

Designing a SoTL Research Project to Measure the Effectiveness of Educational Case Studies

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Presentation goals include....

Regarding educational case studies, discuss:

- Definition, including FS contexts
- Benefits and limitations
- Indicators of good quality
- Sources for existing examples
- Generating original examples
- Best practices

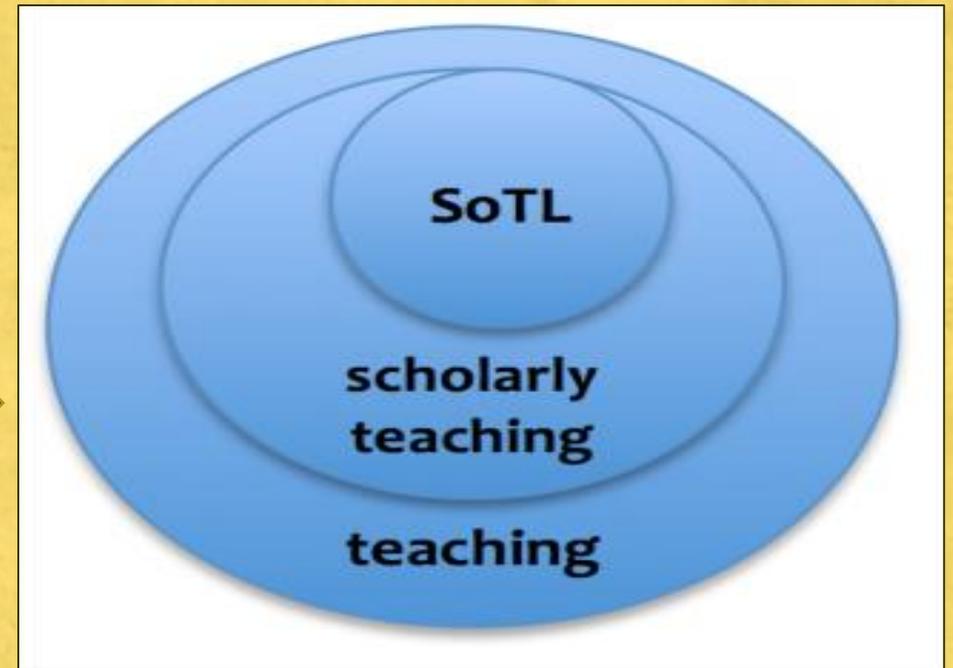
▪ Regarding SoTL / classroom action research, discuss:

- Definition, including FS contexts
- Benefits and limitations
- Indicators of good quality
- Steps in designing a SoTL study based on use of case study approach
- Two examples, with findings

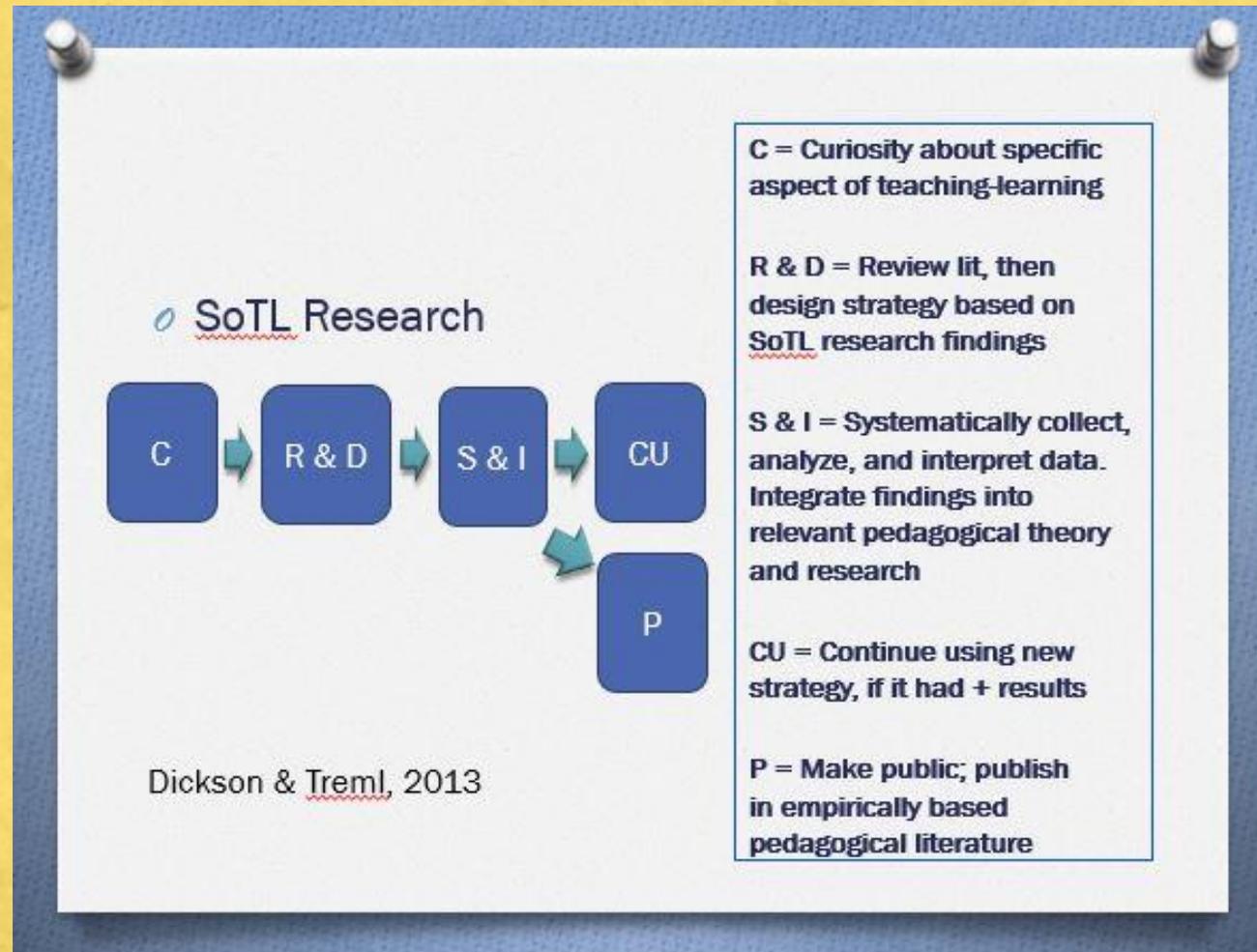
What is SoTL (Scholarship of Teaching and Learning)?

- **The systematic reflection on teaching and learning made public.**
- **Combination of reflection and knowledge which yields questions about teaching for study.**
- **Brings together disciplinary knowledge with pedagogical/andragogical knowledge.**
- **Has not taken off in FS despite the fact that we are ideally situated to be leaders in this field.**

Pictorial representations of SoTL



Another diagram to add clarity



Why SoTL work matters

- Allows for intentionally studying teaching practices and student learning outcomes; is crucial for producing excellence in instruction
- SoTL promotes the exchange of scholarship across disciplines and various types of subject matter
- SoTL furthers curiosity about how, when, where and why people learn and how best to teach to create optimal learning opportunities



Why engage in SoTL work?

Benefits for students

- Fosters more meaningful classroom experiences
- Enhances student learning
- Affords student voices for “transformative effect”



Benefits for faculty

- Demonstrates personal dedication to excellent teaching
- Promotes growth in own teaching
- Encourages creativity and innovation
- Advances opportunity for disciplinary scholarship
- Enhances faculty credentials

Is there a downside to SoTL work?

Classroom action research versus other disciplinary research

- Teachers may be penalized in evaluations / promotions – perceived as less 'productive'
- Less time for other disciplinary research
- Less 'scholarly' outputs
- Increasing emphasis on grant writing / 'scholarly' pursuits (SoTL grant funds are few and harder to attract).

Indicators of high quality SoTL

- Requires a high level of discipline-specific expertise
- Breaks new ground; is innovative
- Methods and results can be documented
- Can be replicated or elaborated upon
- Methods and results can be peer reviewed
- Has significance or impact

(Diamond and Adams, 1995)

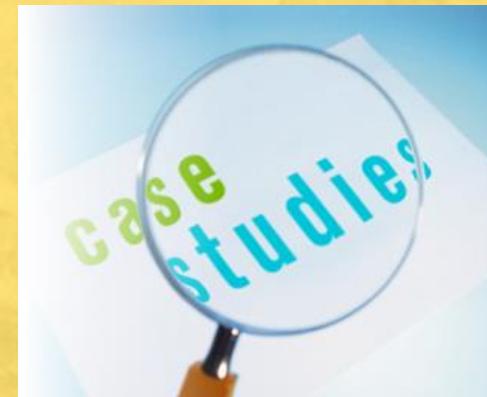
What is a case study?

- A story or narrative that...
 - is true or a composite of real-to-life components
 - features an issue, problem, conflict, and/or dilemma
 - prompts consideration of multiple paths to a workable solution



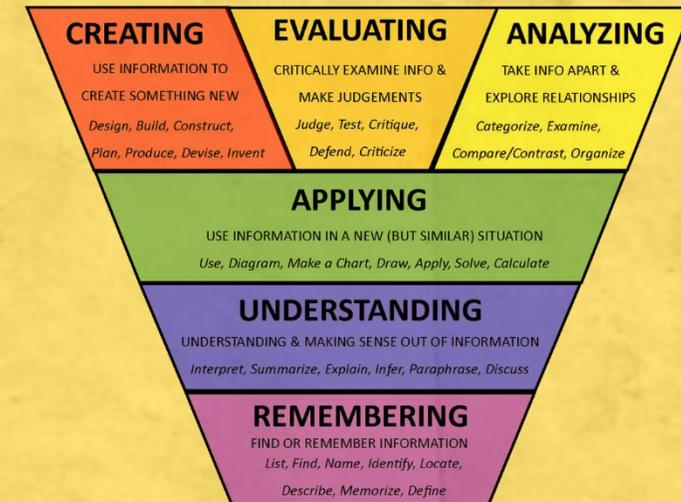
What is case study methodology in the context of teaching and learning?

- Case study methodology is a teaching-learning process or strategy that...
 - calls for the instructor to be “planner, host, moderator, devil’s advocate, fellow student, and judge”
 - requires “the art of managing uncertainty”
 - is supported by such theories as
 - Constructivism
 - Adult learning



What is case study methodology in the context of teaching and learning?

- Case study methodology a teaching-learning process that...
 - promotes higher level cognitive thinking on part of the student and is consistent with the principles of ...
 - Problem-based learning
 - Cooperative learning
 - Discovery learning
 - Inquiry-based learning
 - Situated cognition
 - Anchored instruction



Purported benefits include...

Lasting
understanding

Theory to practice

Recognize real-world
impacts

Practice collaboration
and communication

Develop thinking
skills

Increased engagement

Possible concerns / cautions include...

- Lack of good quality, relevant examples in a variety of disciplinary contexts.
- Using case studies for wrong reasons.
- Not following best practices when selecting and assigning case studies.
- Poorly preparing learners for the task of analyzing case studies.

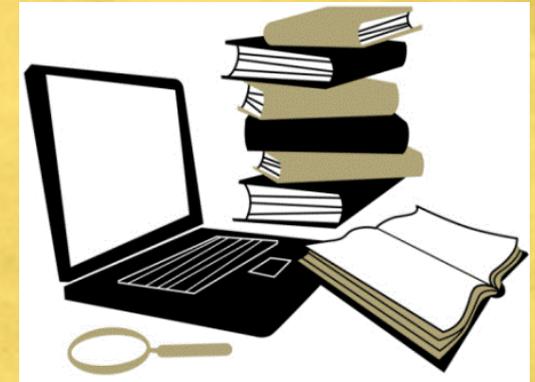


How to select or write case studies

- Finding sources/collections
- Assessing for preferred characteristics / qualities
- Considering recommended components

Finding useful sources of case studies

- Existing case studies (hard copy or electronic) prepared by others
 - Books
 - Journals
 - Memoirs
 - Organizational resources
- Composing one's own case studies based on...
 - Memories of personal and professional experiences
 - Experiences related by students involved in service learning projects, internships, and practicums
 - Experiences related by fellow professionals (colleagues, internship/practicum faculty and site supervisors, etc.)

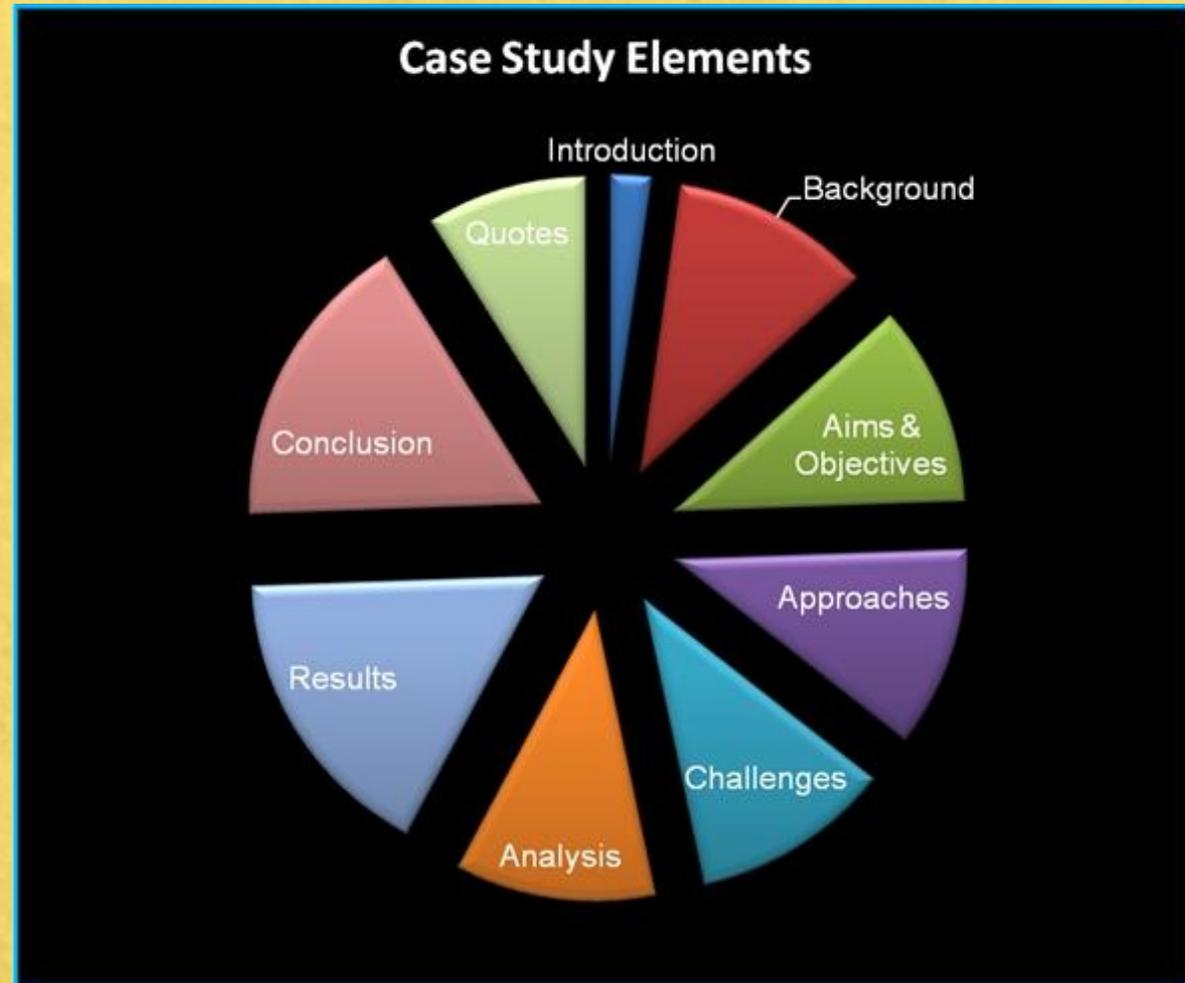


Indicators of high quality

- Consistent with course goals & student learning outcomes
- Consistent with real-world situations graduates will face
- Relatively short in length
- Authentic / realistic
- Contemporary
- Interesting and engaging
- Well organized and written
- Sufficiently complex and, typically, with no obvious right answer(s)
- Adequate background info to allow students to consider breadth and depth of context
- Compelling players and for whom empathy is possible



Writing an original case study: Common components to consider including



Possible sections or headings

- Executive summary
- Opening paragraph
- Scope of situation
- Presentation of facts



- Description of issues
- Questions to be answered
- Decision(s) to be made

Ancillary items to accompany a case study

- Directions about how to analyze and process the case
- Criteria for assessing learners' performance as they...
 - ✓ Collaborate and communicate with fellow learners
 - ✓ Analyze facts and issues
 - ✓ Weigh options and consequences
 - ✓ Identify and defend preferred solution(s)
- Assessment tools: Rubric, checklist, etc.



Consider carrying out a SoTL project based on use of case studies within a family science course

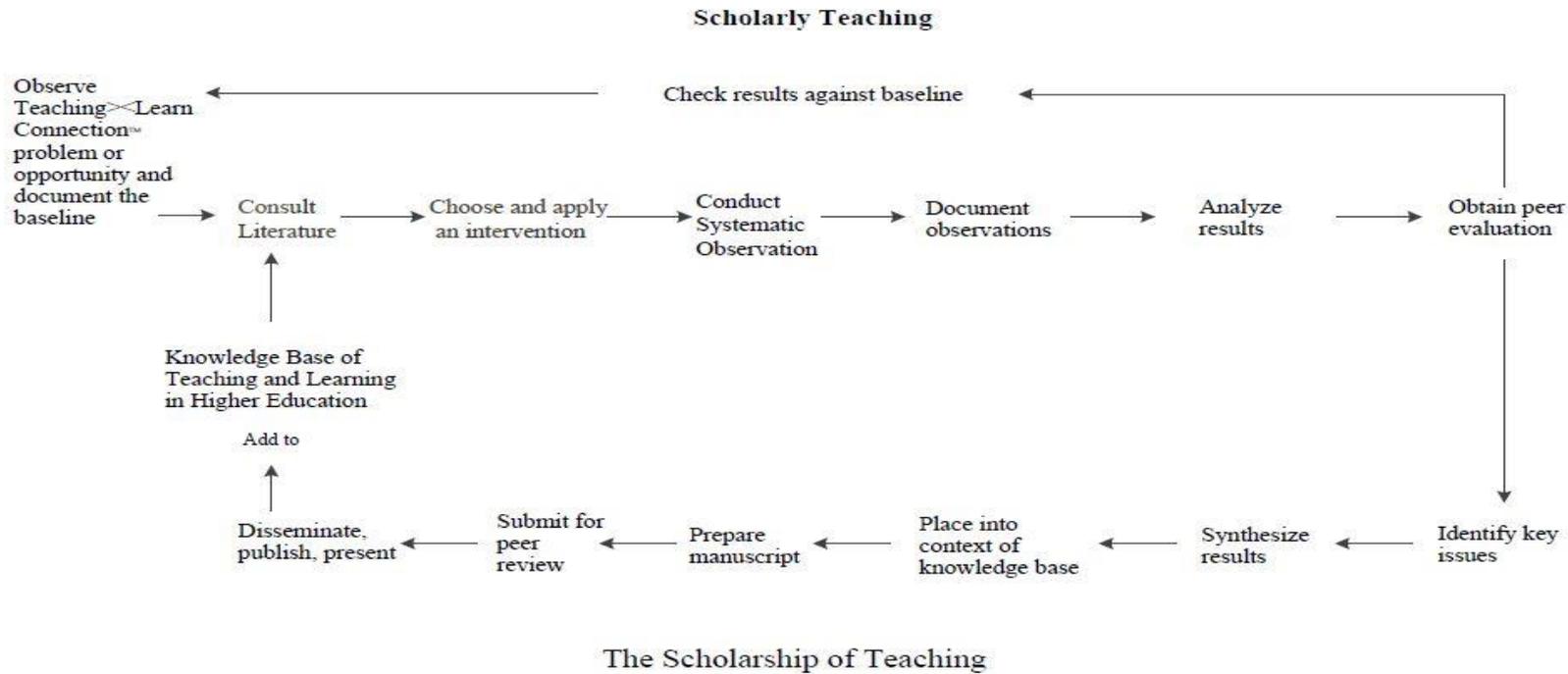
Steps involved

- Identify a teaching-learning issue, problem, or question
- Design and carry out a rigorous study based on appropriate methods
- Collect data
- Analyze data, then review and summarize results
- Reflect on findings and share them publicly
- Seek critique and feedback



Flowchart of steps from scholarly teaching to scholarship of teaching and learning (SoTL)

Figure 5.1. The Ongoing Cycle of Scholarly Teaching and the Scholarship of Teaching



Formulating a good SoTL question

- o 4 Types of Questions
 - o What works?
 - o What is...?
 - o Visions of the possible
 - o Theory building
- o Other characteristics
 - o Novel
 - o Arguable
 - o Focused
 - o Testable
 - o Relevant
 - o Clearly worded (Center for Academic Program Support, 2013)



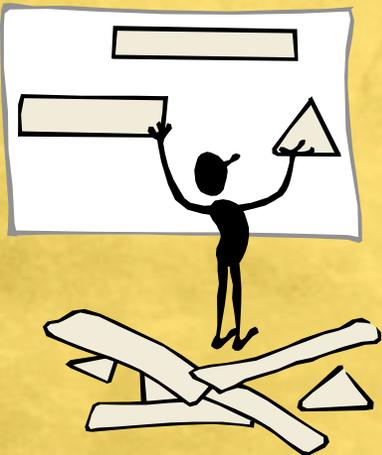
Possible design features

- Qualitative? Quantitative? Mixed methods?
- One point in time? Multiple points in time?
- One researcher? Multiple researchers?
- Faculty researchers? Student researchers? Both?
- One discipline? Multiple disciplines?
- One location? Multiple locations?
- One group of students? Multiple groups of students?

Bill Anderson's SoTL study (Illinois State University)



- **The problem:** Reviewing developmental theory with a diverse mix of strengths and weaknesses
- **The solution:** Interrupted case studies
 - **A good case has ambiguities** and it requires space to give a richness and texture to a story. The learner never knows how it will all play out...
 - This format **allows instructors multiple opportunities to pose questions, review student responses, and use those responses to address student misconceptions** and model answering questions appropriately
 - Use **progressive disclosure of information** rather than giving away the entire story line at the beginning **Learners work with incomplete data**, make tentative hypotheses, collect more information, **refine hypotheses**, make more predictions, get more information...





Bill Anderson's SoTL study (Illinois State University)

- Pre-/post-test scores were analyzed** using a paired-samples *t*-test. The effect was significant, $t(20) = -7.990, p = .000$.
 - For all participants the posttest score was higher, moving from a mean pretest score of 17.65/39 (SD – 3.26) or 45%, to a posttest mean of 33.11/39 (SD – 3.05), or 85%.
 - This indicated a mean student improvement of roughly 40%
- Coding essays #2 and #8 explained the significance**
 - Intra-class correlation coefficient function of SPSS v. 20 determined a *kappa* score of reliability of .846 for essay #2 .818 for essay #8

	Essay 2 - 14-Up	Essay 8 - 56-Up
Creating	6.6%	12.2 %
Evaluating	9.7 %	13.1 %
Analyzing	16.9%	18.1 %
Applying	14.5%	11.3%
Understanding	24.2 %	16%
Remembering	28.1%	29.3%

Bill Anderson's SoTL study (Illinois State University)

- *Learning to analyze and critically evaluate ideas, arguments, and points of view*, improved from $M = 4.67/5.0$ ($SD = .153$) to $M = 4.83/5.0$ ($SD = .208$). Results were significant, $t(2) = -5.00$, $p. = .038$
- *Acquiring an interest in learning more by asking my own questions and seeking answers*, improved from $M = 4.37/5.0$ ($SD = .231$) to $M = 4.63/5.0$ ($SD = .305$). Results approached significance $t(2) = -4.00$, $p. = .057$
- *Learning to apply course material to improve thinking, problem solving, and decisions*, improved from $M = 4.40/5.0$ ($SD = .361$) to $M = 4.73/5.0$ ($SD = .115$). Results were not significant, $t(2) = -2.00$, $p. = .184$
- *Found ways to answer my own questions* showed no change at $4.84/5.0$

Charlene VanLeeuwen's SoTL study

(University of Prince Edward Island)

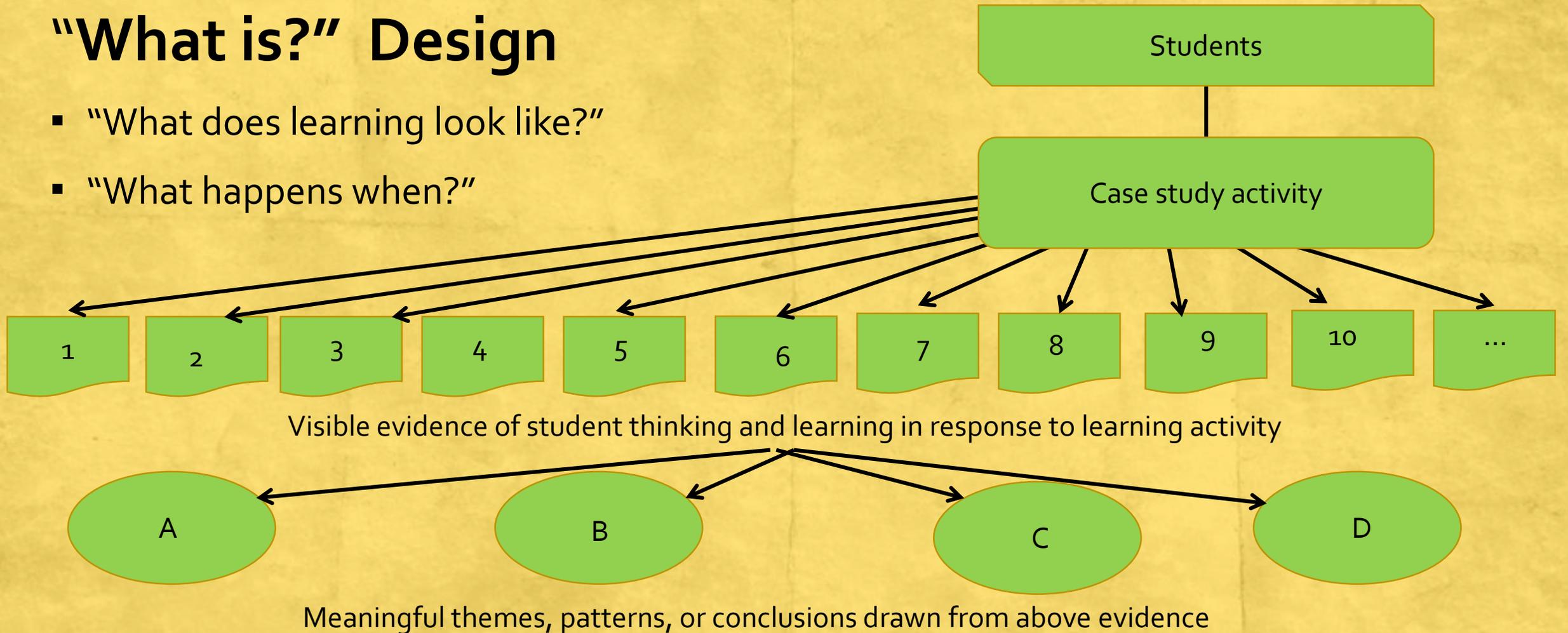
Qualitative case studies share with other forms of qualitative research the search for meaning and understanding, the researcher as the primary instrument of data collection and analysis, an inductive investigative strategy, and the end product being richly descriptive

(Merriam, 2009, p.39)

Charlene VanLeeuwen's SoTL study (University of Prince Edward Island)

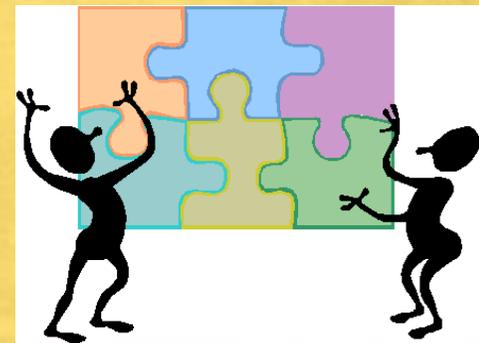
"What is?" Design

- "What does learning look like?"
- "What happens when?"



Charlene VanLeeuwen's SoTL study (University of Prince Edward Island)

- **The problem:** How to effectively support students as they develop confidence in decision-making when faced with ethical dilemmas in practice.
- **A solution:** An action research project using a series of case studies with increasingly complex practice-based scenarios
 - Unlike ethical **issues** where there is generally a clear right or wrong course of action, **dilemmas** do not offer straightforward solutions. Students are wary of problems without a **correct** answer.
 - The progressive complexity of the practice-based case studies allow students to **develop confidence** with ethical decision-making processes first, before tackling ethical dilemmas.



Charlene VanLeeuwen's SoTL study (University of Prince Edward Island)

Rationale

- As instructors we want to better understand how to scaffold student learning as we model critical thinking, ask questions, or re-direct discussion as students work through increasingly complex cases.
- Opportunity to unpack learning process
- Requires smaller number of students
- Highly descriptive of
 - Learning context
 - Evidence of learning
 - Analysis of evidence

Charlene VanLeeuwen's SoTL study (University of Prince Edward Island)

Steps involved

- Put together a series of increasing complex case study scenarios; combination of small group, pair/triad and individual tasks
- Gathered/gathering data
 - Researcher observations and reflections from class sessions focused on ethics
 - Students' written notes from group case study
 - Individual case study assignment
- Data analysis – Thematic analysis (Braun and Clarke, 2006; Luborsky, 1994)
- Reflecting on findings
- Dissemination

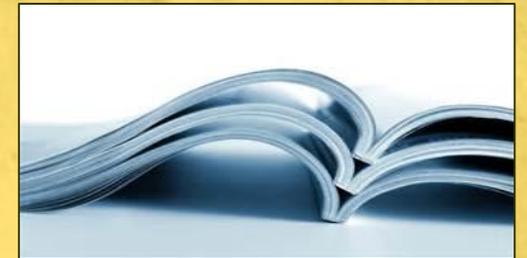
Charlene VanLeeuwen's SoTL study (University of Prince Edward Island)

Initial findings

- Can't share, didn't have ethics approval
- Anecdotally, ... students who have had more practice working through challenging ethical issues in the classroom are more likely to bring up ethical issues in seminar discussions in their fourth-year field placement course.

Making SoTL Results Public: Multiple & Varied Outlets

- Campus workshops, brown bags, etc.
- Conferences
 - Regional, state, national and international
 - Family Science Association's *Teaching Family Science Conference and Workshop*
 - NCFR Annual Conference
- Publications
 - Newsletters, blogs, trade magazines, journals
 - Peer reviewed, editor reviewed, self-published
 - Family Science Association's *Family Science Review*
 - Disciplinary specific, general to education/ teaching



Time for....

- Practice
- Examples from audience
- Questions and comments
- Extending thanks and appreciation

