

Infrastructure and Innovation

John Mitchell

Topics (from Rajeev Alur's email)

- Experience from wide-scale deployment of courses and tools
- Survey of relevant initiatives by
 - Govt agencies
 - MOOC providers
 - Universities
- Collaboration with industry
- Access to data, privacy

Plan

(1) Experience from wide-scale deployment of courses and tools

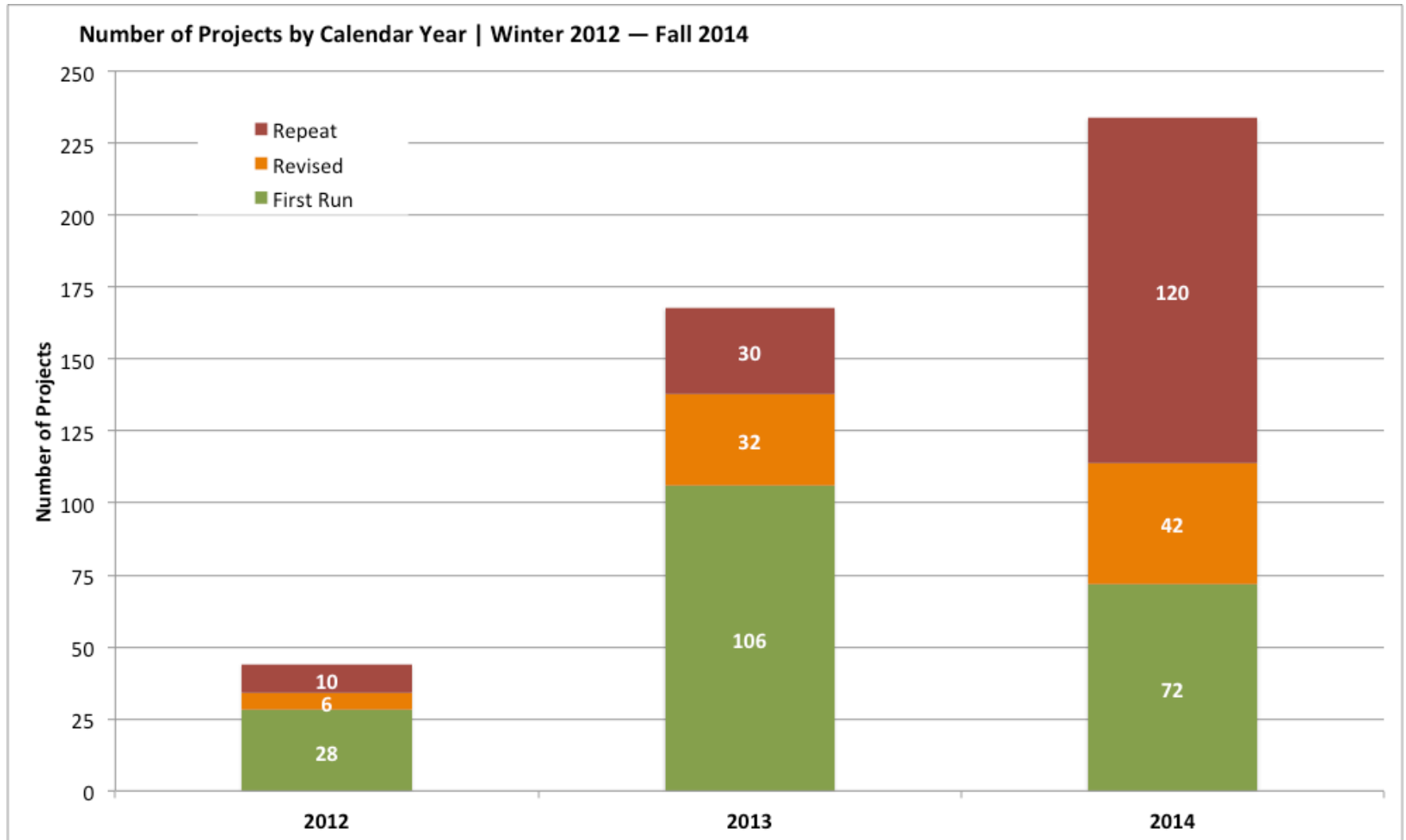
- ~~• Survey of relevant initiatives by~~
 - ~~– Govt agencies~~
 - ~~– MOOC providers~~
 - ~~– Universities~~

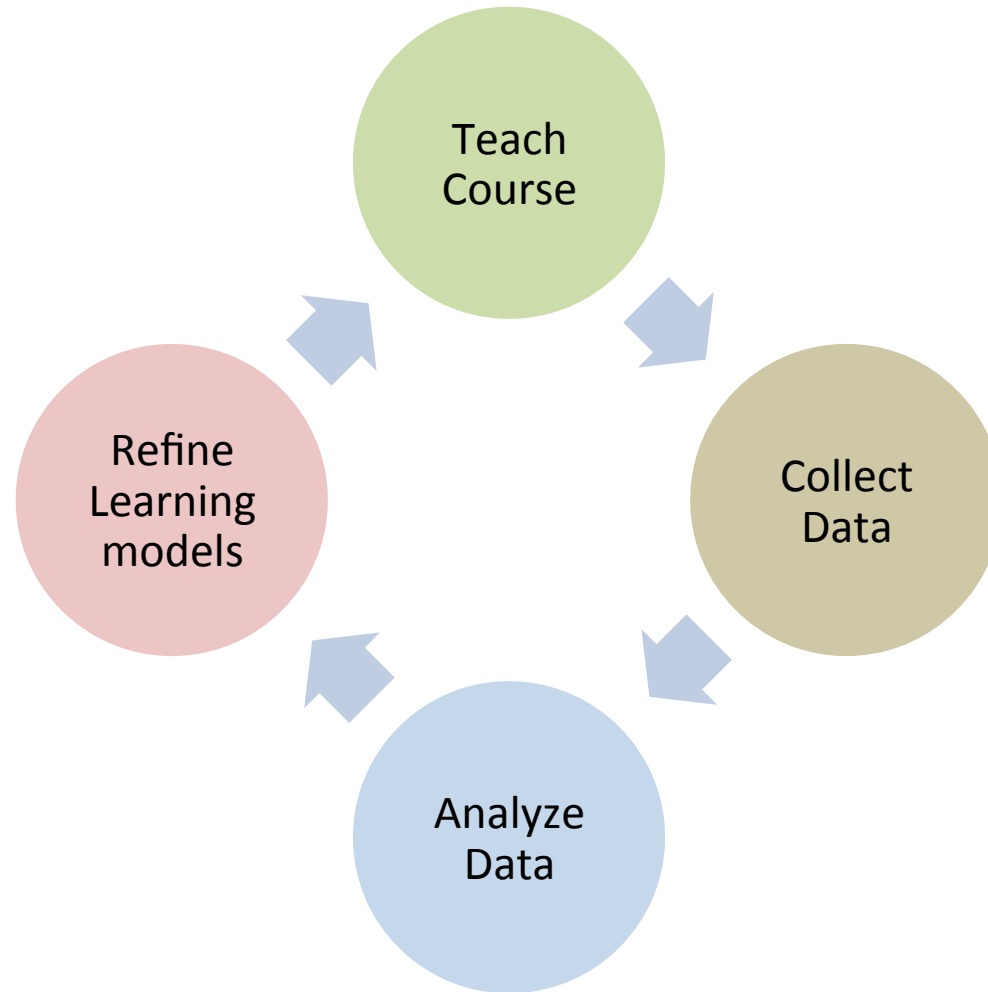
(2) Thoughts on structuring a research prog

- ~~• Collaboration with industry~~

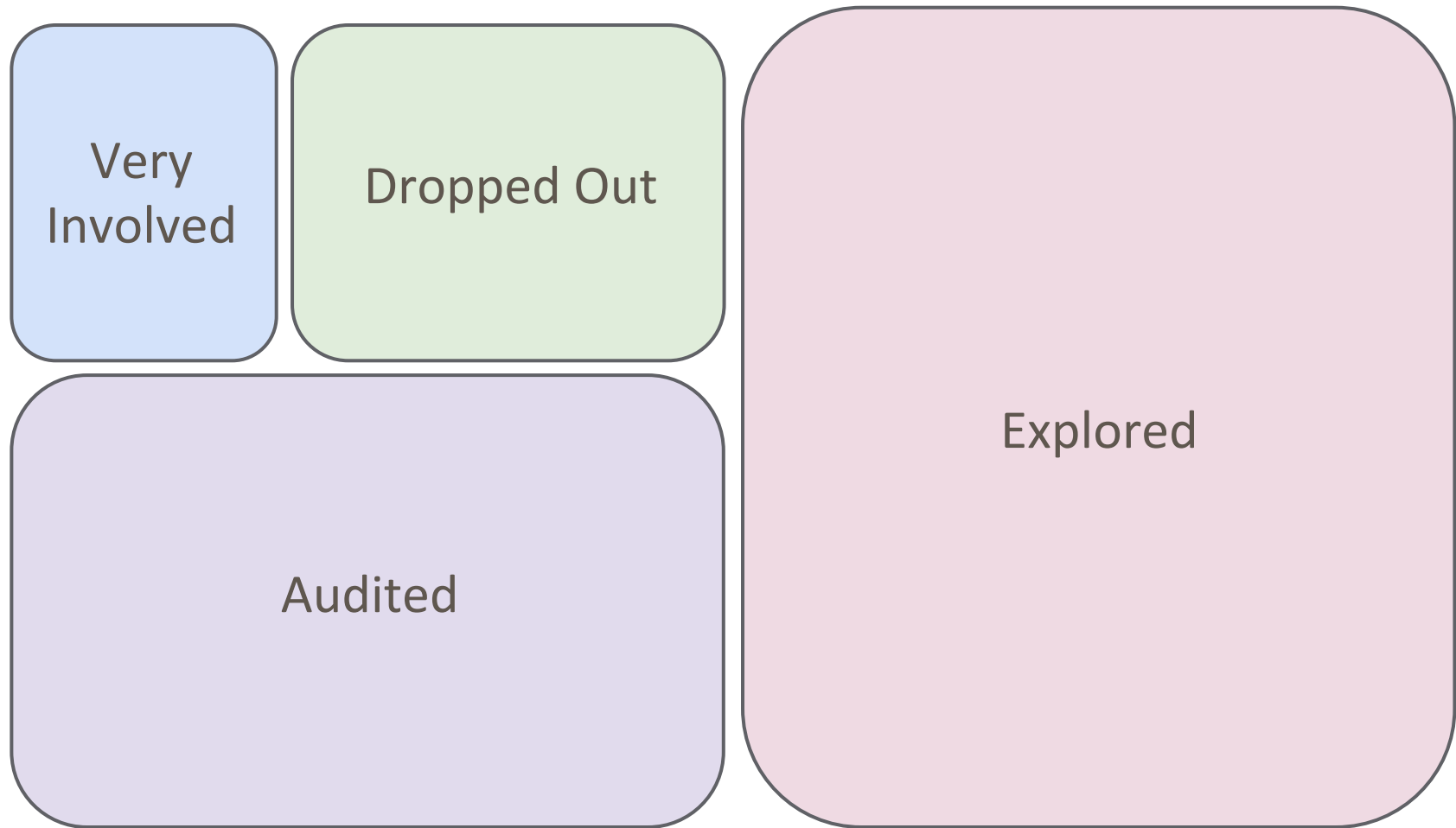
(3) Access to data, privacy

VPOL: 446 Projects over 3 Years





Clustered patterns of engagement

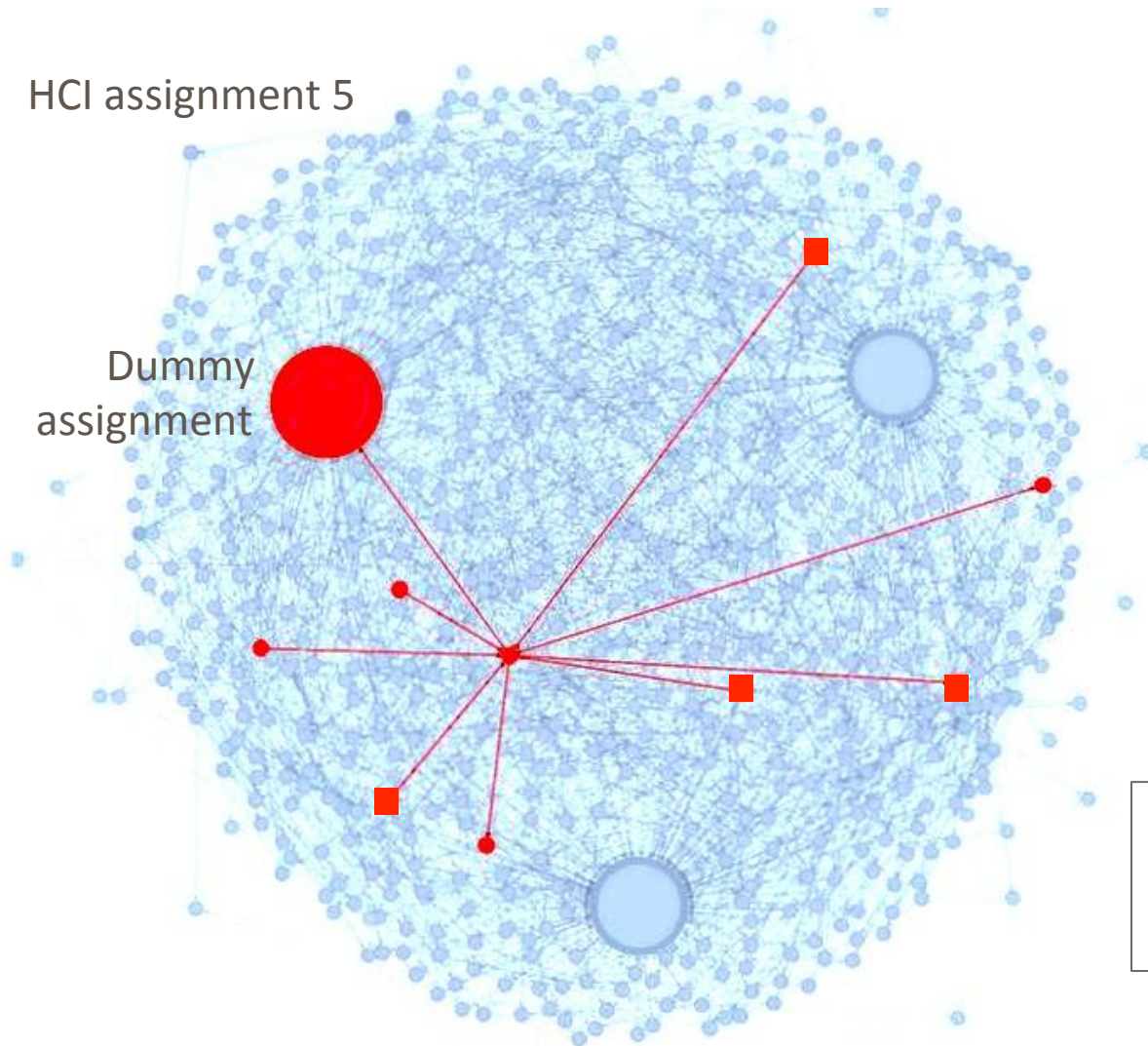


[Kizilcec, Piech, Schneider]

Peer Review Network

HCI assignment 5

Dummy assignment

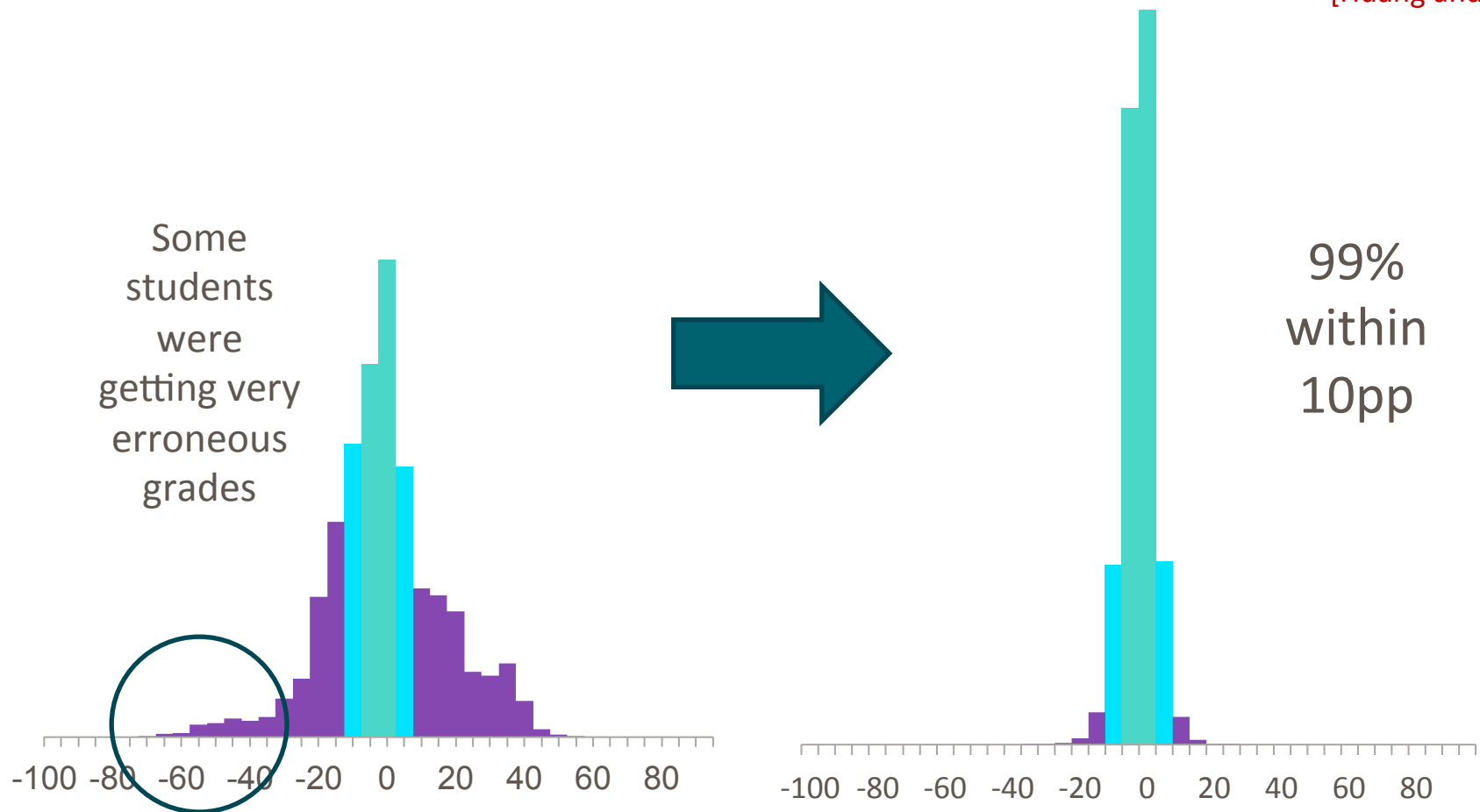


One student is highlighted
● student she graded
■ student who graded her

[Huang and Piech]

Improving Accuracy

[Huang and Piech]



Corrections involve weighting reliable graders and additive correction for bias.



- **Attrition and Achievement Gaps in Online Learning**
 - René F. Kizilcec, Sherif Halawa
- **PeerStudio: Rapid Peer Feedback Emphasizes Revision and Improves Performance**
 - Chinmay E. Kulkarni, Michael S. Bernstein, Scott R. Klemmer
- **Autonomously Generating Hints by Inferring Problem Solving Policies**
 - Chris Piech, Mehran Sahami, Jonathan Huang, Leonidas Guibas

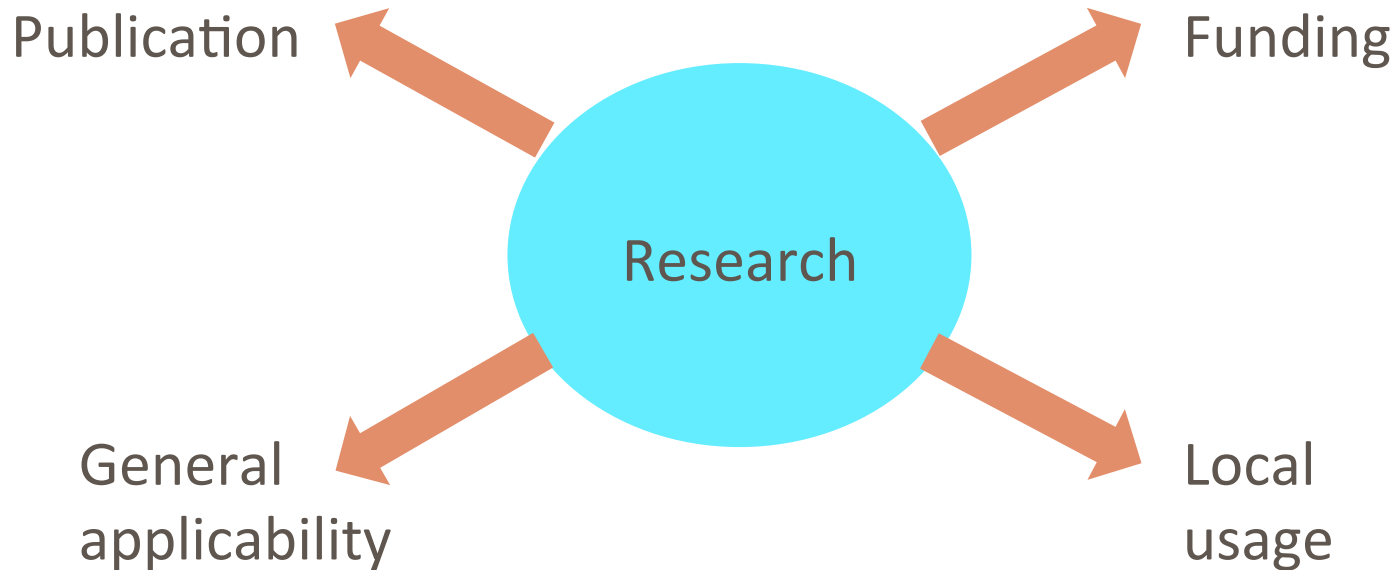
Building a research community

- Very significant progress through
 - L@S, ...
 - This workshop
 - Annual meetings by Coursera, edX
- How are we doing overall?
 - Grand challenge problems
 - Community building
 - Collaboration plan(s)
 - Constructive competition
- What will universities look like in the future?

Institute for the Future of Higher Education

- *Foundations:* Educational psychology, “educational social interaction”, neuroscience, ...
- *Learning science:* research and development
- *Economics and public policy*
- *Computer science:* data modeling, machine learning, social network analysis, sentiment analysis, ..., open-source software tools and systems
- Wild new educational experiments
- Some transition paths for successful experiments

Some tensions



Collaboration across institutions: data sharing, privacy