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# SAMW Meet & Greet 2025

From data to decisions: strengthening evidence synthesis with a data literacy e-learning platform

**Tanya Karrer, Wissenschaftliche Mitarbeiterin (Information Specialist)**

August 12, 2025 · Zürich

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# Do you remember the Covid-19 pandemic?

**Incidence**

**Bias**

**Sensitivity**

**Specificity**

**Prevalence**

**Odds**

**Risk**

**Confounding**

*u*<sup>b</sup>

It's all about data!

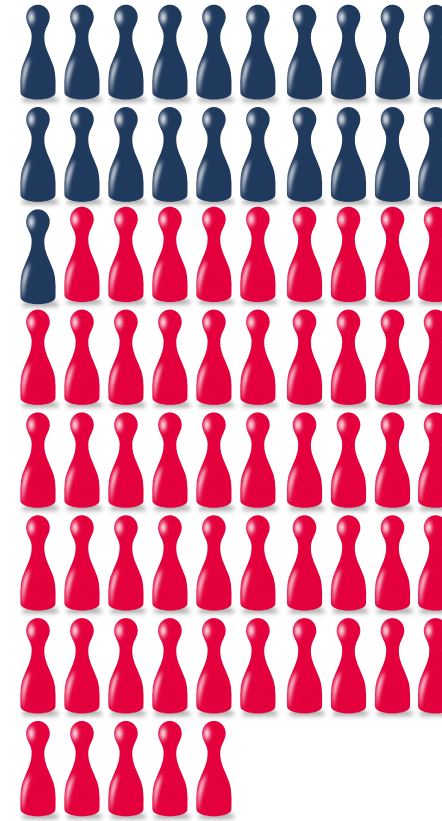
**But who "knows"  
data?**

Some doctors even said they had difficulty interpreting aggregated data in studies. However, they need to understand it in to make evidence-based medical decisions.

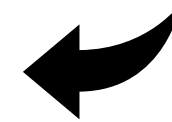
# Human Impact of Data Literacy Study 2020



[Link to study](#)

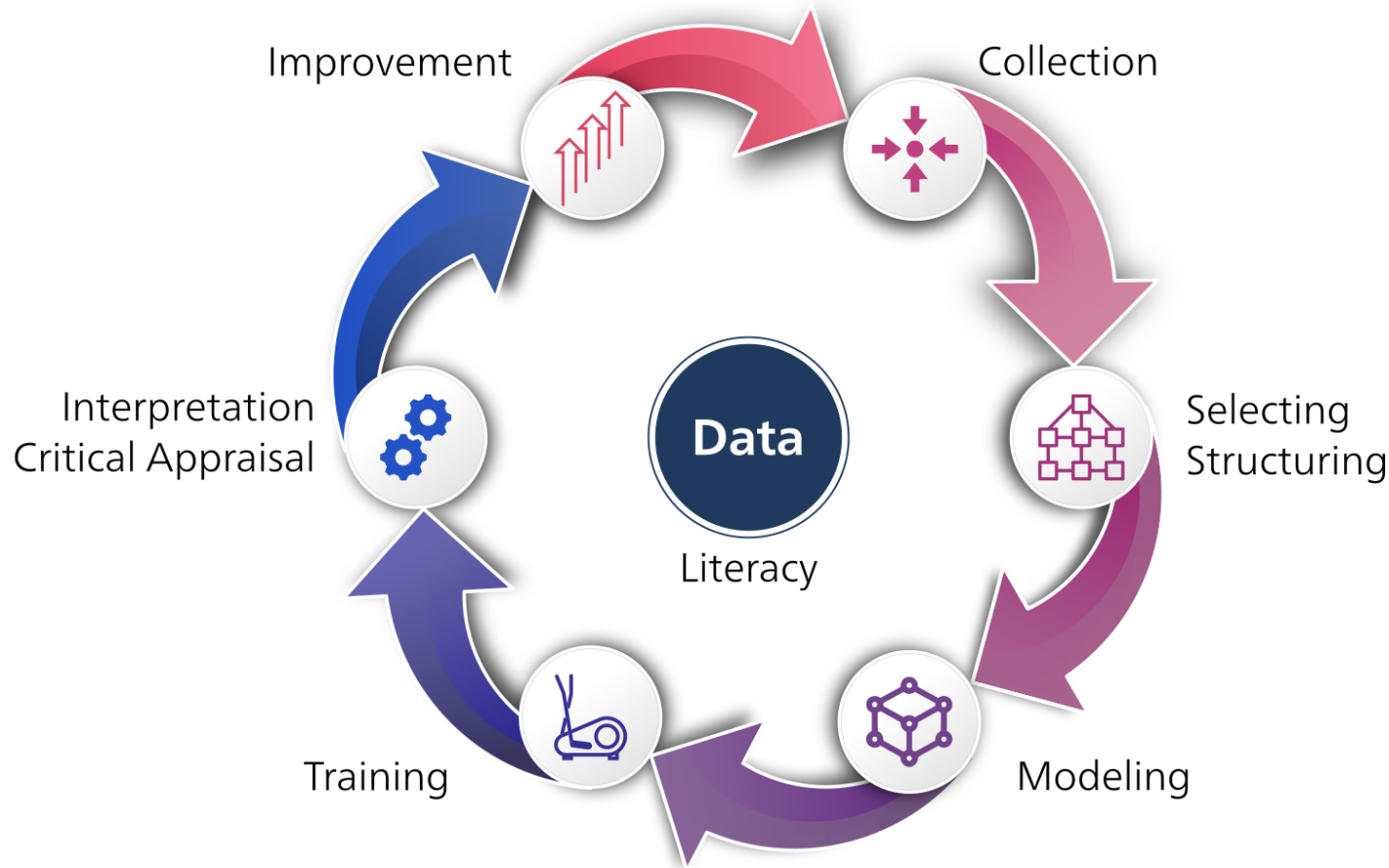


**Close the gap!**



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# From data literacy to AI literacy



# We're not the only ones



Supplemental online resources improve **data literacy** education: Evidence from a social science methods course.

Alcocer M, Falabella L, Lange A, Smith N, Feeley M.

PLoS One. 2024 Dec 19;19(12):e0315318. doi: 10.1371/journal.pone.0315318. eCollection 2024.

PMID: 39700089



Promoting Digital Health **Data Literacy**: The Datum Project.

Powell D, Asad L, Zavaglia E, Ferrari M.

JMIR Form Res. 2025 Jan 3;9:e60832. doi: 10.2196/60832.

PMID: 39773678



FAIR data management: a framework for fostering **data literacy** in biomedical sciences education.

Gonzalez Soltero R, Pino García D, Bellido A, Ryan P, Rodríguez-Learte AI.

BMC Med Res Methodol. 2024 Nov 16;24(1):284. doi: 10.1186/s12874-024-02404-1.

PMID: 39550539



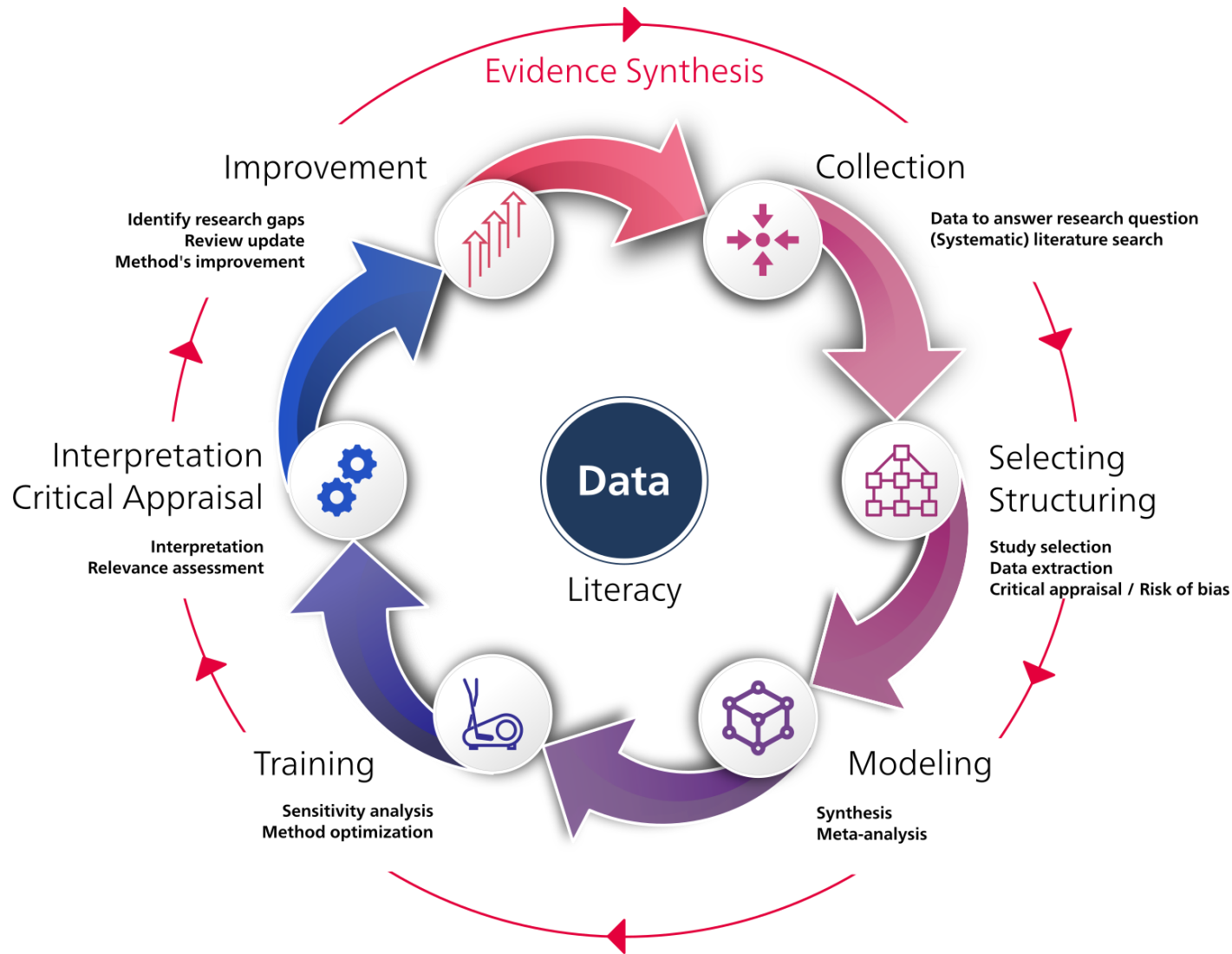
Information in Healthcare - From Data to Knowledge: Improving **Data Literacy** Competencies.

Egbert N, Haukkakallio T, Hüsers J, Phipps L, Tietze MF, Vieira-Marques P, Hübner UH.

Stud Health Technol Inform. 2024 Jul 24;315:160-164. doi: 10.3233/SHTI240126.

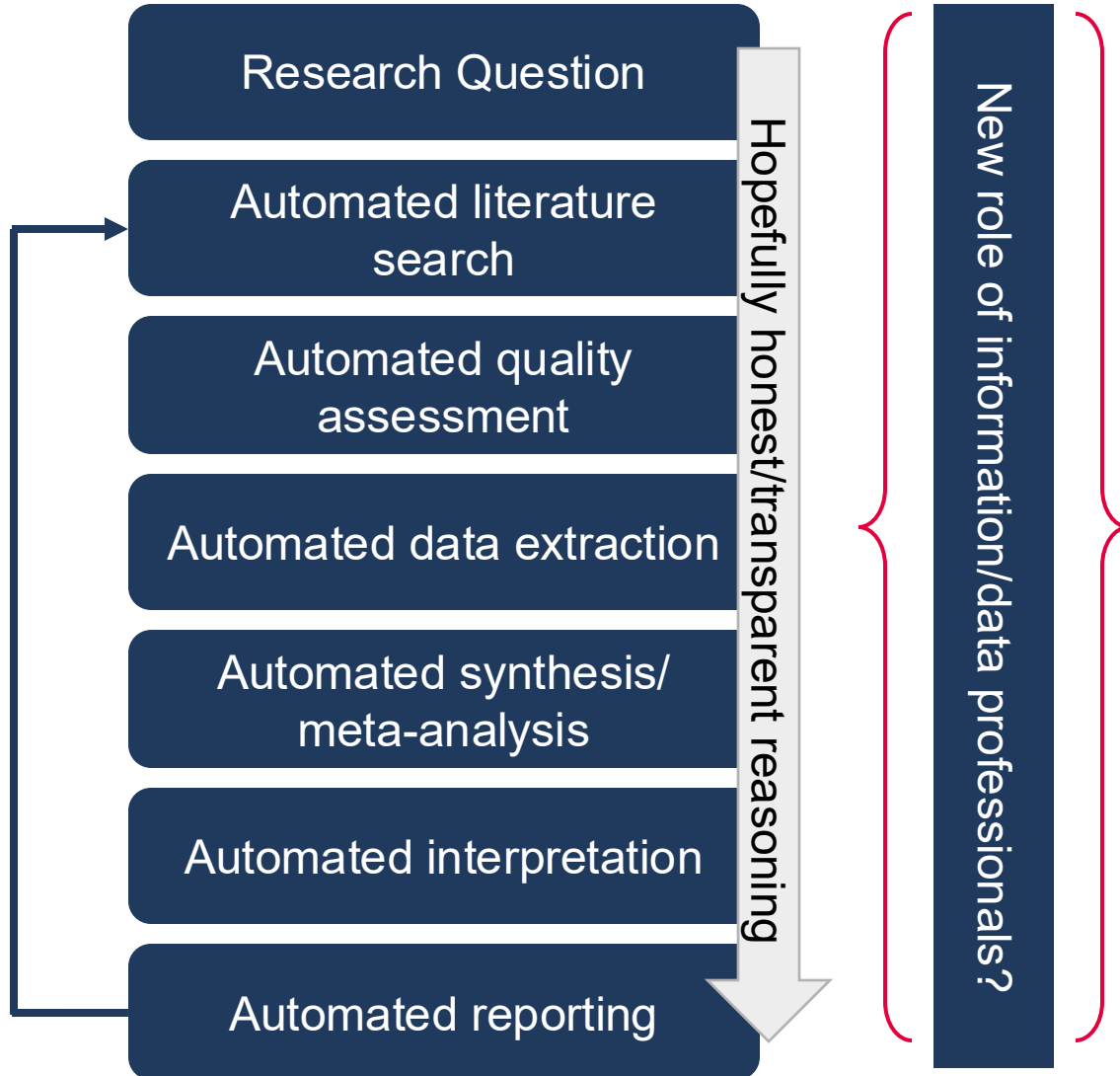
PMID: 39049245

# Data Literacy in Evidence Synthesis



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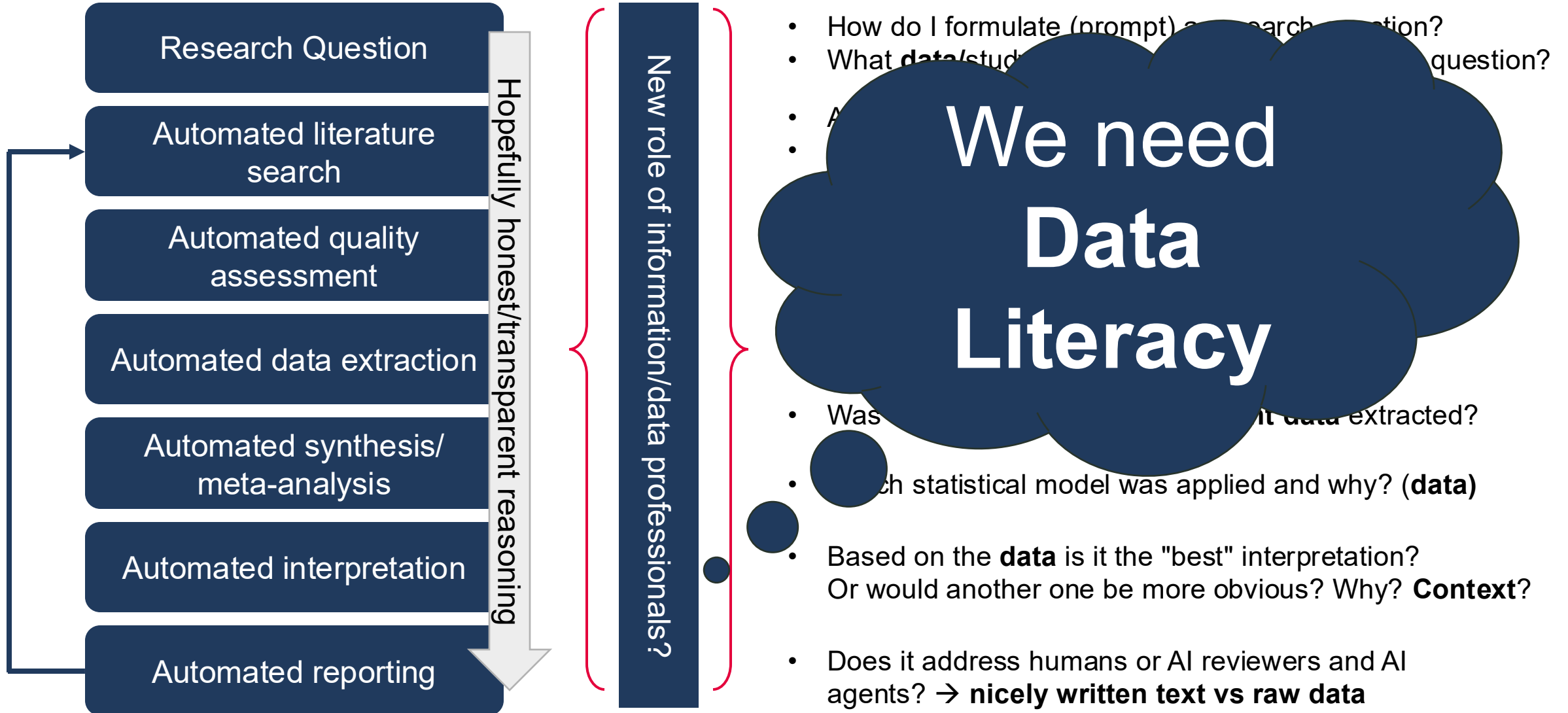
# Let's imagine an agentic SystRev AI



- How do I formulate (prompt) a research question?
- What **data**/study type does answer the research question?
- Are the retrieved papers relevant? Why? → **data**
- Is the corpus of retrieved papers **complete in relation to the volume of research output**? Or does the system give you only the 100 "best matching"?
- Of what **data** does the matching/relevance consist?
- **What and how much (aggregated) data** make a paper a good quality paper?
- Was the **right data and all relevant data** extracted?
- Which statistical model was applied and why? (**data**)
- Based on the **data** is it the "best" interpretation? Or would another one be more obvious? Why? **Context**?
- Does it address humans or AI reviewers and AI agents? → **nicely written text vs raw data**

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# Let's imagine an agentic SystRev AI



*u*<sup>b</sup>

# Conception: Preliminary project

## Michelle Schaffer & Tanya Karrer

- Who might be interested?
- [Data Literacy Charta](#) Akademien der Wissenschaften Schweiz
- Dean's office: part of medicine's curriculum
- Research data sharing platform Inselspital - UniBE
- Networking e.g. planned Department of Digital Medicine
- Funding? → No

# Conception: Project team

Let's build an internal team!



**Tanya Karrer**  
Conception and  
content creation



**Lorena Staiger**  
Platform evaluation  
and development

**Michelle Schaffer**  
"Client"



**Raul Bison**  
Video production



**Stefan Grosjean**  
Corporate design,  
communications



# *u*<sup>b</sup> Conception: Delivery

**Target audience:** Doctors, researchers, students ([DL Charta](#))

**Format:** Videos with quizzes and further descriptions

**Address:** for adults, serious but not just a presentation

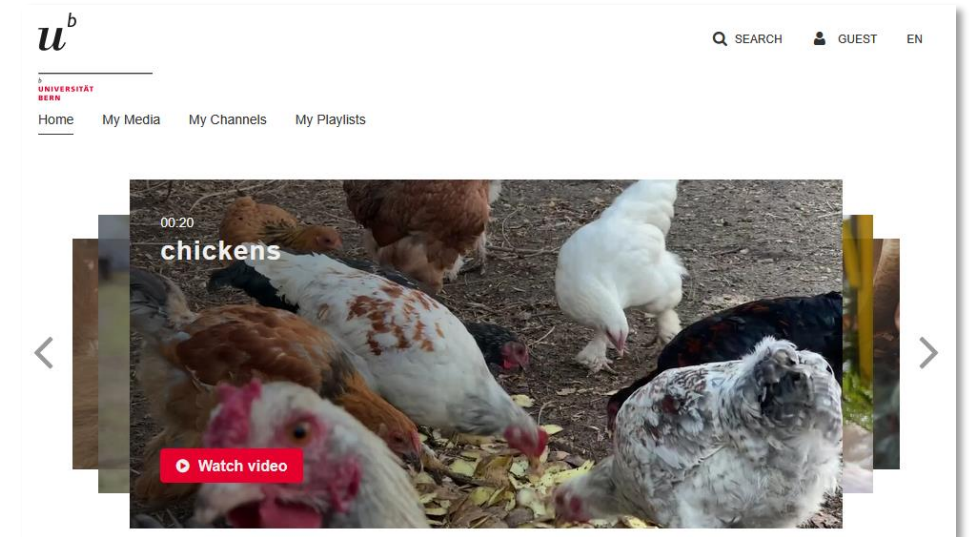
**Language:** English

**Corporate Design:** UniBE

**Login:** maybe (Switch Edu-ID)

**Diploma:** no (so far)

→ **Platform:** Kaltura via SWITCHcast



# Conception: Content

Module	Content
1	<b>What data is</b>
2	<b>Good data for good decisions</b> (Knowledge, reproducibility, transparency, objectivity, patterns and correlations, validation of models, decision-making, tests, evidence and forecast)
3	<b>Data to answer your research question</b>
	a) A good research question
	b) Primary data: Experimental studies (In-vitro, animal, observational, intervention, RCT, crossover, DTA)
	c) Secondary data: Register data, patient data, laboratory data, biobanks etc.
	d) Aggregated data for reviews: Publications
4	<b>Understanding aggregated data in studies: Intro</b>
	a) Standard deviation
	b) Box plot
	c) Confidence interval
	d) P-value
	e) Odds ratio
	f) Hazard ratio
	g) Forest plot
	h) Sensitivity and specificity
5	<b>Finding data in publications</b>
	a) Systematic search in bibliographic databases and platforms (reproducing the trial setting)
	b) Trial registries
	c) Repositories
	d) AI tools
6	<b>Data cleansing: Intro</b>
	a) Deduplication
	b) Screening: Getting rid of unwanted data

7	<b>Extracting Data from studies</b>
	a) Data sheet (templates)
8	<b>Quality Assessment and Risk of Bias of Data (Zayne Roa)</b>
	a)
9	<b>Data Synthesis</b>
	a) Qualitative
	b) Univariate
	c) Bivariate
	d) Multivariate
	e) Meta-analysis
10	<b>Interpretation of your data</b>
	a) Evidence
	b) Model building
11	<b>Publish and share data</b>
	a) Publish
	b) Share
12	<b>Data Management (Olga Churakova)</b>

# An (incomplete) impression

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Related Media  
No Entries

pour\_coffee

From Markus Buerer April 03, 2025

Details

No description provided

- Module 3 -  
Good data for a good  
research question:  
Primary & secondary data

Did you know that much  
of today's medical research  
is based on data that was  
never collected for science?

u<sup>b</sup>

[Demo Link](#)

*u*<sup>b</sup>

# What's to come

1. First modules online by the end of 2025
2. Intros, outros
3. Patronage and matronage (experts)

Perhaps:

- AI literacy
- Existing videos for systematic searching

# Conclusion

1. Data and AI literacy is an emerging field for scientific libraries, involving teaching and consulting.
2. Data literacy improves the quality of evidence synthesis and systematic reviews.
3. It helps one understand and analyze metrics of research output.
4. Data literacy is essential for understanding and critically appraising AI
5. It becomes part of the curriculum: Scientific libraries have the opportunity to fill the void of teaching "basic knowledge" that no one else does.

**Do you agree?**

MA, MAS ALIS

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