SoTL Research Design: Methods

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Adapted from Klyczek, Waterman & Marsteller 2014

Human Subjects

- Because you are working with humans, you must submit a Human Subjects or IRB application according to your institution's procedures.
- This is required if you plan to publish your results
- Most projects are Category I - what one might do in the normal course of teaching

Common SoTL Research Designs

Quantitative Designs:

Focusing on pre/post assessment, often limited by time (snapshot)

Pros: Simple to robust analysis possible, deployment, cost-effective

Cons: Can be simplistic (capture issues), limited scope, analysis bound

Qualitative Designs:

Focusing on rich data, collection from multiple sources driven by interviews, artifacts and reflections

Pros: Deep analysis, longitudinal, story-telling

Cons: Resource intensive, data prep, often team based evaluation

Best option? COMBINE BOTH (if possible) to provide a rich analysis from a multi-dimensional framework using mixed-mode design.

Thinking about collecting data

- From whom are you gathering data?

  More than one class, subgroups?

- When will you gather data?

  First week of classes? After the new thing has been introduced? Fall? Spring?

- How will you gather data?

  Questions, artifacts, observations?

- Where will you gather data?

  Classroom, online forum, dropbox survey?

Methods: Unstructured Observations

- Examples
  - A journal that an instructor keeps to record personal impressions of how a class is going.
  - A written remembrance of interactions with one or a few students that are being tracked over time.
  - A written set of impressions made while watching a videotape of a class.

Methods: Questioning with Surveys

- Examples:
  - A survey of attitudes toward science
  - Student ratings of instruction
  - May include open-ended questions, e.g., what element of this course most helped you to learn?
  - May include some content, but if only content, it's a test and is an artifact of the course.

Methods: Questioning with Interviews and Focus Groups

- Advantage over surveys: can ask follow-ups, more personal contact.
- Gain large amounts of reflective information
- Examples:
  - Solve a genetics problem aloud, explaining thinking
  - Interview of team members in small groups

Method: Examine and Score Artifacts

Examples of artifacts:

- Diagrams of cells before and after instruction
- Wear on computer keys to see which are hit most
- Answers to a test question
- Portfolios
- Term papers
- Case analyses

Method: Longitudinal Analysis

- Determine long term outcomes from cases, instructional changes, curriculum improvements
- Examples:
  - Changes in number of majors, course enrollment, research experiences taken
  - Application/acceptance to graduate/professional school
  - Career decisions and future plans

More Examples

- http://www.sotl.ilstu.edu/examples/
- http://www.buffalostate.edu/orgs/castl/examples.html
- http://www.sotl.ilstu.edu/examples/isupub.shtml
- http://www.indiana.edu/~sotl/onlinepres.html
- http://www.vanderbilt.edu/cft/resources/teaching_resources/reflecting/sotl.htm#sample