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# The Place of Research Paradigms in SoTL Practice: An Inquiry

## ABSTRACT

Research paradigms constitute views that a researcher holds about (a) the nature of reality and what they can know about it (ontology); (b) the potential influence of their existing ideas and values on what they want to know, how they try to get to know, and criteria they use to make judgments about knowledge (epistemology); and (c) appropriate strategies for developing and evaluating knowledge (methodology). These views may influence their conception, design, implementation, and accounts of research projects. Critical self-reflection (reflexivity) is required to recognize these views and articulate their implications for projects. As scholars of teaching and learning, we attend explicitly to these views and their implications for our projects. However, our observation of practice in the field of the Scholarship of Teaching and Learning (SoTL) in general, as documented in publications, indicates that while some colleagues attend to such views and implications, others do not. This observation prompted us to explore the extent to which journal-based accounts of SoTL projects refer to paradigm-related views and possible explanations for the attention that their authors do, or do not, give to this consideration. Explanations proposed include conceptions of SoTL, journal author guidelines and review criteria, and properties of the concept of a paradigm. Recommendations for educating new SoTL practitioners about research paradigms and their possible relevance to SoTL, based on our inquiry, are also presented.

## KEYWORDS

SoTL, researcher reflexivity, research paradigm, inquiry

## INTRODUCTION

The origins of this article lie in the experiences of the authors, a supervisor (Neil) and a student (Andrew) in the course of a doctoral research project. The project, which involved investigation of a strategy to enhance curricula intended to facilitate students' development of design thinking expertise (Withell 2016), aligned with our conception of SoTL: "Teachers engage in some form of systematic inquiry into, and critical reflection on, aspects of their own teaching and their students' learning with the primary intention of improving students' learning in particular contexts" (Haigh 2010, 12). Such inquiries have the status of scholarship when "they are made public, subjected to critical review and communicated to a wider community of scholars and practitioners, and they fulfil other criteria and standards associated with strong scholarship within disciplines" (Haigh 2010, 12).

Early in our discussions of the project, we talked about the notions of researcher reflexivity and research paradigms. In the context of research, reflexivity involves "critical self-reflection of the ways social background, assumptions, positioning and behavior impact on the research process" (Finlay and

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Gough 2003, ix). The stance that critical self-reflection should be a defining feature of research is based on the view that the researchers' existing points of view, feelings, and values can influence what they research, how they engage in research, and how they evaluate processes and outcomes of their research. From this perspective, the work of research is deemed to be subjective, and researchers are expected to turn a critical lens on themselves (that is, to be reflexive) so they can take account of, and report on, the relationship between who they are and the nature of the research they undertake. This position challenges the view that research can, and should be, objective. For research to be objective, researchers must substantiate the claim that their research endeavors are independent of who they are.

Ongoing debates about the place of subjectivity and objectivity in research are part of the subject matter of epistemology that addresses a question posed by Egon Guba and Yvonna Lincoln (1994, 108): "What is the nature of the relationship between the knower or would-be knower [that is, the researcher] and what can be known?" The broad concerns of epistemology include (a) the nature of knowledge, (b) the relationship between reality and knowledge that is constructed about it, (c) the relationship between the person who seeks to know and the knowledge they construct, and (d) how claims about knowledge can be justified.

The following examples illustrate possible differences in the views researchers might hold about the subjectivity and objectivity of research practices—and the relationship that exists between knowledge and reality.

On one hand, one researcher selects and administers a questionnaire that includes multiple-choice response items concerning student engagement in aspects of laboratory classes to a large random sample of students completing an undergraduate medical education program. While knowing the questionnaire has been rigorously trialed and evaluated, the researcher does not investigate who the designers are with reference to their theories about student engagement and the impact of those theories on the questions asked and response options provided. The possible fit, or not, of the questionnaire with the researcher's own theory about student engagement is similarly not considered. The researcher also believes that on the basis of appropriate statistical analysis, they can generalize the findings to the total population of students completing the program.

On the other hand, another researcher who is interested in understanding students' engagement in laboratory classes conducts focus group interviews with a sample of the students who are selected on the basis of their widely variable characteristics. The researcher believes that their existing theory of student engagement may dispose them to ask particular questions, and they intentionally allow students' responses to go beyond the subject matter of particular questions. The researcher constantly seeks confirmation and clarification from students regarding the meaning they attach to questions—and to the meaning they initially associate with student responses. A record of the group dialogue and the researcher's interpretations is returned to students who can clarify, amend, or extend it. The findings are stated to be the researcher's interpretations of the meaning of students' similar and differing statements about their engagement in this context at this time. The researcher emphasizes that the findings may not be generalized to all students enrolled in the program.

Further views about reality, knowing, and knowledge that researchers may hold—and choose to be reflexive about—fall within the domain of ontology. The question that addresses these views is again from Guba and Lincoln (1994, 108): "What is the form and nature of reality and, therefore, what is there that can be known about it?" Once more, responses to this question can differ significantly. For example, some researchers consider that a real world exists beyond and within us and that much, if not all, of this

world is directly experienced using our senses. This is not an imagined world—a world that we have constructed in our mind with no certainty that it exists independent of our mind. In contrast, some consider that reality is confined to what our minds conceive reality to be and that we can never have certainty that a world exists independent of the one constructed in our mind.

Other views are associated with another of Guba and Lincoln's questions: "How can the inquirer (would-be knower) go about finding out whatever he or she believes can be known?" (1994, 108). This question concerns the purposes and attributes of the ways in which data may be gathered, analyzed, and interpreted should be. Examples of methodologies are survey, observation, narrative inquiry, phenomenology, ethnography, case study, correlational, experimental, historical, action research, and appreciative inquiry. A methodology is more than a list of specific methods (e.g., closed response questionnaire, focus group interview), and different methodologies, or the ways they are engaged in, may reflect different ontological and epistemological perspectives. For example, the researchers in the two examples above were engaged in survey research. However, the purpose and nature of their surveys clearly differed in ways that reflected their different ontological and epistemological perspectives.

A combination of views concerning ontology, epistemology, and methodology is termed a *paradigm*, and researchers have adopted various paradigms, such as positivism, social constructionism, and critical realism. Some researchers take a pragmatic paradigm stance: while not discounting the concepts of ontology and epistemology, they emphasize the need to choose data, methodologies, and methods that logically fit the research question. Other researchers contest the relevance of paradigm viewpoints.

Having concluded that paradigm-related views were a relevant consideration for his own research, Andrew decided his views aligned with those espoused by critical realists. As these views also inform this inquiry and we believe we should make them explicit, we provide the following summary of key critical realist views, which were formulated initially by Roy Bhaskar (1975).

### **Critical realist ontology**

Critical realists believe there is a world that exists and acts independently of knowledge that we may construct about it. This "real" world is made up of things (entities) with properties that give them the power to act in ways that can cause effects or events. Critical realists use the term *mechanism* when referring to a way in which something can act. More familiar synonyms are *process* or *method* (we use the former in this article). When processes are activated, they may change the properties of an entity and can enable, block, or modify the exercise of other processes. Critical realists emphasize that while the properties and processes of entities may not be observable, and therefore need to be inferred, actual events or outcomes caused by them may be directly experienced and observed. Critical realists also believe that while the real world is characterized by complexity and change, it is a world that can be described and explained, even if imperfectly, through research. From this perspective, a paradigm is an entity with properties (such as points of view about reality) that inform or guide SoTL design decisions. Informing and guiding are described as latent processes. In our project, described below, we made design decisions with these specific points of view about reality in mind.

### **Critical realist epistemology**

Critical realists assume that how we experience and interpret reality is influenced by our existing assumptions, theories, and values. This means knowledge about some thing can always change (or is

transitive), such as when new research adds to or changes our understanding, or as we change our own assumptions, views, and values. However, the entity that we are researching remains the same—it is intransitive. It does not matter what we think it is—it is what it is. Thus, while our existing theories have disposed us to certain explanations for the attention SoTL practitioners do or do not give to research paradigms, our theories and explanations remain open to change.

### **Critical realist methodology**

From the perspective of a critical realist, the primary purpose of research is to theorize explanations for events or effects that can be shown to have some form of consistent trend or relationship. For example, increasing numbers of New Zealand tertiary educators are becoming engaged in SoTL. Trends may also include the absence of such relationships or extreme variability in relationships. Critical realists take a pragmatic position on research methodology, believing that a mix of methodologies (and methods) may well be required to address research questions. However, a distinctive feature of a critical realist methodology for developing theory about explanations is the use of *abductive* and *retroductive* inference (Meyer and Lunnay 2013) and the more commonly used inductive and deductive forms of inference. Abduction, which we used in our inquiry, involves inferring a best explanation for something without basing the inference on an existing theory. While existing theory may sometimes be drawn on, it is reinterpreted using critical realist perspectives. For instance, we drew on and reinterpreted theory concerning threshold concepts in this way (see the discussion below under “Findings”). Retroduction involves inferring entities, properties, and processes that *must* exist for something to be possible. Thus, we endeavored to infer entities that may need to exist if SoTL practitioners are to know about research paradigms and their potential relevance to the the field of SoTL. We inferred three entities that *may* need to be present for such knowledge to exist.

### **The case for an inquiry**

After Andrew’s SoTL doctoral project was completed, we reflected on and discussed the place of paradigm considerations in the work of colleagues. In the process, we considered Andrew’s experience of encountering the notion of research paradigms. Although he had prior research experience in the field of industrial design, he was unfamiliar with the concepts of reflexivity and research paradigms when he commenced his project. We also noted participants’ responses in the workshops Neil offered on SoTL projects that included consideration of research paradigms (Haigh 2015). For some participants, the concept was clearly familiar and its relevance to SoTL uncontested. For others, it was unfamiliar and challenging to understand, and some expressed caution or doubt about its relevance. The former were likely to have a background in a social science discipline and prior research experience. The latter were likely to be new to research or have disciplinary roots in research fields where discourse about paradigms is absent or limited. Our ongoing reading of published accounts of SoTL projects also suggested SoTL practitioners’ familiarity with, and attention to, research paradigms varies widely. Given these observations, we decided that a more systematic inquiry into the place of paradigm considerations in SoTL practice was warranted. Were our impressions valid? And if they were, could we theorize explanations for trends that we had observed? We anticipated that answers to these questions could both enhance our ability to support new SoTL practitioners and assist professional development facilitators, supervisors, mentors, and editors and reviewers pursuing the same agenda.

The inquiry was underpinned by the premise that new SoTL practitioners should know about research paradigms and their possible relevance to SoTL practice. They should also be encouraged to think deeply about their own position concerning relevance. Will they identify their own, and others', ontology, epistemology, and methodological perspectives and take them into account; take a pragmatic paradigm position; or reject the relevance of research paradigms? We note that regardless of their personal stance regarding relevance, all SoTL practitioners will encounter accounts of SoTL projects that do refer to paradigm-related views. Therefore, they need to understand these views if they are to comprehend and critique these accounts.

Accordingly, our inquiry addressed the following two questions:

1. ***How often do SoTL practitioners explicitly refer to research paradigms in published accounts of their projects?***
2. ***What properties and processes associated with (a) conceptions of SoTL, (b) SoTL publication author guidelines and review criteria, and (c) views about the concept of research paradigms could influence the attention SoTL practitioners give to research paradigms?***

## INQUIRY DESIGN

To address these two questions, we took the steps that are detailed below.

### **Q1: References to research paradigms in SoTL project reports**

Through a literature review, we identified one previous investigation of the place of research paradigms in published accounts of SoTL. Kym Fraser and Ekaterina Pechenkina (2016) surveyed 84 articles published in two highly ranked education journals, the *Higher Education Research & Development* and *Studies in Higher Education*. They reviewed SoTL reports to determine whether (a) the authors identified a paradigm foundation for their projects, (b) a paradigm position could be inferred if not explicitly stated, and (c) if there was a dominant paradigm. They looked for text that explicitly referred to a paradigm position or stated the “intent of the article’s authors, the drivers of their research, the nature of the knowledge/understanding developed from their research (epistemology), the literature and methods used, and the outcomes of their work” (Fraser and Pechenkina 2016, 42). When identified, paradigms were classified using one of seven categories (positivist, neo-positivist-deductive, neo-positive-inductive, transformative, interpretivist, super-complexity, or pragmatic). They found that in only one article in *Higher Education Research & Development* did the authors state their paradigm positioning, while in four articles in *Studies in Higher Education* did the authors state this. When paradigm position was inferred, 60 percent of researchers adopted a neo-positive-inductive position.

To build on this research and with the aim of identifying evidence of explicit attention to paradigm positioning, during 2018 we surveyed the text of a sample of articles in three SoTL journals: *Journal of the Scholarship of Teaching and Learning* (27 articles in vol. 16, nos. 2–4 and vol. 17, no. 3), *Teaching & Learning Inquiry* (24 articles in vol. 4, no. 2 and vol 5, nos. 1 and 2 ), and *International Journal for the Scholarship of Teaching and Learning* (34 articles in vol.10, no. 2 and vol. 11, nos. 1 and 2). Our method of content analysis involved reading all text to identify terms and phrases that explicitly referred to concepts related to paradigm or positioning (i.e., we did not seek implicit evidence). Specifically, we first searched for one or more of three terms: *paradigm*, *ontology*, *epistemology*, or the naming of particular paradigm positions (e.g., such as social constructionism). Second, we looked for other terms

and phrases (e.g., such as research philosophy, world views) that might also refer to research paradigms. As some of these words have more than one potential meaning, it was necessary to read the context to establish their intended meaning and relevance.

A potential limitation of the analysis was that some authors may have referred to research paradigms using vocabulary that we did not recognize was relevant. Michael Potter and Brad Wuetherick (2015) highlight this possibility in commentary on the marginalization of epistemologies, philosophies, and research methods associated with humanities disciplines, which may result in exclusion from publications or diminishment of the status of contributions. Based on their review of SoTL journals, they conclude that humanities disciplines are marginalized because reviewers generally apply social science norms. Those norms may include particular vocabulary. Thus, our analysis was constrained by our disciplinary backgrounds and limited to the text used in literature or presentations on paradigms with which we were familiar.

### **Q2(a): Concepts of SoTL in literature**

When prospective SoTL practitioners are introduced to SoTL, they are typically presented with one or more formal definitions of, or more general commentary on, the nature of SoTL and its related practices, which may or may not refer to research paradigms. When references to research paradigms are included, such statements may be expected to guide the practitioner to give attention to this entity. Consequently, we (a) reread an extensive range of literature compiled for previous projects; (b) surveyed internet-based institutional resources intended to introduce SoTL and provide procedural guidelines; and (c) conducted a further internet-based review of literature using the terms *SoTL*, *paradigm*, *ontology*, and *epistemology*. When we found references to paradigm-related concepts, we performed a content analysis of the related text. The limitations of reliance on these terms are acknowledged again, alongside the scope of accessible literature.

### **Q2(b): Author publication guidelines**

Using a similar content analysis method, we read journal aims and author guidelines for the three journals listed above and the two higher education research journals also studied by Fraser and Pechenkina, which include SoTL project reports—*Higher Education Research & Development* and *Studies in Higher Education*. These aims and guidelines were presented on each journal's respective main website. In particular, we searched for statements that referred to review criteria, and that explicitly or implicitly alluded to the expectation that authors should be reflexive and state positions that influenced their decision making and accounts. We considered that these guidelines could have an educational purpose or outcome for those new SoTL practitioners and guide their practice.

### **Q2(c): Views about the concept of research paradigms**

As we had observed that some new practitioners appeared to find the concept of research paradigms unfamiliar, challenging, and unsettling, we reviewed the literature to see whether this had been noted by others involved in the education of those new to SoTL and, if so, whether they offered explanations for this response. We identified several relevant studies (see below) and interpreted their findings and associated explanations through a critical realist ontological lens (abduction).

## FINDINGS

Our findings, detailed below, can be summarized as follows:

1. Limited attention to, and elaboration of, paradigm considerations in general literature on SoTL.
2. Absence of references to reflexivity and paradigm considerations in journal publication criteria and author guidelines.
3. The potentially troublesome properties of ideas about paradigms when presented in educational programs for new SoTL practitioners.

**Q1: Reference to research paradigms in SoTL-focused journal publications**

*Journal of the Scholarship of Teaching and Learning*: While the term *paradigm* was used in four of 27 articles, its meaning did not encompass ontology and epistemology, nor could it be confirmed (e.g., “there was a paradigm shift in approaches to learning”). No paradigm positions were named, and the terms *ontology* and *epistemology* were not used in any articles. No other terms or phrases that could be interpreted as related were identified.

*Teaching & Learning Inquiry*: The term *paradigm* was used in one of 24 articles, but its meaning differed. There were no references to specific paradigm positions, and the terms *ontology* and *epistemology* were not used. No alternative terms or phrases were noted.

*Journal of the Scholarship of Teaching and Learning*: While six of 34 articles included the term *paradigm*, the meanings differed or could not be confirmed. No paradigm positions were stated, and the terms *ontology* and *epistemology* were not used. However, the authors of one article stated that a pragmatic worldview underpinned their study. This view and its study implications were not elaborated. No related terms or phrases were encountered.

Our findings parallel those of Fraser and Pechenkina (2016) with respect to the level of explicit attention to paradigm positioning in SoTL-focused literature.

**Q2(a): Conceptions of SoTL in literature and resources**

The review of SoTL-focused literature and resources uncovered few references to research paradigms in definitions and general commentary on the practice of SoTL. We found two key references. First, An early definition of SoTL links the choice of methods with the requirements of discipline-based epistemologies, explaining that “the scholarship of teaching is problem posing about an issue of teaching or learning, study of the problem through methods appropriate to disciplinary epistemologies, application of results to practice, communication of results, self-reflection and peer review” (Cambridge 2001, 8). Similarly, Kathleen McKinney (2004, 8) states, the “scholarship of teaching and learning involves systematic study of teaching and/or learning and the public sharing and review of such work through presentations, publications, or performances. ‘Study’ is broadly defined given disciplinary differences in epistemology and the need for interdisciplinary SoTL.” Other definitions of SoTL that emphasize the significance of the scholar’s disciplinary positioning do not directly associate paradigm perspectives with their disciplines. For example, “the scholarship of teaching involves studying, reflecting on, and communicating about teaching and learning, especially within the context of one’s discipline” (Healey 2003, 20).

Commenting on diverse methodological approaches that may be adopted for SoTL, Harry Huball and Anthony Clarke (2010) state that “each methodological approach is rooted in particular

ontological and epistemological assumptions.” They also observe, “More often than not, however, faculty members from a variety of disciplines, especially those unfamiliar with social science research methods, do not possess the appropriate methodological expertise and thus find it significantly challenging to conduct SoTL research in complex institutional/curricula/classroom settings” (Huball and Clark 2003, 1). Similarly, Janice Miller-Young and Michelle Yeo (2015, 38) observe, “underlying any inquiry about teaching and learning are particular stances and world views about such things as how learning works, as well as assumptions about methodology.” They argue that “methodological choices are not entirely separate from choices of theoretical perspective and world view” (2015, 40) and that “neglecting to articulate these in the report to make SoTL more accessible can contribute to a perception that a lack of rigor is acceptable in SoTL” (2015, 38). If SoTL researchers are aware of these views, they suggest, this will “help them ask new questions, design better studies, and also more strongly articulate their findings, especially to colleagues with different world views” (Miller-Young and Yeo 2015, 40). While these authors’ reference to “world view” may imply paradigm considerations, they do not elaborate on this term. However, they share our view that adopting a reflexive approach and articulating personal views that inform practice are valuable to SoTL practitioners.

Carol Berenson (2018, 42-3) argues, “in order to claim a space as a legitimate SoTL practitioner, it is helpful to do some preliminary thinking about the assumptions underlying our approach to research, or our research paradigm” in order to “articulate the rigor and legitimacy of our research to ourselves and to a broader SoTL audience.” She also observes, “As the SoTL debates make clear, when paradigmatic assumptions are not uncovered and articulated, all research is held up to the same standards—those of the dominant paradigm . . . . When different traditions are acknowledged and understood, we embrace alternative language and standards to talk about and evaluate our work” (Berenson 2018, 43). Yeo, Manarin, and Miller-Young (2018) also propose that exploration of more varied philosophical traditions or positions can broaden the range of SoTL phenomena researched and methodologies used. They offer support for this stance by describing insights that participants in a program gained when they applied perspectives and approaches associated with the paradigm of “phenomenology” into the phenomena of “surprise.”

What we found on our review suggests that the concept of research paradigms has a relatively low profile within general SoTL literature, which reduces the likelihood that SoTL practitioners will give attention to it. At the same time, as confirmed in the publications reviewed above, there are some strong advocates for the position we take—that SoTL practitioners should know about research paradigms and reflexivity.

### **Q2(b): SoTL publication author guidelines**

*Journal of the Scholarship of Teaching and Learning:* We noted that the journal aims include addressing contemporary issues concerning “philosophical approaches to teaching, current research, and praxis.” However, the criteria that reviewers are required to use when evaluating several categories of publication, and that are made available to authors, do not refer explicitly or implicitly to reflexivity, philosophical approaches, or research paradigm perspectives.

*International Journal for the Scholarship of Teaching and Learning:* This journal provides authors with statements (“Thoughts on SoTL,”) about the concept of SoTL and a set of review criteria proposed by Charles Glassick, Mary Huber, and Gene Maeroff (1997) to define scholarship. The former include two perspectives that are relevant to this inquiry. First, it is observed that SoTL “functions as a rich text

forum through which works in different fields, interests, philosophical orientations and methodologies find space and thrive.” However, authors are not prompted to provide their “philosophical orientation,” and the term is not further elaborated. Second, the “ethic of reflexivity” is considered to be embedded with SoTL and to require SoTL practitioners to be “responsible for applications and ramifications of our works in both our specific context and in society.” This reference to reflexivity does not imply attention to personal positions, such a paradigm-related views. While the Glassick, Huber, and Maeroff criteria include reflective critique, this criterion does not encompass reflexivity concerning personal positioning in relation to such considerations as paradigm orientations.

*Teaching & Learning Inquiry*: While the journal aims to showcase “the breadth of the interdisciplinary field of SoTL and its explicit methodological pluralism,” the possible relationship between such pluralism and research paradigms is not further expanded. Criteria proposed by Peter Felten (2013) for assessing SoTL work are also referenced. While being “methodologically sound” is a criterion, it is associated with the linking of a question to student learning. The linking of a question with a paradigm position is not considered.

*Higher Education Research & Development*: The criteria provided include a significant and original contribution to the theory, practice, or research of higher education; fresh insights into the area addressed; and appropriate framing for an international audience. There are no criteria in relation to researcher reflexivity.

*Studies in Higher Education*: Criteria are confined to “significant originality” and “enhanc[ing] understanding.”

Overall, two of the three SoTL-specific journals provide authors with more detailed information about the criteria reviewers are asked to apply. The *Journal of the Scholarship of Teaching and Learning* provides authors with the reviewers’ article assessment guide, and prospective authors for *Teaching & Learning Inquiry* can read review criteria. The other journals do not provide such information. This survey indicated that author guideline statements in a sample of SoTL publications do not explicitly require or prompt authors to report on the place of reflexivity, which can include consideration of paradigm perspectives.

### **Q2(c): Views about the concept of research paradigms**

While we did not attempt to make a systematic analysis of curricula of educational programs for new SoTL practitioners, we did review several studies in which the researchers had reported on the response of participants to aspects of a particular curriculum. These responses indicated that some participants confront challenges to their existing viewpoints about the purpose and character of research that may be associated implicitly or explicitly with references to research paradigms. For example, Phillip Wankat, Richard Felder, Karl Smith, and Frank Oreovicz (2002, 234) identify differences between engineering research and education research/SoTL in relation to “vocabularies, priorities, and conceptions of research.” They observe that education research does not involve “the kind of reasoning engineering professors are accustomed to employing in their research, however, and most are skeptical of it” (Wankat et al. 2002, 227). Similarly, Niamh Kelly, Susan Nesbit, and Carolyn Oliver (2012) report on the experiences of a scientist and an engineer, captured in reflective interviews, who were making the transition into the SoTL environment. As one participant stated, “We both agreed that the intellectual journey toward SoTL involved moving away from a traditional deterministic science perspective that emphasised cause and effect thinking, deduction and the quest for proof and certainty” (Kelly, Nesbit,

and Oliver 2012, 6). And, in guidance offered to science academics engaging in SoTL, Susan Rowland and Paula Myatt (2014, 10) note, “perhaps the most wrenching transition that a natural scientist will have to complete as they move into SoTL is the switch from a positivist, reductionist, and realist outlook to one that allows for context-constructed realities.” This view directly links the challenges experienced to the participants’ encounter with unfamiliar views about research that are, in part, related to paradigm considerations. How the participants engage with those ideas may determine whether they become successful SoTL practitioners.

Some researchers have also concluded that some of the ideas that those new practitioners encounter may be “threshold concepts”: “A threshold concept can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something without which the learner cannot progress. As a consequence of comprehending a threshold concept there may thus be a transformed internal view of subject matter, subject landscape, or even world view” (Meyer and Land 2003, 412). Threshold concepts may be perceived as alien, counterintuitive, subversive, or conceptually difficult, and these perceptions may induce feelings of uncertainty, anxiety, and fear—and a sense of being stuck. As a result, the transition to understanding “may be protracted over a considerable period of time, with the transition to understanding proving troublesome” (Meyer and Land 2003, 412). Threshold concept theory was drawn on by Nicola Simmons, Earle Abrahamson, Jessica Deshler, Barbara Kensington-Miller, Karen Manarin, Sue Morón-García, Carolyn Oliver, and Joanna Renc-Roe (2013, 11). Interpreting narratives composed by eight scholars new to SoTL, they concluded that “engaging with SoTL leads to troubled knowing” when this requires a reconstruction of academic identity because of significant differences between an existing disciplinary identity and that of a SoTL scholar. The latter may be associated with “alien epistemologies, methodologies, and concepts... a whole new way of looking at the world” (Simmons et al. 2013, 12). They describe the troublesome liminal space that these scholars entered and had to navigate to gain an understanding of these new ways of looking at the world. They also drew on social identity theory, originally formulated by Henri Tajfel and John Turner (1979), when differentiating processes that could be exercised during this navigation—given the troublesome properties of some concepts (e.g., *abandon* being the disciplinary scholar, *reconcile* disciplinary and SoTL identities, *retreat* to disciplinary identity, or *protect* disciplinary turf).

Similar conclusions are presented by Anne Tierney (2017) who investigated threshold concepts associated with life sciences academics’ engagement with SoTL. As she observes, “For Life Scientists in particular, engagement with SoTL may offer particular challenges as individuals tackle material outside their disciplinary expertise. Language, research methodology, confidence in data gathering, sense of identity may present barriers to engagement with SoTL to academics who are more comfortable within a positivist, quantitative paradigm” (Tierney 2017, 166). The notion of paradigm was identified as a “troublesome” area of knowledge for the academics because it was both alien and conceptually difficult: it was alien “because there is generally perceived to be only one tradition, and that is positivist” (Tierney 2017, 179). Tierney contends that the properties that the academics associate with research paradigms make it difficult for them to accept different paradigms accommodated within the field of SoTL.

Drawing on data from participants in a faculty leadership program focused on SoTL, Andrea Webb (2015) identifies five threshold themes that were present in the program. To gain an understanding of two of the themes, conceptions of research and subjectivity, the participants needed to make significant ontological and epistemological shifts, which were difficult because of their “long-

standing enculturation into disciplines” (Webb 2015, 94). She concludes that participants who could more readily make the required shifts were “able to recognize the tension between their disciplinary expectations of research and SoTL research, acknowledge the validity of alternative methodologies of research used in SoTL as part of the liminal [that is, sticky] experience, and be epistemologically and ontologically transformed as they become insiders connected to a different research community” (Webb 2015, 98–99).

The boundary crossing entailed has been identified as both a further threshold concept and a necessary disposition for the SoTL scholar. However, even when new SoTL practitioners are receptive to boundary crossing, they may encounter gatekeepers to the SoTL community who may make this difficult to achieve. Potter and Wuetherick (2015, 5) make this point when they describe the marginalization of SoTL (or its work) based in the arts and humanities disciplines and related paradigms: “Many SoTL scholars cannot envision what humanities-based SoTL would look like, what its methodologies would be, what sorts of theoretical frameworks it would use. This is to be expected when people embedded in a given paradigm are confronted with another.”

Findings and explanations from these studies confirm that for some new practitioners, SoTL involves ideas that are unfamiliar, cognitively challenging, unsettling, troublesome, or sticky. Some of these ideas concern research paradigms and their implications for SoTL.

## RECOMMENDATIONS

We offer the following recommendations for action based on our own experiences and the findings from our inquiry. These actions involve changes to properties and consequential processes of several entities in the SoTL environment.

### **SoTL authors: Tackle the topic of research paradigms and SoTL**

We encourage authors of publications intended to introduce academics to conceptions and practices of SoTL to address the topic of paradigms and its relevance to SoTL. This literature is important as it is often a source of first impressions about SoTL practice. Regardless of their own stance concerning the relevance of these considerations, an educational approach to this agenda would require them to address the topic. Furthermore, it needs to be addressed with care, as the potential audience is extremely varied, with respect to their existing knowledge and personal perspectives. Reflection on our own experience of presenting ideas about paradigms in workshops and associated resources has emphasized the importance of using familiar vocabulary or translating related jargon, acknowledging alternative terms, and using accessible examples and case studies. An acknowledgement that these ideas may be unfamiliar and initially unsettling or troublesome for some is also appropriate.

### **Journal editors: Prompt consideration of reflexivity and research paradigms in review criteria and author guidelines**

Many new SoTL scholars are eager to contribute to the literature and look for information and guidelines about the expected content of articles. One key source they turn to are the author guidelines for journals. Although journal editors may not consider that these guidelines have an explicit educational purpose, new members of the community may anticipate that they do. As our research showed, however, journal guidelines and review criteria vary widely in content and level of detail, and infrequently indicate whether the author’s reflexivity and positioning (e.g., in relation to paradigms, formal and personal

theories, and values espoused) should be a consideration and made explicit in articles. We suggest that journal editors reassess the purposes that author guidelines are intended to serve and consider whether evidence of reflexivity (the relationship between the researcher and their research), should be added to review criteria. This move could also assist reviewers, as they may be unsure whether their own stance on the significance of such reflexivity should be reflected in their evaluation of colleagues' scholarship.

### **SoTL mentors and academic developers: Teach about reflexivity and research paradigms**

Our own experiences and those of colleagues reinforce the important role that mentors and academic developers can have in assisting new SoTL practitioners to learn about research paradigms in the context of SoTL projects. For example, in a one-day workshop, participants are introduced to a framework intended to guide their thoughts and thinking when they conceptualize and design SoTL projects (see Haigh 2015). The framework prompts them to think about the potential place of their paradigm-related perspectives. Concepts, language, and differing perspectives associated with research paradigms are addressed, as are possible implications for SoTL. Associated learning activities include identifying personal ontological and epistemological perspectives, linking these perspectives with previous teaching and research experiences, and reviewing and discussing the place of paradigm perspectives in examples of SoTL (including examples provided by participants). The facilitator acknowledges the possible novelty and stickiness of the notion of research paradigms for some participants, empathizes with possible emotional and cognitive responses to the concept, uses everyday language when translating the formal language of paradigms, ensures opportunities for continuing conversations, and references other accessible resources (e.g., Grant and Giddings 2002). Similar approaches and considerations are echoed in literature on the learning and teaching of threshold concepts (see O'Brien 2008). They are also affirmed by Webb (2015) who offers the following suggestions for new practitioners' navigation of SoTL concepts: develop communities of practice supported by mentors who can enable sustained dialogue; ensure time to talk; introduce unfamiliar language; offer focused sessions on ontologies, epistemologies, methodologies, and methods; and provide examples of alignment of research questions with paradigm position. The significance of being embedded in a community of practice was also emphasized by Simmons, Abrahamson, Deshler, Kensington-Miller, Manarin, Morón-García, Oliver, and Renc-Roe (2013) who, as noted above, asked a group of scholars from varied backgrounds new to the field of SoTL to interrogate their experience of being members of such a community. They concluded that community membership could help them resist the influence of competing disciplinary cultures, collaboration in interdisciplinary work could help them resolve conflicts between existing and new perspectives, and opportunities for conversations with colleagues could reveal the possible identities of a SoTL practitioner.

## **CONCLUSION**

Becoming a SoTL practitioner may involve significant boundary crossing with accompanying troublesome experiences. One possible source for those experiences—the concept of research paradigms—was the focus of our inquiry. While we offer some practical steps that can be taken to facilitate the crossing process, we endorse the argument presented by Simmons, Abrahamson, Deshler, Kensington-Miller, Manarin, Morón-García, Oliver, and Renc-Roe (2013, 18) that more research is needed on “how to further develop the considerable capacity of the SoTL community to be a supportive liminal environment . . . within which new learning can take place and identify how struggles might be

safely navigated.” With this environment in mind, we recall that Chick (2014, 10) also emphasizes that as “we gather under this big [SoTL] tent, let’s keep the conversation going, but be gentle with each other, knowing we all struggle with who we are and what we do when we step across that threshold.”

Our own paradigm perspectives will continue to guide both our projects and efforts to provide collegial support for those taking first steps in becoming fellow scholars. As these perspectives have guided our conceptualization and design of this inquiry, we have made their place explicit in this article. In doing so, we reconfirm our commitment to being reflexive SoTL researchers.

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