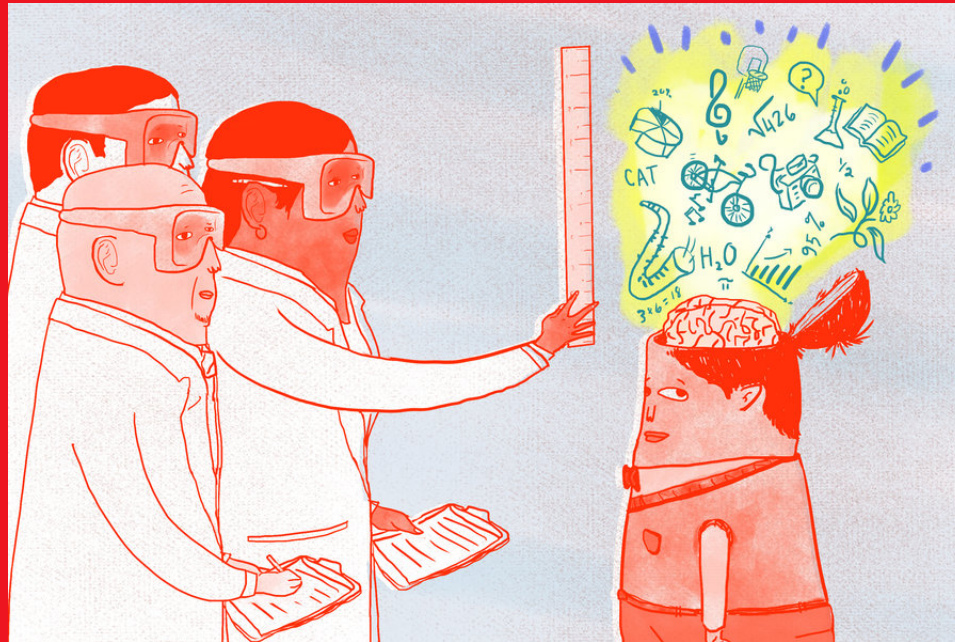# Designing an Ethical SoTL Study

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Teaching Commons

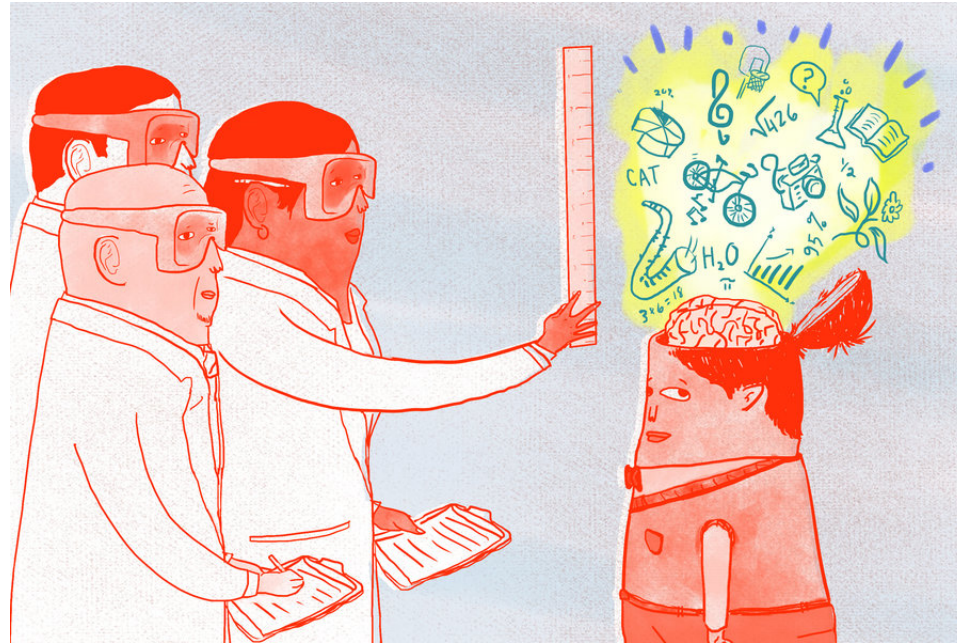YORK U

redefine THE POSSIBLE.

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"Teachers who act also as scholars of teaching and learning in the practice of their discipline must consider the ethics of their **dual roles** in situations in which **their students are also their subjects of research**."

MacLean & Poole (2010: 1)

Learning Outcomes of the Session:

At the end of this session, participants will (better) be able to:

- Identify how their own research tradition/process can inform their SoTL research

- Identify and discuss important methodological and ethical considerations for SoTL research

- Devise a study which design can alleviate common methodological and ethical concerns

- Address the key ethical concerns in an ethical review application

Research Paradigms

Quantitative	Qualitative	Other
• Experimental Randomized (RCT)	• Ethnography	• Mixed Methods Research
• Quasi Experimental	• Grounded Theory	• Action Research
• Single Subject	• Case Study	• Program Evaluation Research
• Non-experimental	• Narrative	• Instructional Design Research
• Descriptive	• Phenomenology	• Curriculum Design Research
• Comparative		• Orientation Research
• Correlational		
• Ex Post Facto		

Source: Fenton, Szala-Meneok, & Marquis (2010)

Qualitative Vs. Quantitative Methods

	Qualitative	Quantitative
Research context	• Explore phenomenon • Describe & explain variation or relationships about phenomenon • Describe experience in a complex educational setting	• Confirm hypothesis • Quantify variation • Predict causal relationships • Describe characteristics of a population / sample
Research questions	• Open	• Closed
Methodological approach	• Some aspects of the study are flexible • Design is iterative • Participants' responses influence questions	• Study design is stable • Subject to statistical assumptions and conditions
Data collection	• Textual (interviews, document review, field notes, etc.)	• Numerical (survey, pre and post test design, etc.)

Source: Fenton, Szala-Meneok, & Marquis (2010)

Example of a Simple SoTL Study

Step	Action
Identify a paradox, a problem, an issue	Will the jigsaw technique help students extract essential information?
Think of ways of tackling the problem	Use the technique, observe how it goes, assess students on quiz, compare quiz scores with previous years
Carry out the change	All students use technique, then take the same quiz as last year
Observe the effect(s)	Compare mean scores
Reexamine teaching practice	Think about the results; decide if jigsaw technique should be used more widely in your course(s)
Share what you found out	Discuss results at faculty meeting

Methodological & Ethical Concerns?

Step	Action
Identify a paradox, a problem, an issue	Will the jigsaw technique help students extract essential information?
Think of ways of tackling the problem	Use the technique, observe how it goes, assess students on quiz
Carry out the change	All students use technique, then take the same quiz as last year, ask current students for feedback on the method
Observe the effect(s)	Compare quiz scores with previous years; consider qualitative comments by students
Reexamine teaching practice, test and refine	Think about the results; decide if jigsaw technique should be used more widely in your course(s)
Disseminate	Discuss results at faculty meeting; present at TIF

Methodological & Ethical Concerns

Step	Action	Methodological & Ethical concerns
Identify a paradox	Is the jigsaw technique effective in helping students extract essential information?	• (M) How do you define effective?
Think of ways of tackling the problem	Use the technique, observe how it goes, assess students on quiz	• (E) How and when will you inform students about the study? • (E) Does it interfere with normal classroom activities? • (M) How many people are you able to include? • (M, E) Will you compare methods? • (E) How will you insure fairness between groups? • (M) How will you know the groups are comparable?

Methodological & Ethical Concerns

Step	Action	Methodological & ethical concerns
Carry out the change	All students use technique, then take the same quiz as last year, ask current students for feedback on the method	• (E) Why are you collecting this data? • (E) Do you have permission to use grades for secondary purposes? • (E) How will you store the data?
Observe the effect(s)	Compare quiz scores with previous years; consider qualitative comments by students	• (E) Who will collect the data? • (E) When will you access the data? • (E) How will you insure confidentiality of participant data?
Reexamine teaching practice	Think about the results; decide if jigsaw technique should be used more widely in your course(s)	• (E) How will this inform how you teach in the future? • (E) How will this inform how you do research on T&L in the future?
Disseminate	Discuss results at faculty meeting; present at TIF	• (E) How will you insure anonymity?

SoTL Study Design

Look at the different designs and attempt to place them in order

- Group 1: From least to most robust
- Group 2: From least to most feasible

SoTL Study Design

Table 4.9. Summary of When and When Not to Use Designs

Design	Use with Small Samples	Use with Single Class	Can Complete in One Session	Can Determine Long-term Effects	Can Determine Causal Relationships	Main Weaknesses
Simple correlation	No	Yes	Yes	No	No	Cannot determine causality
One-group post-test only	Yes	Yes	Yes	No	No	Cannot make comparisons; cannot determine causality
Two-group post-test only	No	If class can be divided	Yes	If add long-term post-test	Yes with random assignment; typically no without	Selection bias
One-group pre-test/post-test	Yes	Yes	If pre- and post-test in same session	If add long-term post-test	Depends on context	Testing and instrumentation effects; confounds between assessments
Two-group pre-test/post-test	Maybe	If class can be divided	If pre- and post-test in same session	If add long-term post-test	Typically yes, better with random assignment	Various minor issues depending on context
Within participants	Yes	Yes	If all treatments and assessments in same session	No	Typically yes if counterbalanced	Carryover, testing, and instrumentation effects
Crossover	Yes	If class can be divided	If both treatments and assessments in same session	If add long-term post-test	Typically yes	Testing and instrumentation effects
Interrupted time series	Yes	Yes	No	Yes	Typically yes	Testing and instrumentation effects

Source: Bartsch (2013b: 46)

Key Ethical Concerns in SoTL

Of particular concern:

1. The relationship between the researcher and participants

2. Free and informed consent

3. Issues of privacy and confidentiality

When we are engaged in classroom research, there is an imbalance of power due to our dual role as researcher and instructor. Students' behaviour, involvement and overall performance are under scrutiny.

- Students must be guaranteed fair treatmen

- There must be no adverse consequences to not participating.
  - Care must be taken to minimize social penalties when a student opts out by reducing the public nature of the decision not to participate

Burden of Participation

- Students' purpose in taking the course is to gain knowledge and skills in a topic. The research should be conducted in a way that does not intrude excessively into that primary purpose

- Research design should aim to enrich educational experiences not detract from them (e.g., use of control group?)

- Minimize instructional time wasted due to the study (e.g., providing information about the study, collecting consent forms, debriefing)

- As SoTL becomes more common, students may feel inundated by requests to participat in classroom studies.

Free and Informed Consent

Are participants given the opportunity to give free and informed consent, **without manipulation, undue influence, or coercion**?

(Article 2.2 of the Tri-Council policy statement)

Free consent means without manipulation, undue influence, coercion, or incentives (e.g., participation mark) offered only to those participating

Students must be informed frankly about the potentials benefits, burden of participation, potential costs, and measures taken to protect their privacy

Consent can be withdrawn at any time before, during or after the study

Right to Privacy

Is the right to privacy of the participants respected in the research design, in the use of the data collected, and in the proposed dissemination of the results of the research?

(Article 3.2 of the Tri-Council policy statement)

Confidentiality of participant data

- Key student documents such as the consent form should remain confidential from the instructor/researcher until after the final grades have been posted

Anonymity

- When results are disseminated, results should be discussed in a way that protect student identity
  - Identifiers should be removed,
  - Data should be aggregated

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Data Security

- Paper documents should be kept in a locked cabinet
- Electronic files in a password-protected computer
- When no longer needed data should be destroyed

Secondary Use of Data

Use of data initially collected for purposes other than the research itself can only be used for research purposes when permission from the participants to do so is explicitly granted.

Common Ethical Problems in SoTL

Problem: Teacher bias upon knowing who provided consent to participate

   Solutions:

Problem: The ethics committee is wary of a study done with students only for the purpose of research

   Solution(s):

Problem: Single class with subgroups of students under different treatment conditions with possibly very different learning as a result

   Solution(s):

Problem: Students are offered incentives such as bonus marks for participation

   Solution(s):

Adapted from Bartsch (2013b: 36)

Common Ethical Problems in SoTL

Problem: Teacher bias upon knowing who provided consent to participate

Solutions: Have a colleague or research assistant collect informed consent, seal consent form in envelope

Problem: The ethics committee is wary of a study done with students only for the purpose of research

Solution(s): Review previous research; cite evidence; provide pedagogical rationale

Problem: Single class with subgroups of students under different treatment conditions with possibly very different learning as a result

Solution(s): Divide class & provide treatment to students in control group after experiment

Problem: Students are offered incentives such as bonus marks for participation

Solution(s): Offer an educational alternative that will also give them bonus marks

Adapted from Bartsch (2013b: 36)

York's Ethical Review Process

- A research investigation that involves human participants [persons who provide data or information to the researcher, which are typically, not part of their professional capacity, or in the public domain] should be **designed to take account of the well-being of prospective participants**.

- Human participants should be **clearly, fairly, and fully informed of the research objectives, procedures, foreseeable risks, and potential benefits**. Their decision to participate should be fully **voluntary**.

- The risks (if any) should never be excessively harmful and the risk-to-benefit ratio should be taken into consideration when proposing the research.

- **Participants' anonymity and confidentiality shall be fully protected**, unless this right is expressly waived (or unless disclosure is authorized or required by law).

Taken verbatim from: http://secretariat-policies.info.yorku.ca/policies/ethics-review-process-for-research-involving-human-participants-policy/

What you will need to provide in your Protocol Form

- Title and description of research
- Description of participants
- Recruitment procedure
- Incentive to participate
- Risks and benefits
- Informed consent: nature of research, methodology, risks and/or benefits, right to participate / withdraw without prejudice, anonymity and confidentiality
- How the data will be secured

York University's HPRC Ethics Protocol Form & Sample Consent Form:

http://www.yorku.ca/research/support/documents/#ethics

Thank you for coming!

Please fill out the workshop evaluation form.

gmp@yorku.ca

If you would like to discuss your SoTL project, don't hesitate to contact me!

Sources for pictures

Researchers measuring student cognitive output:
http://www.npr.org/sections/ed/2015/02/26/387471969/5-lessons-education-research-taught-us-in-2014

Research design (person and hands on black board):

https://www.linkedin.com/pulse/research-design-change-management-julie-dimmick

Simple: http://www.grupomagma.net/image.php?pic=/images/2015/simple/simple-02.jpg

Right, Wrong, It depends: http://www.rampartsofcivilization.com/?p=5485

Lion and cat: https://www.bonadio.com/sites/default/files/lionCatTogether.jpg

Student with heavy backpack: http://bluemesagroup.com/blog/coaching-presence-and-the-power-differential-between-client-and-coach/

Mean teacher:

http://bluemesagroup.com/blog/coaching-presence-and-the-power-differential-between-client-and-coach/

Confidential / locked file: http://www.metrorecycling.co.uk/waste/wp-content/uploads/2012/10/confidential.jpg

Boots: http://cdn.farmersalmanac.com/wp-content/uploads/2013/04/boot-planter-420x240.jpg

Two head thinking together:
http://static1.squarespace.com/static/56c9150127d4bd3fdb2bba77/t/56ca4f034c2f85180fbcb5b0/1456780473624/DesignResearch.jpg

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Smith, R. A. (2008). "Moving towards the Scholarship of Teaching and Learning: The Classroom Can Be a Lab, Too!" Teaching of Psychology 35: 262-266.