Jan 24th, 2:15 PM - 3:00 PM

Scaffolding SoTL: A Two-Year Iterative Process to Launch a SoTL Community

Sue Mattson  
*University of South Alabama, smattson@southalabama.edu*

Jen Friberg  
*Illinois State University, jfribe@ilstu.edu*

Follow this and additional works at: [https://digitalcommons.georgiasouthern.edu/sotlcommons](https://digitalcommons.georgiasouthern.edu/sotlcommons)

Part of the [Curriculum and Instruction Commons](https://digitalcommons.georgiasouthern.edu/sotlcommons), [Educational Assessment, Evaluation, and Research Commons](https://digitalcommons.georgiasouthern.edu/sotlcommons), [Educational Methods Commons](https://digitalcommons.georgiasouthern.edu/sotlcommons), [Higher Education Commons](https://digitalcommons.georgiasouthern.edu/sotlcommons), and the [Social and Philosophical Foundations of Education Commons](https://digitalcommons.georgiasouthern.edu/sotlcommons)

Recommended Citation


This presentation (open access) is brought to you for free and open access by the Conferences & Events at Digital Commons@Georgia Southern. It has been accepted for inclusion in SoTL Commons Conference by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
And you may ask yourself, well
How did I get here?
Talking Heads, Once in a Lifetime (1980)
### Schedule-at-a-Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am</td>
<td>Registration opens</td>
<td>Registration opens</td>
</tr>
<tr>
<td>8:30-10:00 am</td>
<td>Continental Breakfast and Poster Presentations</td>
<td>Breakfast Buffet and Poster Presentations</td>
</tr>
<tr>
<td>10:15-11:00 am</td>
<td>Session 1</td>
<td>Session 6</td>
</tr>
<tr>
<td>11:15-12:00 pm</td>
<td>Session 2</td>
<td>Session 7</td>
</tr>
<tr>
<td>12:00-2:00 pm</td>
<td>Lunch &amp; Opening Remarks</td>
<td>Lunch &amp; Keynote Presentation</td>
</tr>
<tr>
<td></td>
<td>Keynote Presentation Dr. Jennifer Friberg</td>
<td>Keynote Presentation Dr. Jeffrey Karpickis</td>
</tr>
<tr>
<td>2:15-3:00 pm</td>
<td>Session 3</td>
<td>Session 8</td>
</tr>
<tr>
<td>3:15-4:00 pm</td>
<td>Session 4</td>
<td>Session 9</td>
</tr>
<tr>
<td>4:15 – 5:30 pm</td>
<td>Session 5 (Research Briefs)</td>
<td>4:15-5:15 pm Session 10 (Research Briefs)</td>
</tr>
</tbody>
</table>

### Effects of Math Anxiety and Test Anxiety on Voluntary Reassessments in Standards-Based Grading

**Drew Lewis**  
Department of Mathematics and Statistics  
University of South Alabama  
January 25, 2019  

*Supported by SoTL USA program*
Scaffolding SoTL: A Two-Year Iterative Process to Launch a SoTL Community

Jan 24-25, 2019

Sue Mattson
University of South Alabama

Jen Friberg
Illinois State University
How did we get here?

Program level

Sue Mattson
Day job: Course redesign
USA hire: Fall 2014
Research interests:
Systems thinking, outcomes scaffolding, managing change
Teaching interests:
Biology, science education

2016-17
- Active Learning Initiative at South Alabama (ALISA) (11 courses)
- AAC&Us PKAL Institute and SoTL FLC to improve STEM project
- SoTL Studio (6 faculty)
- SoTL Mini-grant Program (4 @ 2K)
- Conference on Teaching & Learning (CoTL) (4 projects)

2017-18
- Summer SoTL Academy (20 faculty)
- SoTL Mini-grant Program (11 @ 1K)
- SoTL showcase @ CoTL (10 projects)

2018-19
- Summer SoTL Academy (26 faculty)
- SoTL Mini-grant Program (18 @ $500 [internal dissemination] + $500 [external dissemination])
- USA presentation options
- Peer-reviewed conference or journal submission

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
How did we get here?

Faculty level

Drew Lewis

Day job: Math faculty
USA hire: Fall 2016
Research interests: Commutative algebra and algebraic geometry
Teaching interests: Standards-based grading (SBG), Team-based learning (TBL)

2016-17
❖ Introduced SBG to faculty
❖ Certified in TBL

2017-18
❖ Awarded “Most Engaged New Faculty Member”
❖ SoTL program mini-grant awardee
❖ Taught SBG and TBL for the first time
❖ SoTL showcase presentation at CoTL

2018-19
❖ Awarded TeamUSA (TBL) QEP Educator of Distinction
❖ SoTL program mini-grant awardee
❖ SoTL Commons presentation
**Summer 2016: Let’s get this party started!**

**Visioning**

<table>
<thead>
<tr>
<th>SoTL 1, 3 and 5 Years From Now: Five Ws and One H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who is involved?</strong></td>
</tr>
<tr>
<td><strong>What types of problems and questions are being researched?</strong></td>
</tr>
<tr>
<td><strong>When are faculty conducting SoTL research?</strong></td>
</tr>
<tr>
<td><strong>Where is research taking place?</strong></td>
</tr>
<tr>
<td><strong>Why are faculty doing this work?</strong></td>
</tr>
<tr>
<td><strong>How is this work being used to support continuous improvement?</strong></td>
</tr>
</tbody>
</table>

**Theory of Change**

**Outputs**
- SoTL USA program

**Outcomes**
- Improved student outcomes

**Impact**
- Increased success & access

**Designing (handout)**
- Institutional fit
- Administrative support
- Staged priorities
- Program structure
- Incentive structure
- Staffing & managing
- Attraction
- Community building
- Onboarding
- Project support

**Staging**

<table>
<thead>
<tr>
<th>Structure</th>
<th>Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>Years 2 &amp; 3</td>
</tr>
<tr>
<td>Sustain</td>
<td>Years 4 &amp; 5</td>
</tr>
<tr>
<td>Studye</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Share</td>
<td>Annual outlets</td>
</tr>
</tbody>
</table>

**How is this work being used to support continuous improvement?**
Design hypothesis: If I do X, then Y will happen

### Design foundations

<table>
<thead>
<tr>
<th>Foundation</th>
<th>Year 1 - 2016</th>
<th>Year 2 - 2017</th>
<th>Year 3 - 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional fit</strong></td>
<td>Align with USA strategic priority to increase student success and access</td>
<td>Promote potential for T&amp;P portfolio; supply accreditation artifacts</td>
<td></td>
</tr>
<tr>
<td><strong>Administrative support</strong></td>
<td>Presented re-funded; CSU presentations announced to deans and chairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Priorities</strong></td>
<td>Expand course improvement programming; keep &quot;raised hand&quot; engaged; introduce formal SoTL presence; develop incentive structure; generate process and product models; demonstrate proof of concept; identify risks</td>
<td>Increase need; expand outreach content; incentivize based on deliverables; develop community aspect; focus support on project creation; build program portfolio; manage toward scaling; mitigate risks</td>
<td></td>
</tr>
<tr>
<td><strong>Structure (Y1)</strong></td>
<td><strong>Design foundations</strong></td>
<td><strong>are &quot;keystone&quot; variables of a complex SoTL system</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Scale (Y2-3)</strong></td>
<td><strong>Represent interlinked problems/opportunities that change as a program develops</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Sustain (Y4-5)** | **have design "solutions" that** | - can be informed by both the literature and experience  
- take on a dynamic quality that often requires "Just-in-time" (JiT) adjustments and inventions  
- are separately and cumulatively testable as program design hypotheses |  |

#### Program structure
- Summer Studio (2 x 2.5 hr sessions)
- Fall and Spring group check-ins
- Presentation at CSU
- 3-semester cycle

#### Incentives structure
- $2K Mini-grant
  - $500 Summer PD
  - $1K Data collected
  - $500 CoT@USA

- $300 Summer PD ($500/day)

- $2K Mini-grant
  - $500 IRB
  - $500 @ USA & exit survey

- $300 Summer PD ($500/day)

- $2K Mini-grant (2 phases)
  - $500 IRB
  - $300 USA presentation & exit survey
  - $500 conference or journal

#### Staffing & managing
- Designers/PD facilitator/managers; two PD peers and proposal reviewers
- Manager/coach; invited PD facilitator; three ILT project coaches; G-Drive folders

#### Attraction
- Invited from USA applicants; by invitation; 7 participants/4 projects
- Open call to all faculty: first come first served
- 20 Academy participants; 11 mini-grant proposals/awards

#### Community building
- Cohort model established
- Academy: Proposal work in small groups
- Peer: Dept groups encouraged
- Sharing: Private feedback using G-drive
- Academy: Proposal work in "Home" group
- Peer: proposal pitch in facilitated "Away" group
- Peer: Review of proposals with home, away and coach contribution
- Sharing: Peer sharing using G-Drive

#### Onboarding outputs
- Prep: SoTL readings & OER study debrief
- Day 1: Research problem defined
- Oversight: Vignette describing learning problem, intervention, and indicators of improvement
- Day 2: Discuss study designs and submit proposal for feedback after polishing
- Prep: None
- Day 1: Research question shared
- Oversight: Research plan drafted
- Day 2: Research proposal coaching
- Mini-grant applicants: Updated planer submitted
- Prep: SoTL readings and online HW
- Day 1: Verte research question
- Oversight: Research planner submitted
- Day 2: Research proposal "pitch"
- Mini-grant applicants: Structured form and off-checked proposal submitted
What if X doesn’t result in Y?

2017 Observations

- Projects stalled early
  - instrument knowledge, IRB delays
- Study designs misaligned and/or underdeveloped
- Inexperience with raw-to-publishable data work
  - processing data, analytic techniques, graphing skills
- Major efforts needed to ready project outputs into quality public forms
- Faculty underestimated, never found, or ran out of time
- Unfinished studies mean SoTL doesn’t gain a foothold

2017 adjustments

Institutional fit
Administrative support
Program priorities
Program structure
Incentive structure
Staffing and managing
Attraction
Onboarding
Faculty support

2018 adjustments

Institutional fit
Administrative support
Program priorities
Program structure
Incentive structure
Staffing and managing
Attraction
Community role
Onboarding
Faculty support
Onboarding: Content flow and session organization

Creating content for the Summer Academy has been an iterative process, too!

The tricky wicket has been finding the balance between providing necessary information about SoTL and providing active planning time for SoTL project development.

**2017 Cohort**

**2 day workshop**

- **Day 1 (content day!)**
  - “intro to SoTL” content
  - developing SoTL questions
  - identify study methods
  - sharing SoTL (locally and more)

- **Day 2 (design day!)**
  - small group work
  - 1:1 consultations with experienced SoTL peers
  - individual work on proposals

**2018 Cohort**

**1.5 day workshop**

- **Day 1 (idea day!)**
  - draft SoTL question
  - speed stating with peer feedback
  - identifying lit review resources
  - brainstorming data sources
  - study design coaching session

- **Day 2 (draft day!)**
  - project “pitch” with peer feedback
  - ethics and SoTL
  - IRB considerations
  - sharing SoTL
  - mini-grant proposal consultations

So...from 2017 to 2018, much of the content stayed the same, but content was emphasized and organized differently to meet the needs of Academy participants!
It was clear “ready references” or aids in project planning would be helpful as additional resources for the 2018 Academy participants. So, we got to work!

A process called “speed stating” was used to help participants describe teaching/learning issues and gather peer feedback to identify a SoTL question.

Two other resources were created to describe different study designs and various data sources and methods that might be applied to a SoTL project.
Onboarding: Lessons Learned

Timing of content matters.

Peer interaction is part of the learning curve.

Starting with the end in mind is critical.
**Faculty support: Iterative scaffolding**

**Starting with the end in mind is critical...**

**SoTL Ends:**
- Apply SoTL locally to improve student outcomes
- Disseminate SoTL to benefit the broader community

**Analysis**
This is a prior knowledge problem that creates hurdles that overload faculty bandwidth

**2017 Observations**
- Projects stalled early
- Study designs misaligned and/or underdeveloped
- Inexperience with raw-to-publishable data work
- Major efforts needed to ready project outputs into quality public forms
- Faculty underestimated, never found, or ran out of time
- Unfinished studies mean SoTL doesn’t gain a foothold

**Hypothesis:** Scaffolding through hurdles can help build requisite knowledge and offset some bandwidth overload

**SoTL Hurdles (handout)**
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

---

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
Iterative scaffolding in Year 1: Scaffolding elements

Top priorities:
- Defining problems that lead to SMART questions
- Quality presentations as indicators of quality program

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL
## Iterative scaffolding in Year 1: Defining problems

### SPEED-STATING: WHAT'S THE PROBLEM?

<table>
<thead>
<tr>
<th>What do you observe that indicates there's a problem?</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does the problem impact student mastery and success?</td>
</tr>
<tr>
<td>How does the problem impact your teaching practices?</td>
</tr>
<tr>
<td>What have you previously tried to address the problem? What happened?</td>
</tr>
<tr>
<td>What have you thought about as next actions?</td>
</tr>
<tr>
<td>What would progress toward addressing the problem look like?</td>
</tr>
</tbody>
</table>

**NOTES**
### Iterative scaffolding in Year 1: Study planning v1

#### SoTL Hurdles

- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

#### This element's targets

<table>
<thead>
<tr>
<th>2016 SoTL Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Research Proposal</td>
</tr>
<tr>
<td>What's the learning problem? What student learning outcomes are not being met? What aren't students mastering? Describe the evidence that you're basing this on – what do you see in students' work, performance, behaviors and communications.</td>
</tr>
<tr>
<td>What questions does this raise about teaching and learning in your course? What questions about learning and learners do you have? Consider these types of questions: What is...? What works...? What would happen if...?</td>
</tr>
<tr>
<td>What does preliminary exposure to the literature suggest about the problem and/or your questions? What are your next steps in doing a lift review – what resources, keywords, etc.? What other types of background work might you do?</td>
</tr>
<tr>
<td>Describe 1-3 actions you are thinking of taking to answer your questions. Be sure to include what you will do, what students will do and what types of evidence (i.e., data) of relevant student thinking and learning will be captured or produced in the process?</td>
</tr>
<tr>
<td>Describe how you will use this data to answer your questions. What will you be looking for? What standards might you use to come to preliminary conclusions?</td>
</tr>
<tr>
<td>In addition to the Conferences on Teaching and Learning (CoTL) at USA. In which forums might you consider “going public?”</td>
</tr>
<tr>
<td>What is a preliminary timeframe for the above action plan? Can you identify milestones and target dates in between now and CoTL?</td>
</tr>
<tr>
<td>How do you see using the funds to support your SoTL work? ($500 for final proposal [Aug]; $1000 for initial implementation [fall or spring]; $500 for CoTL and 2017 Studio contribution)</td>
</tr>
<tr>
<td>What type of support from the DLC, TBL, the library or other resources do you think you'll need to successfully implement your action plan?</td>
</tr>
<tr>
<td>What concerns do you have at this point? What might be a barrier to successfully implementing your action plan?</td>
</tr>
<tr>
<td>Any questions, comments, ideas?</td>
</tr>
<tr>
<td>Please submit your proposal for review by August 1 to <a href="mailto:smattson@southalabama.edu">smattson@southalabama.edu</a>. Thanks!</td>
</tr>
</tbody>
</table>

**Speed dating: What's the problem?**

| Each member of the dyad has five minutes to introduce a teaching and learning problem. Group members then have three minutes to ask questions of the other to discover where the problem relates to existing and success. |
| How does the problem impact student learning and success? |
| What does the problem impact student learning and success? |
| How do you previously think to address the problem? What happened? |
| What does the problem look like at the moment? |
| How do you plan to address the problem? |
| NOTES |
Iterative scaffolding in Year 1: Standard slides

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

This element’s targets

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
More attention needed:
Study design, data work, presenting SoTL

Also...
Earlier coaching and additional feedback cycles
Iterative scaffolding in Year 2: Scaffolding elements

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

Top Priorities:
- Earlier articulation of study design, including data work, and details of implementation
- Improve standard slides for quality presentation of a completed project

Also...
- Early engagement with peers and additional coaches to improve quality of proposals
Iterative scaffolding in Year 2: **Study planning v2**

### SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

### Study design

**Research Proposal Planner**

**What is the learning problem or opportunity?** What student learning outcomes are not being met or could be improved? Describe the evidence that you have that this exists — what do you see in students' work, performance, behaviors and communications to indicate a need for change? (Note: Being specific about the evidence of the problem can indicate the data points that you'll find most relevant.)

**What questions does this raise about teaching and learning in your course?** What questions about learning and learners do you have? Consider these types of questions to get the ball rolling: What is happening here? What accounts for what is happening? What would change if what is happening? What would improvement look like? (Note: These questions can guide your lit review and inform possible actions.)

**If you've done a preliminary lit review, what does exposure to the literature suggest about the problem, interventions and/or your questions?** If not, what are your next steps in doing a lit review? What resources, keywords, etc.? What other types of background work might inform what you do to investigate?

**Describe a pedagogical "move" (i.e. action or change) you are considering (or have taken) that can generate answers to your questions.** Be sure to include what you - and what students will do (or did) and what types of evidence (i.e. data) of relevant student thinking and - In the process? (Note: Being specific will help you operationalize your questions as well as identify risks and benefits to students)

**Pose a SMART research question based.** Consider questions like: What will happen if I do X? How will doing a X change Y? (Note: X and Y need to be as specific as possible)

**Describe how you will use data to answer your questions.** What types of evidence (e.g. student work, performance, behaviors, responses) will you be looking at? What standards might you use to come to preliminary conclusions about the effects of your actions?

**In addition to the Conference on Teaching and Learning (COTL) at USA, in which forums might you consider "going public"?**

**What is a preliminary timeframe for the above action plan?** Can you identify milestones and target dates in between now and COTL in May?

**What types of resources do you think you will need to successfully implement your action plan?**

**What concerns do you have at this point?** What might be a barrier to successfully implementing your plan?

**Any questions, comments, ideas that you need to address before moving forward?**

**If you'd like preliminary feedback, please submit your plan by June 30 to smattson@csutah.edu. Thanks!**
Iterative scaffolding in Year 2: Structured writing

<table>
<thead>
<tr>
<th><strong>SoTL Hurdles</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem definition</strong></td>
</tr>
<tr>
<td><strong>Research question(s)</strong></td>
</tr>
<tr>
<td><strong>Literature integration</strong></td>
</tr>
<tr>
<td><strong>Study design</strong></td>
</tr>
<tr>
<td><strong>IRB</strong></td>
</tr>
<tr>
<td><strong>Data work</strong></td>
</tr>
<tr>
<td><strong>Writing SoTL</strong></td>
</tr>
<tr>
<td><strong>Presenting SoTL</strong></td>
</tr>
<tr>
<td><strong>Publishing SoTL</strong></td>
</tr>
<tr>
<td><strong>This element’s targets</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Iterative scaffolding</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Collection (upload any artifacts)</strong></td>
</tr>
<tr>
<td>Describe how you will add data to answer your questions. What types of evidence (e.g., student work, performance, behaviors, responses) will you be looking at and what evidence do you need to confirm your conclusions about the effects of your actions?</td>
</tr>
<tr>
<td>Where are you in the data collection process?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Results/Analysis (upload an artifact)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>How did the data support your claims? (e.g., graphs, images, multiple paths) How did you describe your data? (e.g., patterns, trends, emergent conceptions) Which evaluation tests did you use (if any)?</td>
</tr>
<tr>
<td>Where are you in the results/analysis process?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Discussion/Significance</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on your findings, how do you answer your research question(s)? What’s your reasoning? What do your results compare to (prior experiences)? Colleague’s experiences? Previous studies? What is the significance of your findings to a task and in your field?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lessons Learnt</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What are any problems or issues that came up in your study design, implementation, data collection or analysis? What impact did these have on your conclusions? What would you recommend to others who might conduct a similar study or replicate your findings? How will you apply your findings to your practice? What are you next steps?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Literature Cited</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the style that your discipline’s preferred journals.</td>
</tr>
</tbody>
</table>

### SoTL Project Update

<table>
<thead>
<tr>
<th><strong>Presentation/Paper Planner</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction/Background</strong></td>
</tr>
<tr>
<td>What’s the learning problem or opportunity? What student learning outcomes are not being met or could be improved? Describe the evidence that you’re basing this on—what do you see in students’ work, performance, behaviors, and communications to indicate a need for change? (Note: being specific about the evidence of the problem can indicate the data points that you’ll find most relevant)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Study Goals</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What questions does this raise about teaching and learning in your course? What questions about learning and learning do you have? Consider these types of questions to get the ball rolling. What is happening here? What accounts for what is happening? What would change what is happening? What would you like to improve like? (Note: these questions can guide your lit review and inform possible sections)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Lit Review/Implications for Study (brief summary)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>If you’ve done a preliminary lit review, what does exposure to the literature suggest about the problem, interventions, and/or your questions? If not, what are your next steps in doing a lit review—what resources, keywords, etc.? What other types of background work might inform what you need to investigate?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Research Question(s)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pose a SMART research question based on the above. Consider questions like: What will happen if A, B, C? How will this affect Y? (Note: “Y” needs to be as specific as possible)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Study Design (upload any artifacts)</strong></th>
</tr>
</thead>
</table>
| Describe a pedagogical “move” (i.e., action or change) you are thinking of taking (or have taken) that can generate answers to your questions. Be sure to include what you will do (or did), what students will do (or did) and what types of evidence (i.e., data) that is relevant student thinking and learning will be (or was) captured or produced in the process? (Note: being specific will
Iterative scaffolding in Year 2: Presentation planner

SoTL Hurdles
Problem definition
Research question(s)
Literature integration
Study design
IRB
Data work
Writing SoTL
Presenting SoTL
Publishing SoTL

This element’s targets

Items iterated

Academic format
Iterative scaffolding in Year 2: Standard slides

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

This element’s targets

Items iterated

Academic format

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
Iterative scaffolding in Year 2: Lessons Learned

More attention needed:
Study design, IRB, data work, writing SoTL

Also…
Weight Summer Academy content toward “how to do” SoTL, proposal to be drafted at Academy, use coaching to converge on polished proposals, support earlier self-sufficiency
Iterative scaffolding in Year 3: Scaffolding elements (to midyear)

Top Priorities:
Explicitly relate the problem and research question(s) to targeted student outcomes
Provide novice-level support for choosing and articulating the details of study design
Provide models for making the IRB process transparent and expedient
Focus on writing SoTL first and presenting and publishing SoTL next

Also...
More extensive involvement of peer critique through iterative proposal drafting and increase self-sufficiency by adding quality check criteria
# Iterative scaffolding in Year 3: SMART questions

## SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

## This element’s targets

## SPEED-STATING: Developing SMART SoTL Questions

<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What do you observe that indicates a problem with student learning?</td>
</tr>
<tr>
<td>2.</td>
<td>What is the problem most evident in student outcomes – how can you confirm it exists?</td>
</tr>
<tr>
<td>3.</td>
<td>What have you previously tried to address the problem? What happened?</td>
</tr>
<tr>
<td>4.</td>
<td>What have you thought about as a next action – what pedagogical technique(s)? What would progress look like – where would you see evidence of change?</td>
</tr>
</tbody>
</table>

### Feedback & Suggestions

<table>
<thead>
<tr>
<th>S</th>
<th>Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Problem, action to be taken, and learning outcomes of interest are unambiguous and are logically related.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M</th>
<th>Measurable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outcomes can be observed, measured, and subjected to scholarly standards of rigorous evidence.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Action-Oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Study involves intervention that acts on the problem and generates data that maps to outcomes of interest.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>Research-Based</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research literature to inform action, interpret results, and shape dissemination.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T</th>
<th>Time-Constrained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Study and dissemination of results completed within a defined time-frame.</td>
</tr>
</tbody>
</table>
Iterative scaffolding in Year 3: Study planning v3

This element’s targets

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

2018 Summer SoTL
Research Planner

- What’s the context for your study? What course(s) are you focusing on? What are the basic course details (e.g., credit hours, class meetings, etc.)? Who are your students (year, majors, backgrounds, GPA, diversity)?
- What’s the learning problem? Describe your evidence—what do you see in students’ work, performance, behaviors, and/or communications that indicates a need for change? Where do you see it? (Note: Being specific about evidence of the problem can indicate what you’ll use as your dependent variable.)
- What does your experience tell you about the problem? How long have you observed the problem? How do you account for the problem? What have you tried previously? What insights does this give you? (Note: These questions can guide your literature review and inform possible actions.)
- What are you considering as an intervention? Describe a pedagogical intervention (i.e., teaching technique) you are thinking of taking. Why are you considering this? Is this something that you can reasonably test? (Note: This becomes your independent variable—it will be important to narrow it down)
- What does the literature tell you? What are your next steps in doing a focused literature search—what journals, keywords, etc.? If you’ve looked at literature, what does it suggest about the problem, interventions, and/or your questions? What other types of background work might inform what you do to investigate?
- Pose a SMART research question based on the above. Consider questions in the form: What will happen if I do X? How does doing a compare between populations A and B? How will doing a effect Y? (Note: It should need to be as specific as possible. Be sure your question identifies your independent and dependent variables.)
- What are your goals? What’s the higher purpose for conducting this study? Why do you want to make this change? What personal or professional goals are involved? Program or department goals? Go beyond the university?
- How will you implement your intervention? What will you do differently? What type of study do you anticipate (descriptive, comparative, experimental, quasi-experimental)? How will you set this up with your student population? What is likely sample size? Will you be able to make comparisons before and after? Will you be able to compare intervention and non-intervention groups? (Note: Being specific will help you identify risks to students)
- What will be your methods for collecting data? Will your study involve quantitative, qualitative, or mixed methods? What types of evidence (e.g., homework, attendance, exam performance, behaviors, survey/Interview responses) will you be looking at? What instruments—techniques and/or tools for collecting data—are you going to use? How will you collect data from your students? Will you be able to identify individual students? Will you process identifying data before grades are due?
- How will you disseminate your findings? In addition to presenting your research here at USA, in which other forums might you consider “going public”? Which journals or conferences might you consider?
- What is a preliminary timeframe for the above action plan?
- What types of resources do you think you’ll need to successfully implement your action plan?
- What concerns do you have at this point? What might be a barrier to successfully implementing your plan?
- Any questions, comments, ideas that you need to address before moving forward?

Summer Academy emphasis

Items iterated
Iterative scaffolding in Year 3: Proposal checklist

SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

This element’s targets

Academic format

Items iterated
### Iterative scaffolding in Year 3: Proposal checklist

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Quality check:</th>
</tr>
</thead>
</table>
| What will you do to better understand or address the problem/opportunity? | - The pedagogical condition or change being studied  
- is specific enough to describe to other faculty to replicate  
- is described in research literature (e.g., in evidence-based)  
- is likely to directly affect student outcomes of interest  
- can be described using direct evidence generated by students  
- can reasonably be studied in your specific teaching context |
| Identify the pedagogical condition (i.e., teaching practice or change(s) (i.e., technique or method) you want to desribe/develop) | |
| Why have you chosen this? | |
| What makes you believe it? How does the change correspond to student outcomes of interest? | |
| Is this something that can be studied systematically by documenting specific student experiences? | |
| Note: For experiments or quasi-experimental studies, a pedagogical change being studied would be considered an independent variable. | |

#### Pose a SMART research question based on the above:

| Descriptive studies: Consider questions in this form for delineate or exploratory studies where you aim to characterize relationships without trying to establish causal relationships. |
|---|---|
| o What happens when condition x is not implemented? A? | |
| o How does implementing x compare to conditions A and B? | |
| o How is x described in population A and B? | |
| o How does x vary across A and B? | |

| Correlational studies: Consider questions in this form when you want to determine whether conditions or student outcomes are related. |
|---|---|
| o Is there a relationship between x and y in population A? | |
| o Does x relate to y in the same way in populations A and B? | |

| Experimental/quasi-experimental studies: Consider questions in this form for studies designed to detect change. |
|---|---|
| o How will doing x affect y in population A? | |
| o What’s your independent variable? Your dependent variable? | |

#### SoTL Hurdles

- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

#### Summer Academy emphasis

- Academic format

---

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
# Iterative scaffolding in Year 3: Proposal checklist

## SoTL Hurdles
- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

## This element's targets
- Summer Academy

## Study design

### Methodology

<table>
<thead>
<tr>
<th>What will you do to better understand or address the problem?</th>
<th>Quality check</th>
</tr>
</thead>
<tbody>
<tr>
<td>- X and Y are variables that need to be as specific as possible. If you can't describe X or Y so that another researcher can envision or replicate your context or study methods, you need to get more specific.</td>
<td>- Enough progress can be made by the end of spring semester 2019 to disseminate findings (including preliminary) at USA</td>
</tr>
</tbody>
</table>

### How will you implement your study?
- What is your unit of analysis (from -)
- What defines your student population? Is the speciﬁc population?
- What kind of study will you conduct? Experimental, correlational, longitudinal, observational?
- How will you recruit participants? How will you select students?
- Will you be working with the same population over time or different populations?
- Will you use a comparison group and, if so, how?
- Will you use a control group to make comparisons? Will you make more comparisons before and after?
- Will you repeat the same intervention more than once?
- Will you compare intervention and non-intervention groups?

### Data work

<table>
<thead>
<tr>
<th>What will your methods for collecting data be?</th>
<th>Quality check</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Your study will involve quantitative (e.g., surveys, interviews, focus groups, etc.) or mixed methods.</td>
<td>- The unit of analysis is a section, course(s), or defined service</td>
</tr>
<tr>
<td>- Data sources will you use?</td>
<td>- Subjects are defined as student population</td>
</tr>
<tr>
<td>- What type of study will you conduct? Experimental, correlational, longitudinal, observational?</td>
<td>- Type of study is identiﬁed and matches the methods described</td>
</tr>
<tr>
<td>- How will you recruit participants? How will you select students?</td>
<td>- Methods for making comparisons (e.g., with baseline data or a control/comparison group) are adequately summarized</td>
</tr>
<tr>
<td>- Will you use a comparison group and, if so, how?</td>
<td>- Exogenous (e.g., uncontrolled, non-random, nuisance) variables that may affect the teaching context and/or student outcomes in unintended ways are recognized and, to the extent possible, controlled</td>
</tr>
<tr>
<td>- Will you use a control group to make comparisons? Will you make more comparisons before and after?</td>
<td></td>
</tr>
<tr>
<td>- Will you repeat the same intervention more than once?</td>
<td></td>
</tr>
<tr>
<td>- Will you compare intervention and non-intervention groups?</td>
<td></td>
</tr>
</tbody>
</table>

### IRB

<table>
<thead>
<tr>
<th>How will you adhere to ethics for Human Research?</th>
<th>Quality check</th>
</tr>
</thead>
<tbody>
<tr>
<td>- How will you recruit and/or access participants?</td>
<td>- Incentives for participating in non-routine course activities (e.g., videotaping, focus groups, surveys, etc.) do NOT beneﬁt grades OR students who don’t participate are offered equivalent beneﬁts</td>
</tr>
<tr>
<td>- How will you obtain informed consent?</td>
<td>- The researcher is not present to obtain informed consent</td>
</tr>
<tr>
<td>- Will you address conﬁdentiality and anonymity?</td>
<td>- Measures are taken to collect, access and report data in ways that maintains conﬁdentiality and anonymity</td>
</tr>
<tr>
<td>- Will you deal with participation and grades?</td>
<td>- When methodologically possible</td>
</tr>
</tbody>
</table>

### Summer Academy emphasis

- Focus on research question(s) and literature integration to ensure a solid foundation for study design.
- Emphasize the importance of clear and specific methodology to facilitate reproducibility and dissemination of findings.
- Address ethical considerations thoroughly to ensure the protection of participants and the integrity of the research process.

---

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
Lessons in progress:
18 proposals, 15 polished; polished proposals supported more successful starts and ongoing self-sufficiency, less intensive “human scaffolding” needed

More attention needed:
Literature integration and, especially, all components of data work

Also…
Two iterative updates of this element planned; standard slides will be offered
Are we there yet?

Faculty level

SoTL Hurdles

- Problem definition
- Research question(s)
- Literature integration
- Study design
- IRB
- Data work
- Writing SoTL
- Presenting SoTL
- Publishing SoTL

Unpublished work © 2019 S.A. Mattson & J.C. Friberg
And you may ask yourself, well
How did I get here?

Talking Heads, Once in a Lifetime (1980)