UNIVERSITY OF TORONTO MISSISSAUGA

ROBERT GILLESPIE ACADEMIC SKILLS CENTRE

Scholarship of Teaching and Learning (SoTL) Series 2:

Situating SoTL:
An Overview of Research Paradigms for Studying Teaching and Learning

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University of Toronto, Mississauga

Land Acknowledgement

Art by Christi Belcourt
https://www.instagram.com/p/Cia4T9euYUu/

We wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and most recently, the Mississaugas of the Credit River. Today, this meeting place is still the home to many Indigenous people from across Turtle Island, and we are grateful to have the opportunity to work on this land.

Access Check

We encourage you to check, identify, and question your learning environment for any of the following and welcome comments if there are elements that we can support to reduce barriers:

- Technology
- Resources
- Pace
- Sound

Timeline of the SoTL Series

SoTL Series 1	SoTL Series 2	SoTL Series 3	SoTL Series 4	SoTL Series 5
SoTL Research Questions	SoTL Research Paradigms	SoTL Research Ethics	Quantitative Research Methods	Qualitative Research Methods
	Today	*March 27th 12:00 – 2:00 pm MS Teams*	*April 14th 11:00-1:00 pm MS Teams*	*May 14th 11:00 – 1:00 pm MS Teams*

Learning Objectives

- Deeper understanding of your own disciplinary paradigm
- Different research paradigms within SoTL
- Different pathways for engaging with different research paradigms

Agenda

- Co-reflections on disciplines and connections to SoTL
- Research Paradigms and SoTL examples
  - Positivism/Post-positivism
  - Interpretivism
  - Critical Realism
  - Transformative
- Ending recommendations and reflections

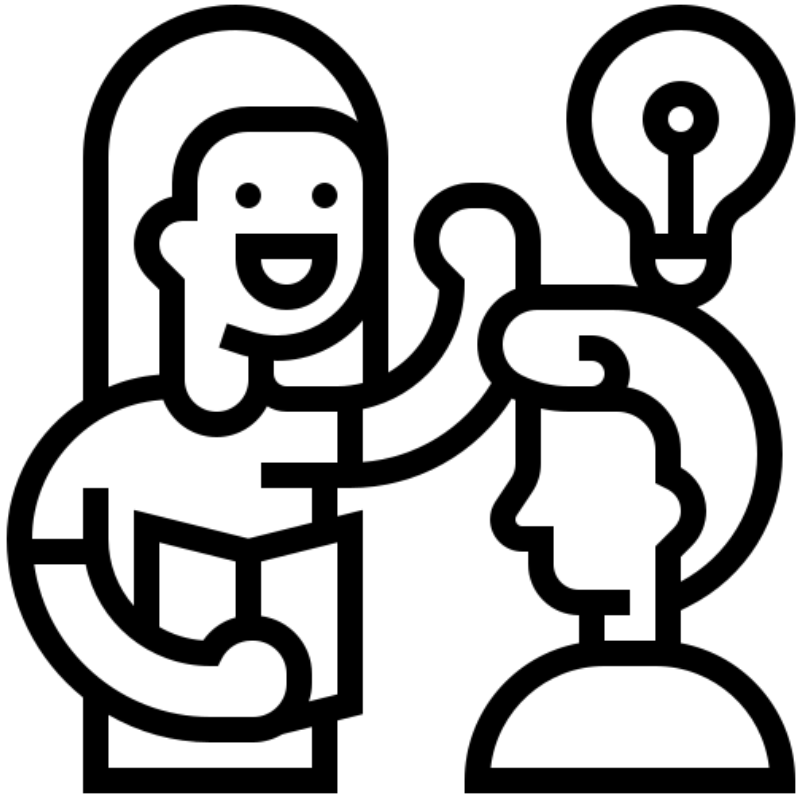
Disciplinary Reflections:

Choose the question(s) that resonate with you and your discipline. Please feel free to type in the chat:

- How does your discipline generate/construct knowledge?
- How does your discipline conceptualize problems? Conversely, how does your discipline debate answers to problems?

Reflection Connections to SoTL:

1. What does it mean to "study" learning from your disciplinary perspective?
2. How does this inform your interest in the Scholarship of Teaching and Learning?



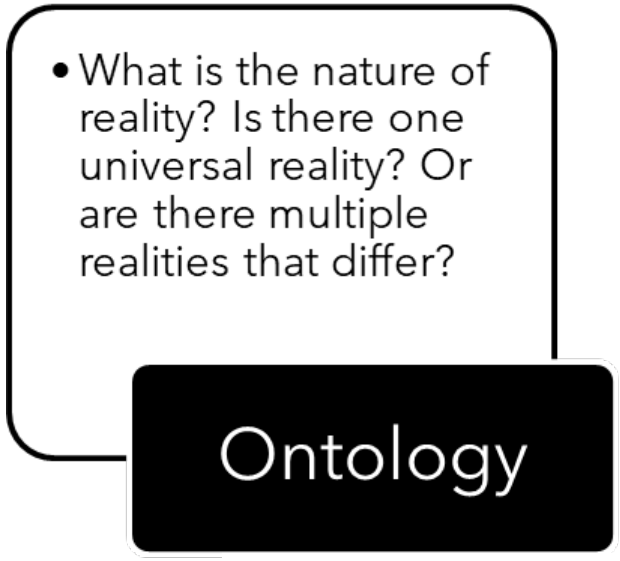
There Are "Good Problems"

"In scholarship and research, having a 'problem' is at the heart of the investigative process; it is the compound of the generative questions around which all creative and productive activity revolves. But in one's teaching, a 'problem' is [usually seen as] something you don't want to have…Changing the status of the problem in teaching from terminal remediation to ongoing investigation is precisely what the movement for a scholarship of teaching is all about."

(p. 1, Bass, 1999, "The Scholarship of Teaching: What's the Problem?")

- Within our disciplines, there are a range of methodologies we employ to explore our discipline-specific problems
- Those methodologies grow out of our disciplinary ontological and epistemological research paradigms

What Are Research Paradigms?



(p. 33, Mertens, Hall, & Wilson, 2025)

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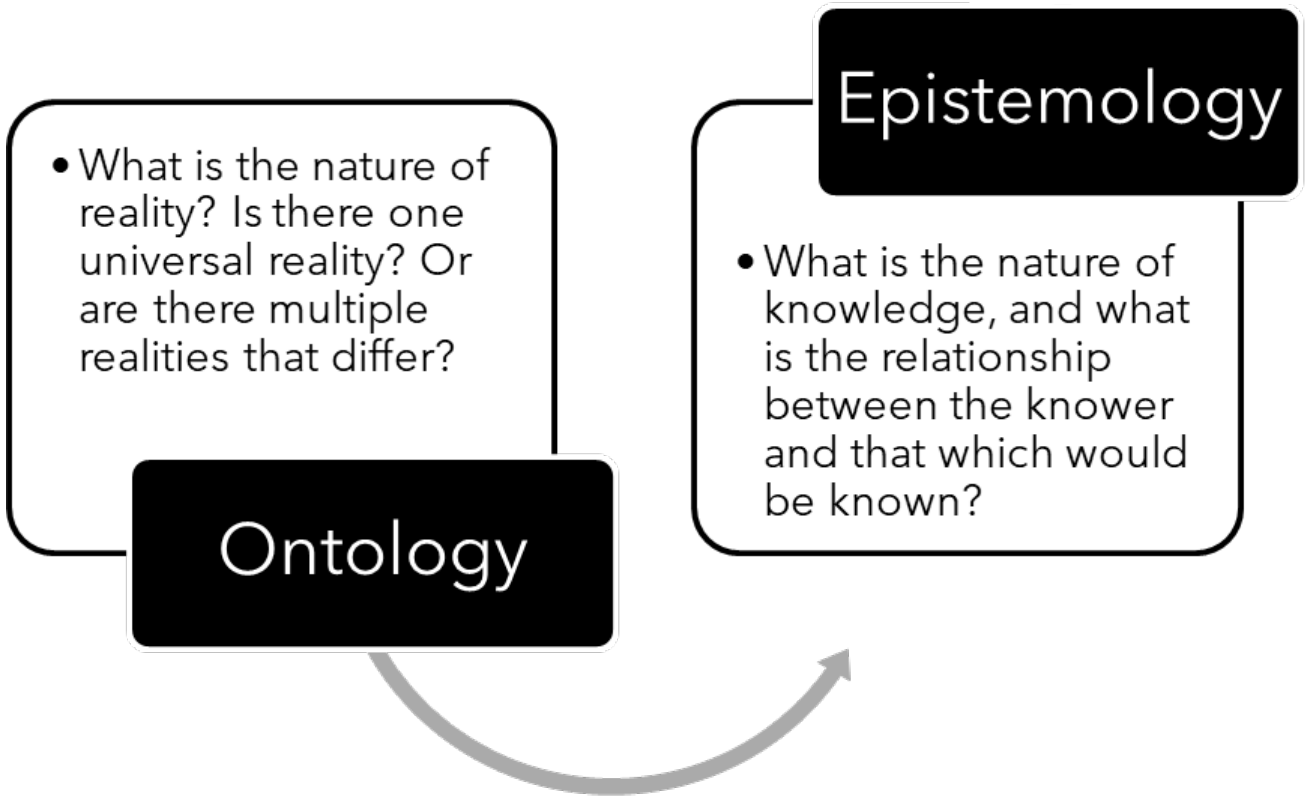

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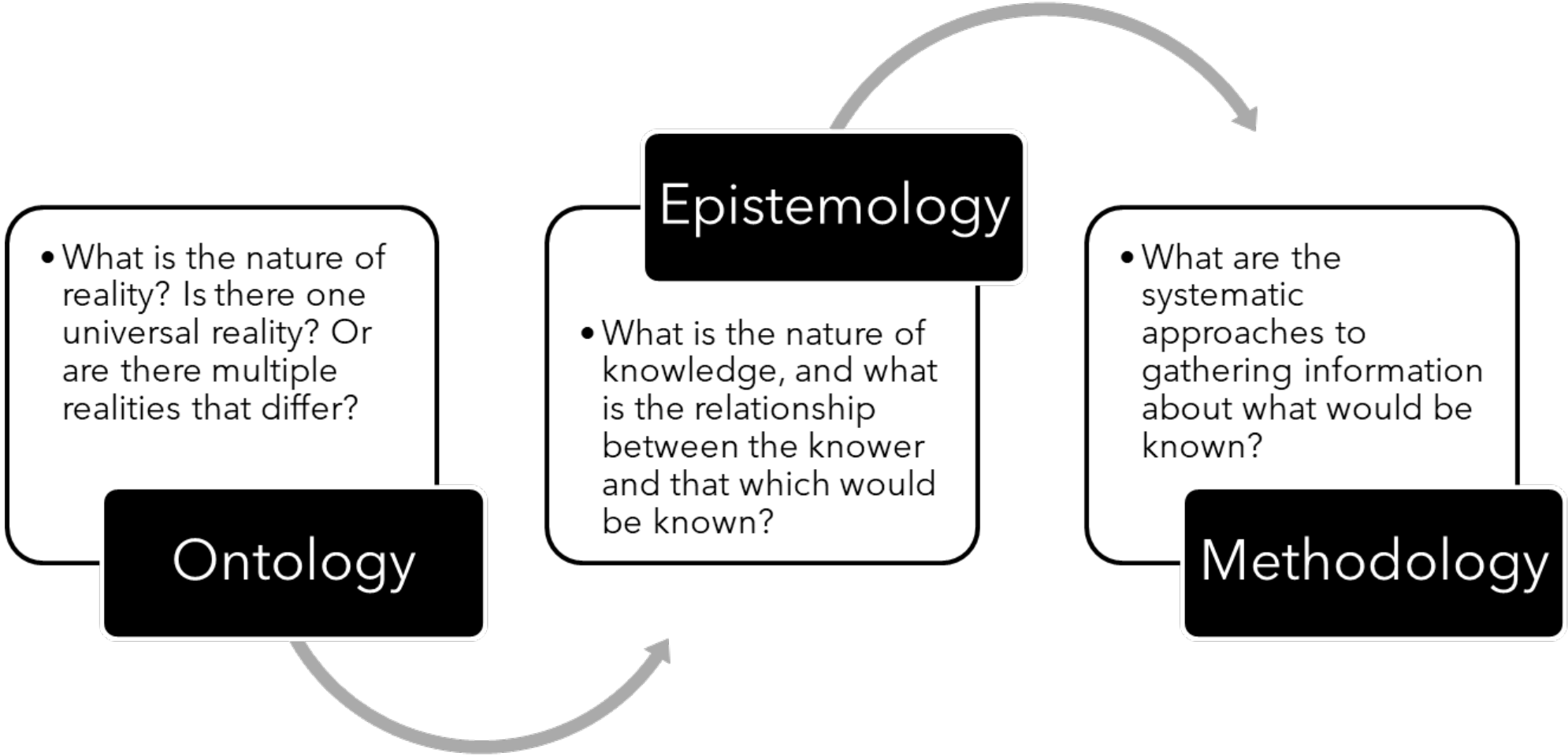

(p. 33, Mertens, Hall, & Wilson, 2025)

Objective vs. Subjective Lenses in SoTL

Consider a research project that seeks to determine if an alternative pedagogical approach improves ***student attainment*** of a course learning objective.

Hamilton & McCollum (2024) "Moving from 'good' to 'great' SoTL

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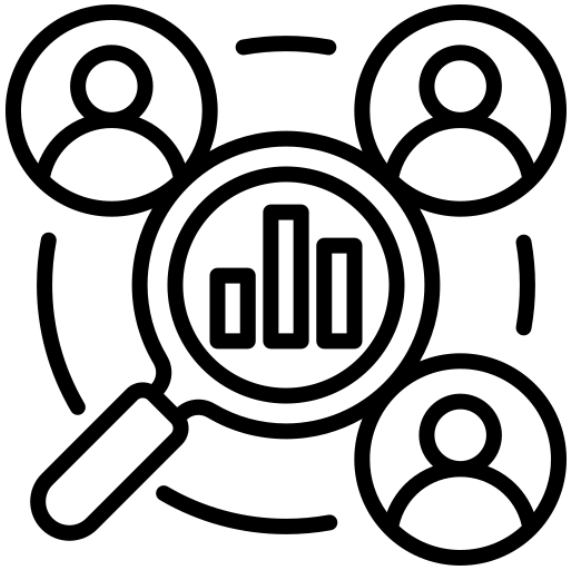
Objectivist lens: How will attainment be measured? (pre-post data; separate from identity, past experiences, biases, of researcher or research participants)



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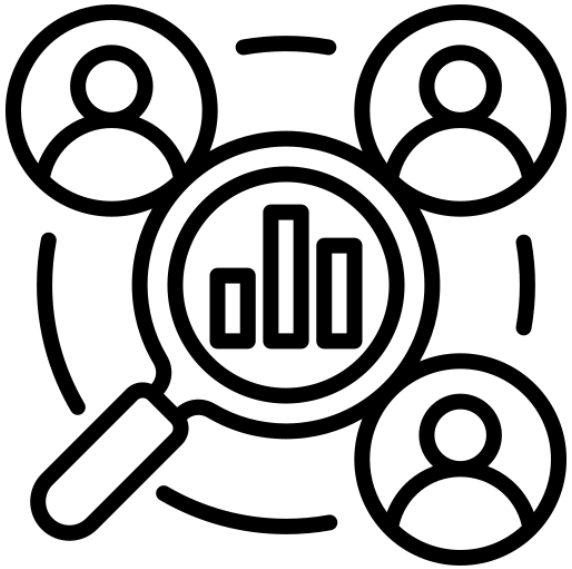
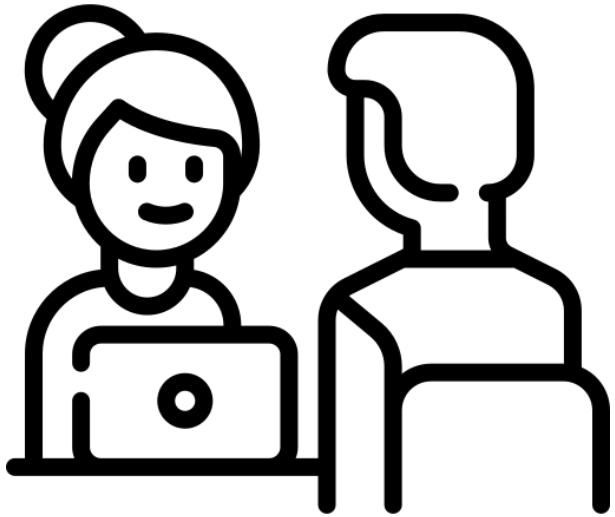




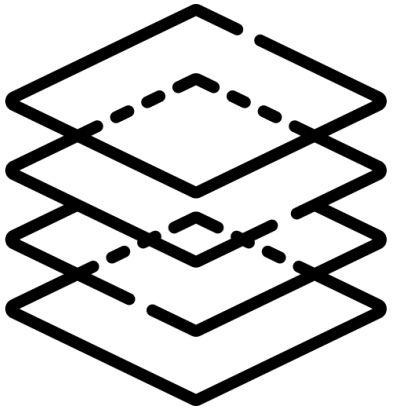
Subjectivist lens: What are the experiences of those who attain the course learning objectives? (interview data, focus groups; interpretations of observations, research is not separate from the researcher)

Hamilton & McCollum (2024) "Moving from 'good' to 'great' SoTL

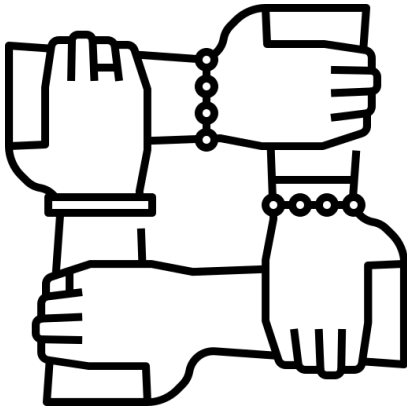
Different Research Paradigms in SoTL

Positivism/Post-positivism

Interpretive



Critical Realism



Transformative

Yeo, Miller-Young, & Manarin (2024). SoTL Research Methodologies: A Guide to Conceptualization and Conducting the Scholarship of Teaching and Learning. (3 ed.) *Routledge*.

Positivism/Post-Positivism

- **Positivism:** There is a "universal reality" that exists, and can be objectively known, independent of the observer, the observed, and the context.
- Can be "observable, stable, measurable" (Merriam & Tisdell, 2016, p.9 in Yeo et al. 2024, p. 38)

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- Can be "observable, stable, measurable" (Merriam & Tisdell, 2016, p.9 in Yeo et al. 2024, p. 38)
- **Post-positivism:** Acknowledges that though there is a "universal reality" it is imperfectly known; what is considered "truth" is socially constructed, limited by our fallible measures, and our own biases. (Yeo et al., 2024, p. 39)
- **Goals:** generalize, predict, cause-effect

Positivism/Post-positivism: An Example from STEM

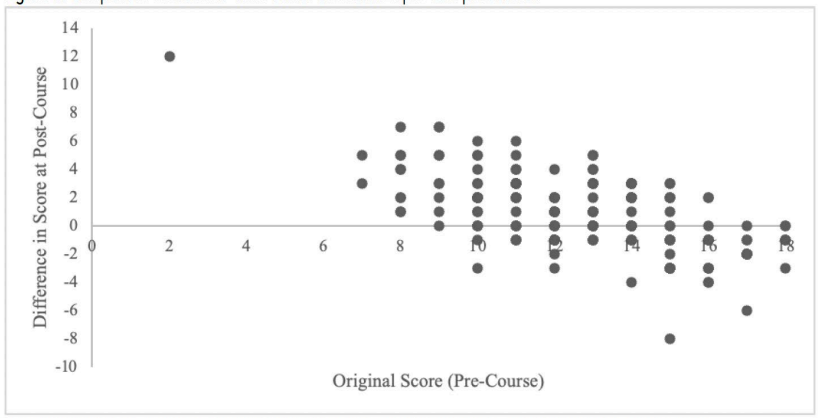
Watson, Gares, & Rempel (2025), "Is the course working?" *Teaching & Learning Inquiry*.

"After a redesign of our school year structure, our science team developed an introduction to science course focused on teaching science to non-science majors early in their post-secondary studies. The goal of this course was not to prepare students for further pursuit of science degrees; instead, we wanted to equip them with the skills and attitudes necessary to understand the scientific world in which we live. Consequently, we wondered whether these skills and attitudes were being met throughout the course; was the course working?"

- Developed an instrument to measure science skills (10 questions) and attitudes (10 questions)
- Tested instrument's validity and reliability, fine-tuned instrument. They provide Pearson coefficients, standard deviations, etc.

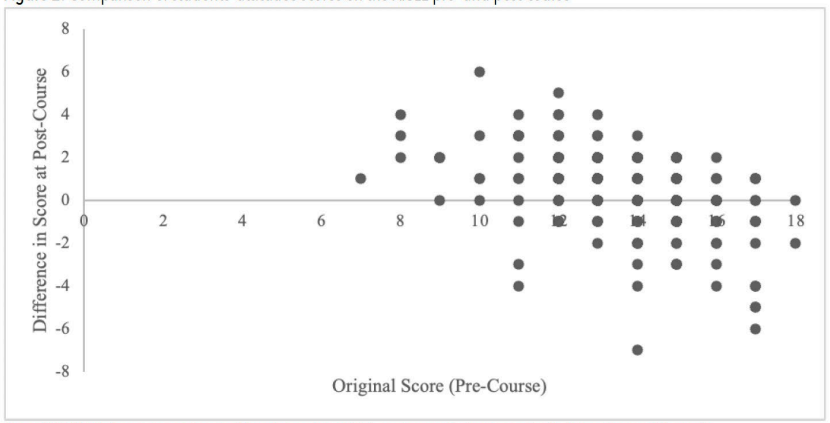
Data Presentation

Figure 1. Comparison of students' skills scores on the AISLE pre- and post-course



Note: All 173 students are represented but data points which are repeated show as a single data point on this graph.

Figure 2. Comparison of students' attitudes scores on the AISLE pre- and post-course



Note: All 173 students are represented but data points which are repeated show as a single data point on this graph

Table 4. Results for attitudes questions on AISLE

		Before removing items		After removing items	
Question	Science attitude	r to skills	r to attitudes	r to skills	r to attitudes
2	Instruments and measurements	0.19	0.44	0.17	0.45*
4	Trust in the scientific process	0.19	0.44	0.16	0.43
6	Mathematical models and experiments	0.09	0.30	Item removed	
8	Disagreement in science	0.29	0.48	0.27	0.50*
10	Ethics in science	0.24	0.54	0.22	0.55*
12	Serendipity in science	0.21	0.47	0.19	0.47
14	Uncertainty in measurements and interpretation	0.19	0.46	0.18	0.45
16	Science and the media	0.13	0.40	0.11	0.44*
18	Scientific thinking	0.23	0.46	0.24*	0.49*
20	Who are scientists	0.23	0.48	0.22	0.51*

All r-values shown had a p-value of $p < 0.001$

*Indicates an increase from values after removing items

Table 6. Descriptive statistics of changes in science skills pre- and post-course

	2018	2019	2020	2021	2023	Combined
N	36	67	45	14	10	173
Average difference (standard deviation)	0.44 (2.78)	0.63 (2.46)	1.69 (2.55)	1.07 (3.71)	0.7 (2.26)	0.91 (2.67)
Median	0	0	2	1	0	1

Table 5. Summary of scores on AISLE for identified groupings

Group	N	Skills score (SD)	Attitudes score (SD)	Overall score (SD)
First-year arts	110	12.77 (2.91)	13.44 (3.00)	26.22 (4.99)
First-year science	136	13.33 (2.86)	14.10 (2.40)	27.43 (4.32)
Upper year science	34	14.91 (2.49)	15.71 (1.87)	30.62 (3.56)

Note: First-year arts consists of surveys from first-year arts A & B, first-year science consists of surveys from first-year science A, & B, and upper-year science consists of surveys from upper-year science A, B, and C, all indicated in Table 2.

Watson, Gares, & Rempel (2025), "Is the course working?" *Teaching & Learning Inquiry*.

Research Paradigms

"As practicing scientists who espouse positivist approaches to defining science skills and attitudes, we designed and validated this survey from a similar paradigm. Positivist research paradigms assume that there is one truth which can be known, and this truth is independent of context and observer (Miller-Young and Yeo 2015). That is, for the purposes of this survey, we assumed that these constructs (i.e. science skills and attitudes) can be described (and agreed upon) by experts. With the assistance of other scientists, a survey was developed that knowledgeable experts believed to best describe science skills and attitudes."

"Naively, we thought that the development of a new instrument measuring science skills and attitudes would be a fairly straightforward process; our team consisted of experts in STEM, so we felt prepared to assess these aspects. Creating questions and seeing student responses was not overly difficult, but to claim that we had created an instrument that measured what it was designed to measure turned out to be a more complex process. Our team accomplished this task by having someone knowledgeable in instrument design in education join and advise our group."

Watson, Gares, & Rempel (2025) "Is the course working?" *Teaching & Learning Inquiry*.

Interpretive

- The world is seen as made up of people experiencing multiple subjective realities, and our collective understanding of those realities are what constitutes knowledge
  - “intersubjective → shared understanding derived from community consensus of what is “real” (Lincoln et al., 2018, p. 113 as cited in Yeo, Miller-Young, and Manarin, 2024).
- **Goals:** Describe, understand, interpret individual and collective experiences

An Example from Criminal Justice

Parrotta, Bergquist, & Hans (2021), "Student perspectives on trauma-informed education practices". *Journal of CJ Education.*

"As educators who teach about sexual violence and victimization in our criminal justice and forensic science courses and a psychology undergraduate who was learning about these topics, we were curious whether and how the hashtag #MeToo is changing classroom dynamics. We examine two trauma informed education activities used in classes at two different universities to assess students' attitudes towards learning about violence and victimization in the #MeToo era."

- To assess student responses, one instructor gave students a reflective essay focused on the activity and the other assigned seven reflective questions after the activity.
- The research team thematically coded all responses.

Data Presentation

Coding & analysis

Response papers from the beginning and end of the Criminal Justice course at Cal Poly and student reflections on Kelsi's story at Purdue University were coded by the first and second author. We did open and focused coding separately through password protected Google Docs where we had uploaded de-identified pre- and post-responses for both class activities in summer 2020 (Charmaz, 2006; Glaser & Strauss, 1967). We met weekly September through November to review codes, performing inter-reliability checks, talking through where we disagreed, sometimes moving passages into different categories. We wrote analytic memos to elaborate on interpretations of patterns emerging during the coding process (Kleinman, 2007).

Discussion

Our examination of Forensic Science and Criminal Justice students' reflections of exposure to potentially upsetting or traumatic course materials related to violent crime and victimization reveal students are not fully aware of the emotional trauma that victims, families, and professionals experience. The results of the first activity provide student support for the use of content warnings in Criminal Justices courses, and highlight that some students benefit from detailed content warnings to prepare themselves if they have a personal connection to a topic. Even students who did not feel that they required a warning, respected and in some cases even declared that the University, at a minimum, should make it mandatory that professors provide a content warning in their course syllabus. Although learning about sexual violence and victimization was documented as difficult by FS and CJ students, working through the materials resulted in self-reflection, empathy, personal growth, and was seen as a necessary part of professional development.

Grappling with difficult material is uncomfortable

In response to the first author's course overview and content warning, seventeen students reflected upon the necessity of grappling with "difficult," "controversial," and "upsetting" topics. A Sociology major said he appreciated the content warning, stating:

> This leaves an opportunity [for a student] to make a decision whether or not to stay in the class due to controversial topics that may be uncomfortable to speak about. I personally believe those are the topics that need to be talked about the most. Also, I find myself successful after stepping out of my comfort zone so I think the challenge of this course will be beneficial in the long term.

By acknowledging the range of graphic topics that would be covered at the start of the quarter, students were reassured they were not the only ones who might be intimidated to speak up or post about certain topics like sexual assault or police brutality. In the #MeToo era, students may be familiar seeing celebrities and even friends share personal experiences about sexual harassment and assault via social media; however, reading tweets is different than participating in class discussion boards where you have to engage by crafting response posts.

A woman commented, "I think it is equally important to talk about difficult subjects and to talk about things that make us uncomfortable. Perhaps starting a dialogue and acknowledging our uncomfortableness makes it easier for people to talk about these subjects." As she notes, acknowledging the uncomfortableness may set the tone for

Research Paradigms

The authors did not state their epistemological orientation(s), but we can make some tentative guesses that they are operating from an interpretivist framework (rather than positivist, as with the STEM folks):

- They are focused on students' subjective experience
- They make limited claims toward generalizability:

> Teacher-scholars should continue to assess student attitudes towards trauma informed practices from various majors, class levels, disciplines, course topics and course modalities, and institutional contexts with respect to their victimization status, positionality, and engagement in social media movements like #MeToo. In addition to relying on surveys and student writing, researchers should consider conducting interviews with students and professionals in the field to better assess entry-level career

Parrotta, Bergquist, & Hans (2021), "Student perspectives on trauma-informed education practices". *Journal of CJ Education.*

An Example from Humanities

Copland (2023), "A case study on the value of humanities-based analysis." *Teaching & Learning Inquiry.*

"Close reading has long been heralded as a humanities-specific methodology with significant potential for SoTL. This essay fills a gap in SoTL literature with a full case study demonstrating what, exactly, close reading shows us about our data that social science-based quantitative and qualitative analyses may not. Close reading-based analysis of first-year writing students' pre-surveys on gender-inclusive language entails attention to the interrelated form and content of students' self-reflections. This analysis reveals nuances and complexities that, if overlooked, would result in inadvertent misrepresentation of the data."

- 3 sections of first-year writing; study looked at an in-class writing assignment
- Article also is a scholarly personal narrative (self-reflective, journey as a new researcher)

Data Presentation

This student's response was not an isolated incident, either. Another stude "occasionally" to the question, "on the whole, do you use gender-inclusive langua singular "they" four times in four sentences, three times in gender-inclusive ways:

> I occasionally use gender-inclusive language when I know what word to us a group of people without assuming their preffered [sic] pronounce [sic]. A refer to [an] individual's pronoun depending on their physical looks. Sometimes when I'm out to eat, I refer to the server as a waitress even though they are a male figure, this is probably due to the fact that no one ever corrects me. I'm not sure what pronoun to use when I meet a person for the first time, because I'm not sure about their preference so I make my assumption based on the gender I see.

- In the first sentence, "their," the possessive form of the pronoun "they," is used to agree with the singular collective noun "group."
- In the second sentence, "their" is used in a gender-inclusive way to refer to the singular "individual." The student says she uses gender-specific pronouns for such individuals based on how they appear to her, so one would expect her to use a construction like "his or her."
- In the third sentence, "they" is used in a gender-inclusive way to refer to the "server": the student says that the server is "a male figure," so one would expect her to use "he."
- In the fourth sentence, "their" is used in a gender-inclusive way to refer to the singular "person." The student again says that she uses gender-specific pronouns for such individuals based on how they appear to her, so one would expect her to use a construction like "his or her."

THE VALUE OF CLOSE READING-BASED ANALYSIS

My initial, straightforward thematic analysis of what students said they were doing in terms of their use of gender-inclusive language did not account for the findings my close reading subsequently revealed: findings about what students were actually doing in their use of gender-inclusive language in the pre-survey itself. Presenting work on the basis of my initial analysis would mean misrepresenting the inextricability of the form and content of students' responses and the contradictions, complexity, nuance, and messiness that thereby emerge.[2] Manarin (2017) frames as a

Research Paradigms

"In truth, the findings I had cut were, for me, the most fascinating, because they arose only through the combination of my disciplinary expertise in the subject matter and my disciplinary methodology of close reading. The latter involved attention to the form as well as the content of a text—or, more accurately, awareness of the inseparability of the form and content of a text. Through my expertise in the English language and through close reading, I made discoveries about the pre-survey responses that highlighted the limitations of the social science methodologies I had been relying on. These limitations were not inherent in the methodologies themselves but emerged because I was wielding them: an amateur, wielding them in their most basic forms. And yet, a social scientist wielding them more expertly would lack my subject-matter expertise related to the English language and gender-inclusive language, specifically."

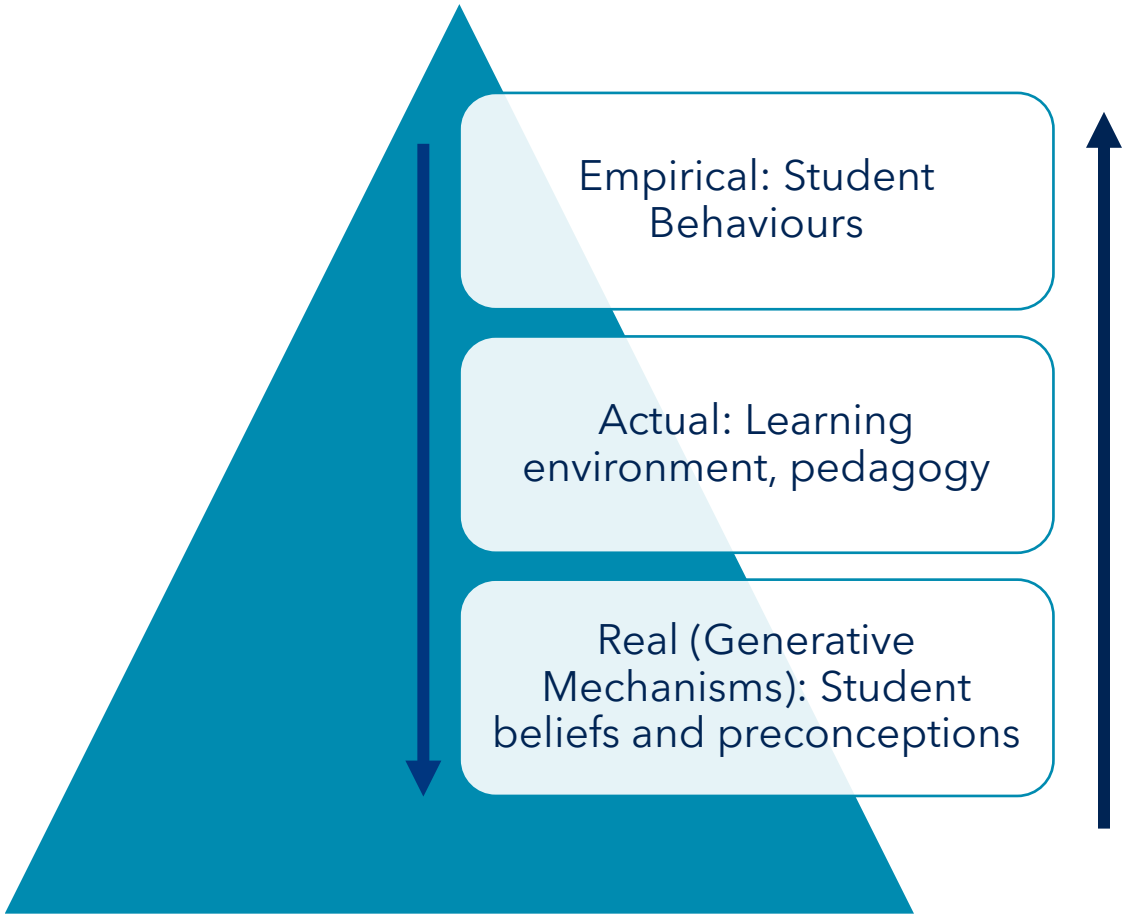
- Probably an interpretive, naturalistic approach
- "Naturalistic studies reject the notion that controlling for variables is desirable [...and] rather pose that each research situation is unique and that data should be gathered from their situated context...these approaches can be fruitfully applied to teaching and learning contexts as sociocultural contexts, for example...analysis of artifacts such as coursework" (Miller-Young & Yeo, 2015, "Conceptualizing and communicating")

Critical Realism

- Critical realism: there is an independent, external reality that exists but it cannot be separated from context.
  - Knowledge is socially and historically produced
- Phenomenon is “stratified” meaning it can be examined at different levels
  - Individual, group, institutional, broader society
- 3 levels:
  - Empirical: events that are being observed
  - Actual: events which occur but may/may not be observed
  - Real: Underlying mechanisms

(Miller-Young, 2025).

Critical Realism



(Miller-Young, 2025).

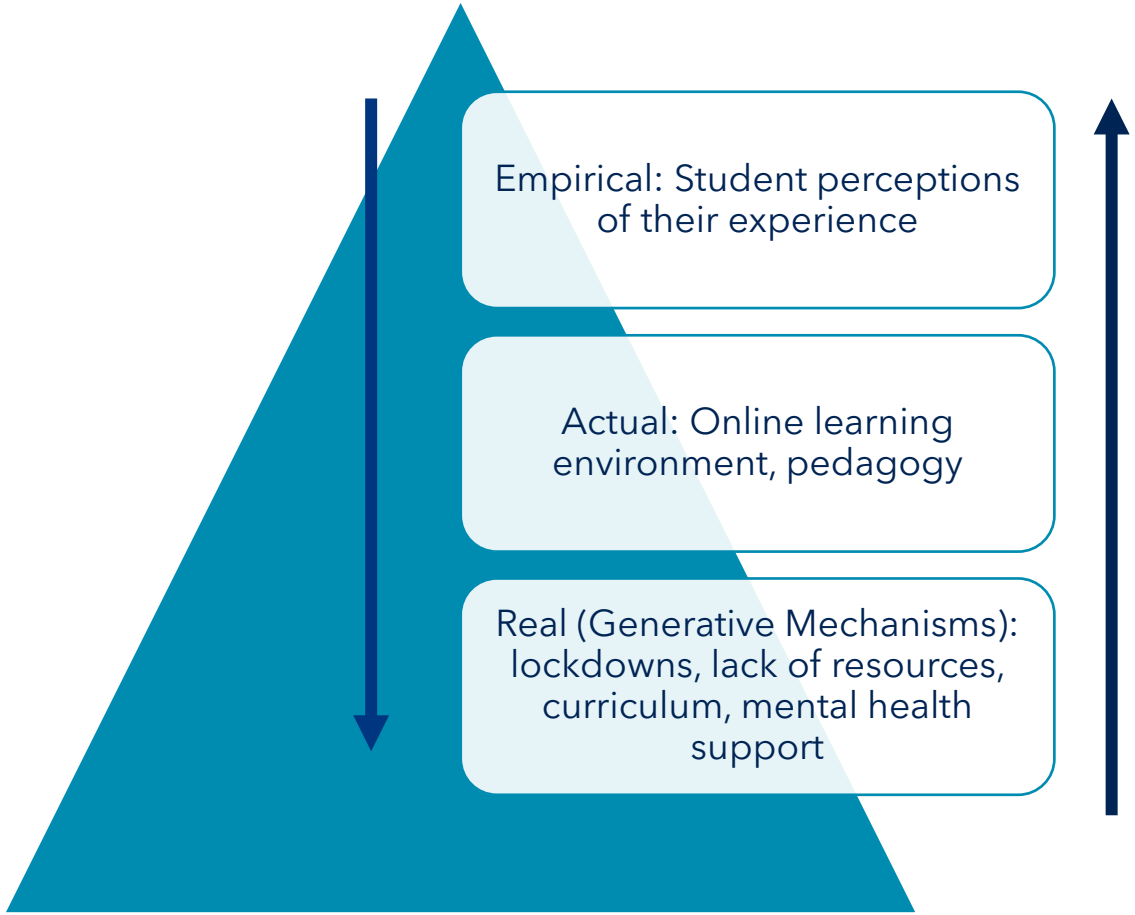
Critical Realism: SoTL Example

Syska & Pritchard (2023): study explored students' perceptions of blended and remote learning and its impact on their sense of belonging

Methods: Multi-method triangulation
Quantitative methods (descriptive and inferential stats).
Qualitative methods (thematic analysis)

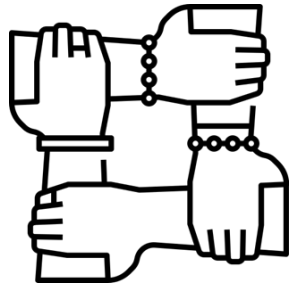
Findings: blended and remote learning not seen as detrimental to academic performance, but there is a negative impact on students' sense of belonging

Sources of loss of student belonging exist on multiple levels (university structures, socio-economic structures, teaching contexts, individual attributes, and technology)



(Miller-Young, 2025).

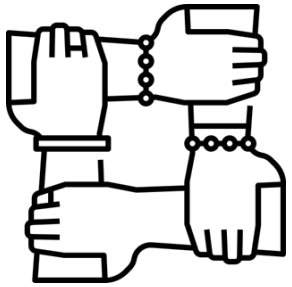
Transformative



- Differential experiences of reality depending on social location, determined through power relationships through social, political, cultural, economic, and gender values
- The perspective leads us towards a more critical approach and reveal our questions of inequity plays out in the pedagogical space

Goals: change, empowering marginalized individuals and groups, problematize status quo.

Transformative:
An example from Inclusive Assessment



Nieminen (2025): Inclusive assessment design: Students with disabilities speak out.

- Study explores and makes visible the voices of students with disabilities and their experiences with inclusive assessment design
- Analysis of 139 qualitative survey responses and nine narrative interviews of students with disabilities.
- Involves students in how inclusive assessment design is conceptualized
  - Student suggestions: More future oriented feedback practices, personalized feedback dialogues, less uniform assessment cultures, more diverse assessment opportunities

Recommendations

From Hamilton & McCollum (2024): "To better inform readers about the SoTL lens employed in a project, authors should explicitly identify their scholarly lens and provide adequate citations so that the audience can familiarize themselves with the approaches used."

Enhanced rigor	The research lens brings a level of rigor and systematic inquiry to SoTL, enhancing the reliability and validity to the findings.
Improved understanding	It will help in better understanding of the complexities of teaching and learning processes, as it encourages researchers to consider multiple perspectives and to use diverse methods of inquiry.
Increased relevance	The research lens ensures that the SoTL study is grounded in relevant theoretical frameworks, making the findings more meaningful and applicable to other contexts.
Greater transparency	It promotes transparency in the research process, making it easier for others to understand, critique, and build upon the work.
Facilitates scholarly dialogue	The use of the research lens can facilitate scholarly dialogue and collaboration, as it provides a common language and shared standard to conduct and evaluate SoTL work.

Questions for you to consider:

Which research paradigms align best with your research interests in SoTL?

OR

Are there points of tension or conflict that you experienced in learning about these paradigms?

Some Take-Away Points

- It's important to make room in SoTL research for multiple ontologies, epistemologies, and methodologies
- But, keep in mind that your readers may not be familiar with those research paradigms
- Consider being explicit about your epistemology and designing a SoTL project that fits your discipline...it will probably resonate with readers from your discipline, the explicit research paradigms will help those outside your discipline understand your project
- Consider research partnerships to get help with unfamiliar methodologies

Next Session:

Navigating Ethical Considerations in SoTL Research

Faculty Co-facilitator: Prof. Jayne Baker

Associate Professor, Teaching Stream; Associate Chair, Academic, Department of Sociology, UTM; Chair, Social Sciences, Humanities, and Education Research Ethics Board (tri-campus), University of Toronto

Online on Friday, March 27th, 2026

12:00pm - 2:00pm on Microsoft Teams

ROBERT GILLESPIE ACADEMIC SKILLS CENTRE

Workshop Feedback for the "Scholarship of Teaching & Learning (SoTL) Series 2"

UNIVERSITY OF TORONTO MISSISSAUGA

ROBERT GILLESPIE ACADEMIC SKILLS CENTRE

Thank you!

Any questions? Please feel free to reach out to eddev.utm@utoronto.ca or amanda.brijmohan@utoronto.ca

References

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