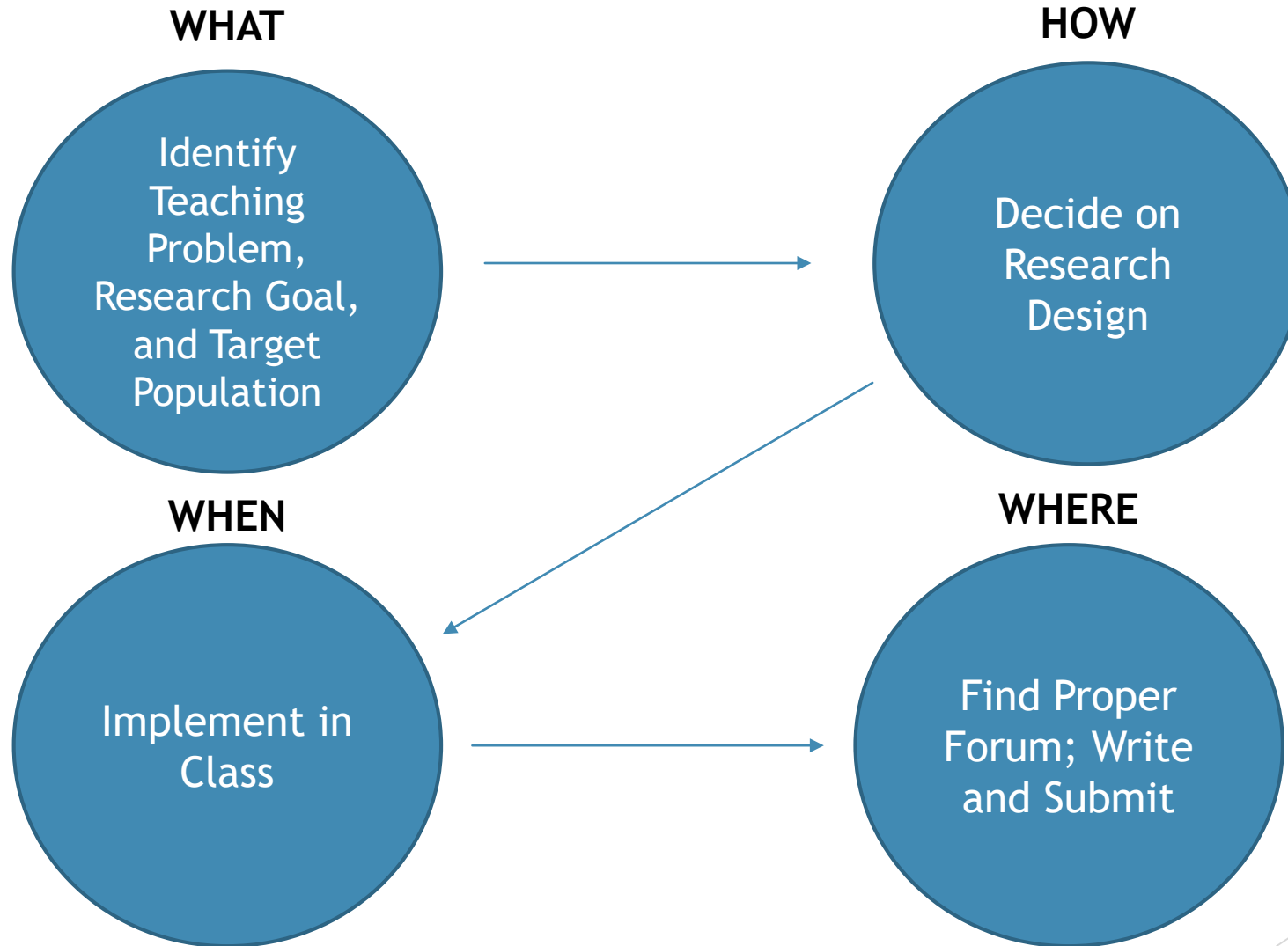


# TiLT and SoTL: A College Try

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GSW TiLT Brown Bag Series  
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# Goal of Presentation: Link Four Steps

## Discuss and critique one hypothetical process



# Step 1: Identify the Problem, Goal, Population

## 1A. Actual Data



YEAR	DWFI %	First Gen
2014-15	34.3%	36.6%
2015-16	32.9%	31.8%
2016-17	39.1%	41.1%
2017-18	40.5%	37.0%

Semester/Section	DWFI RATE	Test Avg D/F
Spring 2020	34% (23/67)	56% (34/61)
Fall 2020	53% (33/62)	56% (24/43)
Spring 2021	43% (24/56)	55% (27/49)

# Step 1: Identify the Problem, Goal, Population

## 1B: Literature Review

### ▶ Set Keywords

- ▶ “Transparency” + “Testing” + “Questions” + “Multiple Choice” + “First-Generation” + “Effective” + “Design”

### ▶ Search Different Databases:

- ▶ JSTOR, EBSCOHOST, Google

### ▶ Establish the framing:

- ▶ **Refine Problem:** Find something concrete that can be tackled → e.g. transparent multiple choice questions
- ▶ **Summarize Literature:** What do we know? Where do I fit? To what am I responding?
- ▶ **Isolate your theory:** I think “X” will affect “Y.”



# Sample Books and Articles

- ▶ Winkelmes et. al, *Transparent Design in Higher Education Teaching and Leadership* (2019)
- ▶ Ray W. Karras, “Writing Multiple-Choice Questions: The Problem and a Proposed Solution” (1978)
- ▶ Robert Blackey, “So Many Choices, so Little Time: Strategies for Understanding and Taking Multiple-Choice Exams in History” (2009)
- ▶ Steven Burton et. al, “How to Prepare Better Multiple-Choice Test Items: Guidelines for University Faculty” (1991)
- ▶ Susan Morrison, “Writing Good Multiple Choice Test Questions that Promote and measure critical thinking” (2001)
- ▶ Schimmelfing and Persky, “Activating prior knowledge using multiple-choice question distractors” (2020)
- ▶ Marsh EJ, Cantor AD. “Learning from the test: do's and don'ts for using multiple-choice tests,” (2014)
- ▶ Roediger HL, Marsh EJ. The positive and negative consequences of multiple-choice testing (2005)
- ▶ Little JL, Bjork EL. Optimizing multiple-choice tests as tools for learning (2015)

# Step 2: Establish Research Design

## ▶ Qualitative or Quantitative

- ▶ **Qualitative:** Will my data be mostly descriptive and/or explanatory? Will it spend most of the time discussing a process and how it works?
- ▶ **Quantitative:** Will my results be “countable” in numerical terms? Will statistics be relevant? Will there be graphs and charts, tables with numbers?

## ▶ Research Design

- ▶ **Descriptive:** Gather lots of information; discuss what it means.
- ▶ **Correlational:** Gather information on two or more variables and see if there’s a correlation. There’s a theory, but no experimental design to “prove” it.



- 
- ▶ **Quasi-Experimental:** True control or true random assignment are not really possible. Different groups may be non-equivalent. Causal inference may suffer.
  - ▶ **Experimental:** There’s a treatment group and control group that are randomly assigned. We can be more confident about whether or not “x” causes “y.”



Posttest Only  
Randomized Experiment

R X O  
R O

Pretest-Posttest  
Nonequivalent Groups  
Quasi-Experiment

N O X O  
N O O

Posttest Only  
Non-Experiment

X O

Two Group Post-Test  
Only

R X O  
R O

# What Kind of Research Design?

- ▶ **Information Gathering** : Use my two sections of American Government, giving students different versions of the “same” 40 test questions for extra credit.
- ▶ **Theory**: Tilting the questions will increase percentage of correct answers.

**Approach 1:** Students in both sections will be randomly assigned 20 “Tilted” and 20 “Untilted” questions on their 40-question test.

**Approach 2:** Give one section per semester the “Untilted,” one section the “Tilted”, and compare results.

## Levels of Design:

1. **Effects of TILTING on Overall Student Performance:** Assessing whether, on the whole, students answered TILTED questions more correctly than UNTILTED ones. Either (a) Each student will have answered 20 TILTED and 20 UNTILTED questions; or (b) we compare sections.
2. **By Question:** Seeing if Tilting certain questions, in certain ways, was more impactful than others. Each question will have ~50 TILTED and UNTILTED answers to compare.
3. **Student Background:** Seeing if Tilting helped underperforming students, on average, more than higher performing students, as the existing literature would suggest.



# TILTED QUESTIONS: CLARIFICATION

- ▶ **Example 1:** Adding a few words to clarify what's being asked. The words in red were added onto a revised version, to connect one of the dots for students that might have been obscure.
- ▶ \_\_\_\_ In the Constitutional Convention, which state's proposal most closely resembled the Articles of Confederation, **in terms of how equally states were represented?**
- ▶ (a) Connecticut
- ▶ (b) Virginia
- ▶ (c) Pennsylvania
- ▶ (d) New Jersey
- ▶ (e) Washington

# TILTED QUESTIONS: Accessible Vocabulary

**Example 2:** Students should not be hindered by vocabulary that's not part of the curriculum. The danger is that we use words in our questions that seem “everyday” to us, when they may not be for students.

## **Version 1:**

\_\_\_\_\_ Which one of the following cases **affirmed** a constitutional doctrine of “separate but equal” public facilities for whites and African Americans in 1896?

## **Version 2:**

\_\_\_\_\_ Which one of the following cases, in 1896, determined that the principle of “separate but equal” public facilities for whites and African Americans was in fact constitutional?

# TILTED QUESTIONS: All or None

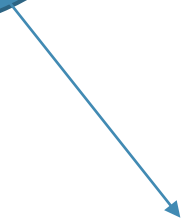
- ▶ **Example 3:** In many instances this is more likely to play psychological tricks on students than to determine if they've learned something. So in the question below I replaced option (e) with a substantive response, rather than an "all" or "none."
- ▶ \_\_\_\_ All of the following have helped to expand the power of federal law over state law except (select the best answer):
  - ▶ (a) the 'commerce clause' of Article I, Section 8 of the Constitution after 1937
  - ▶ (b) the 'necessary and proper' clause of Article I, Section 8 of the Constitution
  - ▶ (c) the 'supremacy clause' of Article VI
  - ▶ (d) the Tenth Amendment of the Constitution
  - ▶ ~~(e) All of these expanded the power of federal law over state law.~~
  - ▶ (e) the selective incorporation of the Bill of Rights

# Step 3: Implementing and Analyzing

Solidify  
Research  
Design; seek  
IRB Approval



Create  
Materials;  
Contemplate  
Testing  
Conditions



Gather Data  
and Analyze;  
Ensure  
Appropriate  
Stats are  
being used



# Step 4: Writing and Publishing

- ▶ Find a Suitable Journal → Look at their writing format
- ▶ **LIST of JOURNALS:** <https://belmont.libguides.com/c.php?g=174362&p=1149193>
  - ▶ College Teaching
  - ▶ International Journal for the Scholarship of Teaching and Learning
  - ▶ Journal of the Scholarship of Teaching and Learning
  - ▶ Journal on Excellence in College Teaching
  - ▶ Transformative Dialogues: Teaching and Learning Journal
  - ▶ **Perspectives in Learning!**
- ▶ **Search also for discipline-specific journals.**
  - ▶ Journal of Political Science Education
  - ▶ Teaching History: A Journal of Methods

# Step 4: Writing and Publishing Perspectives in Learning!



# Upcoming T&L Conferences

- ▶ **January 12-13, 2022, Georgia Gwinnett College Teaching, Learning, and Research Symposium, "Aftermath: Higher Education in a Pandemic-Altered World"**
  - ▶ Hybrid regional conference
  - ▶ Proposal deadline: November 12, 2021
  - ▶ Note: This conference has an undergraduate research track. There is no registration fee for students.
- ▶ **February 23-25, 2022, SoTL Commons Conference**
  - ▶ Face-to-face conference
  - ▶ Proposal deadline: October 31, 2021
- ▶ **March 10-11, 2022, Teaching Matters Conference, "Teaching Still Matters: A 20th Anniversary Celebration"**
  - ▶ Virtual conference
  - ▶ Proposal deadline: January 7, 2022
- ▶ **March 14-31, 2022 (On-demand activities), April 1, 2022 (in-person regional events), USG Teaching and Learning Conference, "Community, Connection, and Compassion"**
  - ▶ Virtual, on-demand activities
  - ▶ Proposal deadline: TBD