



LAND OF THE CURIOUS



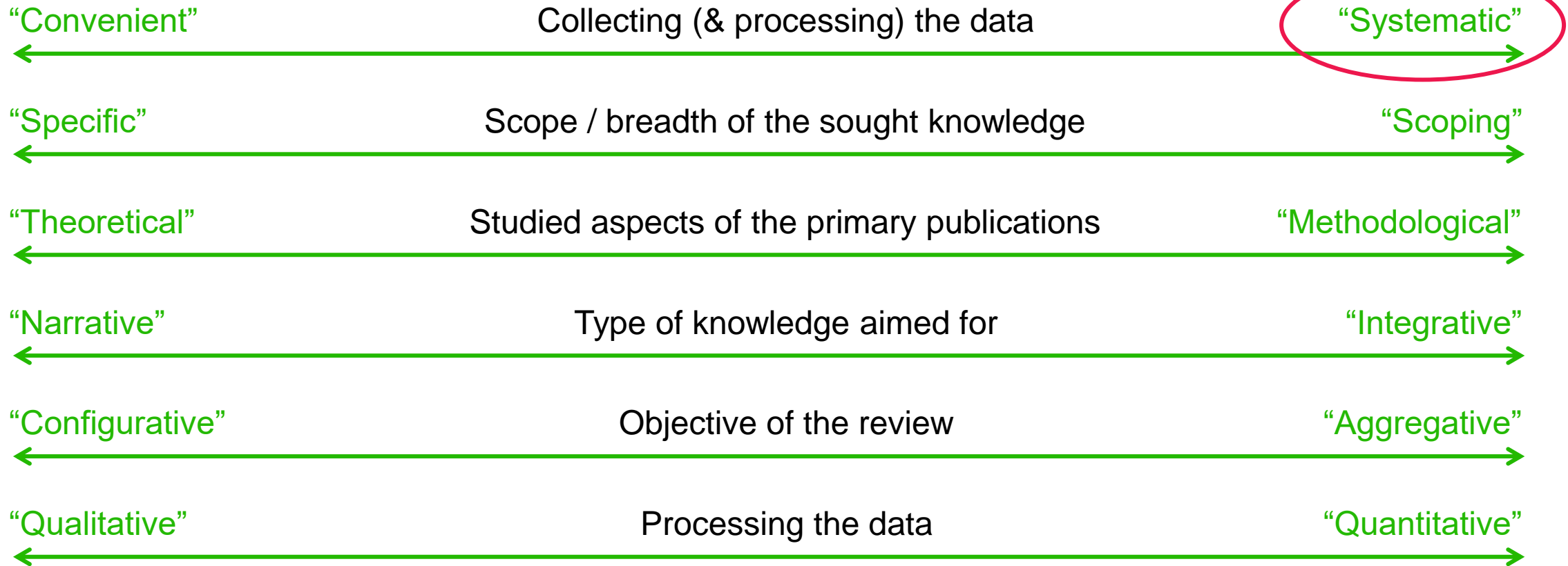
HIPO DOCTORAL NETWORK COURSE ON OPEN SCIENCE

MAKING A LITERATURE REVIEW



D.Sc. Johanna Naukkarinen, LUT School of Energy Systems

RESEARCH METHOD WITH MANY DIMENSIONS



PROCESS OF THE SYSTEMATIC LIT REVIEW



Adapted from:

A. Dresch, D. P. Lacerda and J. A. V. Antunes, "Systematic literature review," in *Design Science Research: A Method for Science and Technology Advancement*, A. Dresch, D. P. Lacerda and Antunes Jr, José Antônio Valle, Eds., Springer International Publishing, 2015. DOI: 10.1007/978-3-319-07374-3_7.



GROUP WORK: DESIGN SCIENCE IN EER

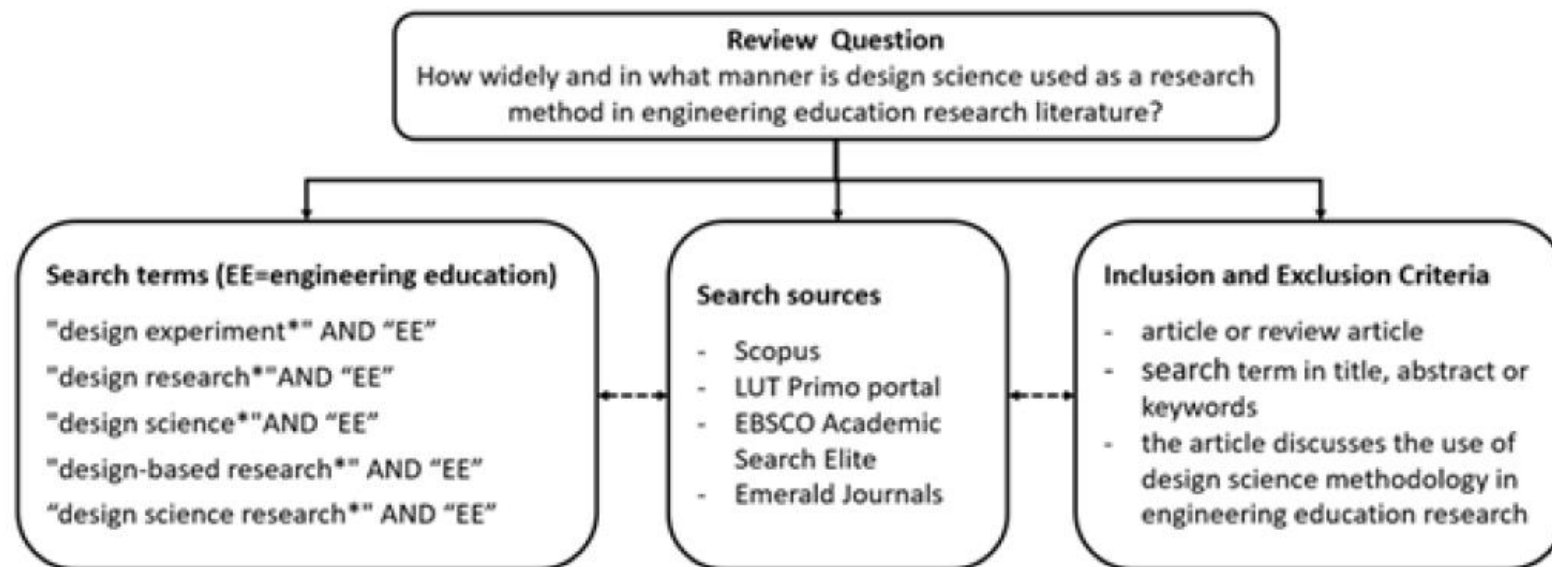
Skim through the Conference paper [Design science in Engineering Education](#) to find out:

1. What was the objective of the study?
2. What was the Review Question of the study?
3. What was the original search strategy? How did it change along the way?
4. How many papers were found in the search? How many of them were excluded and on what grounds?
5. How were the primary papers processed?
6. What kind of limitations were noted?
7. What was the final conclusion of the study?

CASE: DESIGN SCIENCE IN EER

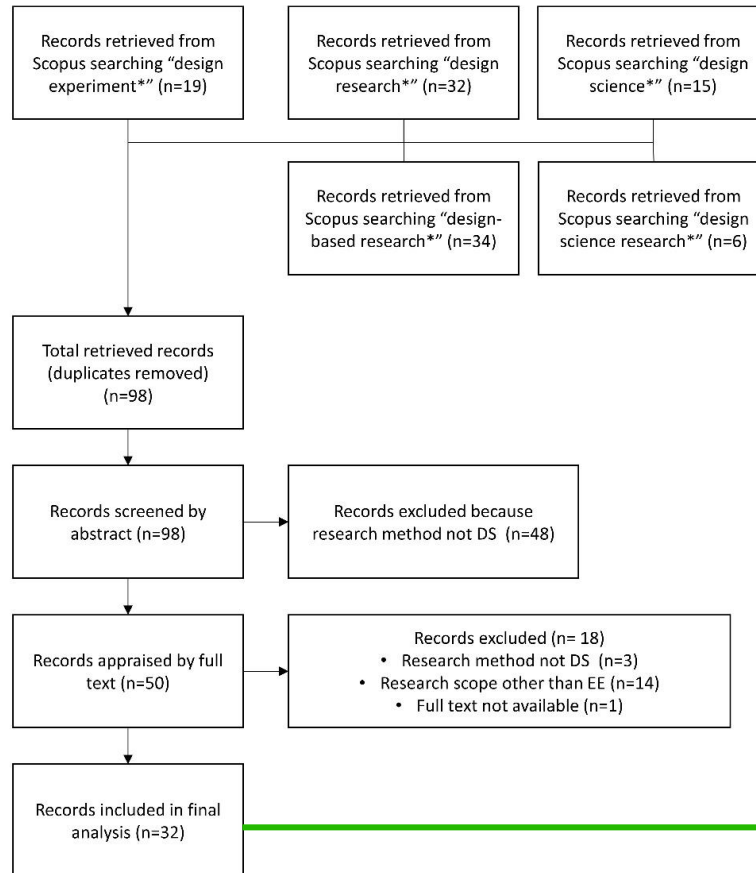
Question
Definition &
Conceptual
framework

Research
Strategy



CASE: DESIGN SCIENCE IN EER

Search,
Eligibility,
and Coding



- Year of publication
- Journal of publication
- Origin of authors
- Target group of intervention
- Use of DS terminology

CASE: DESIGN SCIENCE IN EER

Quality Assessment

- » Quality of the process & results:
 - » Transparency/followability of the process
 - » Reliability of the results
- » Limitations:
 - » Reliance on specific terminology
 - » Exclusion of conference papers
 - » Searches in English

Synthesis of Results

- » Quantitative aggregation:
 - » 32 different journals
 - » Three scopes of intervention
 - » Geographical origins of authors (4 regions)
 - » Term usage
 - » Use of DS methodology
- » Conclusions:
 - » DS a feasible methodology in EER
 - » Better awareness could enhance the research rigor
 - » Terminological jungle needs clearing e.g. by means of a glossary



QUESTIONS TO CONSIDER WHEN DOING LIT REV

- »» Where to find the primary literature/sources?
 - »» Journals vs. conference papers
 - »» Scientific vs. technical (e.g. datasheets, patents, standards)
 - »» Commercially published vs. grey literature
- »» How to find the primary literature/sources?
 - »» Search terms
 - »» Connectors
 - »» Database search vs. snowballing (backward or forward)
 - »» Inclusion & exclusion criteria
- »» How to synthesize the results?
 - »» Qualitative vs. quantitative techniques
 - »» What's new?

