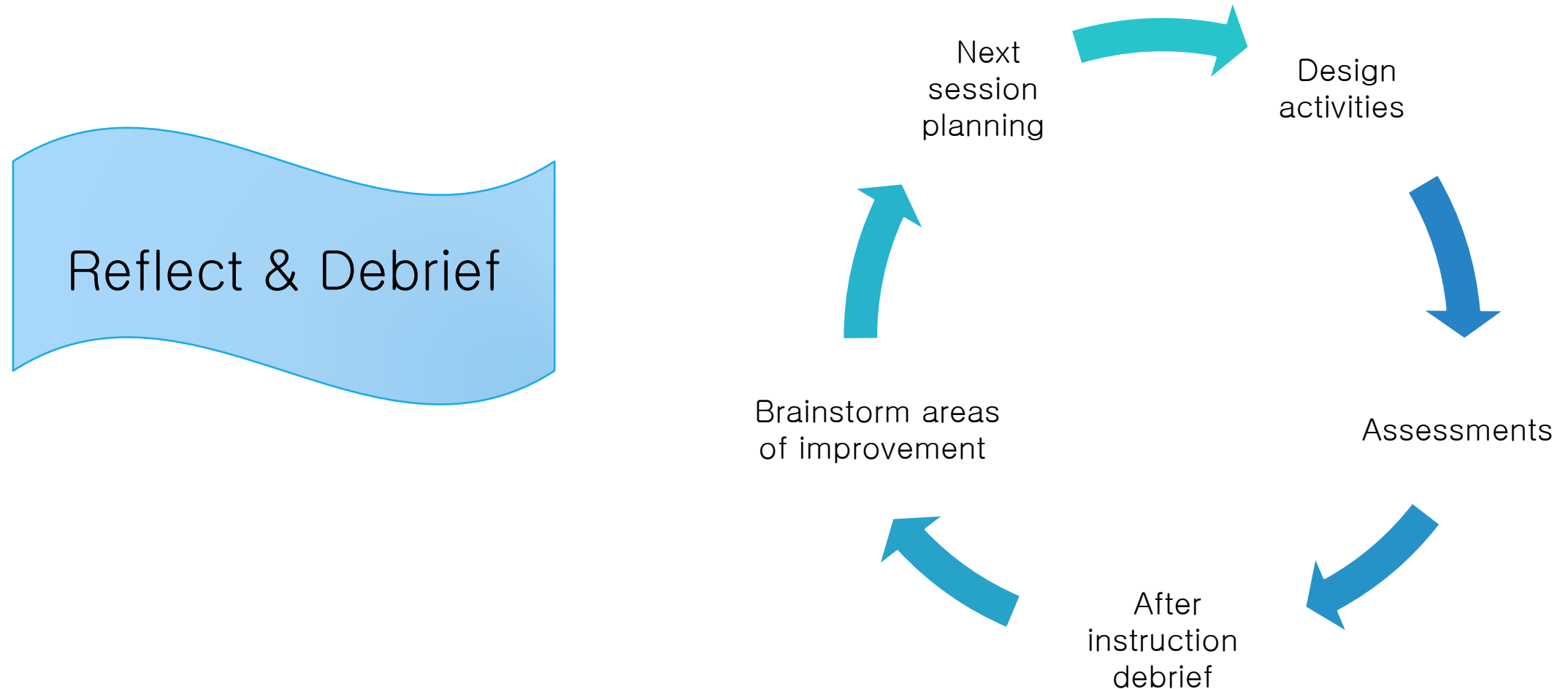
SESSION 1 COMPREHENSIVE SEARCHING

SESSION 2 ALL DATABASE TRANSLATION

SESSION 3 GOING GREY & SUPPLEMENTARY SEARCH TECHNIQUES

Workshop Series – round 2

3 X 2 HOUR SESSIONS

2 GPS CREDITS

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translation as a skill

Demo
- Instructor demos
- 3 databases (1 at a time)

Describe
- Instructor describes key differences
- Emphasis on the 'art' and process of translation

Do
- In teams, translate 2nd concept
- Copy & paste search into Google Doc
- Instructors comment on the Google Doc

Session 2: Translation Activity *Now*

GROUP 1

FINISH THIS SEARCH

MEDLINE	EMBASE
PART 1 - SUBJECT HEADINGS	**PART 1 - SUBJECT HEADINGS**
exp Nursing Homes/ OR Long-Term Care/ OR Homes for the Aged/ OR Hospices/	
PART 2- TEXTWORDS	**PART 2 - TEXTWORDS**
((home* or facilit*) adj3 (old age or aged or nursing or convalescen* or intermediate care)).tw,kf.	
((care or stay) adj2 (long term or longterm or extended)).tw,kf.	
hospic*.tw,kf.	
CHUNK 2	
((nursing home* or hospice*) adj3 (cat or cats or dog or dogs or pet or pets or animal*)).tw,kf.	
TOTAL RESULTS	

SESSION 1
COMPREHENSIVE
SEARCHING

SESSION 2 DATABASE
TRANSLATION

SESSION 3 GOING
GREY & REPORTING

EXTENDED WORKSHOP
LENGTH TO 7.5
HOURS

Workshop Series – round 3/4

3 X 2.5 HOUR SESSIONS

2 GPS CREDITS

Session 3: Critical Appraisal Activity

Activity 4:

Step 1: Read the abstract, methods and appendix

- The effect of wind turbine noise on sleep and quality of life: A systematic review and meta-analysis of observational studies
  In Environment International
  By: Igho J. Onakpoya, Jack O'Sullivan, Matthew J. Thompson, Carl J. Heneghan
  September 2015. Volume, 82. Page, p.1To-9

- 📄 Appendix 1 from The effect of wind turbine noise on sleep and quality of life: A systematic review and meta-analysis of observational studies

Activity 4

Step 2: Use the PRESS checklist to review the search from "Effectiveness of upper limb functional electrical stimulation after stroke for the improvement of activities of daily living and motor function: a systematic review and meta-analysis"

Consider:

- Would you suggest any changes?

- 📄 PRESS
  Table 9 Pg 38-40.
  Retrieved from: McGowan J, Sampson M, Salzwedel DM, Cogo E, Foerster V, Lefebvre C. PRESS Peer Review of Electronic Search Strategies: 2015 guideline statement. J Clin Epidemiol. 2016 Jul;75:40-6.
  http://www.sciencedirect.com/science/article/pii/S0895435616000585

Activity 4

Step 3

In groups consider:

- Is the search comprehensive and exhaustive?
- Is the search reproducible?
- Is the search bias?
- Do you trust the results?
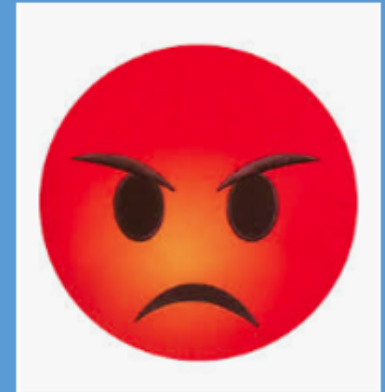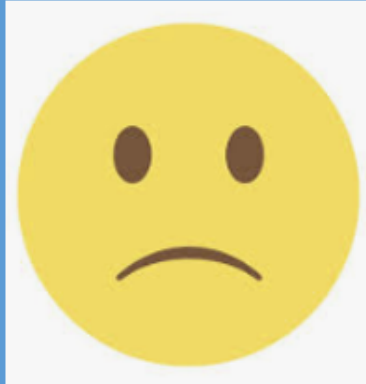
Series Now

Session 1: Comprehensive Searching

✓ Content

✓ Acknowledge confusion

✓ Opportunity to practice

✓ 3 individual activities

Session 2: Translation

✓ Content – 3 databases introduced with a focus on the process

✓ Database reporting

✓ Opportunity to practice

✓ 3 group activities & 1 individual activity

Session 3: Going Grey & Supplementary Search Techniques

✓ Grey literature search strategies

✓ Reporting

✓ Supplementary search techniques

✓ Critical appraisal activity

✓ Publication

✓ Renewing a search

✓ 2 individual activities & 2 group activities

Unique Registrants per Department/Faculty
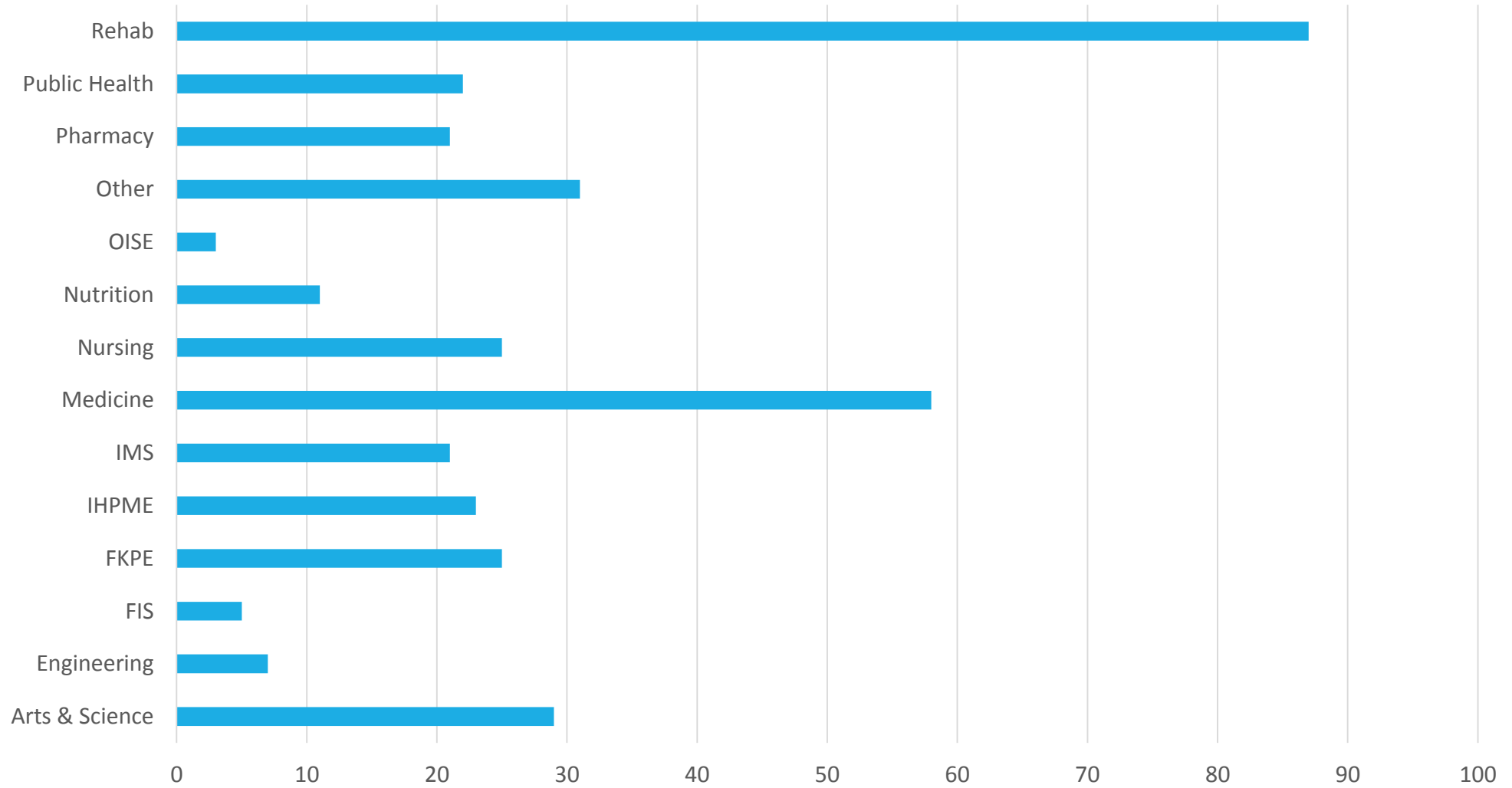
Summary: teaching approach

Active learning
- With exception of first day, we have an activity ~every 15min
- Mix of team & individual activities
- Provide enough structure for activities to be successful

Teaching processes not tools

Less is more
- Objectives have stayed the same

teaching **how**
...
in the context of **why**

1. Can better searches improve the quality of research? If yes – how? No– why?

2. How will you ensure your searches are reproducible and exhaustive?

3. What question(s) has this workshop raised for you?

"Better searches also reduce bias including publication bias, citation bias, and location bias, which help to improve the quality of research."

" …Not only is this better for the review itself, but future research based on this review will be better informed and more worthwhile."

"The workshop has actually made me question a large amount of the reviews that I've read before the workshop. …It also made me question which type of review would be best for a review I am planning to do now. I always thought systematic reviews were simply accepted as the best and ideal, but I now know that there's more to it than that."

what we're working on now

Session 3 : Grey Literature Activity

You are conducting a systematic review on the following question:
What is the effect of therapy animals on stress and the quality of life of older people living in nursing home facilities?

Animal therapy & Nursing Homes

Legend:
Part 1 - ⬡ = Identify the type of information
Part 2 - ▤ = Identify locations where this information is found

Example from Lecture Slides
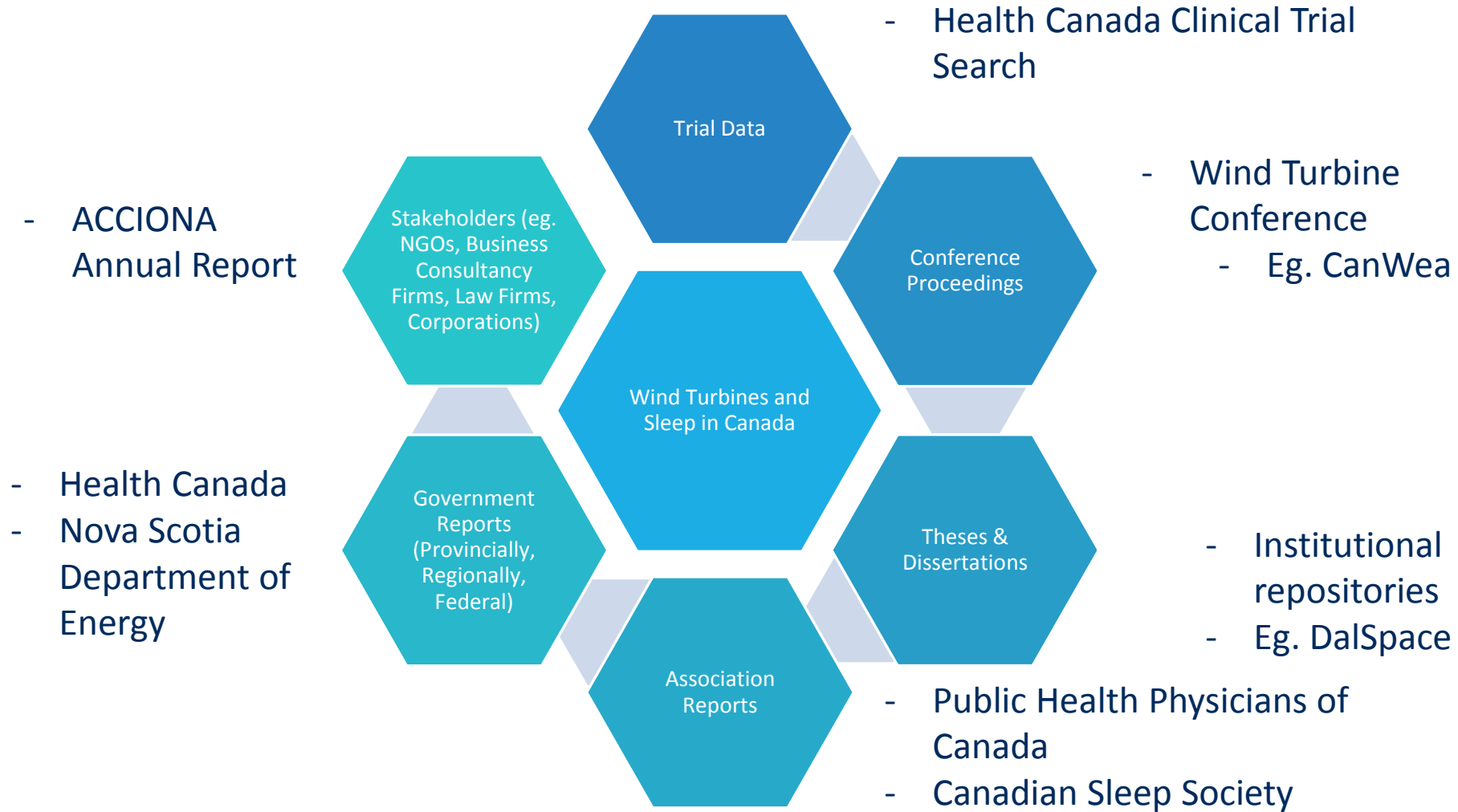
We've started the conversation... but now we need to have this conversation in a new space.

discussion

What (if any) are your challenges working with students conducting KS?

How do you teach this?

Consider:
- Consultations? Large group instruction? (integrated into classes? open workshops?)
- Examples of teaching techniques? (demo? activities? handouts? online?)
- What are your challenges?
- What successes have you had?

Questions?

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More, more, more?

Lenton, E., & Fuller, K. (2019). Explaining the method behind our madness: 3-part series on comprehensive searches for knowledge syntheses. *Journal of the Canadian Health Libraries Association / Journal De L'Association Des Bibliothèques De La Santé Du Canada*, *40*(1). https://doi.org/10.29173/jchla29391