Metrics literacy

Special session STI 2023

Stefanie Haustein, Heather Woods, Maddie Hare, Isabelle Dorsch & Carey Ming-Li Chen

Special session: Metrics literacy

Outline

- → Introduction (15 min.)
  - → Metrics literacies
  - → Design thinking
- → Hands-on breakout session (65 min.)
  Design thinking exercises in small groups using FigJam
  - → Defining the problem with “How Might We” statements
  - → Developing a user persona
  - → Creating an empathy map
  - → Creating a journey map
- → Wrapping up (10 min.)
  - → Reporting back
  - → Closing

What is metrics literacy and why do we need it?

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What are metrics literacies?

→ Definition

"Metrics literacies are an integrated set of competencies, dispositions and knowledge that empower individuals to recognize, interpret, critically assess and effectively and ethically use scholarly metrics."

Dorsch et al. (2021, p. 1465)

→ Objective

To improve the understanding and appropriate use of scholarly metrics in academia

Dorsch, I., Jeffrey, A., Ebrahimzadeh, S., Maggio, L. A., & Haustein, S. (2021). Metrics Literacies: On the State of the Art of Multimedia Scholarly Metrics Education. *Proceedings of the 18th International Conference on Scientometrics and Informetrics*, 1465–1466. https://doi.org/10.5281/ZENODO.5101306

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Why do we need metrics literacy?

Coercive Citation in Academic Publishing

Allen W. Wilhite*,†, Eric A. Fong*

+ See all authors and affiliations

Science 03 Feb 2012:

Citation analysis

The counting house

Journal citation cartels on the rise

The number of journals denied an impact factor for taking part in citation cartels has risen sharply this year, pushing up the total number of

June 21, 2013

Visualizing Citation Cartels

By PHIL DAVIS | SEP 26, 2016 | 15 COMMENTS

The Number That's Devouring Science

The impact factor, once a simple way to rank scientific journals, has become an unyielding yardstick for hiring, tenure, and grants

By RICHARD MONASTERSKY | OCTOBER 14, 20(

Brazilian citation scheme outed

Thomson Reuters suspends journals from its rankings for 'citation stacking'.

Richard Van Noorden

New record: 66 journals banned for boosting impact factor with self-citations

19 Jun 2013 | 19:32 GMT | Posted by Richard Van Noorden | Category

Another editor resigns from journal hit by citation scandal

The Emergence of a Citation Cartel

By PHIL DAVIS | APR 10, 2012 | 64 COMMENTS

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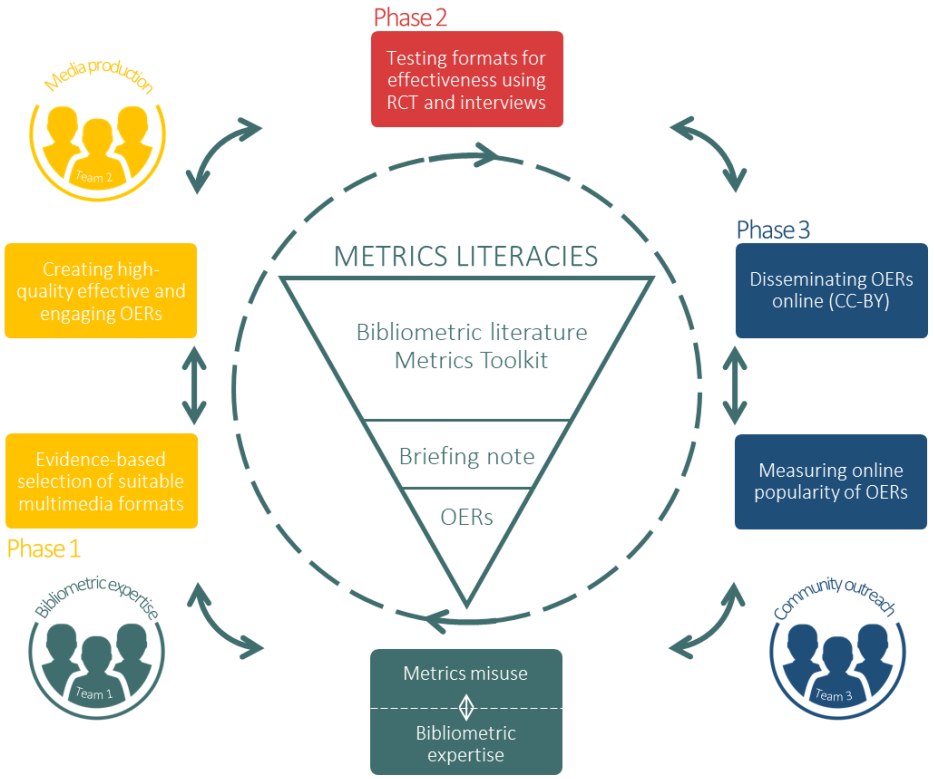
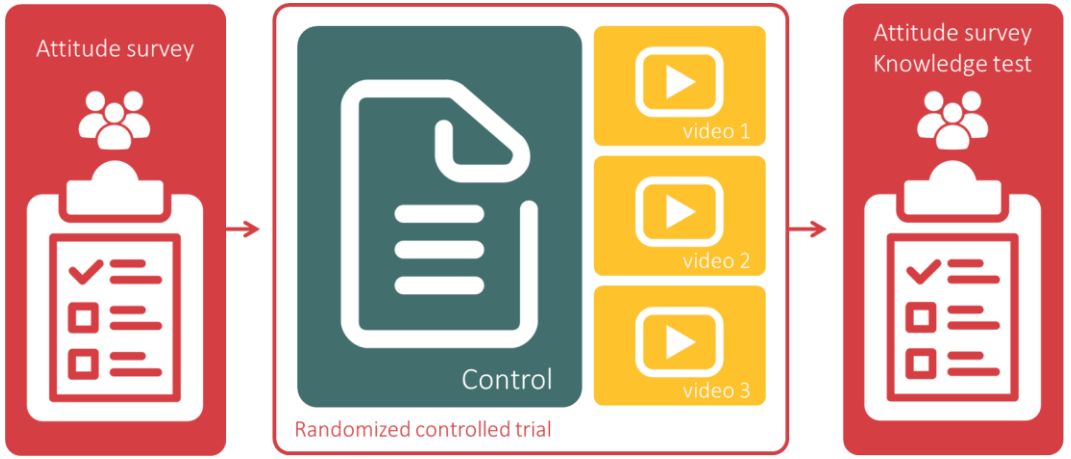
Metrics literacies research project



→ Randomized controlled trial (Phase2)



→ Personas

https://www.scholcommlab.ca/research/metrics-literacies

Design thinking

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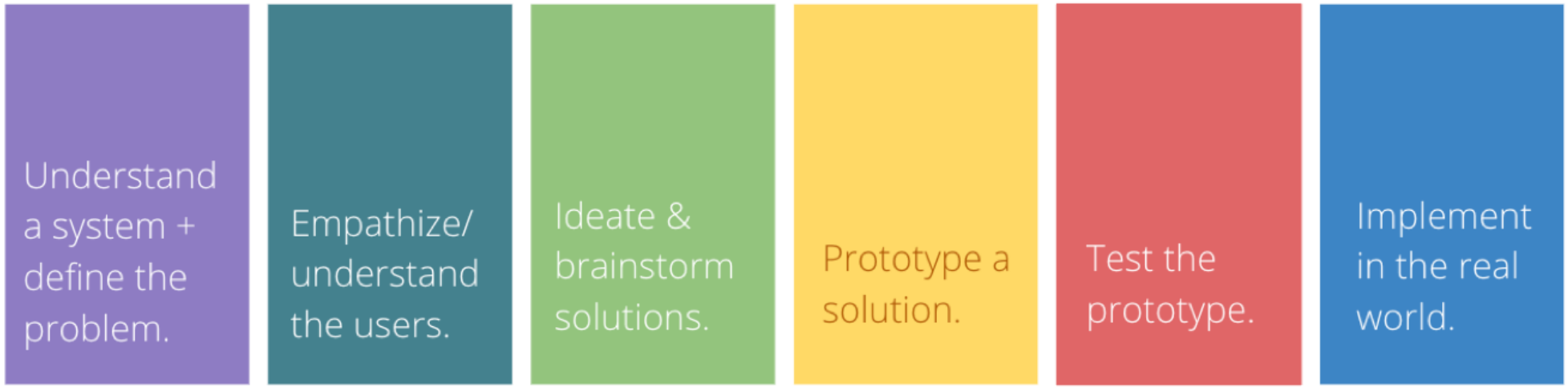
Design thinking



Chung, L. (2017). Design Thinking for Open Research & Education. https://docs.google.com/presentation/d/1qMNS2-AtnvZPldGoBRitRq-IVrHUNUp1aedys7kOz3M/edit

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Design thinking

Chung, L. (2017). Design Thinking for Open Research & Education. https://docs.google.com/presentation/d/1qMNS2-AtnvZPldGoBRitRq-IVrHUNUp1aedys7kOz3M/edit

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Design thinking exercises

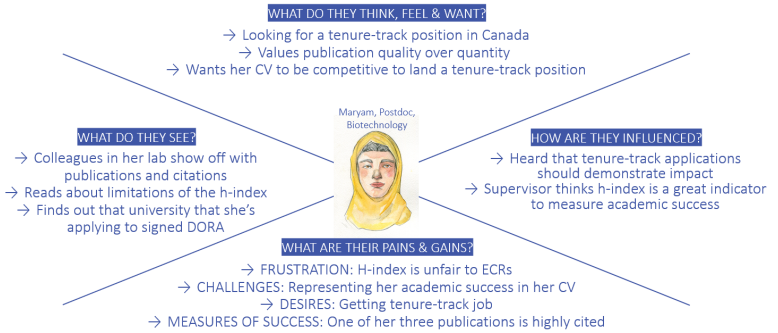
1. Defining the problem with "How Might We" statements

How might we improve the way that scholarly metrics are used in academia?

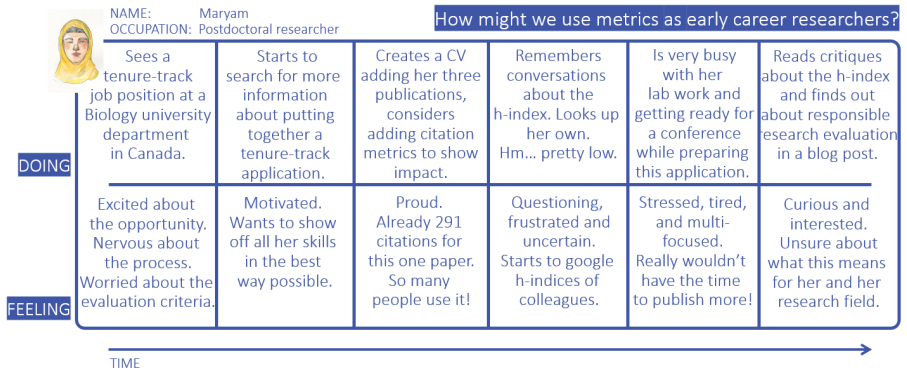
2. Developing a user persona

Name	Maryam
Age	34
Occupation	Postdoctoral researcher
Nationality	Iranian
Background	Maryam is a 34-year-old postdoctoral researcher at a university in Tehran in Iran. She has a PhD in biotechnology from the same university.
Goals & Needs	She is looking for a tenure-track position in a biology department, preferably at a Canadian University. Maryam got married last year, her husband is also an academic.

3. Creating an empathy map



4. Creating a journey map



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Defining the problem with “How Might We” statements

- → HMW statements
  - → Not too narrow to avoid restrictions
  - → Not too broad to avoid infinite number of possibilities
- → Metrics literacy related HMWs:
  - → How might we improve the way that scholarly metrics are used in academia?
  - → How might we reduce the inappropriate use of bibliometrics?
  - → How might we reduce the use of flawed indicators (e.g., h-index, IF)?
  - → How might we educate researchers about bibliometric methods and indicators?

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https://public-media.interaction-design.org/pdf/How-Might-We.pdf

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Developing a user persona

→ Profiles of different stakeholders involved
  → Considering various perspectives when designing the solution
  → Narrowing down the problem to fix

→ Talk about and reflect your own perspective, needs and challenges

→ Goal: information to feed into empathy and journey maps

Name	Maryam
Age	34
Occupation	Postdoctoral researcher
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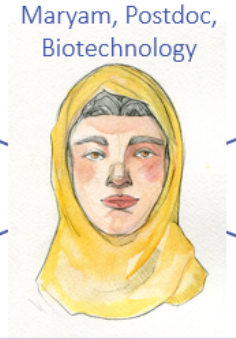
Creating an empathy map

→Describing the persona's emotions and influences

WHAT DO THEY THINK, FEEL & WANT?

→ Looking for a tenure-track position in Canada
→ Values publication quality over quantity
→ Wants her CV to be competitive to land a tenure-track position



WHAT DO THEY SEE?

→ Colleagues in her lab show off with publications and citations
→ Reads about limitations of the h-index
→ Finds out that university that she's applying to signed DORA

HOW ARE THEY INFLUENCED?

→ Heard that tenure-track applications should demonstrate impact
→ Supervisor thinks h-index is a great indicator to measure academic success

WHAT ARE THEIR PAINS & GAINS?

→ FRUSTRATION: H-index is unfair to ECRs
→ CHALLENGES: Representing her academic success in her CV
→ DESIRES: Getting tenure-track job
→ MEASURES OF SUCCESS: One of her three publications is highly cited

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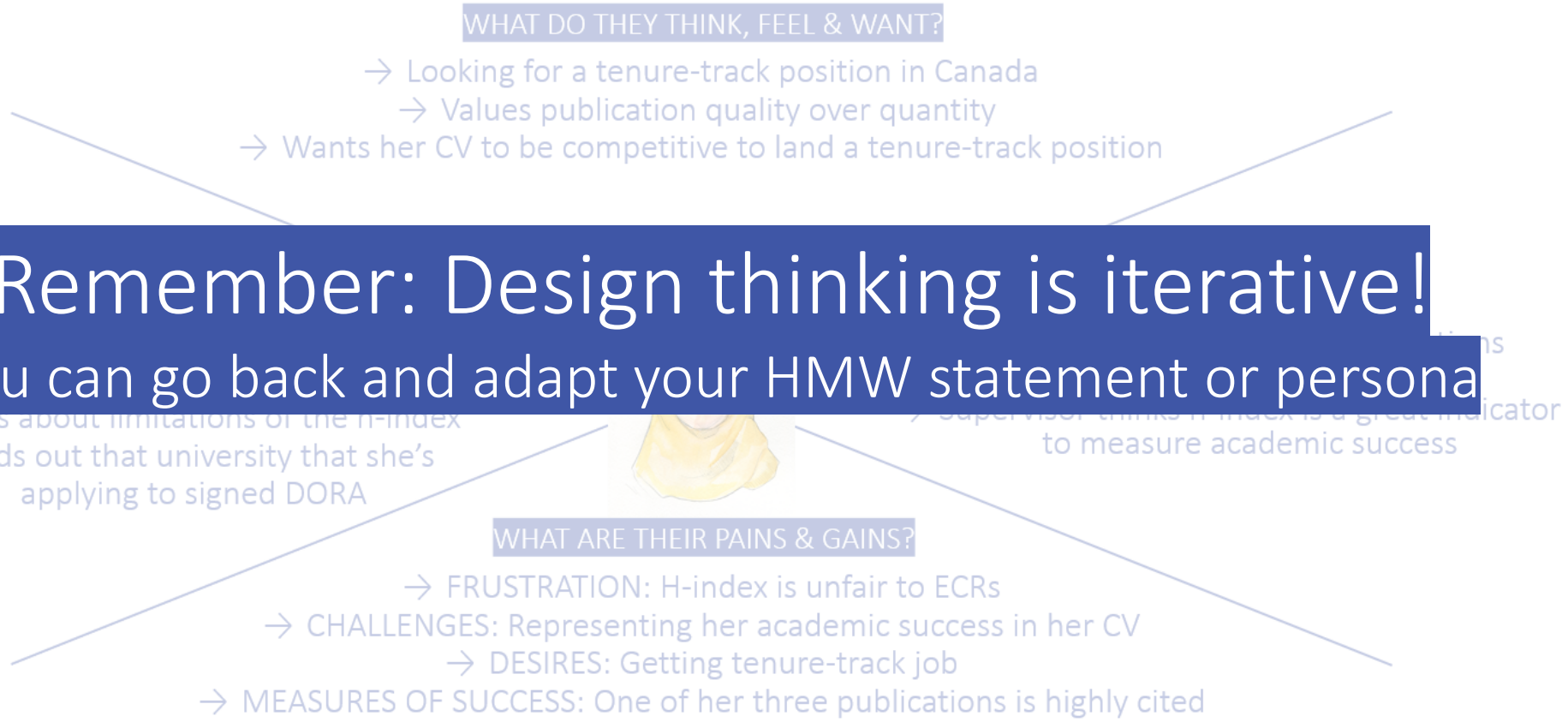
Special session: Metrics literacy

Creating an empathy map

→Describing the persona's emotions and influences



Remember: Design thinking is iterative!

You can go back and adapt your HMW statement or persona

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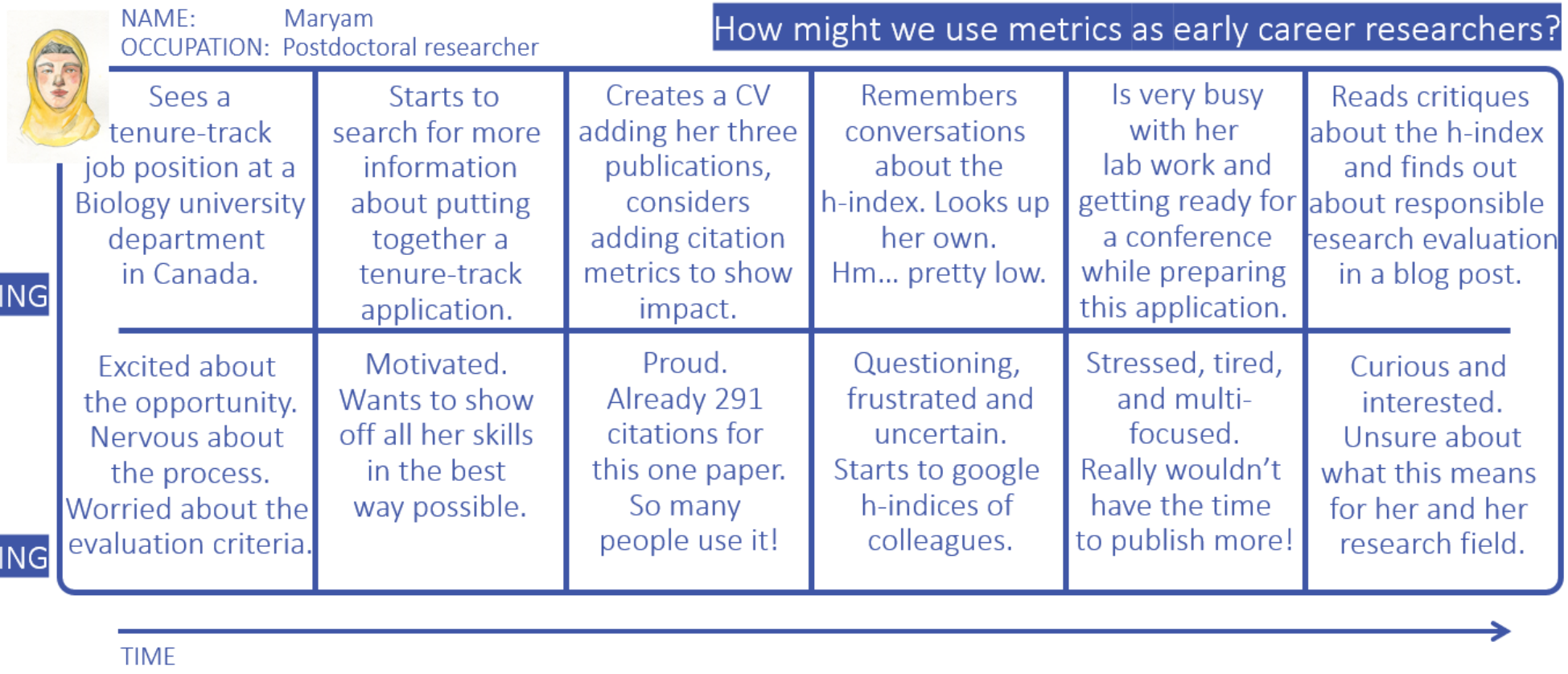
Creating a journey map

→Describing what the persona thinks and feels while on a journey towards the HMW statement



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Hands-on breakout session

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Hands-on breakout session

→ Get together in your group
  → Members should have a similar role in the context of improving the ways in which bibliometrics are used (e.g., researcher, practitioner, data provider)
  → If you need help finding a group, please raise your hand
  → We will come around and assign a number to each group (for FigJam)

→ Use the FigJam whiteboard for 4 exercises
  → Access the FigJam board via: bit.ly/STI2023MetricsLiteracy
  → FigJam board contains templates for the 4 design thinking exercises
  → Work collaboratively to fill out the template assigned to your group number

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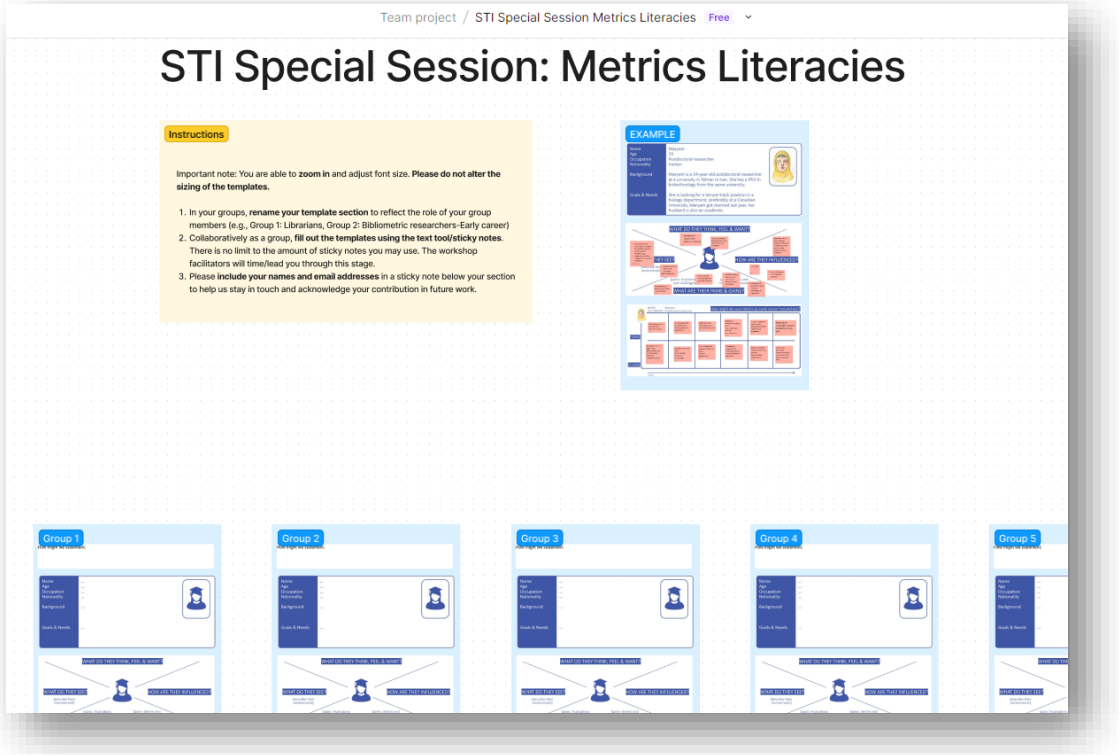
Hands-on breakout session

→Instructions

- →Zoom into your template and rename it to reflect the role of your group members
- →Collaboratively fill out the templates using as many sticky notes as you like.
- →Please add your name and email in a sticky note to help us stay in touch and acknowledge your contribution in future work

→ We will guide you through the exercises and keep track of time

FigJam: bit.ly/STI2023MetricsLiteracy



Defining the problem

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Group exercise: Defining the problem

Task: Develop a HMW statement that best represents your groups approach to improving metrics literacy

→You make pick from or modify the example statements:

- →How might we improve the way that scholarly metrics are used in academia?
- →How might we reduce the inappropriate use of bibliometrics?
- →How might we reduce the use of flawed indicators (e.g., h-index, IF)?
- →How might we educate researchers about bibliometric methods and indicators?

→Please fill out the HMW template on FigJam:
bit.ly/STI2023MetricsLiteracy

These slides are available at: bit.ly/STI2023MetricsLiteracySlides

Developing a user persona

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Group exercise: Developing a user persona

Task: Develop a user persona that best represents your group members' backgrounds, goals and needs in the context of metrics literacy

→Please fill out the persona template: bit.ly/STI2023MetricsLiteracy

Name	…
Age	…
Occupation	…
Nationality	…
Background	…
Goals & Needs	…

These slides are available at: bit.ly/STI2023MetricsLiteracySlides

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Group exercise: Developing a persona

→Persona example

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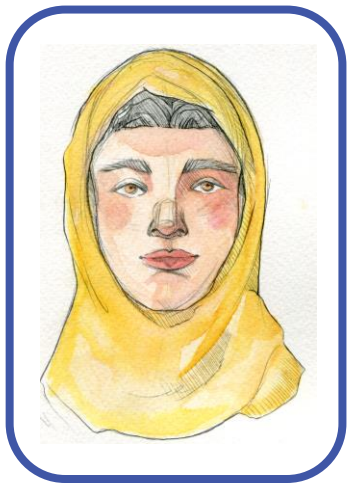

Empathy map

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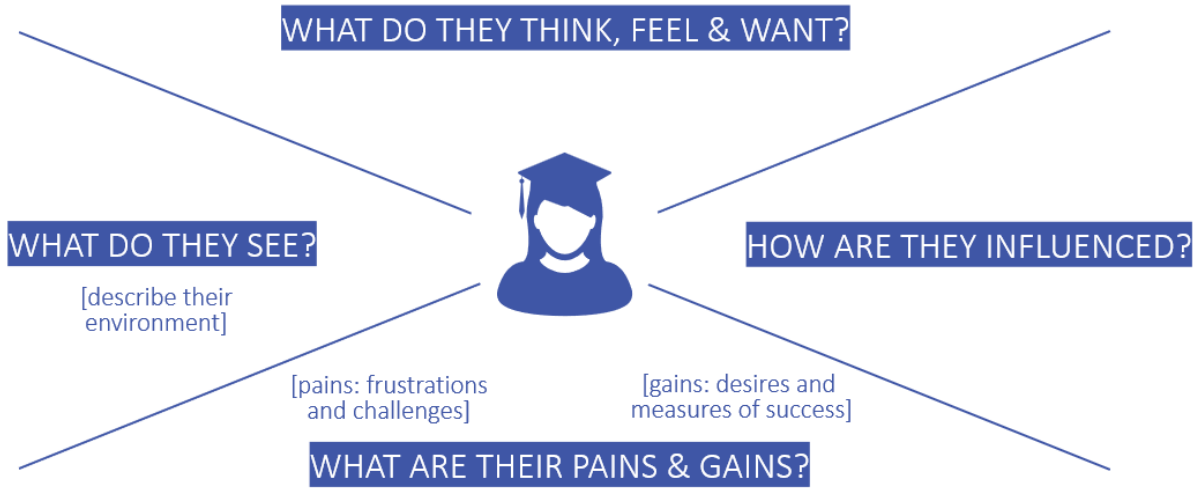
Group exercise: Creating an empathy map

Task: Create an empathy map that reflects your persona's thoughts and influences in the context of metrics literacy

→Please fill out the empathy map template: bit.ly/STI2023MetricsLiteracy



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Group exercise: Creating an empathy map

→Empathy map example

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→ Values publication quality over quantity
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Maryam, Postdoc, Biotechnology

WHAT DO THEY SEE?

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HOW ARE THEY INFLUENCED?

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Journey map

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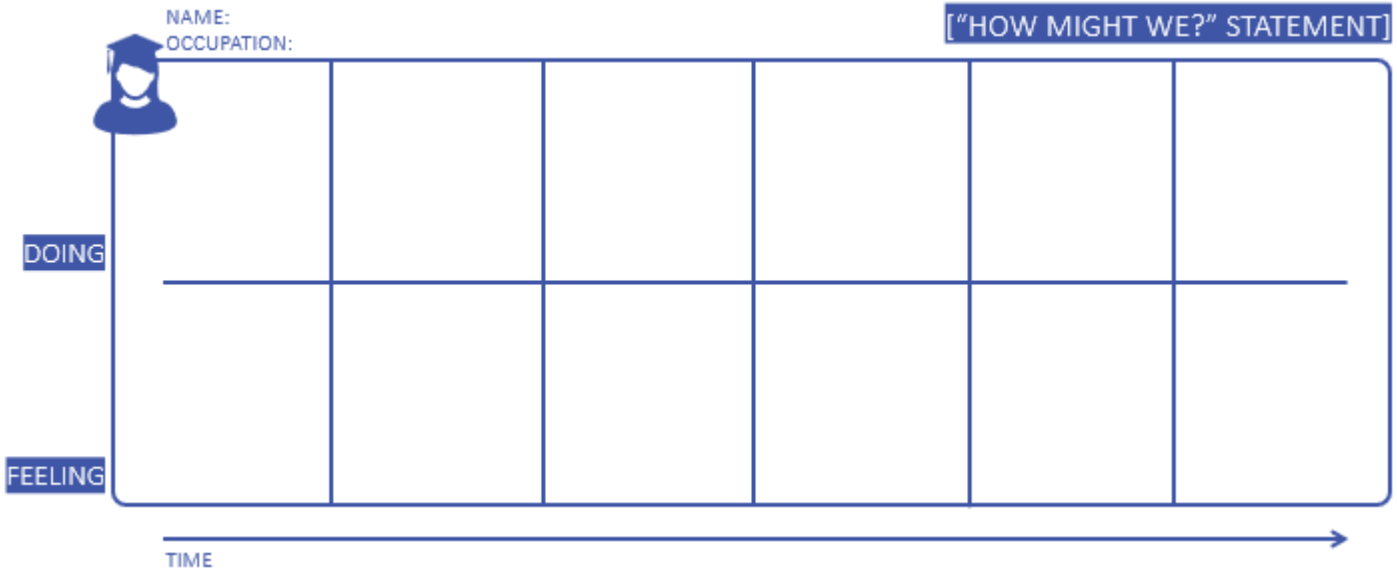
Group exercise: Creating a journey map

Task: Create a journey map that reflects your persona's journey in the context of your HMW statement

→Please fill out the journey map template: bit.ly/STI2023MetricsLiteracy



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Group exercise: Creating a journey map

→Journey map template

NAME: Maryam
OCCUPATION: Postdoctoral researcher

How might we use metrics as early career researchers?

DOING	Sees a tenure-track job position at a Biology university department in Canada.	Starts to search for more information about putting together a tenure-track application.	Creates a CV adding her three publications, considers adding citation metrics to show impact.	Remembers conversations about the h-index. Looks up her own. Hm… pretty low.	Is very busy with her lab work and getting ready for a conference while preparing this application.	Reads critiques about the h-index and finds out about responsible research evaluation in a blog post.
FEELING	Excited about the opportunity. Nervous about the process. Worried about the evaluation criteria.	Motivated. Wants to show off all her skills in the best way possible.	Proud. Already 291 citations for this one paper. So many people use it!	Questioning, frustrated and uncertain. Starts to google h-indices of colleagues.	Stressed, tired, and multi-focused. Really wouldn't have the time to publish more!	Curious and interested. Unsure about what this means for her and her research field.

TIME

Wrapping up

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Wrapping up

→Reporting back

→Closing

Thank you.

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scholcommlab.ca

zenodo.org/communities/metricsliteracies