Scholarship of Teaching and Learning: Using Your Classroom to Increase Peer-Reviewed Publications and Improve Student Outcomes

A joint webinar between the Society for Nutrition Education and Behavior & the American Society for Nutrition
Suzie Goodell, PhD, RDN
NC State University
Panelist

Amy R. Mobley, PhD, RDN
University of Connecticut
Moderator

Lora Beth Brown, EdD, RDN
Brigham Young University
Panelist

Natalie K. Cooke, PhD
NC State University
Panelist

Sarah L. Ash, PhD
NC State University
Moderator
An Introduction to SoTL

Suzie Goodell, PhD, RD
NC State University
Current SNEB Higher Education Division Chair,
Former ASN Nutrition Education RIS Chair
What is SoTL?

• Scholarship of Teaching and Learning
• Purpose: Improve teaching and student learning outcomes
  – Higher Education
• Questions to ask:
  – Is my teaching effective? Is it doing what I want it to do for my students?
  – How is this helpful to other educators?
How is SoTL different from other types of research?

• Target community: the “classroom”

• Target participant: the student

• Target outcomes: student learning
Why do we care about SoTL?

• Improve student learning
  – Program success
• Improve teaching
  – Student evaluations; peer evaluations
• Produce scholarship
  – Publications for CV
  – Interdisciplinary partnerships
Example Areas of SoTL

• Learning Environments: classrooms, labs, online, field work, etc.
• Pedagogy: problem-based learning, service-learning, cooperative learning, online instruction, etc.
• Evaluation level: activity, exams, units, courses, degree curricula
• Target Populations: all students, STEM students, in the major, minorities, non-traditional students, etc.
SoTL in Small Classes: Methods to Improve Teaching and Student Learning Outcomes

Natalie K. Cooke, PhD
Postdoctoral Teaching Scholar
Dept. of Food, Bioprocessing, & Nutrition Sciences
North Carolina State University
February 11, 2015
Case Study: Community Nutrition Service-Learning (SL) Course
Case Study: Community Nutrition Service-Learning (SL) Course

- Academic Material
- Relevant Service
- Critical Reflection

Course Improvements
Evaluating Learning Outcomes
• Critical Reflection Papers
• Focus Groups
• Individual Interviews
• Surveys
Community Nutrition Course Design

**Pre-SL Training**
- 7 weeks
- Lesson planning
- Best practices video and discussion
- Shopping and food budgeting skills
- Knife skills
- Mock lessons

**SL Experience**
- 6 weeks teaching pre-packaged nutrition education and cooking curriculum
- Weekly critical reflections
- Instructor and peer feedback
Building Self-Efficacy

**Pre-SL Training**
- 6-7 weeks
- Lesson planning
- Best practices video and discussion
- Shopping and food budgeting skills
- Knife skills
- Mock lessons

**SL Experience**
- 6 weeks teaching pre-packaged nutrition education and cooking curriculum
- Weekly critical reflections
- Instructor and peer feedback

**Emotionally Supportive Environment**

- Vicarious learning
- Mastery
- Verbal persuasion
Qualitative Measures:
Critical Reflection Papers & Focus Groups

**Yearly Course Improvements**

- Added an official lab time and increased the length of training.
- Designed new activities to teach teamwork, lesson planning, communication, and flexibility.
- Adjusted assignments and activities based on feedback.
What is the impact of the SL course on students’ self-efficacy (SE)?

- Self-reflection and constructive criticism improve SE.
- Experience breeds confidence
- SL encourages students to gain more knowledge and experience in areas of deficiency

Qualitative Measures: Critical Reflection Papers & Focus Groups

Critical Reflection Papers (n=58)

Pre- and Post-Interviews (n=16)
Quantitative Measures: Surveys

The Self-Efficacy in Teaching Nutrition in the Community (SET-NC) Survey

1. Experimental group
   - n=20
   - Pre-SL Training

2. SL Experience
   - First half of the semester

3. Control group
   - n=63
   - Second half of the semester
Validation of the Self-Efficacy in Teaching Nutrition in the Community (SET-NC) Survey

1. Content Revisions
2. Expert Panel #1
3. Cognitive Interviews
4. Administration
5. Factor Analysis
Critical Reflection
Academic Material
Relevant Service
Critical Reflection
Course Improvements
Evaluating Learning Outcomes
One Semester and Done: Research in Large Classes

Lora Beth Brown, EdD, RDN
Brigham Young University
Choose a topic or focus

- What are you doing that
  - Is unique?
  - Could be interesting to others?
  - Is reportable?
  - Provides new insights on college students’ thinking or dietary behavior?
  - Allows collecting all data within one semester?

- What is the theoretical or conceptual framework?
  - Health Belief Model? Stages of Change? Or...

- Large classes
  - Convenient (convenience sample)
  - Increase power
Example: Cook an Entrée Assignment

• Brown LB, Richards, R. Teaching students to cook: An easily incorporated assignment in an academic nutrition course.
  • *J Nutr Educ Behav.* 2010;355-356.

• A required assignment for course credit, but an alternative was available for the same number of points, time, and effort.

• Theoretical model: Social Cognitive Theory
Example: Cook an Entrée Assignment

• Purpose: Help cooking-impaired students know how to prepare one simple survival-skill entrée.
  • Prepare an entrée that had at least 3 kinds of foods: protein, starchy, and fruit or non-starchy vegetable.
  • Serve it to someone else, who would write a comment about the entrée.
  • Answer questions about what they learned; how long it took; how easy, cheap, and tasty it was, etc.
Example: Cook an Entrée Assignment

• Research question: What was the impact of the assignment?

• Qualitative analysis of students’ responses to open-ended question: “What did you learn from this assignment?”

• Quantitative data on time spent and skills developed
Logistics

• Enrollment: 600-800 in 4 - 5 sections each semester
• Different instructors, but all use the same assignments and tests
• Students reported on their cooking experience by answering questions in a Qualtrics online survey.
  • Text responses captured electronically
  • Easy analysis of additional quantitative data collected
• “Grading” was cursory: if they followed instructions and answered the questions, they received full credit.
Systematic approach to data analysis

- Researchers independently read students’ comments, identified categories, and created codes.
- Researchers compared their interpretations and categorizations of specific comments.
- This constant comparison process allowed refinement of the categories.
- Responses in each of the categories were counted.
Results: Students learned that their entrée or the experience was...

- Nutritious: 46%
- Easy: 42%
- Quick: 28%
- Tasty: 26%
- “Good”: 25%
- Rewarding: 23%
- Cheap: 18%
- Fun: 17%
- And 98% said they intended to cook the entrée again.
Suggestions to consider

• Collect data from an existing assignment.
  • Use current/past experience as a pilot for a formal study in a later semester.
  • What additional data do you need or want to collect?

• What is the incentive for students to participate?
  • Required points, Extra credit, MP-3 downloads, Campus/Amazon gift cards.

• Is participation required of all students, or is it voluntary?
  • You may need an alternate “assignment” on hand.

• Get IRB approval: without it, publication is unlikely.
  • Know the rules for your institution
Suggestions to consider

• Qualitative studies
  • Use established methods to collect and analyze the data.

• Quantitative studies
  • Find a validated tool to measure the outcome of interest.
  • If none exists, consider creating and validating a new tool.
    • Time consuming
    • Possible benefit – a “methods” publication that is cited often

• Collect data online if possible
Suggestions to consider

• Collaborate with others when possible.
  • Within your institution – broader perspective, more refinement of ideas
  • Across institutions – possibly a larger, more diverse sample
  • Help colleagues publish

• Search literature for precedents and connections.
• Document all the steps.
• Have fun!
SoTL as a Path to Tenure and Promotion

Sarah Ash, Ph.D.
NC State University
One potential approach to SoTL

• Use it to assess/refine/ the application of a specific pedagogy to improve outcomes in a discipline/major.
  – E.g., the use of service-learning to increase the self-efficacy of students in a community nutrition course.
  • You could...
    – Design and implement a training program
    – Design a self-efficacy scale
    – Do pre and post test measurements to assess effectiveness.
Challenges

• Need a publication outlet
• Some disciplines have *entire journals* devoted to teaching in higher ed
  – A sampling for biology:
    • Journal of Physiology Education
    • American Biology Teacher
    • Biochemistry and Molecular Biology Education
    • Bioscene: Journal of College Biology Teaching
    • BioScience
    • Journal of Microbiology and Biology Education
    • Journal of College Science Teaching
    • Journal of Research in Science Teaching
• There are more limited options in nutrition for those doing SoTL work in higher ed
  – SNEB Gem
  – JAND
    • More likely to get published if it has a dietetics focus
  – NACTA Journal (North American Colleges and Teachers of Agriculture)

• Or, you need to figure out how to broaden the relevance to broaden the audience
Here is a *model* for scale development as a means of assessing self-efficacy in experiential learning

- Scale development journals
  - Psychological Assessment
  - Journal of Applied Psychology
- Higher ed assessment journals
  - Assessment & Evaluation in Higher Education
  - Journal of Educational Measurement
- Experiential/service learning journals
  - Michigan Journal of Community Service Learning
  - Journal of Experiential Education
- General interest higher education Journals
  - Health Education and Behavior
  - Innovative Higher Education
Challenges

- I was trained as a nutrition scientist not as an educational psychologist
  - Can be a steep learning curve
  - Need to become familiar with the literature
    - What are the “big” questions?
    - What’s interesting to you in your classes may not be interesting to anyone else
  - Find collaborators with expertise
  - May need to learn qualitative as well as quantitative research methods.
    - Control groups, sufficient sample sizes can be difficult
Opportunities

• Increasing emphasis on assessment
  – Accreditation bodies
  – State agencies/boards

• SoTL is a natural fit for asking whether we are delivering the outcomes that we claim
  – My research began as an effort to head off an assessment plan being forced on our service-learning program from the outside
    • “Where is the learning in service-learning?”
• Developed the DEAL Model for critical reflection in service-learning.

  


The American Society for Nutrition (ASN) is a non-profit organization dedicated to bringing together the world's top researchers, clinical nutritionists and industry to advance our knowledge and application of nutrition for the sake of humans and animals.

ASN’s Nutrition Education and Behavior Science Research Interest Section includes:

• Members who focus on the communication of nutrition science information to the general public to help them understand the relationship between diet and health to food practices, and to individuals with specific dietary needs to change behaviors conducive to health and well-being.

• Activities such as research on nutrition information transfer, factors that affect eating patterns, effects of nutrition knowledge on behavioral change, and behavior modification to improve health, and motivating factors for change.
Join in December and receive two months of membership free!

- **Benefits of membership**
  - Professional Member - $190/year
  - Associate Member - $95/year
  - Student Member - $60/year
- Subscription to the *Journal of Nutrition Education and Behavior*
- Free access to live and recorded webinars
- Deepest discount to attend the SNEB Annual Conference
- Membership in an SNEB division
- Connection to other professionals through SNEB listserv
- [www.sneb.org/join](http://www.sneb.org/join)
New in 2015! Scholarship of Teaching and Learning Nutrition in Higher Education Award

- Sponsored by SNEB Higher Education Division
- Established to recognize outstanding SNEB members for their scholarly contributions to and student engagement in higher education
- Designed to honor exemplary nutrition faculty who motivate college student learning through innovative and effective teaching methods
- Nominations due March 1, 2015

http://www.sneb.org/about/awards.html-