

# NAPLeS:

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# Today's Agenda

## Part 1

- NAPLeS: The Network of Academic Programs in the Learning Sciences

## Part 2

- Teaching the Learning Sciences: an analysis of 75 programs

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## **The International Society of the Learning Sciences (ISLS)**

### **The ISLS Education Committee**

- Creating and developing outreach and educational activities for ISLS
- Learning Sciences doctoral consortia
- Early/mid career workshops
- NAPLeS as initiative to connect degree programs worldwide

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS

- Network of PhD and Master's programs in the Learning Sciences
- Part of the educational mission

*Fostering the quality of higher education programs in LS*

### Mechanisms

- Webinar series
- Video resources
- Syllabi collection
- Visiting scholarship
- Joint supervision of doctoral research

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS Resources

### Webinar Series:

<http://isls-naples.psy.lmu.de/intro/all-webinars/index.html>

Startseite • Webinar Series • All Webinars

NEWS

ISLS NAPLES OBJECTIVES

NAPLES MEMBERS

WEBINAR SERIES

All Webinars

Part A: How people learn

Part B: Supporting Learning

Part C: Methodologies for the Learning Sciences

Part D: Computer-Supported Collaborative Learning

VIDEO RESOURCES











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### All Webinars

 <p>Sheryl Burgstahler (UW)</p> <p><b>Making Computer-Supported Learning Accessible to Students with Disabilities</b></p>	 <p>Marlene Scardamalia &amp; Carl Bereiter</p> <p><b>Knowledge Building: Communities Working with Ideas in Design Mode</b></p>
 <p>David Williamson Shaffer (WISC)</p> <p><b>Tools of Quantitative Ethnography: Epistemic Network Analysis and nCoder</b></p>	 <p>Allan Collins (NU)</p> <p><b>Cognitive Apprenticeship</b></p>
 <p>Gerhard Fischer (CU Boulder)</p> <p><b>Massively Open Online Courses (MOOCs) as Components of Rich Landscapes of Learning</b></p>	 <p>Michael J. Jacobson (Sydney) &amp; Peter Reimann (Sydney)</p> <p><b>Complex Systems and the Learning Sciences: Implications for Learning, Theory, and Methodologies</b></p>
 <p>Patrick Jermann (EPFL)</p> <p><b>Physiological measures in Learning Sciences Research</b></p>	 <p>Jim Pellegrino (UIC)</p> <p><b>Assessment</b></p>
 <p>Susan Goldman (UIC)</p>	 <p>Nikol Rummel (RUB)</p>

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS Resources

### Webinar Series:

<http://isls-naples.psy.lmu.de/intro/all-webinars/scardamalia-bereiter/index.html>

Startseite • Webinar Series • All Webinars • Marlene Scardamalia & Carl Bereiter: Knowledge Building: Communities Working with Ideas in Design Mode

NEWS print

ISLS NAPLES OBJECTIVES

NAPLES MEMBERS

WEBINAR SERIES

- All Webinars
- Part A: How people learn
- Part B: Supporting Learning
- Part C: Methodologies for the Learning Sciences
- Part D: Computer-Supported Collaborative Learning

VIDEO RESOURCES

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### Marlene Scardamalia & Carl Bereiter: Knowledge Building: Communities Working with Ideas in Design Mode

Basic reading

- Bereiter, C. & Scardamalia, M. (2014). Knowledge building and knowledge creation: One concept, two hills to climb. In S. C. Tan, H. J. So, J. Yeo (Eds) *Knowledge creation in education* (pp. 35-52). Singapore: Springer [\[online\]](#)



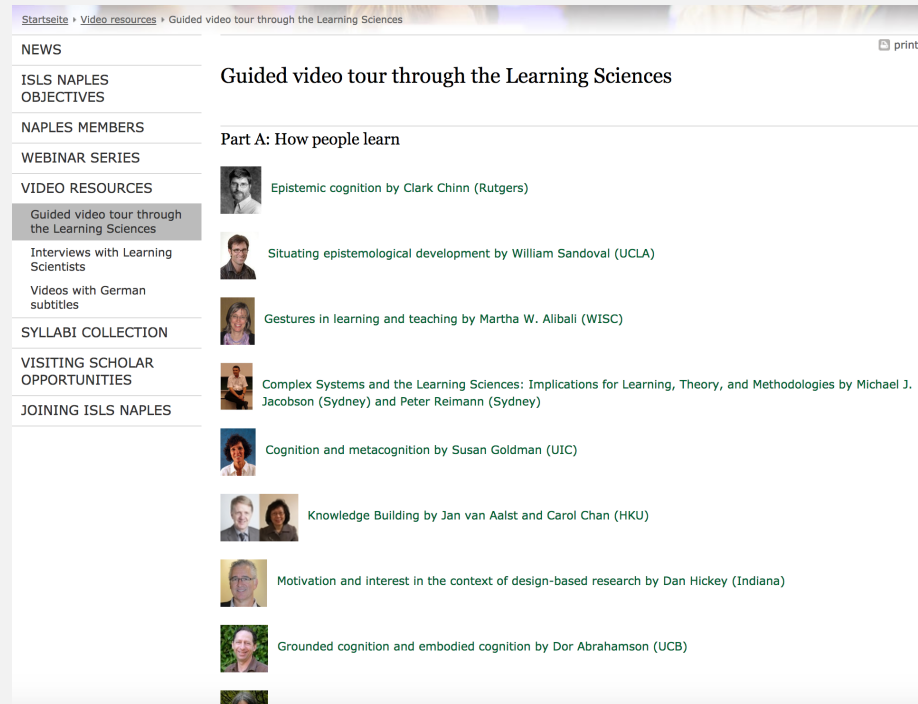
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# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS Resources

### Guided Tour through the LS:

<http://isls-naples.psy.lmu.de/video-resources/guided-tour/index.html>



The screenshot displays the NAPLeS website interface. At the top, a breadcrumb trail reads: Startseite > Video resources > Guided video tour through the Learning Sciences. A 'print' icon is visible in the top right corner. On the left, a vertical navigation menu lists several categories: NEWS, ISLS NAPLES OBJECTIVES, NAPLES MEMBERS, WEBINAR SERIES, VIDEO RESOURCES (which is highlighted), Interviews with Learning Scientists, Videos with German subtitles, SYLLABI COLLECTION, VISITING SCHOLAR OPPORTUNITIES, and JOINING ISLS NAPLES. The main content area is titled 'Guided video tour through the Learning Sciences' and features a sub-header 'Part A: How people learn'. Below this, a list of video resources is presented, each with a small portrait icon and a title: 'Epistemic cognition by Clark Chinn (Rutgers)', 'Situating epistemological development by William Sandoval (UCLA)', 'Gestures in learning and teaching by Martha W. Alibali (WISC)', 'Complex Systems and the Learning Sciences: Implications for Learning, Theory, and Methodologies by Michael J. Jacobson (Sydney) and Peter Reimann (Sydney)', 'Cognition and metacognition by Susan Goldman (UIC)', 'Knowledge Building by Jan van Aalst and Carol Chan (HKU)', 'Motivation and interest in the context of design-based research by Dan Hickey (Indiana)', and 'Grounded cognition and embodied cognition by Dor Abrahamson (UCB)'.

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS Resources

### Interviews:

<http://isls-naples.psy.lmu.de/video-resources/interviews-is/index.html>

Startseite » Video resources » Interviews with Learning Scientists

NEWS

ISLS NAPLES OBJECTIVES

NAPLES MEMBERS

WEBINAR SERIES

VIDEO RESOURCES

Guided video tour through the Learning Sciences

Interviews with Learning Scientists

Videos with German subtitles











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Interviews with Learning Scientists

Experts in the Learning Sciences talk about their topic, it's significance for and position in the Learning Sciences:

	<b>Iris Tabak (BGU) and Brian Reiser (NWU)</b> Interview about Scaffolding		<b>Jeremy Roschelle (SRI)</b> Interview about "Convergent Conceptual Change" -- Reflections on a JLS article that lasted 20 years
	<b>Carolyn Rosé (Carnegie Mellon University)</b> Interview about Learning analytics and educational data mining in learning discourses		<b>Clark Chinn (Rutgers)</b> Interview about Epistemic cognition
	<b>William Sandoval (UCLA)</b> Interview about Situating epistemological development		<b>Mimi Recker (USU)</b> Interview about Teacher learning and technology
	<b>Tim Koschmann (SIUmed)</b> Interview about Conversation and interaction analysis/ ethnomethodological approaches		<b>Pierre Dillenbourg (EPFL)</b> Interview about Orchestrating CSCL
	<b>Sten Ludvigsen (UIO)</b> Interview about Workplace learning with digital resources		<b>Jim Pellegrino (UIC)</b> Interview about Assessment



# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS Resources

### Syllabi:

<http://isls-naples.psy.lmu.de/syllabi/index.html>

NEWS

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Syllabi Collection

print

NAPLeS Syllabi

On this page you can find and download a collection of syllabi that were allocated by different existing Learning Sciences programs. We have arranged the syllabi in four different main themes:

(1) How People Learn, (2) Supporting Learning, (3) Methodologies for the Learning Sciences and (4) Computer-Supported Collaborative Learning.

Keywords may help you to find the syllabi you are interested in.

How People Learn

📄

**Doctoral Seminar**

by Brent Davis & Michele Jacobsen, University of Calgary

📄

**Embodied Cognition**

by Mitchell Nathan, University of Wisconsin

📄

**Foundations of Learning Sciences**

by Devrim Güven, Günizi Kartal, Emine Erkin

📄

**Foundations of Teaching and Learning**

by Yasmin B. Kafai, University of Pennsylvania

Keywords: Learning Theories, communities

📄

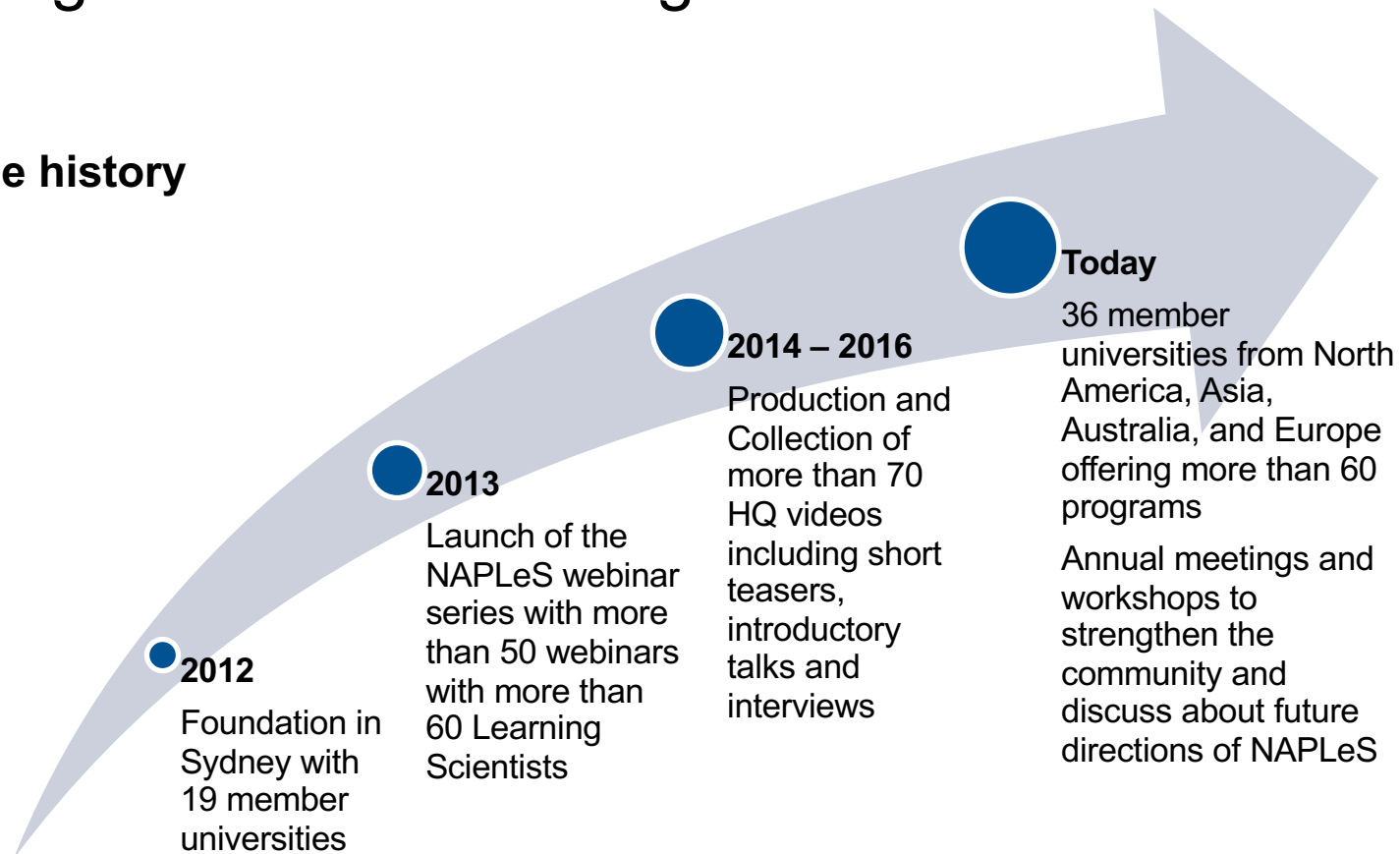
**Foundations of the Learning Sciences**

by Lina Markauskaite, University of Sydney

Keywords: Theories of technology-enhanced learning, cognitive learning theories, foundations of instructional design principles, foundations of learning sciences research

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## The history



# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS members

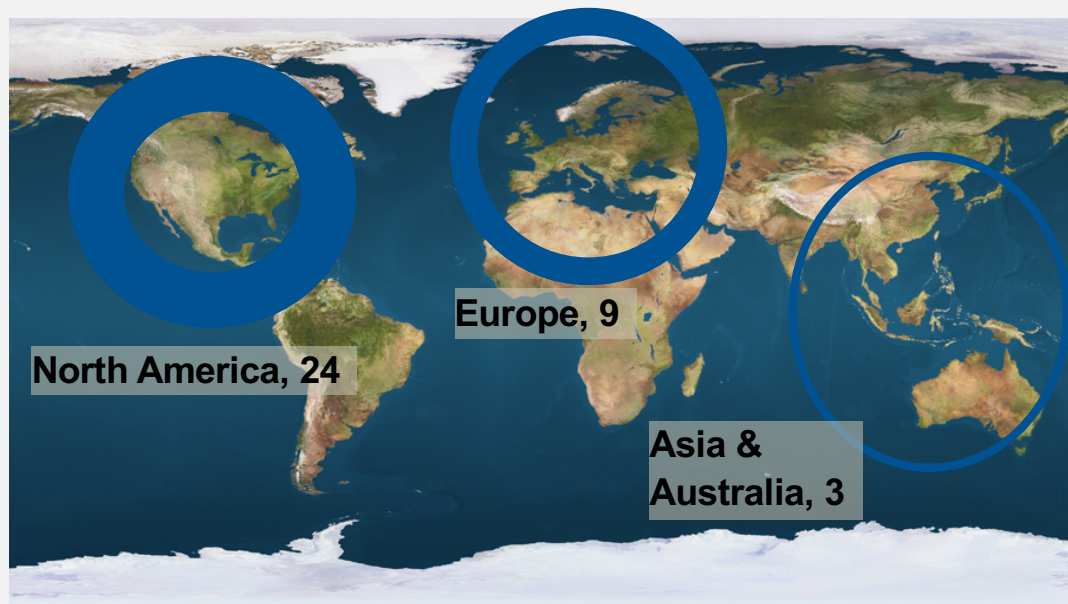
### Status quo:

Concentration on programs in North America, (Europe, and Asia)

### Future directions:

Reach out to programs in Asia and Europe

Collaboration with Learning Sciences initiatives in **Africa** and South America



# NAPLeS: The Network of Academic Programs in the Learning Sciences

## **USA**

- Carnegie Mellon University, Indiana University, New York University, Northwestern University, North Carolina State University, Penn State University, Rutgers University, Stanford University, University at Buffalo, University of California Berkeley, University of California Los Angeles, University of Illinois at Chicago, University of Illinois at Urbana-Champaign, University of New Mexico, University of North Carolina, University of Pennsylvania, University of Pittsburgh, University of Washington, University of Wisconsin-Madison, Utah State University

## **Canada**

- McGill University, Simon Fraser University, University of Calgary, University of Toronto

## **Europe**

- Boğaziçi University, Open University of the Netherlands, Ruhr University Bochum, Saarland University, University of Munich, University of Nottingham, University of Oulu

## **Asia, Middle East, Australia**

- Nanyang Technological University, Singapore, University of Haifa, University of Hong Kong, University of Sydney

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## Learning resources

### Status quo:

- Collection of > 100 videos (recorded webinars, introductions, and interviews) for > 50 topics
- Collection of > 30 syllabi
- NEW: Selection of videos with German captions for local educational use

### Future directions:

- Tagging, editing, and creating new videos around a topic for different learners
- Collecting and creating syllabi that build on the use of NAPLeS resources

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## NAPLeS webpage

### **Status quo:**

- Static website offering NAPLeS information and resources
- Hosted by the Ludwig-Maximilian University of Munich with limited features

### **Future directions:**

- Shifting the NAPLeS content to the website hosted by ISLS
- More features using the Drupal system
- Including more interactive and social features (member login, exchange, etc.)

# NAPLeS: The Network of Academic Programs in the Learning Sciences

## How to become a NAPLeS member program?

### Two main requirements

- PhD or Master's program in the area of Learning Sciences
- At least **3 ISLS members** associated with the program (at least 2 on the faculty level)

### Members are expected to be active in

- Naming a NAPLeS liaison person
- Submitting program information for the NAPLeS webpages
- Provide visiting scholar opportunities
- Submitting exemplary syllabi
- Contribute to the webinar series / NAPLeS resources

# Teaching the Learning Sciences: an Analysis of 75 Programs

## Learning Sciences

- Academic community investigating human learning
- Includes researchers from diverse backgrounds
  - Psychology
  - Sociology
  - Computer science
  - Science & science education
  - ...
- Community with a growing *membership, spreading, and maturity*
- Increasing number of LS degree programs worldwide



# Teaching the Learning Sciences: an Analysis of 75 Programs

## But what do we know about these programs?

So far, it is unknown ...

- ... what the *disciplinary backgrounds* of LS programs are?
- ... what these programs actually teach?
- ... if there is some homogeneity between the various programs?

# Teaching the Learning Sciences: an Analysis of 75 Programs

## Research Questions

1. Which *disciplines* are involved in teaching the Learning Sciences?
2. What are the *core concepts* taught in Learning Sciences programs?
3. What are the *core methods* taught in Learning Sciences programs?
4. Can we identify a core of *more homogeneous* Learning Sciences programs?

# Teaching the Learning Sciences: an Analysis of 75 Programs

## Method

### Document analysis (Bowen, 2009)

- Website contents of international graduate LS programs
- Qualitative content analysis (Mayring, 2001, 2014)

### Inclusion criteria

- English online presentation
- Self-identification as Learning Sciences operationalized by:  
*Learning Sciences, Learning Science, or Sciences of Learning*

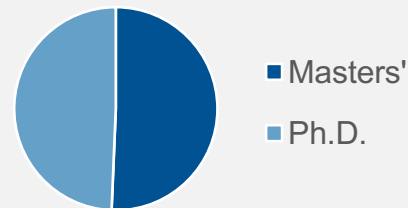
→ Differentiation of programs identifying/not identifying as LS is crucial to make inferences about *LS programs*

# Teaching the Learning Sciences: an Analysis of 75 Programs

## Sample

### 75 Learning Sciences programs

- 51% Master's programs ( $N = 38$ )
- 49% Ph.D. programs ( $N = 37$ )

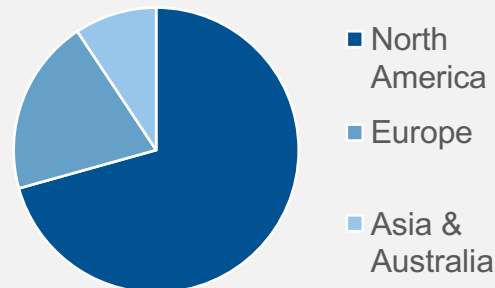


### NAPLeS membership

- 57% ( $N = 43$ )

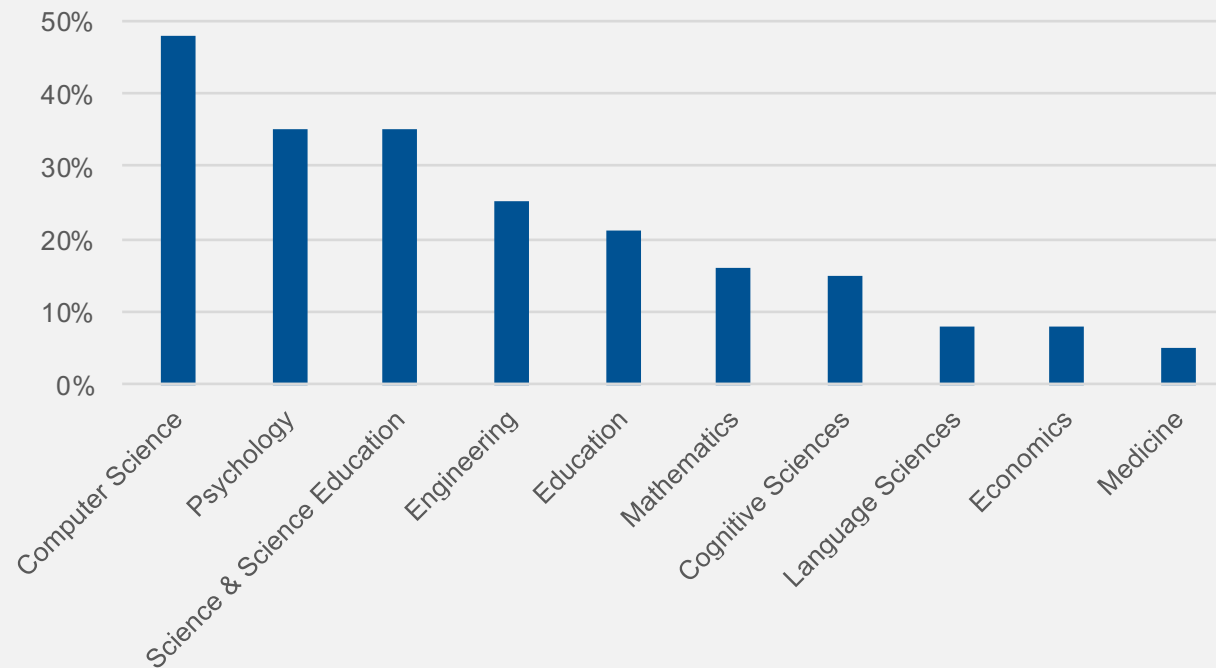
### Regional distribution

- North America 71% ( $N = 53$ )
- Europe 20% ( $N = 15$ )
- Asia and Australia 9% ( $N = 7$ )



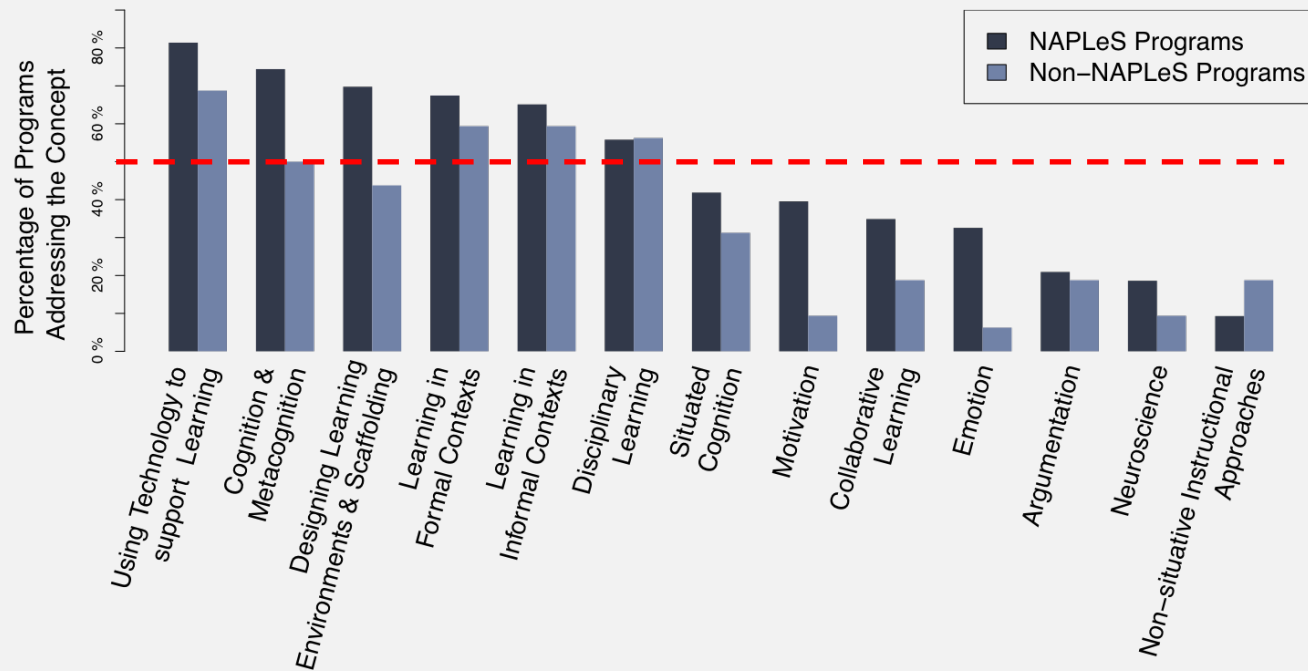
# Teaching the Learning Sciences: an Analysis of 75 Programs

## Results – Top 10 Involved Disciplines



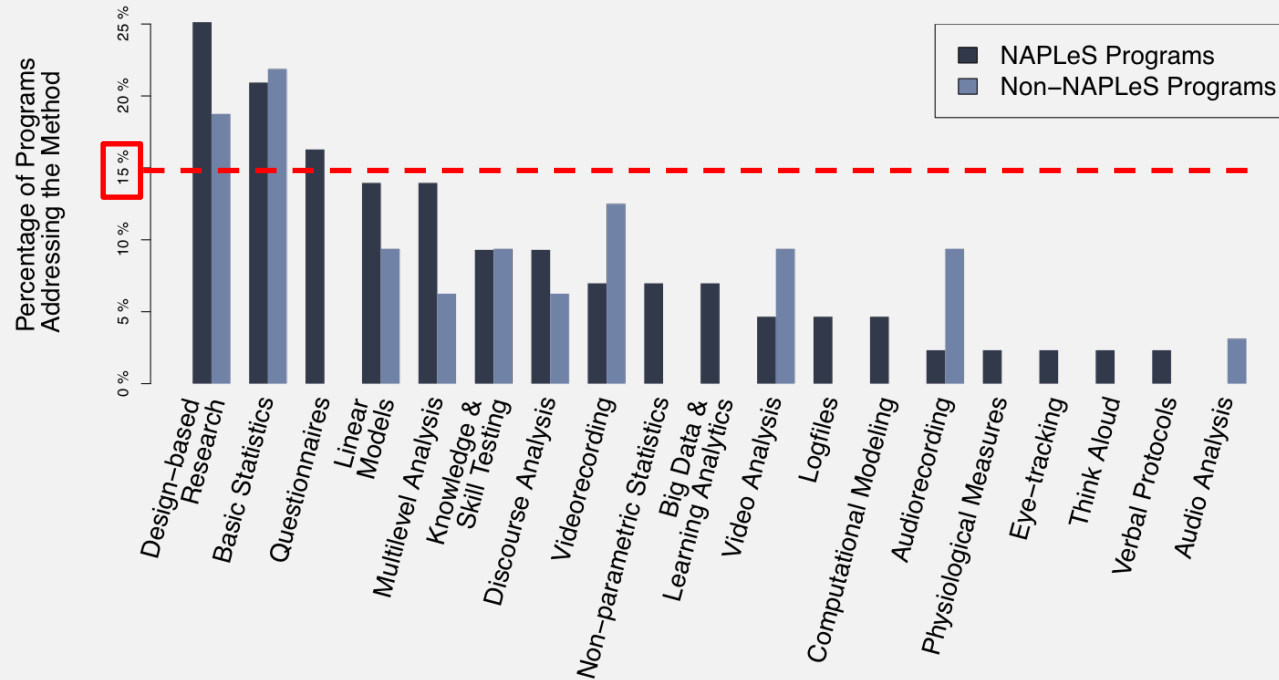
# Teaching the Learning Sciences: an Analysis of 75 Programs

## Results – Core Concepts



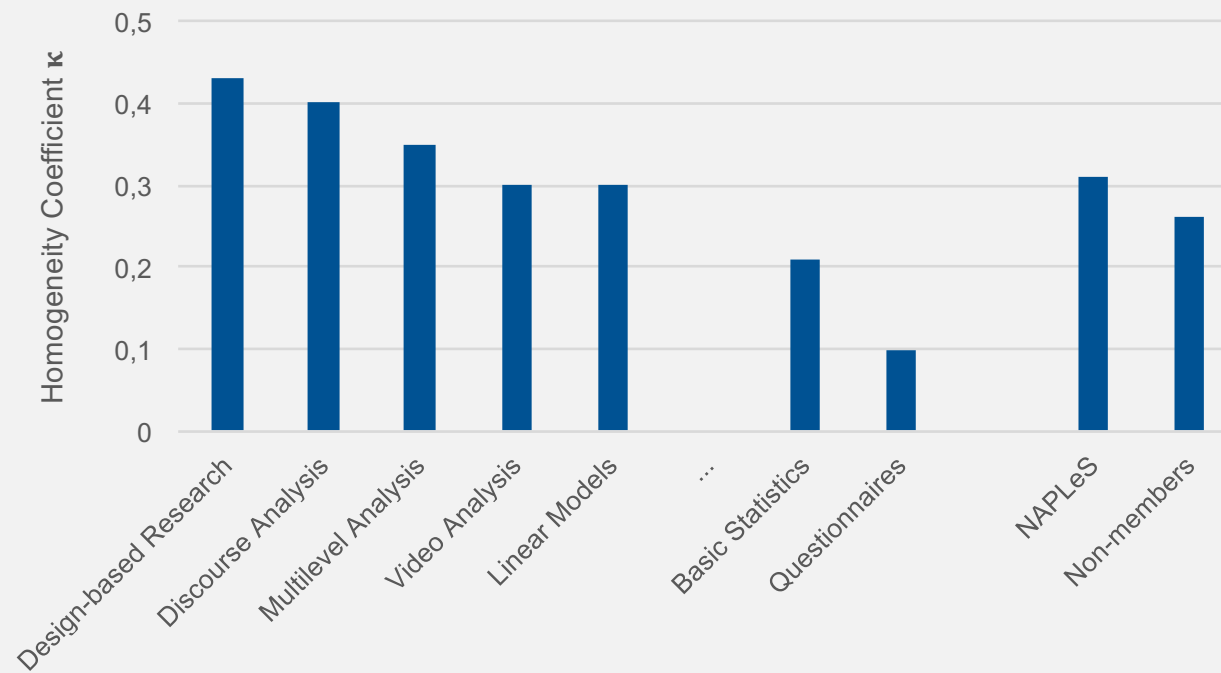
# Teaching the Learning Sciences: an Analysis of 75 Programs

## Results – Core Methods



# Teaching the Learning Sciences: an Analysis of 75 Programs

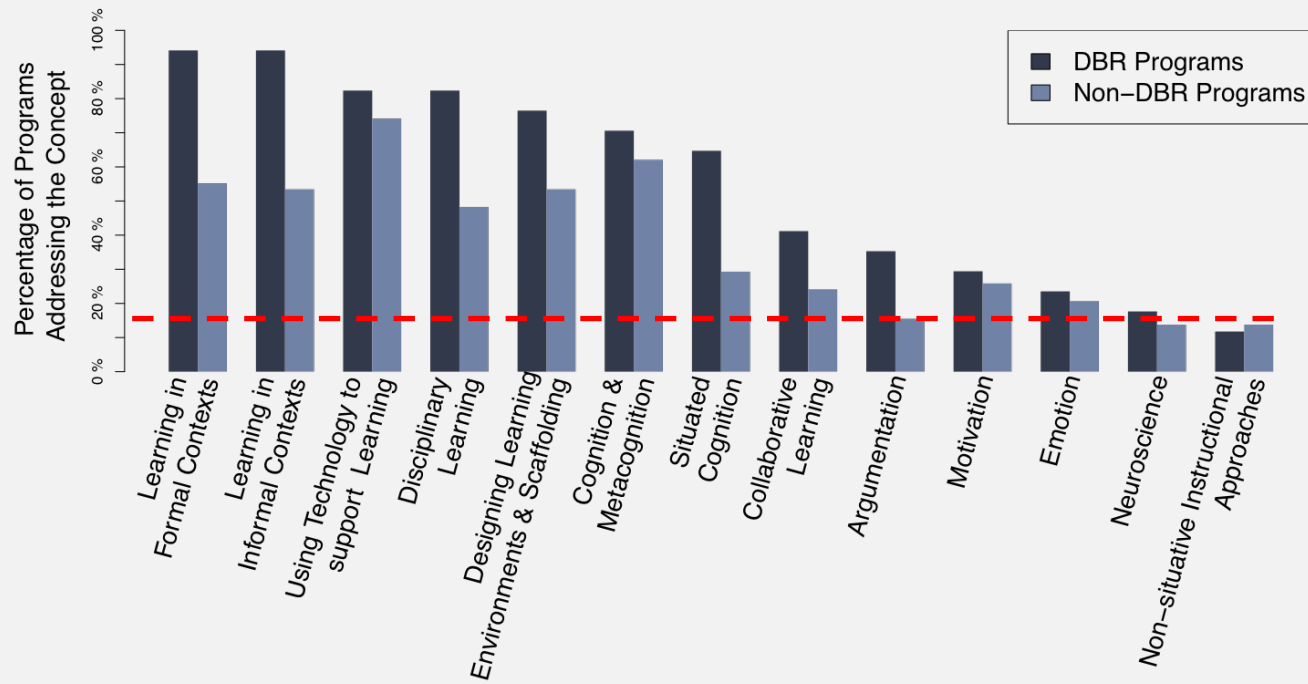
## Results – Homogeneity





# Teaching the Learning Sciences: an Analysis of 75 Programs

## Results – Core Concepts in DBR Programs



# Teaching the Learning Sciences: an Analysis of 75 Programs

## Discussion

### Study provides empirical data

- LS programs include several disciplines
- Several conceptual and methodological cores can be identified

### Important Features of Learning Sciences

- Design-based research constitutes a signature method
- NAPLeS programs are somewhat more homogeneous than other LS programs

### The Learning Sciences as a growing and changing community

- Core themes, but also a variety of concepts and methods from other disciplines

→ *We argue, that this is an indication of a productive scientific community*

# Teaching the Learning Sciences: an Analysis of 75 Programs

## Discussion

### The results on concepts & methods

Only *partially* match other conceptions of LS (Packer & Maddox, 2016), especially regarding research foci (Yoon & Hmelo-Silver, 2017).

→ Possibly a gap between current *research* and *teaching*

### First empirical data that LS degree programs

- show a high conceptual diversity and
- even higher methodological diversity.

### Design-based research

- is the most frequently mentioned method (< 25% of programs)
- and programs teaching it show the highest homogeneity, possibly representing the core of the learning sciences Community of Practice

You want to learn more? Watch out for our upcoming publication:

Sommerhoff, D., et al., (2018). What do we teach when we teach the Learning Sciences? A document analysis of 75 graduate programs. *Journal of the Learning Sciences*, 27(2)

or send me an E-Mail.

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