2024

Training the Educators of Design Science Research

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Design Science Research Academy –
Training the Educators

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3rd September 2024

Overview of the Training-the-Educator Session

1. DSR-Methodology and motivation for students to use it
2. Theoretical knowledge of DSR
3. Resources for students and educators (more in extra slide deck)
4. Curriculum overview and alternative syllabi
5. The DSR-academy.org and MyResearchProcess.com

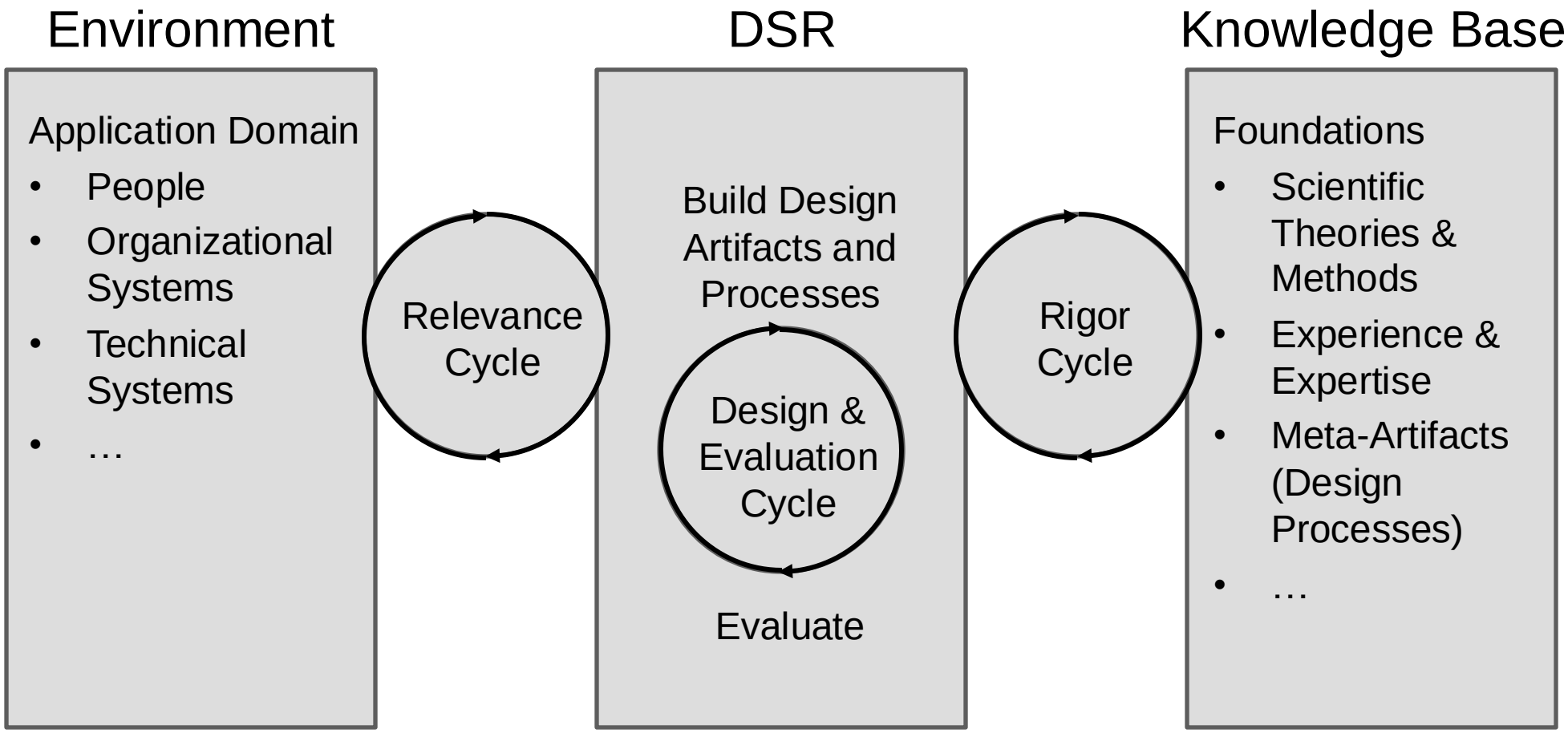
What is the Problem?

- The rapid technological development and digital mediation in peoples' lives and organizations' workings demand new research investigations.
- However, most scholarly methods focus on observing, explaining, and predicting.
- Design Science Research (DSR) aims at knowledge generation through the design and evaluation of innovative solutions to real-world problems, thus striving for usefulness.
- Consequently, DSR is iterative in both its research and application.

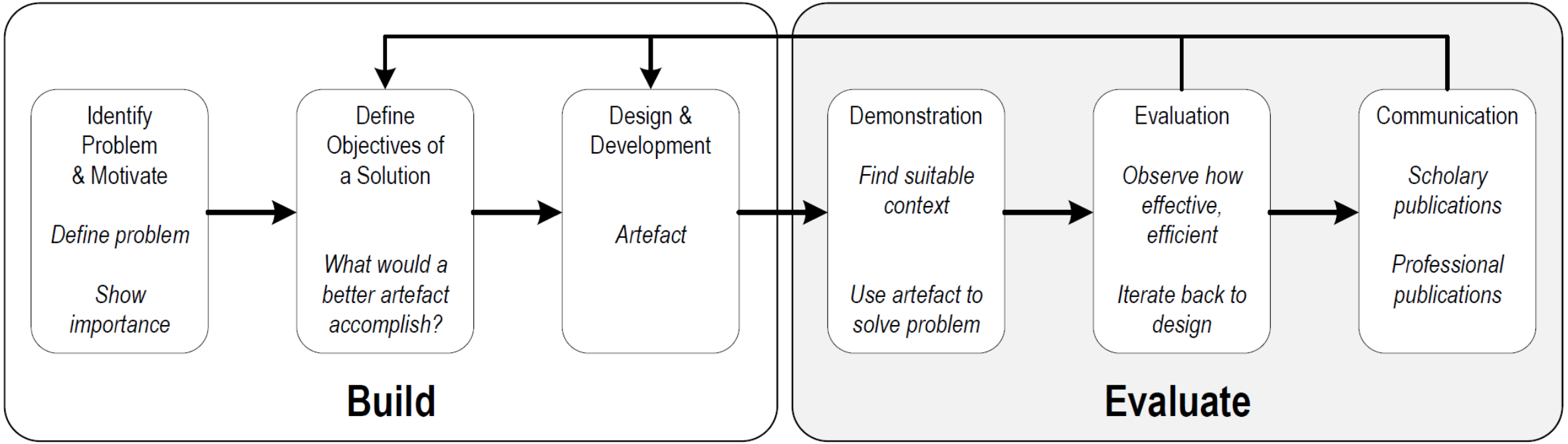
Why is the DSR method important for students?

- At university, students learn academic methods, yet often not how they can be used to solve organizations' problems.
- Over 99% of students will ultimately leave academia and join industry.
    - It is important to equip those students with the tools to use the benefits of academic methods (i.e., structure, rigor, systematism) and solve real-world problems.
- The remaining students, who stay in academia, do research – and strive for impact.
    - It is important to equip those students with novel scientific methods that maintain research standards (i.e., structure, rigor, systematism) while creating real impact.

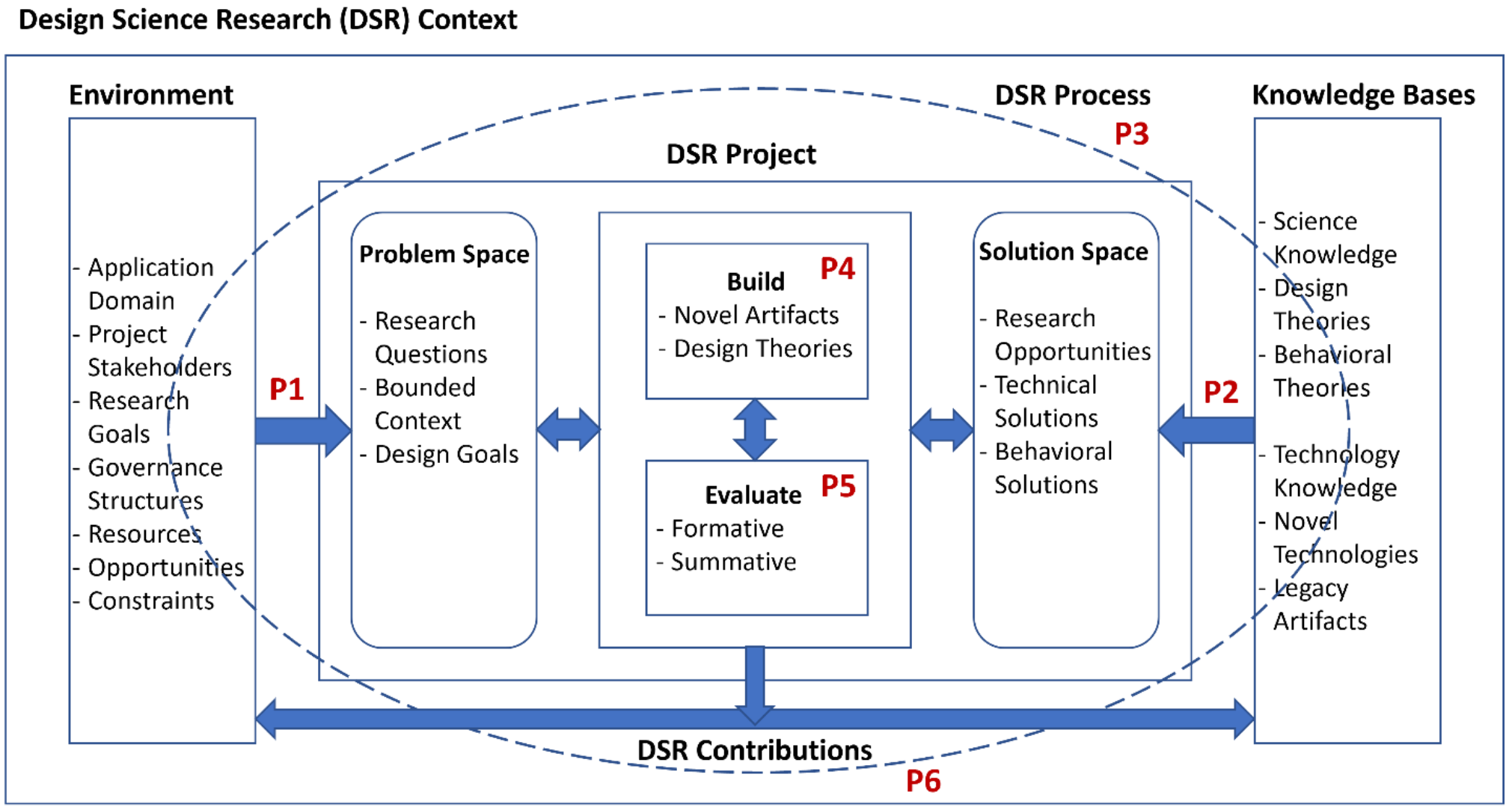
The DSR Method



Build-Evaluate Patterns in DSR



The DSR Proficiency Model



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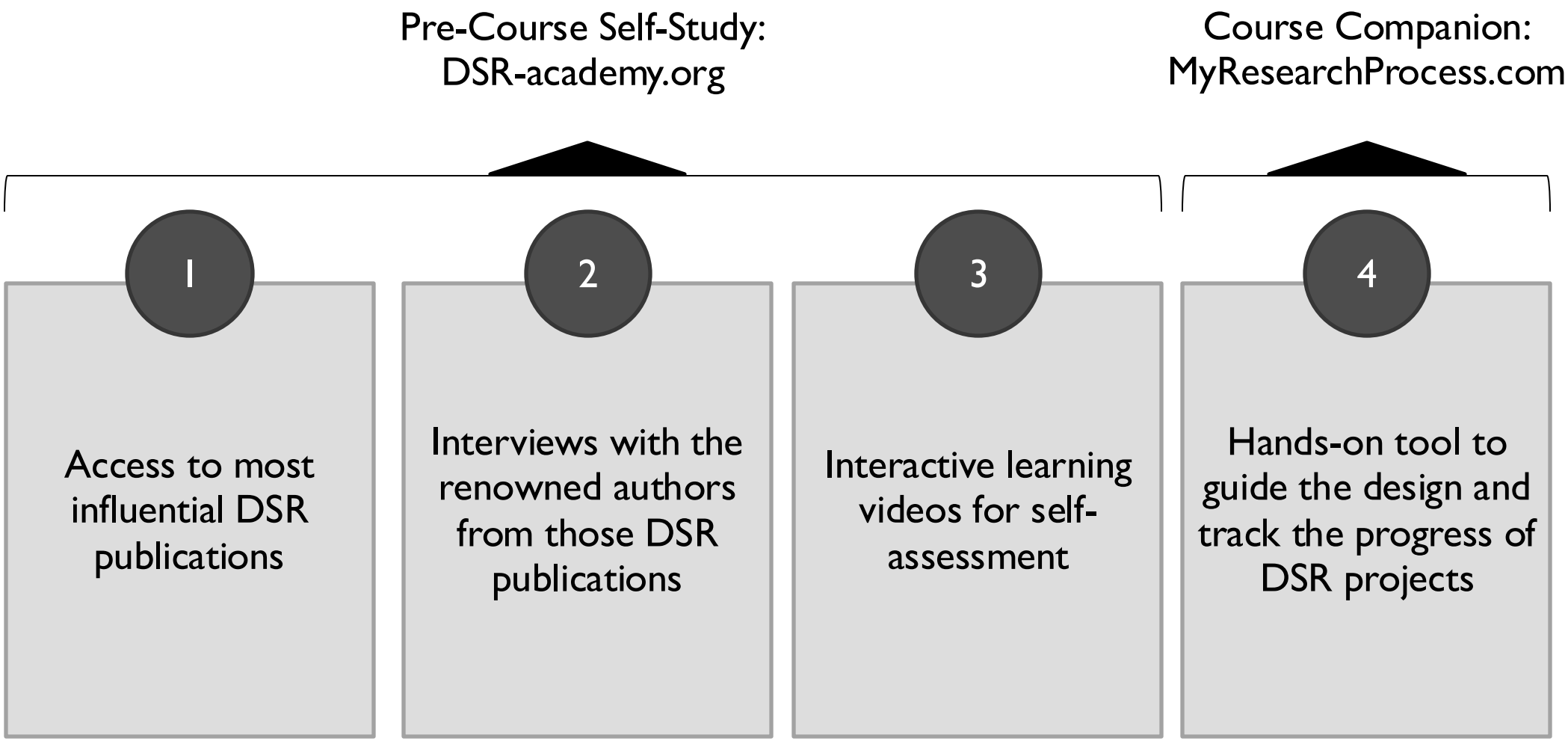
(Hevner, vom Brocke 2023)

Current DSR Courses

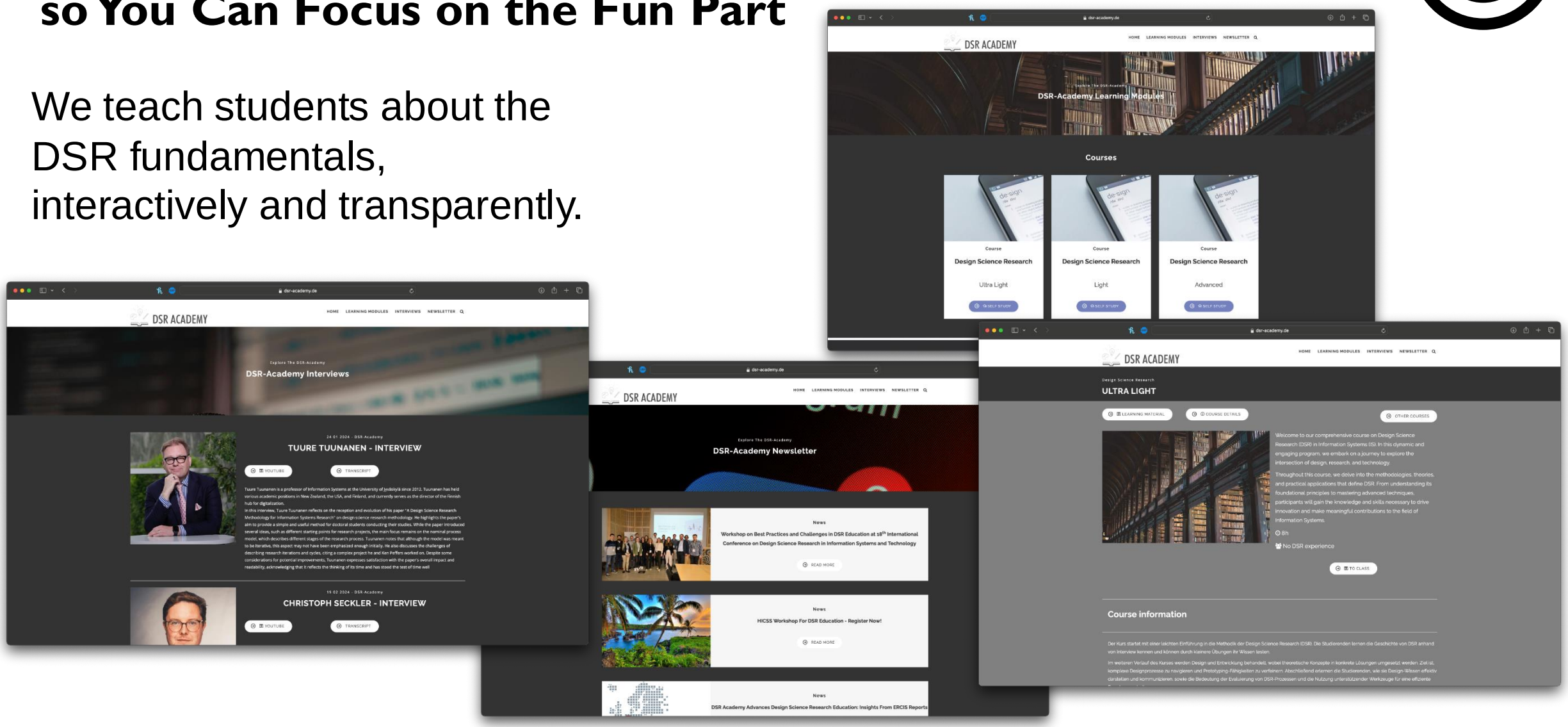
- We analyzed 24 publicly available DSR course structures.
- Status Quo of DSR courses: Either full method courses or only a part of practically focused courses (e.g., capstone project courses)
  - Current courses focus on teaching basics, which means less time for teaching the really valuable part: application.
- Administrative overhead for teachers in administering content and providing helpful tools to students
  - This further includes the effort of updating reading lists and staying afloat with DSR publications

Teaching Material for DSR Method



Our Goal: Teach Students the Basics of DSR, so You Can Focus on the Fun Part

We teach students about the DSR fundamentals, interactively and transparently.



Structure for Typical DSR Courses

1 Unit = 90 minutes of self-study

Type	DSR for Practical Courses	DSR for Student Theses	DSR for (Junior) Researchers

Focus	• Definition of DSR
	• Introduction to DSR Method
		• Everything from the previous type plus
		  • Short deep dive into four DSR aspects
			• Everything from the previous type plus
			  • Extensive deep dive into four DSR aspects
			  • Philosophical discussion of DSR
			  • How to publish DSR

Lenght	1 unit (introduction)	1 unit (introduction), 4x 0.5 units (topic deep dives)	1 unit (introduction), 6x 1 unit (topic deep dives)
Learning Outcomes	• Introduction to the DSR Method • Application of the basic DSR concepts to a practical problem	• Guided application of DSR to a research problem, specifically their thesis	• Profound knowledge of DSR Method • Application of DSR to all types research problems • Critical reflection and advancement of DSR knowledge
Our Corresponding Course	*Ultra-Light Package*	*Light Package*	*Advanced Package*
How to integrate it	• Students access the material to study in their own time before starting their project	• Students access the material before and while working on their theses • Supervisors can relate students to the material and offer personalized, deeper supervision exceeding DSR foundations	• Students complete the material prior to first session of their course • Lecturers can then focus on application examples, or coaching a student project

The Difference Between Course Packages: *Ultra-Light Package*

Introduction to DSR

Structure for a 'Practical' DSR Course Integration

Type	Substantial Learning
DSR Component	• The course is focused on students (typically bachelor or master) solving a practice problem • DSR can be briefly taught as a method to improve student projects
Length of DSR Component	1 unit (introduction)
Learning Outcomes	• Introduction to the DSR Method • Application of the basic DSR concepts to a practical problem
Our Corresponding Course	*Ultra-Light Package*
DSR-Course Content	• Introduction to DSR (1 unit)
How to integrate it	• Students access the material to study in their own time before starting their project

The Difference Between Course Packages: *Light Package*

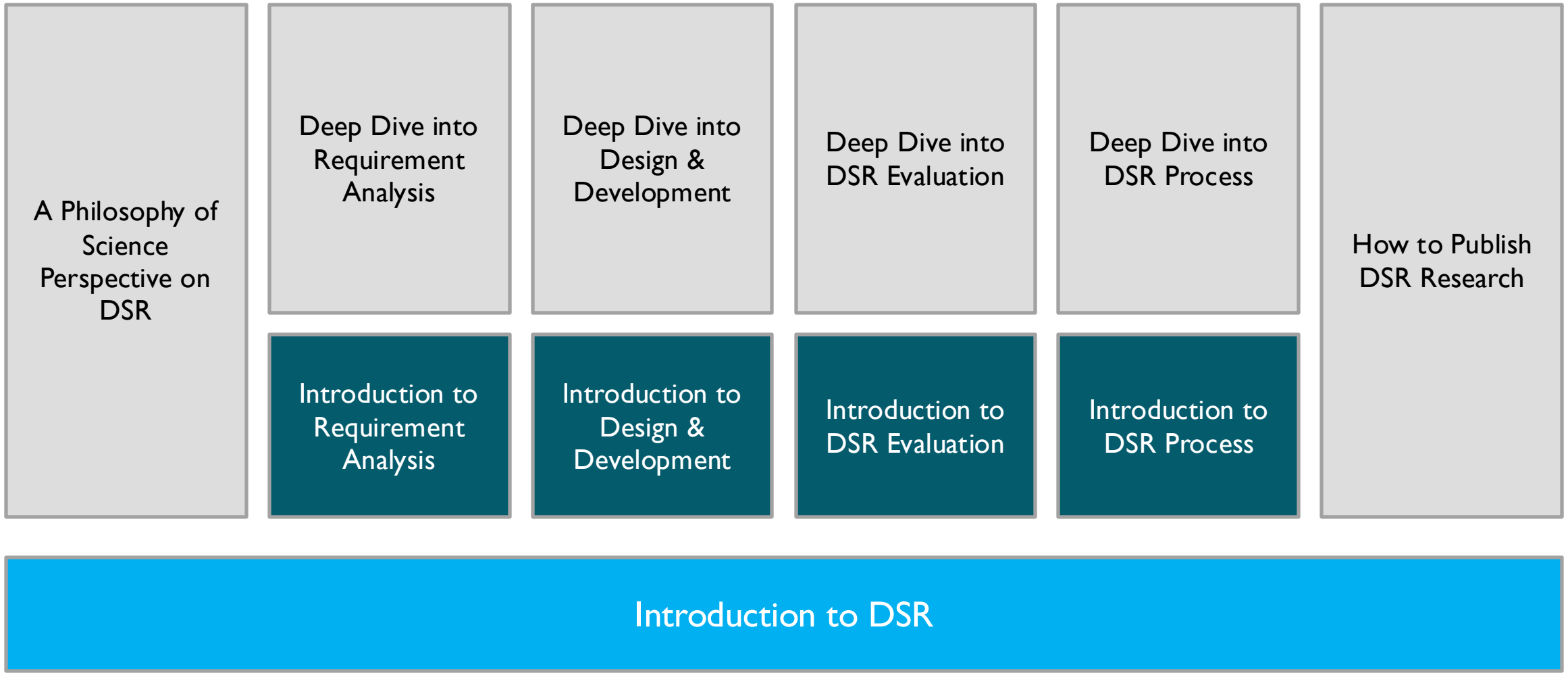
Structure for a 'Thesis-related' DSR Course Integration

Type	Substantial Learning
DSR Component	• Students (bachelor or master) need to write their final theses for which they might want to deploy the DSR methodology • DSR can be taught along with several relevant deep-dive topics
Length of DSR Component	3 unit
Learning Outcomes	• Introduction to the DSR Method • Guided application of DSR to a research problem, specifically their thesis
Our Corresponding Course	*Light Package*

DSR-Course Content	• Introduction to DSR (1 unit)
	• 4 Topic Deep-dives
	  • Requirement Analysis (0.5 units)
	  • Design and Development (0.5 units)
	  • DSR Evaluation (0.5 units)
	  • DSR Process (0.5 units)

How to integrate it	• Students access the material before and while working on their theses • Supervisors can relate students to the material and offer personalized, deeper supervision exceeding DSR foundations

The Difference Between Course Packages: *Advanced Package*



Structure for a 'Research' DSR Course Integration

Type	Substantial Learning
DSR Component	• Students (PhD-level) want to deploy the DSR methodology for their research papers, which they seek to publish in journals or conferences • DSR is, in this context, a full-fledged method course focusing on teaching the DSR methodology
Length of DSR Component	7 unit
Learning Outcomes	• Introduction to the DSR Method • Profound knowledge of DSR Method • Application of DSR to all types research problems • Critical reflection and advancement of DSR knowledge
Our Corresponding Course	*Advanced Package*

DSR-Course Content	• Introduction to DSR (1 unit)
	• 6 Profound Topic Deep-dives
	  • Philosophy of Science Perspective on DSR (1 unit)
	  • Requirement Analysis (1 units)
	  • Design and Development (1 units)
	  • DSR Evaluation (1 units)
	  • DSR Process (1 units)
	  • How to publish DSR (1 unit)

How to integrate it	• Students complete the material prior to first session of their course • Lecturers can then focus on application examples, or coaching a student project

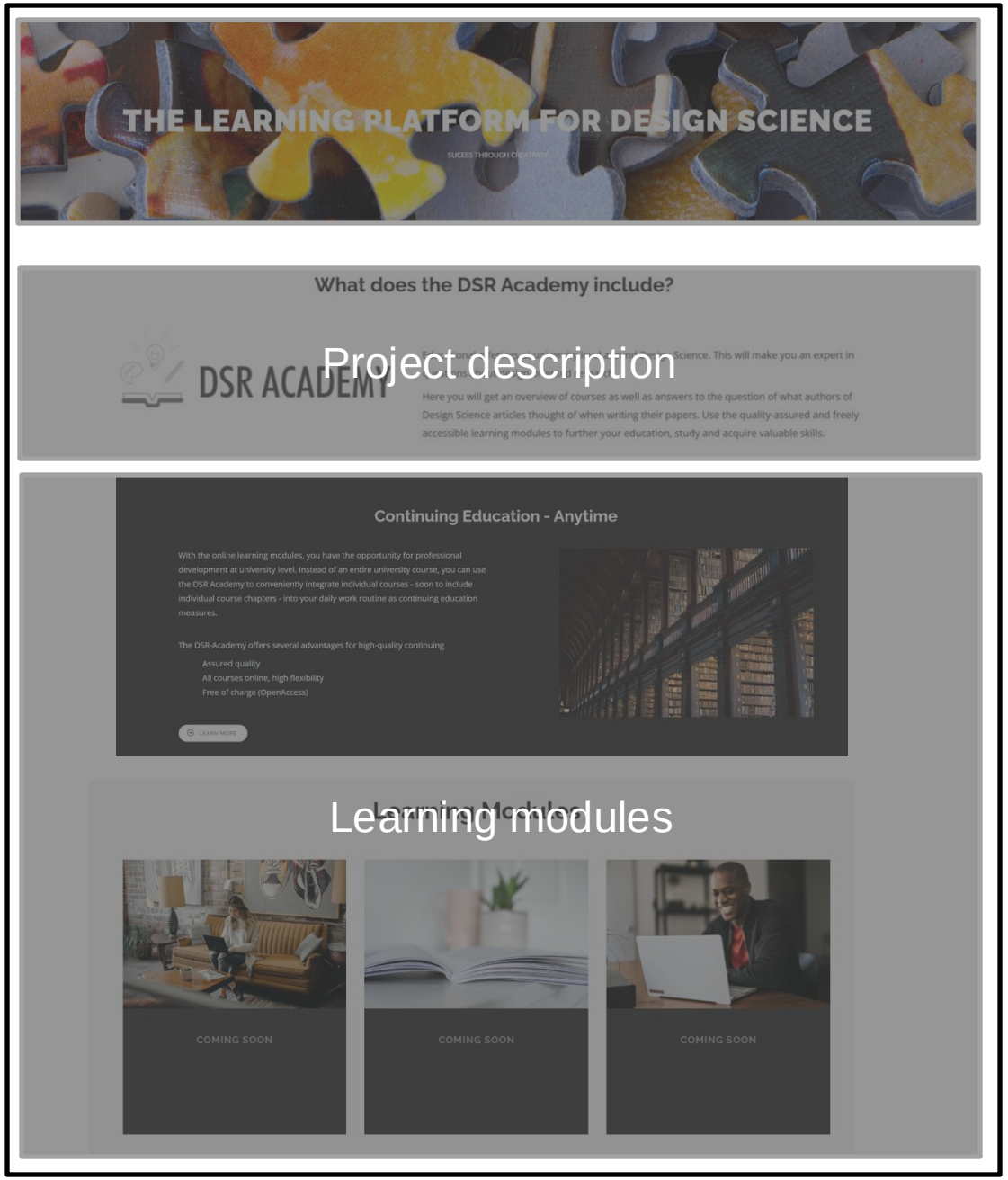
Illustration of **DSR-Academy** and **MyResearchProcess**

→ There will be an appendix, independently linking to all the resources shown in this illustration.

DSR Academy Website:

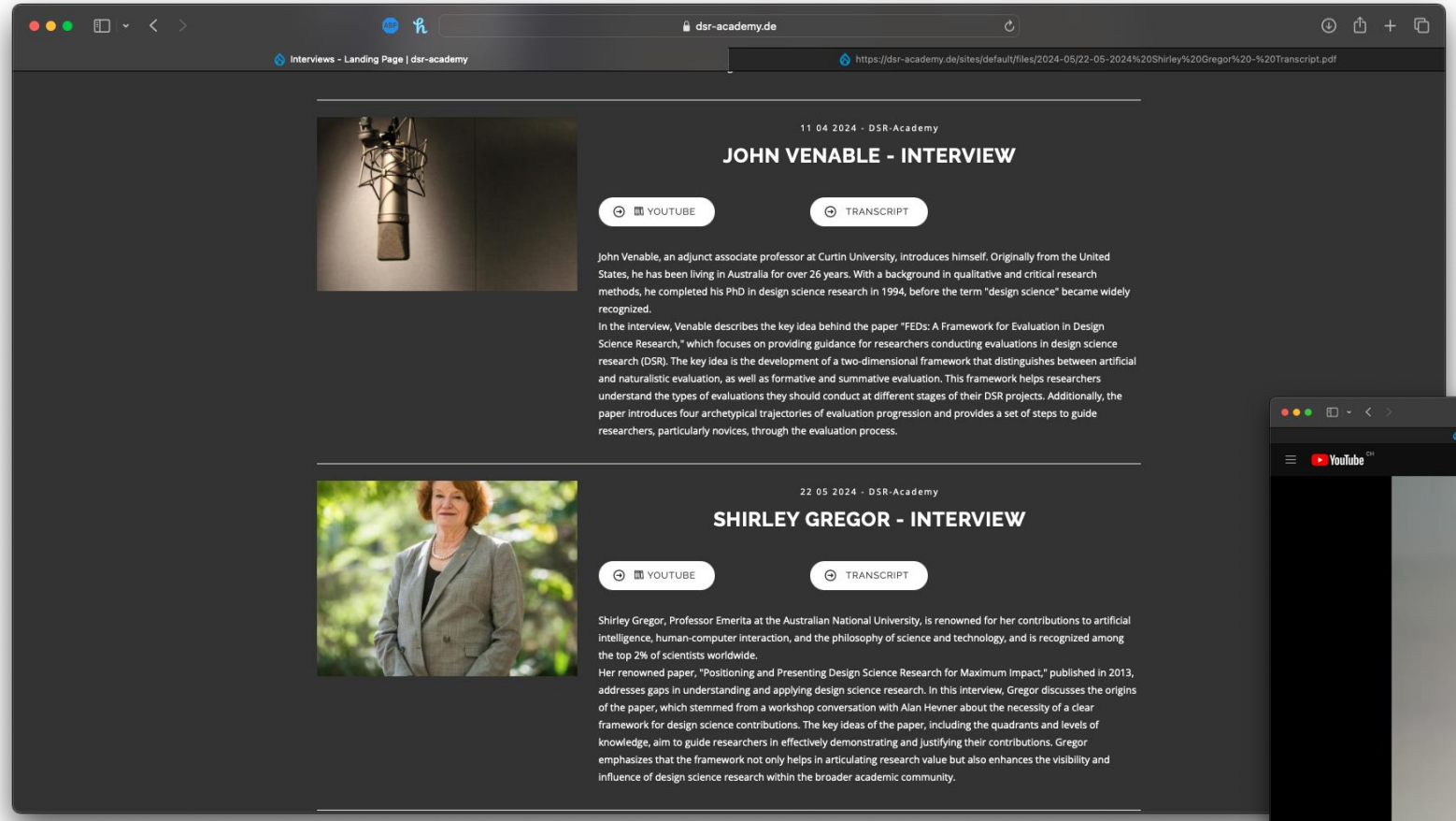
https://dsr-academy.org

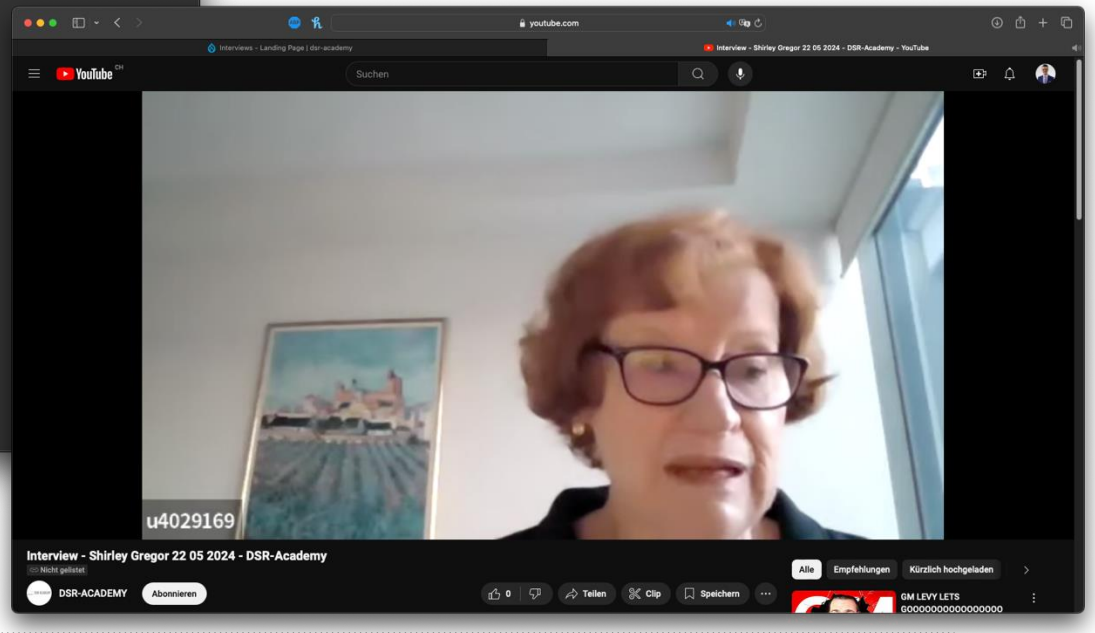
Main Page



- Header
- Project description
- Advert (e.g., ICIS)
- Learning modules
- News
- Interviews
- Project team
- Contact

New DSR Teaching Material: Interviews





Tool for Design Science Researcher:

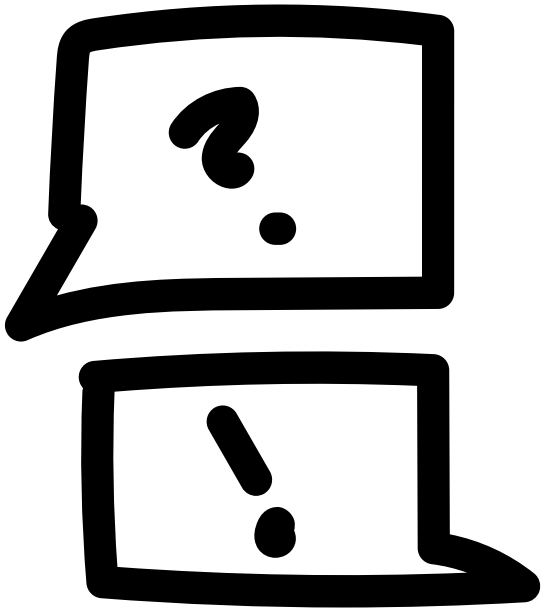
https://myresearchprocess.com

Use Case:

Design Science Research

Design science research (DSR) is a problem-solution mapping paradigm. DSR projects are known to complex. MyResearchProcess offers templates and guidance for successfully executing DSR projects. At the same time, it supports increasing transparency.

Q&A



Project Team

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Outlook

- If you are interested in collaborating in this research project, get in touch with the project team: https://dsr-academy.org
- Meet us at ICIS 2024! We want to consolidate our results **with the community for the community**!

Backup

Advantages of the DSR Academy

- Teachers can use our platform so that students learn foundational knowledge **on their own**
    - Teachers can focus their courses on applying DSR methodology through student projects
- We regularly update teaching materials (e.g., relevant reading lists)
    - We provide literature for all relevant sub-topics within DSR
- We create new teaching material
    - E.g., interviews with prominent DSR authors, insights on publishing DSR, …
- Our platform has dynamic questions to test students' learning
- We also support the project phase through a progress tool
- The platform is **open education** and **entirely free**