Multi-Institutional, Multi-National Studies in CSEd Research
Some design considerations and trade-offs

Authors
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- Anthony Robins
- Josh Tenenberg
- Marian Petre
Any resemblance to coauthors, either living or dead, is purely coincidental.

Summary
- Why?
- Why?
- When.
- …and if time allows
  - How
  - How

But What?
- Remember Gary’s talk? (card sorts)
- Remember Beth’s talk? (19 strategies)

Lister (2001): A Fictitious Paper

A Study of Assessment of Programming Skills of First-Year CS Students
Raymond Lister
University of Technology Sydney
Australia

- A single author, presenting results for a single institution.

Lister (2001): A Fictitious Paper

Explanations?
1) Raymond can’t teach.
2) The students are Australian.
3) Raymond teaches at an atypically poor school.
4) If Raymond changed:
   a) From Pascal to C to C++ to Java to Python
   b) Objects early Procedural
   c) Used closed labs Used open labs
   d) More assignments Less Assignments
   …
   < insert your favorite deck chair permutation for the “C.S. Titanic” >
Differential Equations

268 Sep 29 Peter Cooper (4433) Re: Differential Equations
269 Sep 29 Lynn Andrea Stein (3490) Re: Differential Equations
270 Sep 29 Dennis J Frailey (4401) Re: Differential Equations
271 Sep 29 Merkle, Laurence (4701) Re: Differential Equations
272 Sep 29 Brian C. Ladd (2016) Re: Differential Equations
273 Sep 29 Ellen Walker (4920) Re: Differential Equations
274 Sep 29 Dennis J Frailey (3234) Re: Differential Equations
N 275 Sep 29 Ellen Walker (3689) Re: Differential Equations
N 276 Sep 29 Nicholas Duchon (2288) Re: Differential Equations
N 277 Sep 29 Holland, Herb (5784) Re: Differential Equations
N 278 Sep 29 H. Conrad Cunnin (2751) Re: Differential Equations
N 280 Sep 29 Ray Schneider (2697) Re: Differential Equations
N 281 Sep 29 David Klappholz (3490) Re: Differential Equations
N 282 Sep 29 brian (2774) Re: Differential Equations
N 283 Sep 29 David Klappholz (3629) Re: Differential Equations

McCracken, et al. (2004)

Lister (2001): A Fictitious Paper

10 authors; data collected at 4 universities in 2 countries:
- They all can’t teach?
- They can’t all be Australian!
- They are all atypically poor schools?
- Several deck chair permutations on the “C.S. Titanic”

The ITiCSE Working Group Model

  – The first empirical ITiCSE working group
- 2004: The “Leeds Group”
  – Data from 12 universities in 6 countries
  – A study of novice program comprehension

The “BootScaff” Model

Fincher
Petre
Tenenberg

The “BootScaff” Model

- 4 day workshop data collection 4 day workshop
2002 Bootstrap
2003 Bootstrap
2004
2005
The “BootScaff” Model
• 4 day workshop  data collection  4 day workshop
2002 Bootstrap
2003 Bootstrap  Scaffolding
2004  Scaffolding
2005

Adapted Models
• Structure adapted from ITiCSE Working group model and BootScaff model:
  – BRACElet
  – South Carolina Group
  – Explore CSED
  – Swedish Group
  – DC Group
  – … more by the end of this conference.

Summary / Conclusion
• Why?
  – Tackles directly the issue of generality
  – At the interface of research and practice
• Genealogy
  – McCracken ITiCSE working group
  – “BootScaff”: Fincher, Petre, Tenenberg
• The emerging multi-institutional method
  – Cross institutional comparisons
  – VOIP

Variation across institutions?

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- (from BRACE)

• We should routinely compare across institutions, for consistency and variation.
• May require more data per institution.

And now for those who have been part of these projects …

A thought about cross-institutional comparisons
Voice Over IP

- Thus far, email primary medium, but:
  - Skype
  - GoogleTalk
  - Marratech

- (time zones remain a problem)

Summary / Conclusion

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  - At the interface of research and practice

- Genealogy
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  - “BootScaf”: Fincher, Petrè, Tenenberg

- The emerging multi-institutional method
  - Cross institutional comparisons
  - VOIP