Signature Moves? An Environmental Scan of the Intersection between Educational Development and SoTL

Laura Cruz,[1] Hillary H. Steiner,[2] and Clare Cruz[3]

1. Penn State
2. Kennesaw State University
3. Allegheny County Department of Human Services

Received: 10 March 2024; Accepted: 10 June 2024

Although the scholarship of teaching and learning (SoTL) has been described as the signature pedagogy of educational development (a professional field focused on support for teaching and learning in higher education), there is little systematic evidence of the scale and scope of the SoTL support practices that centers for teaching and learning (CTLs) are currently using, how they are using them, and how these practices connect across the ecosystem of higher education. To understand the evolving intersection between educational development and SoTL, we used web scraping/content analysis to explore the current state of SoTL support at U.S.-based CTLs (as reflected in their websites), with the aim of mapping the current landscape of the signature pedagogy, nearly thirty years after Boyer first challenged us to rethink the relationships between scholarship, teaching, and learning.

In a 2018 essay in *To Improve the Academy*, Peter Felten and Nancy Chick proposed that the scholarship of teaching and learning (SoTL) be identified as a "signature pedagogy" of educational development (2018). For those not familiar with the term signature pedagogy, it is used extensively to describe pedagogical practices, implicit structures, and deep, often epistemological, structures, which are both inherent and distinctive to the teaching and learning that is conducted across a particular discipline or, in some cases, super-discipline, e.g., STEM, humanities (Benmayor, 2008, Gurung et al, 2009, Reisner & Stewart, 2020). Although most would not describe educational development as an academic discipline, Chick and Felten argue that it, too, can identify distinctive approaches to what, how, and why members of the field embrace SoTL, whether as an evidence-base for practice, the focus of specific programs (e.g., institutes and fellowships), and/or a significant part of efforts to foster a broader institutional culture of teaching and learning (Felten et al, 2007).

In the current climate of U.S. higher education, this latter function, community building, has become an issue of renewed significance, with a sense of belonging (to that community) emerging as a critical factor not just in the flourishing of individual faculty, staff, and students, but for the university as a whole (Cruz & Atterholt, 2024; Gopalan & Brady, 2020). A sense of belonging is not the only outcome that such communities may engender. Rather, a growing body of research suggests that the transformation of teaching and learning practice; an aspiration shared by the SoTL movement, the field of educational development, and the leaders of higher education institutions, rests on the meaningful personal relationships, whether between and/or among faculty, staff, and students, that arise through a broader sense of shared goals, practices, and values (Felten & Lambert, 2020; Gayles, 2023).

THE INTERSECTIONS BETWEEN SOTL AND EDUCATIONAL DEVELOPMENT: AN HISTORICAL OVERVIEW

It is perhaps telling that Felten and Chick phrased the title of their essay in the form of a question (e.g. "Is SoTL the signature pedagogy of educational development?"). Their approach is exploratory, asking (rather than answering) questions about what forms a signature pedagogy might take in a field of practice that is inherently multi, perhaps even trans-, disciplinary in orientation. Indeed, their conceptualization of SoTL as a signature pedagogy is the product of the historical intersection between educational development as a field, CTLs as organizational units, and SoTL as a movement.

Phase 1: The Rise of SoTL and Educational Development

In the United States, the SoTL movement and the field of educational development emerged roughly contemporaneously, with the first CTLs just beginning to appear in the 1970s and SoTL taking off following the publication of Ernest Boyer's groundbreaking work, *Scholarship Reconsidered*, in 1990. In that work, Boyer emphasized the recognition of effective teaching (and later learning) as scholarly work and suggested that when such work is assessed and shared, it should be recognized as a credible form of scholarship (1990).

Both initiatives were responses to the growing body of research on teaching and learning coming out of educational psychology, one response institutional (CTLs) and the other super-institutional (SoTL), under the leadership of a leading non-profit organization, the Carnegie Foundation for the Advancement of Teaching (CASTL) (Lewis, 1996; McKinney, 2010). The relationship between the two could be seen as reciprocal, with SoTL feeding the burgeoning foundation of evidence-based practice upon which faculty development was, and continues to be, built. In its most recent strategic plan, the Professional and Organizational Development (POD) Network, the leading professional organization for educational development in the United States, identifies evidence-based practice as one of three principle values of both the organization and the field (as it is practiced in the United States) (2019).

The nomenclature of "signature pedagogy" serves several purposes in this context. It reflects the close relationship that the

two movements have long enjoyed in research and practice, but it also re-frames the purpose of SoTL within the context of the work that educational developers do to support it. As a form of *scholarship*, the primary purpose of SoTL is to produce research artifacts which, by extension, contribute to faculty advancement and a shared body of knowledge. As a *pedagogy*, on the other hand, SoTL serves as a process by which faculty engage in that scholarship, whether as readers or producers, and, in turn, use the insight gleaned in that process to transform their teaching (Geertsma, 2009; McKinney, 2012; Trigwell, 2013). As a *signature pedagogy*, then, engagement in SoTL reflects the shared values and beliefs about teaching and learning that characterize both movements.

Phase 2: SoTL and Centers for Teaching and Learning (CTLs)

The distinction between *SoTL-as-scholarship* and *SoTL-as-pedagogy* is an important one. The former refers to SoTL as a body of research, the latter refers to the myriad of ways in which SoTL can be used to foster effective teaching, which may or may not include publication. Indeed, institutionally-embedded CTLs are often less concerned with increasing research productivity per se, but rather ensuring that instructors from a wide range of disciplines, backgrounds, roles, and interests have equitable access to the benefits of engaging SoTL, whether as learners (reading about pedagogy), classroom instructors, or scholars (or all three) (Felten & Chick, 2018). In other words, by situating SoTL as a signature pedagogy, the emphasis not only shifts from what instructors produce in terms of published studies, but what they learn through the process of thoughtfully collecting evidence on their teaching, whether or not they conduct that process themselves. This means that there are multiple levels at which instructors, and by extension CTLs, may choose to engage with the body of SoTL work. This shift in emphasis allows for greater access and inclusion under the SoTL umbrella, a value shared by CTLs and the SoTL movement as a whole.

If SoTL is treated primarily as a gateway to pedagogical development, however, that does introduce a few apparent contradictions into how and why CTLs support it. As Johan Geertsema points out, "if the purpose of SoTL is to improve learning and teaching, and hence academic practice on the ground, then it makes sense to orient SoTL inquiry towards the complex web of micro-cultures that make up the meso level of our institutions (Mårtensson & Roxå, 2016) rather than aiming to disseminate it on a more public, global level" (2016, p. 121). In Geertsema's conception, *SoTL-as-scholarship* (i.e. the mega level) is less the domain of local CTLs, which can more effectively and appropriately focus on *SoTL-as-pedagogy*. This signature pedagogy includes activities such as scholarly teaching, sharing ideas about teaching, and bridging insights from the pedagogical literature (Kern et al, 2015). In other words, as Geertsma describes it, CTLs typically focus their work primarily on the micro (e.g. individual faculty) and meso (e.g. department) levels. SoTL advocates, on the other hand, often look for larger, integrated levers of change that may start at the micro, but ultimately extend out to include the meso, macro (institution) and even mega (super-institutional) levels (Fanghanel et al, 2016, Frake-Mistak et al, 2023; Poole, 2007, Rehrey et al, 2014, Roxå et al, 2007, Simmons, 2016, Starr-Glass, 2012, Wuetherick et al, 2016).

SoTL advocates operate at these higher levels for a number of reasons, but one primary factor is the need to establish an institutional culture that is conducive to the kinds of experiments with teaching practice that SoTL is intended to foster. Research on the dissemination of SoTL has identified factors such as disciplinary standards of research, tenure and promotion policies, and administrative buy-in as significant obstacles to the dissemination of SoTL as research, and these barriers are not likely to be resolved by strictly local action (Goodburn & Savory, 2009, Marcketti & Freeman, 2016, McConnell, 2012, Myett et al, 2018, Thomas & Ribera, 2011).

Because SoTL is often characterized as supra- or trans- disciplinary in nature, too, it lacks a clear toehold in the conventional sociology of academia. For a period of time, it seemed as if CTLs might serve as a sort of "home base" for SoTL within institutions (Toni & Cindy-Leigh, 2014), but that alternative turned out to be too limiting. As the end of the reign of centralized leadership under the Carnegie Foundation drew near in 2011, leading advocates instead chose a network model which they believed would ensure both sustainability for SoTL across multiple levels while encompassing the broadest range of institutions (including those that lack CTLs) (Gurung & Schwartz, 2010, Hubball et al, 2010, Hubball et al, 2013, Williams et al, 2013). While there remained considerable overlap between the SoTL movement, educational developers, and their organizational units, these threads were becoming more, rather than less, tangled up with one another as they expanded.

Phase 3: Expanding the Scope of Educational Development

Recently, however, the field of educational development has become increasingly interested in expanding the scope of its endeavors beyond the micro and the meso, with a particular emphasis on organizational development, i.e. the macro. This shift towards "coming in from the margins" (Schroder, 2012) sprang from a number of sources, including the increasing recognition of the degree to which the institutional environment influences teaching and learning practice, as well as growing professionalization within the field itself (Cruz, 2018; Green & Little, 2014).

This former impetus also contributed to the development of a new form of scholarly inquiry, the scholarship of educational development (SoED), that blends elements of SoTL, higher education studies, and practitioner research (Cruz et al., 2021). While it may resemble SoTL in some aspects, SoED has a very different positionality within the field, as its primary purpose is not pedagogical, but rather to strengthen the legitimacy of educational development and deepen insight into effective change practices (Little, 2014).

An Integrated Model

What had emerged from these overlapping jurisdictions was a great deal of attention to the local on the part of CTLs, and the big picture on the part of SoTL and higher education scholars, but considerably less emphasis on the connections across these levels and perspectives. In the post-pandemic context, it would appear that these positions had started to reverse themselves, as educational developers started to think bigger at the same time that SoTL scholars began to think more locally, particularly in connecting their work to community contexts and students as partners, all on their own campuses (Fedoruk & Lindstrom, 2022; Shank & Cruz, 2023; Tan et al, 2022). This convergence provides an auspicious opportunity for advancing our understanding of

SoTL as *pedagogy* across multiple levels, from the more familiar micro and meso levels, to the macro and beyond (Cruz et al, 2019; Frake-Mistak et al, 2023).

To date, studies from the scholarship of educational development have tended to treat the long-standing relationship between SoTL and educational development work as self-evident, a part of the standard toolbox. Indeed, this study rests on a similar assumption, i.e., that SoTL is, in fact, the basis of a signature pedagogy, whether implicitly or explicitly. There is evidence in the research literature to support this claim. The second edition of the stalwart *Guide to Faculty Development*, for example, mentions either "SoTL" or the "scholarship of teaching and learning" over sixty times across multiple chapters (Gillespie et al, 2010). A 2015 study of CTL mission statements identifies the integration of SoTL as a common denominator across multiple institutional types and levels (Schroeder, 2015), as does Mary Wright's recent comprehensive study of CTLs in the United States (2023). Similarly, numerous studies of educational developer competencies identify attributes such as knowledge of the SoTL literature, and critical literacy skills (i.e., identifying appropriate sources of evidence-based teaching and learning practice), in addition to (often optional) skills in research and research development (Baker, 2018; Dawson et al, 2010; McDonald et al, 2016).

Outside of the research literature, there is also evidence, perhaps less systematic in nature, of its prevalence in practice. There are sessions at every POD conference related to *SoTL-as-pedagogy*, the latter including a large and active special interest group (SIG) created in 2017. The same is true for International Consortium of Educational Development (ICED) and there are numerous regional networks that include both SoTL and educational development, such as the teaching and learning in higher education (TelEd) network based in Bergen, Norway, and SoTL in the South coming out of South Africa. In the United States, a group of educational developers from multiple institutions in Virginia recently formed the SoTL Collaboratory, which has produced numerous research artifacts and resources related to how CTLs support SoTL, including a comprehensive taxonomy of practices and a strategic planning guide (Lukes et al, 2023).

Despite considerable interest and activities, to date, most studies of SoTL support have largely focused on the effectiveness of individual programs, initiatives, or modalities (e.g., faculty learning communities, academies, grants) with a focus on providing insight into the degree to which they foster teaching transformation on our respective campuses (Fanghanel, 2014, Happel & Song, 2020; Hoessler et al, 2010; Stuart et al, 2023). Because of this primarily local orientation, we know comparatively little about *SoTL as pedagogy* on a broader, more mega, level. In other words, there is scant empirical literature about the scale and scope of the SoTL support practices that CTLs (and related units) are currently using, how they are using them, and how these practices connect across the ecosystem of higher education.

To better understand the evolving intersection of educational development, CTLs, and SoTL, we must first see the full picture of what this phenomenon looks like in practice. To accomplish this goal, we chose to explore the current state of SoTL integration at U.S.-based CTLs, with the aim of mapping the current landscape of one of its signature pedagogies, nearly thirty years after Boyer first challenged us to rethink the relationships between scholarship, teaching, and learning.

THE STUDY

This study describes an environmental scan of SoTL integration in POD-affiliated CTLs associated with institutions of higher education in the United States. As mentioned previously, the majority of prior empirical studies of SoTL integration have focused on specific people, programs, or institutions. This may be due, at least in part, to systemic challenges with the availability and commensurability of gathering data and/or evidence about SoTL across multiple U.S. higher education institutions (HEIs), including issues of content validity (e.g., the definition of SoTL is known to differ across institutions); representativeness (e.g., low response rates for survey-based research) and potential sampling biases towards subjects with existing SoTL integration. To mitigate these issues, our focus on CTL websites is intended to provide a clear, consistent, and inclusive capture point to facilitate cross-institutional insights, an approach which is in keeping with best practices for environmental scans (Gordon & Glenn, 2009). The approach further mirrors recent higher education studies that systematically (and manually) analyze website content as evidence of implicit representation across multiple institutions (e.g., Davis et al, 2019; Ford & Cate, 2020; Salinas & Lozano, 2019).

Making use of the comprehensive list of CTL websites offered by POD in its membership directory, and assuming that the websites accurately represented existing SoTL support, we embarked on an extensive website scraping process to uncover the extent and nature of SoTL programming offered by POD-affiliated CTLs. In popular parlance, web scraping often refers to processes conducted by bots, or other forms of artificial intelligence, in scanning internet content at scale. That said, the process can also be performed manually as the basis for content analysis of websites, which is the approach used here. Adopting the perspective of a new faculty member joining an institution (i.e., not allowing our personal knowledge of our colleague's institutions to influence our data collection), we used qualitative web scraping to uncover the breadth of SoTL integration represented by these websites.

First, we used the POD directory to compile a list of POD-affiliated CTLs (N=988 after accounting for duplicate, non-existent or unavailable data). We then assigned codes adapted from the Carnegie Classifications for institutional size and type (Carnegie Classification of Institutions of Higher Education, n.d.) for each institution in our list. Size classification was based on the institutions' respective 2017 full-time equivalent (FTE) student enrollment and included the categories of: very small (<1000 students), small (1,000-2,999 students), medium (3,000-9,999 students), and large (>9,999 students). We then used the broad Carnegie Classifications (Doctoral Universities, Master's Colleges and Universities, Baccalaureate Colleges, Baccalaureate-Associate's Colleges, Associate's Colleges, and Special Focus Institutions) to categorize institutions by type. No schools designated by Carnegie as Tribal Colleges appeared on our list, so that category was omitted.

Next, we visited each institution's CTL website in the directory. After a quick inspection for obvious references to SoTL programming, we conducted a search via the institution's search engine for the terms "SoTL" and "Scholarship of Teaching and Learning," collecting all relevant information about how the unit(s) supported or integrated SoTL into a file. For most sites, this information included support and programming related to SoTL as well as the integration of SoTL into the CTL's mission and vision statements. If the site also mentioned alternative names

for pedagogical research, such as discipline-based educational research (DBER) or Teaching as Research (TAR), this was noted. When the link provided by the POD directory was broken, we attempted to find the institution's CTL ourselves, notating the broken link. Ours was not intended to be an historical study, so we chose 2015 as the earliest cutoff date for both practical and philosophical reasons. The year 2015 not only marked the 25th anniversary of Boyer's book, but the five-year span (2015-2020) allowed for representation from institutions that may lack regular support for website updates.

Two members of the research team then used a pragmatic thematic analysis approach (Braun & Clarke, 2006) to develop codes to analyze the SoTL programming data collected from the websites. First, we familiarized ourselves with the data and generated initial codes. About halfway through data collection we met to discuss emerging themes and establish a coding system, which was further refined as we proceeded through the data, describing the quantity and breadth of SoTL programs offered as well as their qualities (i.e., whether the programming was sustained, embedded in the mission of the CTL, aligned with institutional initiatives, etc.). These initial codes were termed "none," "low," "medium," and "high" to denote the quantity and qualities of SoTL program offerings. After noticing specific patterns in the low and medium categories, these categories were further refined to produce the codes described in Table 1.

Table 1. Classification of SoTL Programming on CTL Websites

Code	Description
None	No evidence of SoTL programming on website
Low	Website only includes a list of SoTL resources
Low-Medium A	Website includes more extensive SoTL resources such as a web guide or blog, but programming is not evident
Low-Medium B	Website includes evidence of programming (e.g., workshops) but programming does not appear to be sustained
Low-Medium C	Mission statement includes a reference to SoTL, but programming is not evident
Medium	Website includes at least one example of sustained SoTL programming, SoTL initiative, or SoTL award
High	Website includes multiple examples of sustained SoTL programming, initiatives, or awards, and/or there are strategic ties to and integration of SoTL to important institutional initiatives

Note: These classifications were developed by the researchers during thematic analysis of the website content.

As data collection progressed, we continued to keep separate notes about the themes that emerged, meeting once per week for discussion. All initial discrepancies in coding were eventually resolved through a structured, reciprocal process of peer interviewing conducted between the two researchers, who hold similar positions at different, roughly comparable institutions. Seeking further information about the institutions that offered programming of some type, we returned to the data after finishing the initial collection to review the specific types of programming (e.g., communities of practice, consultations, travel grants) that appeared in the various categories and finalize the qualitative validation process.

LIMITATIONS

Our website analysis has some limitations to how it addresses the ubiquity of SoTL programming in the United States. First, because we chose to rely on the POD CTL directory, only U.S. institutions whose CTLs appeared in the directory were included in our study. We did not investigate CTLs outside of the U.S., where there may be considerable SoTL support, as evidenced by recent increases in non-U.S. participation and leadership in the International Society for the Scholarship of Teaching and Learning (ISSOTL). Additionally, there are likely many institutions that provide programming through centers not affiliated with POD. This may be especially true at community colleges, which are underrepresented in POD membership, and at institutions whose CTLs are integrated with centers for educational technology, which also may not be adequately represented in the POD directory list. Also, larger institutions with multiple CTLs may list only one CTL in the POD directory, so SoTL programming at additional institutional centers may have been overlooked. As flawed as it may be, the POD directory is currently the only publicly available list of CTLs in the United States.

Second, our data is time-delimited in that it was gathered with two visits to each site in Spring of 2021, with additional clarification and confirmation taking place in early 2022. While data collection took place after most institutions had moved away from the remote learning modalities necessitated by the global pandemic, it should be recognized that this remained a largely unprecedented time period for many of us who work in higher education. To address this potential concern, we conducted a second scan of those institutions that we initially coded in the highest categories, in March of 2024. This post hoc analysis affirmed the initial categorizations, with no discrepancies noted.

Finally, we were only able to record SoTL programming that was represented on the websites, thus, if the website did not accurately reflect institutional offerings, the data may not be fully representative of practice. We further recognize that this discrepancy between practice and web representation may be compounded for under-resourced institutions that have limited access to on-going support for web design. From the perspective of a new faculty member joining an institution, however, a visit to the CTL website is likely how one would discover what types of SoTL programming are available.

FINDINGS

Our study sought to illuminate the intersection of educational development and SoTL by painting a picture of the SoTL landscape as practices by CTLs at POD-affiliated US institutions. By approaching each CTL website as if we were a new faculty member searching for programs related to SoTL, we sought to uncover the implicit and explicit support offered to instructors who wished to find SoTL-related opportunities for learning, funding, or leadership. By aggregating the data and investigating the intersection of institutional size, type, and scope of programming, we hoped to gain a better understanding of the scale and nature of this signature pedagogy at institutions across the U.S.

As described above and in Table 1, we initially coded institutions into five broad categories based on the presence of SoTL support programming represented on their websites. A breakdown of percentages of institutions in each category is shown in Figure 1.

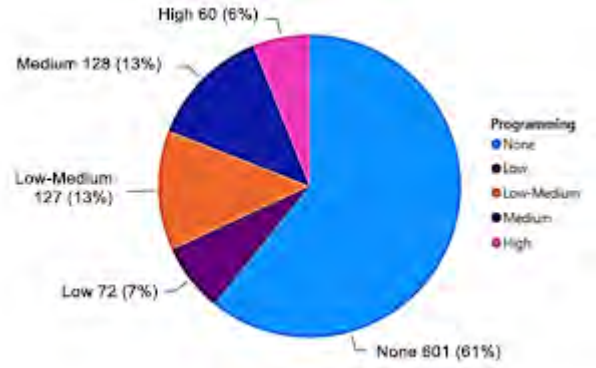

Figure 1. Levels of SoTL Programming in U.S. POD-Affiliated Institutions
Note: This figure represents a total of 988 institutions compiled from the POD membership directory. Institutions that had merged with another institution, did not have a website, or otherwise had missing data were removed from this data set. Programming codes are described in Table 1.

Given the long-standing association between SoTL, CTLs, and educational development described in the literature review above, the most astonishing finding (from our perspective) of our study was the scarcity of SoTL programming represented on the CTL websites. We were unable to find any evidence of SoTL programming on 601 of the websites, about 61% of the total. This was especially true in the smaller institutions and those that did not offer a high percentage of doctoral or master's degrees (see Figures 2 and 3).

About 33% of the institutions overall displayed a low to medium level of programming on their websites. When further broken down into the seven categories described in Table 1 above, 72 websites—about 7%—offered nothing but a list of resources (coded as "low"), often simply containing links to other institutions' SoTL resources, such as Vanderbilt University's comprehensive SoTL guide. An additional 3% offered more extensive web resources (coded as low-medium A), and 5% offered non-sustained programming (low-medium B). Thirteen percent were coded as offering medium levels of programming, including at least one sustained program, initiative, or award. About 6%, or 60 CTL websites, showed a high level of SoTL program offerings. Although high levels of SoTL programming was more common in larger rather than smaller institutions (see Figure 2), and in Doctoral or Master's institutions versus other category types (see Figure 3), the difference in proportion was not large.

As noted above, we returned to the categories that had some sort of programming beyond web resources (i.e., low-medium B, medium, and high) to determine what types of programming most often appeared in these categories (see Figure 4).

In examining this more closely, we found that group-based programs such as faculty learning communities or communities of practice were the most common sustained program, with 34% of institutions offering any type of programming choosing to offer this type. It appears likely that if an institution is limited in what they can offer, communities are a favored choice. We also noticed that 18% percent of institutions offered intensive faculty fellows programs related to SoTL, yet many of these offered nothing else beyond this single program, which seems to indicate deep, but not broad, support of instructors as scholars. Additionally, we observed that in the low-medium and medium groups where programming was limited, there seemed to be two sub-groups that emerged: institutions that had financially supportive programs such as awards or grants, and institutions that had research development programs such as consultations and communities of practice.

As a signature pedagogy within educational development, we might expect to see SoTL featured prominently in the mission statements of many CTLs. However, this was not the case. Of the 988 institutions, less than 13% percent included SoTL (or related phrases) explicitly in their mission statements. A variety of institutions were represented in this subset, including universities at various Carnegie levels, and with high, medium, and low amounts of programming. Some institutions—about 4% of the total—included SoTL in their mission statements yet did not have any evidence at all of SoTL programming on their websites, a notable disconnect that invites more questions about the changing relationship between SoTL and educational development, discussed below.

DISCUSSION AND IMPLICATIONS

Our findings demonstrate that, for a signature pedagogy, SoTL seemed to be curiously and conspicuously under-represented in the majority of CTL websites, and the majority of those that did boast visible SoTL support did so at relatively low levels, such as a single web page with a static list of resources. This startling insight regarding relative under-representation begs the question of why. Though we cannot answer this question definitively, our broader exploration of the CTL websites suggests possible clues to the evolving nature of the relationship between educational development, CTLs, and SoTL.

Nearly every website we visited made reference to evidence-based practice, in some cases overtly, such as the form of book clubs that focus on reading works in which this evidence is explicated, or in many cases more implicitly, to inform the teaching and learning practices espoused by center staff. In this sense, SoTL functions as a vehicle of legitimation or validation for the work of educational development. As Mary Wright (and others) describe it, SoTL directly supports the temple function of a CTL, which "establishes teaching as an ongoing scholarly endeavor, worthy of professional development" (2018; 2023). In this perspective, the insights gained through SoTL research may have been absorbed into the roots of evidence-based practice, part of the deeper, but perhaps less evident, structures of this signature pedagogy. This hypothesis could be tested through future qualitative studies of how educational developers (and similar roles) integrate SoTL into their work.

At that local institutional level, our findings suggest that the practices of supporting SoTL have remained fairly constant, with an established repertoire of educational development modalities, i.e. grants, fellowships, workshops/webinars, sharing events, and consultations, characterizing the majority of CTLs with SoTL related programming covered by this study. It seems possible that CTLs have been able to focus on this rather stable set of practices at the local level because the work of *SoTL-as-scholarship* had been displaced, shifting from central spaces (like CTLs) to more specialized, often disciplinary-specific places. In their prescient description of the process of institutionalization, Hutchings, Huber, and Ciccone (2011) suggested that SoTL can be adopted across two continua: depth (shallow/deep) and breadth (wide/narrow), with the desired end goal focusing on a culture that is both deep and widespread. Our review of *SoTL-as-pedagogy* indicated that

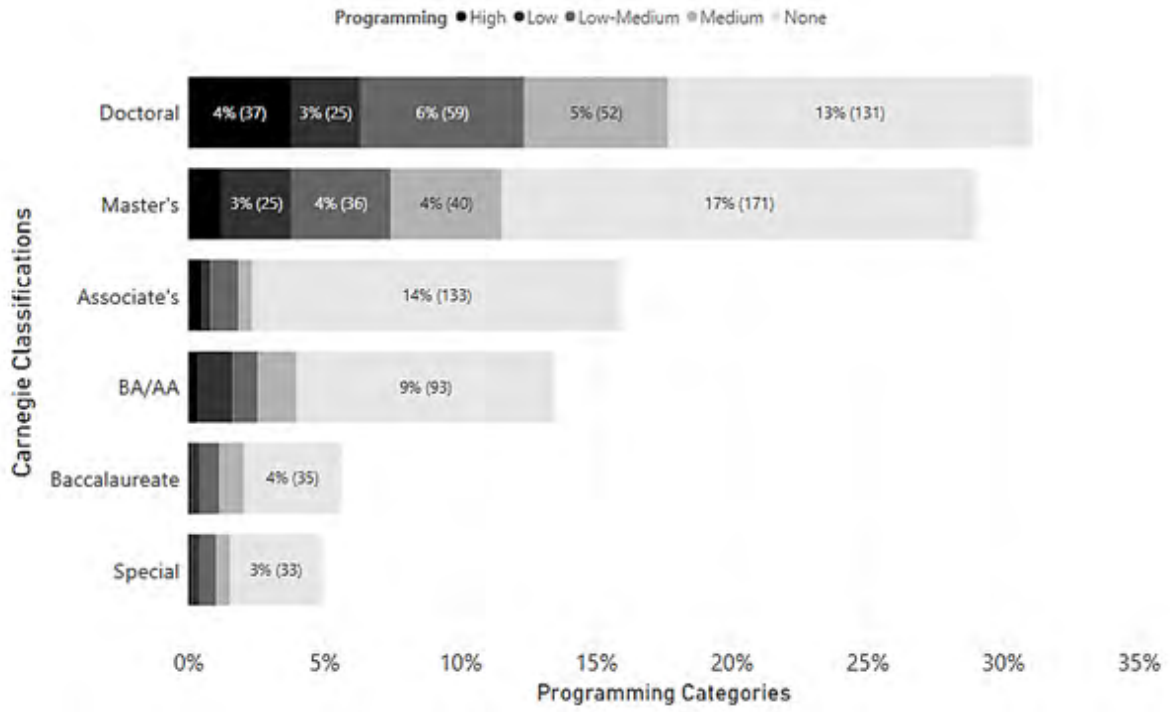

Figure 2. Levels of SoTL Programming by Size
Note: This figure represents a total of 979 institutions and excludes those in our data set that had missing FTE data. Size is based on the Carnegie classification system and includes the categories: very small (<1000 students), small (1,000-2,999 students), medium (3,000-9,999 students), and large (>9,999 students).

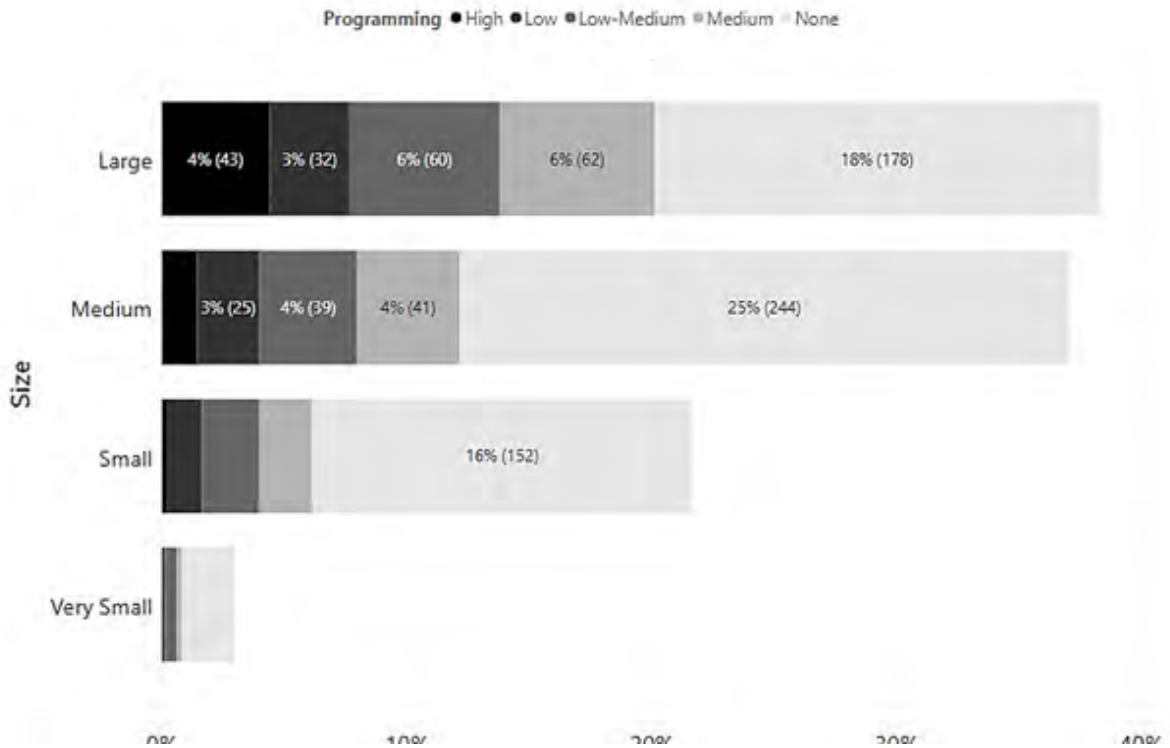

Figure 3. Levels of SoTL Programming by Carnegie Classification Type
Note:This figure represents a total of 979 institutions and excludes those in our data set that had missing Carnegie classification data. Type is based on the broad categories in the Carnegie classification system and includes Doctoral Universities, Master's Colleges and Universities, Baccalaureate Colleges, Baccalaureate-Associate's Colleges, Associate's Colleges, and Special Focus Institutions.

many CTLs were choosing depth over breadth, as indicated by the prominence of intensive programs, such as fellowships or grants. This finding suggests that future endeavors may benefit from a more nuanced framework to measure degrees of SoTL integration, or SoTL culture, at the institutional level.

Indeed, there are distinct limits to the scalability of support for SoTL. With more disciplines implementing robust educational research agendas, a shift that has documented extensively by others (Dolan et al, 2018; National Research Council, 2012), it may be increasingly challenging for educational developers (and other SoTL supporters) to keep up with diverging questions, methods, and standards across multiple disciplines in higher education. This shift towards more disciplinary-centered lines of pedagogical inquiry suggests a divergence not just in practice, but also in the implicit beliefs about the nature and purpose of research on teaching. In a number of cases, disciplinary practitioners have chosen to provide different names for various forms of teaching and learning scholarship that are closely related to SoTL. The reasons for changes in nomenclature are various, from a desire to create distance from a body of literature that, at least in its early years, battled with credibility (Billot et al, 2017, Boshier, 2009, Pan, 2009), to a more constructive desire to integrate the tools and approaches of disciplinary-based research into the study of teaching and learning (Miller-Young et al, 2016). While the shared practice remains "the systematic study of teaching and learning" in higher education, other genres of scholarship, including discipline-based educational research (DBER), teaching as research (TAR), pedagogical research, educational improvement science, or any of a number of similar terms, (Huber, 2006, Huber & Morreale, 2002, Lindblom-Ylänne et al, 2006, Spronken-Smith & Walker, 2010), reflect diverging values and beliefs that underlie that shared practice. This divergence suggests the possibility of signature pedagogies (plural) and opens up new questions about whose signature pedagogies these are, or should be.

One unintended consequence of diverging nomenclature, however, is that it becomes increasingly difficult to identify, locate, and connect related practices, which Healey & Healey characterize as an emerging literacy challenge (2023). At one of our SoTL super-centers, Carnegie Mellon University, for example, the terms "SoTL" or "scholarship of teaching and learning" do not appear once across their extensive web pages, but TAR is an integral part of the majority of their faculty development programs, an emphasis these researchers could easily have missed with standardized search terms. These alternative terms were not used extensively across the CTL websites we visited, appearing in only a handful of cases, but many scholars and practitioners have predicted that the divergence will continue. As more disciplinary-oriented practices emerge, directors of CTLs will likely be faced with the dilemma of how many of the growing number of signature pedagogies they can reasonably support and to what extent generalized SoTL support remains a viable practice. Rather than seeing the divergence as a problem to be solved, however, it could perhaps be seen as an opportunity to think creatively and consider new and innovative modalities for *SoTL-as-pedagogy*, moving beyond the standard canon affirmed through our study.

The increasing division of SoTL labor has also had other implications, including the growth of segmented publishing markets, specialized roles (e.g. STEM education researchers, digital humanities scholars), and rising professional standards. While this latter may sound like a welcome development, it functions in many ways as a double-edged sword, as it can take this scholarship beyond the reach of amateurs in the SoTL operating room (Pace, 2004). Ten years ago, a standard "what works" SoTL study might consist of the evaluation of a simple set of pre- and post-assessments following the integration of a new teaching inter-

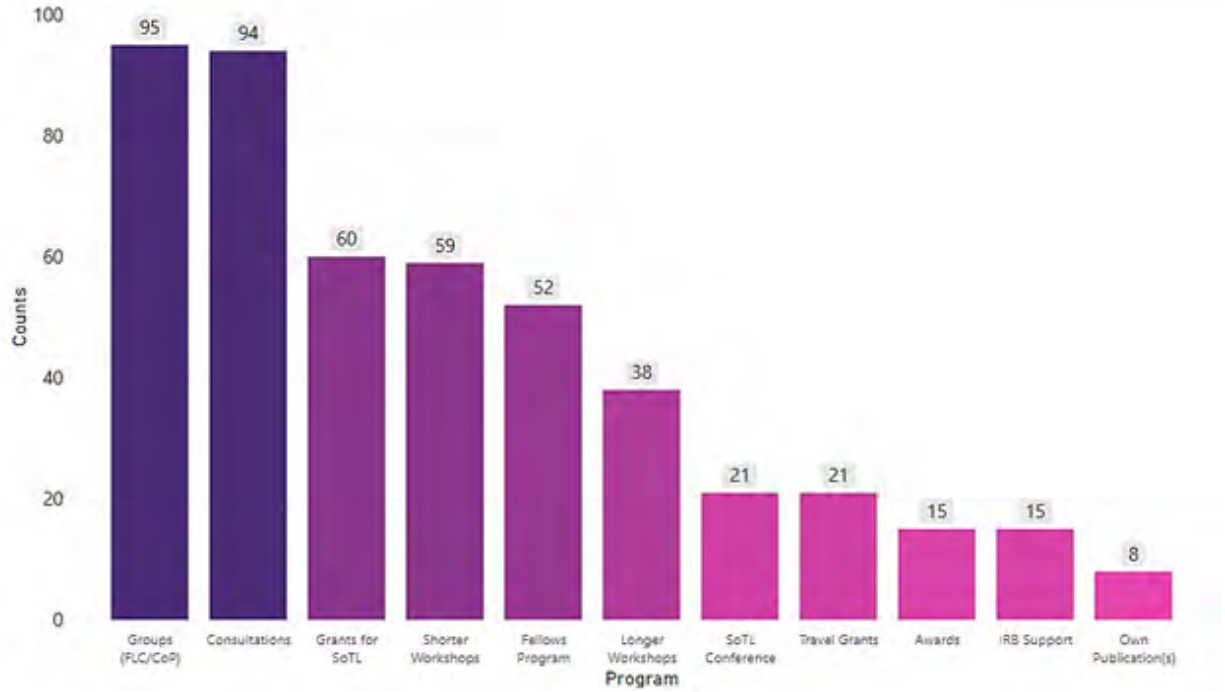

Figure 4. Specific Types of SoTL Programs Represented on Websites (n=478)
Note: This figure includes institutions whose websites indicated some level of programming beyond web resources (N=283). It is provided to give readers an idea of the range of specific programs offered; given the limitations of our data discussed in the paper, these proportions should not be construed as providing a numerically accurate count of SoTL programs in the U.S.

vention. These days, in many fields, such a design would have a strong chance of being considered too simplistic, the validation of the assessments would be carefully scrutinized, the statistical analyses held to high standards of rigor, and the preferred number of participants would need to be a minimum of 100. As *SoTL as scholarship* becomes an increasingly professionalized field, this means that providing a "compass and a map" (O'Brien, 2008) is no longer sufficient to bring scholars in the field, and more of the work *of SoTL-as-pedagogy* will need to be conducted by formally trained (not informally developed) professionals. In other words, as *SoTL-as-scholarship* rises, so might *SoTL-as-pedagogy* recede, moving away from production (publishing SoTL) largely towards consumption (reading and applying), and CTLs may choose, in fact, may already be choosing, to shift their programming accordingly. It could prove to be quite interesting to see the differences between our findings and a similar scan conducted five, or even ten, years later.

The dynamics of rising and receding, however, are implied and not explicit in the results of our study, which is essentially a static snapshot of the state of SoTL support in U.S.-based CTLs. Our study is predicated on the assumption that SoTL was, and remains, one of the signature pedagogies of the field. Like signature pedagogies in other fields, this designation does not presume that every center (or developer) will adopt it fully and uncritically or that all centers have the capacity to do so. It is even possible that our findings could be used to problematize the presumed designation of SoTL as a signature pedagogy. Similarly, our secondary assumption, i.e., that prior levels of SoTL support may have been higher is a supposition based largely on impressionistic evidence. In other words, it may be possible that we have framed these phenomena as a glass half empty, when it could just as easily be half full.

Even if our presumption of what we have called "signature moves" is largely correct, there may be at least one other possible alternative explanation for the apparent absence that actually reflects growth in both fields. As the field of educational development comes to embrace their role as change agents, rather than merely providers of services (noted in phase 3, above), then it would stand to reason that their support for SoTL might not be as readily evident on CTL websites. It could certainly be possible that the CTLs covered in this study are working as levers of change, as bridgers of practice, as builders of networks, and influencers of culture around SoTL (Addy & Frederick, 2023; Hutchings et al, 2013, Verwoord & Poole, 2016), all of which take place in the largely invisible "back stage" of teaching, and which are more likely to manifest themselves in the form of broader changes of teaching culture (Roxå & Martensson, 2009), and not as blurbs on websites.

This point brings the discussion back to embracing the shared goal of both SoTL and educational development: teaching transformation. While the two fields have experienced historical periods of both convergence and divergence, as described above, it is interesting to speculate how their relationship might continue to evolve in the future. In their recent book, *Going Public Reconsidered* (a play on Boyer's iconic title), Nancy Chick and Jennifer Friberg proposed that scholars and practitioners alike might consider expanding the audience for sharing the message of teaching transformation, not to different levels of organizational culture within higher education, but beyond the hallowed halls of academia and outwards towards the general public and aimed at broader social change (Huber & Robinson, 2016, Chick & Friberg, 2022, Wade et al, 2019). Just how this kind of public SoTL will work with the often locally-bound orientation of CTLs has yet to be determined, but, as this study attests, its status as a signature move within educational development has proven to be remarkably resilient.

CONTACT

Laura Cruz <lxc601@psu.edu>
Hillary H. Steiner <hsteiner@kennesaw.edu>
Clare Cruz <cbrightly1@gmail.com>

REFERENCES

Addy, T. M., & Frederick, J. (2023). Educational developers as conveners, brokers, and expansionists: How networks enhance our work. *The Journal of Faculty Development*, *37*(1), 35-40.

Baker, L., Leslie, K., Panisko, D., Walsh, A., Wong, A., Stubbs, B., & Mylopoulos, M. (2018). Exploring faculty developers' experiences to inform our understanding of competence in faculty development. *Academic Medicine*, *93*(2), 265. https://doi.org/ 10.1097/ACM.0000000000001821

Benmayor, R. (2008). Digital storytelling as a signature pedagogy for the new humanities. *Arts and Humanities in Higher Education*, *7*(2), 188-204. https://doi.org/10.1177/1474022208088648

Billot, J., Rowland, S., Carnell, B., Amundsen, C., & Evans, T. (2017). How experienced SoTL researchers develop the credibility of their work. *Teaching & Learning Inquiry*, *5*(1), 1-14. https://dx.doi.org/10.20343/teachlearninqu.5.1.8

Boshier, R. (2009). Why is the scholarship of teaching and learning such a hard sell?. *Higher Education Research & Development*, *28*(1), 1-15. https://doi.org/10.1080/07294360802444321

Boyer, E. L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Princeton University Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Chick, N., & Friberg, J. (2022). *Going public reconsidered: Engaging with the world beyond academe through the scholarship of teaching and learning*. Stylus Publishing, LLC.

Collins-Brown, E., Wright, M. and others (2018) *Defining What Matters: Guidelines for Comprehensive Center for Teaching and Learning (CTL) Evaluation*. Available from. https://podnetwork.org/occasional-reports/

Cruz, L. (2018). The idea of educational development: An historical perspective. *To Improve the Academy: A Journal of Educational Development*, *37*(1). http://dx.doi.org/10.3998/tia.17063888.0037.106

Cruz, L., & Atterholt, R. (2024). Shock waves: Academic witnessing as resiliency practice in higher education. *The Journal of Faculty Development*, *38*(1), 35-43.

Cruz, L., Cunningham, K., Smentkowski, B., & Steiner, H. (2019). The SoTL scaffold: Supporting evidence-based teaching practice in educational development. *To Improve the Academy*, *38*(1), 50-66. https://doi.org/10.1002/tia2.20090

Davis, L. A., Wolniak, G. C., George, C. E., & Nelson, G. R. (2019). Demystifying tuition? A content analysis of the information quality of public college and university websites. *AERA Open*, *5*(3), 2332858419867650.

Dawson, D., Britnell, J., & Hitchcock, A. (2010). Developing competency models of faculty developers: Using World Café to foster dialogue. *To Improve the Academy*, *28*(1), 3-24. https://doi.org/10.1002/j.2334-4822.2010.tb00593.x

Dolan, E. L., Elliott, S. L., Henderson, C., Curran-Everett, D., St. John, K., & Ortiz, P.A. (2018). Evaluating discipline-based education research for promotion and tenure. *Innovative Higher Education*, *43*, 31-39. https://doi.org/10.1007/s10755-017-9406-y

Fanghanel, J. (2013). Going public with pedagogical inquiries: SoTL as a methodology for faculty professional development. *Teaching and Learning Inquiry*, *1*(1), 59-70.

Fanghanel, J., Pritchard, J., Potter, J., & Wisker, G. (2016). *Defining and supporting the scholarship of teaching and learning (SoTL): A sector-wide study*. Heslington, York, UK: Higher Education Academy.

Fedoruk, L. M., & Lindstrom, G. E. (2022). The ethics of equity when engaging students as partners in SoTL research. In *Ethics and the Scholarship of Teaching and Learning* (pp. 147-162). Springer International Publishing.

Felten, P., & Chick, N. (2018). Is SoTL a signature pedagogy of educational development?. *To Improve the Academy*, *37*(1), 4-16. https://doi.org/10.1002/tia2.20077

Felten, P., Kalish, A., Pingree, A., & Plank, K. M. (2007). 6: Toward a scholarship of teaching and learning in educational development. *To Improve the Academy*, *25*(1), 93-108. https://doi.org/10.1002/j.2334-4822.2007.tb00476.x

Felten, P., & Lambert, L. M. (2020). *Relationship-rich education: How human connections drive success in college*. John Hopkins University Press.

Ford, K. S., & Cate, L. (2020). The discursive construction of international students in the USA: prestige, diversity, and economic gain. *Higher Education*, *80*(6), 1195-1211. https://doi.org/10.1007/s10734-020-00537-y

Frake-Mistak, M., Friberg, J., & Hamilton, M. (2023). Reimagining the 4M framework in educational development for SoTL. *Teaching and Learning Inquiry*, *11*. https://doi.org/10.20343/teachlearninqu.11.14

Gayles, J. G. (2023). Humanizing higher education: A path forward in uncertain times. *The Review of Higher Education*, *46*(4), 547-567. https://doi.org/10.1353/rhe.2023.a900572

Geertsema, J. (2016). Academic development, SoTL and educational research. *International Journal for Academic Development*, *21*(2), 122-134. https://doi.org/10.1080/1360144X.2016.1175144

Goodburn, A., & Savory, P. (2009). Integrating SOTL into instructional and institutional processes. *MountainRise*, *5*(3). n.p.

Gopalan, M., & Brady, S.T. (2020). College students' sense of belonging: A national perspective. *Educational Researcher*, *49*(2), 134-137. https://doi.org/10.3102/0013189X19897622

Gordon, T. J., & Glenn, J. C. (2009). Environmental scanning. *Futures Research Methodology. 3*(3).

Green, D. A., & Little, D. (2013). Academic development on the margins. *Studies in Higher Education*, *38*(4), 523-537. https://doi.org/10.1080/03075079.2011.583640

Gurung, R. A., Chick, N. L., & Haynie, A. (2009). *Exploring signature pedagogies: Approaches to teaching disciplinary habits of mind*. Stylus Publishing, LLC..

Gurung, R. A., & Schwartz, B. M. (2010). Riding the third wave of SoTL. *International Journal of the Scholarship of Teaching and Learning*, 4(2), 5.

Happel, C. A. C., & Song, X. (2020). Facilitators and barriers to engagement and effective SoTL Research collaborations in faculty learning communities. *Teaching & Learning Inquiry*, *8*(2), 53-72. http://dx.doi.org/10.20343/teachlearninqu.8.2.5

Healey, M., & Healey, R. (2023). Reviewing the literature on scholarship of teaching and learning (SoTL): An academic literacies perspective: Parts 1& 2. *Teaching and Learning Inquiry*, *11*. https://doi.org/10.20343/teachlearninqu.11.5

Hoessler, C., Britnell, J., & Stockley, D. (2010). Assessing the impact of educational development through the lens of the scholarship of teaching and learning. *New Directions for Teaching and Learning*, *2010*(122), 81-89.

Hubball, H., Clarke, A., & Poole, G. (2010). Ten-year reflections on mentoring SoTL research in a research-intensive university. *International Journal for Academic Development*, *15*(2), 117-129. https://doi.org/10.1080/13601441003737758

Hubball, H., Pearson, M. L., & Clarke, A. (2013). SoTL inquiry in broader curricular and institutional contexts: Theoretical underpinnings and emerging trends. *Teaching and Learning Inquiry*, *1*(1), 41-57.

Huber, M. T. (2006), Disciplines, pedagogy, and inquiry-based learning about teaching. *New Directions for Teaching and Learning*, 63–72. doi:10.1002/tl.246

Huber, M. T., & Morreale, S. P. (2002). *Disciplinary styles in the scholarship of teaching and learning: Exploring common ground*. Merrifield, OH: AAHE Publications.

Huber, M., & Robinson, J. (2016). Mapping advocacy and outreach for the scholarship of teaching and learning. *Teaching and Learning Inquiry*, 4(1), 1-4. https://doi.org/10.20343/teachlearninqu.4.1.3

Hutchings, P., Huber, M. T., & Ciccone, A. (2011). *The scholarship of teaching and learning reconsidered: Institutional integration and impact* (Vol. 21). San Francisco: John Wiley & Sons.

Hutchings, P., Borin, P., Keesing-Styles, L., Martin, L., Michael, R., Scharff, L., et al. (2013). The scholarship of teaching and learning in an age of accountability: Building bridges. *Teaching and Learning Inquiry*, 1(2), 35-47. https://doi.org/10.20343/teachlearninqu.1.2.35

Kern, B., Mettetal, G., Dixson, M., & Morgan, R. K. (2015). The role of SoTL in the academy: Upon the 25th anniversary of Boyer's Scholarship Reconsidered. *Journal of the Scholarship of Teaching and Learning*, *15*(3), 1-14. https://doi.org/ 10.14434/josotl.v15i3.13623

Lewis, K. G. (1996). Faculty development in the United States: A brief history. *The International Journal for Academic Development*, *1*(2), 26-33.

Lindblom-Ylänne, S., Trigwell, K., Nevgi, A., & Ashwin, P. (2006). How approaches to teaching are affected by discipline and teaching context. *Studies in Higher Education*, *31*(03), 285-298. https://doi.org/10.1080/03075070600680539

Little, D. (2014). Reflections on the state of the scholarship of educational development. *To Improve the Academy*, *33*(1), 1-13.

Lukes, L. A., Abbot, S., Henry, D., Wells, M., Baum, L., Case, K., Brantmeier, E., & Wheeler, L. (2023). Impact of a regional community of practice for academic developers engaged in institution-level support for SoTL. *International Journal for Academic Development*, 1-13. https://doi.org/10.1080/1360144X.2022.2135005

Marcketti, S. B., & Freeman, S. A. (2016). SoTL evidence on promotion and tenure vitas at a research university. *Journal of the Scholarship of Teaching and Learning*, *16*(5), 19-31. http://doi.org/doi: 10.14434/josotl.v16i5.21152

Mårtensson, K., & Roxå, T. (2015). Leadership at a local level - Enhancing educational development. *Educational Management Administration & Leadership*, 1-16. https://doi.org/10.1177/1741143214549977

McConnell, C. (2012). Developing a SoTL campus initiative: Reflections on creating sustainable impact. *Transformative Dialogues*, *6*(2). Retrieved from http://www.kpu.ca/td/past issues/6

McDonald, J., Kenny, N., Kustra, E., Dawson, D., Iqbal, I., Borin, P., & Chan, J. (2016). The educational developer's portfolio. https://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=1006&context=ctlreports

McKinney, K. (2010). *Enhancing learning through the scholarship of teaching and learning: The challenges and joys of juggling*. John Wiley & Sons.

McKinney, K. (2012). Making a difference: Application of SoTL to enhance learning. *Journal of the Scholarship of Teaching and Learning*, 12(1), 1-7.

Miller-Young, J. E., Yeo, M., & Manarin, K. (2018). Challenges to disciplinary knowing and identity: Experiences of scholars in a SoTL development program. *International Journal for the Scholarship of Teaching and Learning*, *12*(1), 3. https://doi.org/10.20429/ijsotl.2018.120103

Myatt, P., Gannaway, D., Chia, I., Fraser, K., & McDonald, J. (2018). Reflecting on institutional support for SoTL engagement: developing a conceptual framework. *International Journal for Academic Development*, *23*(2), 147-160. https://doi.org/10.1080/1360144X.2017.1346511

National Research Council, Singer, S. R., Nielsen, N. R., & Schweingruber, H. A. (2012). *Discipline-based education research: Understanding and improving learning in undergraduate science and engineering* (pp. 6-11). Washington, DC: National Academies Press.

O'Brien, M. (2008). Navigating the SoTL landscape: A compass, map and some tools for getting started. *International Journal for the Scholarship of Teaching & Learning*, *2*(2).

Pace, D. (2004). The amateur in the operating room: history and the scholarship of teaching and learning. *The American Historical Review*, *109*(4), 1171-1192.

Pan, D. (2009). What scholarship of teaching? Why bother? *International Journal for the Scholarship of Teaching and Learning*, *3*(1), 2.

Poole, G. (2007). Using the scholarship of teaching and learning at disciplinary, national and institutional levels to strategically improve the quality of post-secondary education. *International Journal for the Scholarship of Teaching Learning*, 1(2), 1-16. https://doi.org/10.20429/ijsotl.2007.010203

Rehrey, G., Siering, G., & Hostetter, C. (2014). SoTL principles and program collaboration in the age of integration. *International Journal for the Scholarship of teaching and Learning*, *8*(1), 2.

Reisner, B. A., & Stewart, J. L. (2020). The literature discussion: A signature pedagogy for Chemistry. In *Advances in Teaching Inorganic Chemistry Volume 1: Classroom Innovations and Faculty Development* (pp. 3-20). American Chemical Society.

Roxå, T., Olsson, T., & Mårtensson, K. (2007). Scholarship of Teaching and Learning as a strategy for institutional change. *The HERDSA (Higher Education Research and Development Society of Australasia) 2007 International Conference*. The Higher Education Research and Development Society of Australasia (HERDSA).

Roxå, T. & Martensson, K. (2009). Significant conversations and significant networks – exploring the backstage of the teaching arena. *Studies in Higher Education*, 34, 547-559. https://doi.org/10.1080 /03075070802597200

Salinas, C., & Lozano, A. (2019). Mapping and recontextualizing the evolution of the term Latinx: An environmental scanning in higher education. In *Critical Readings on Latinos and Education* (pp. 216-235). Routledge.

Schroeder, C. (2012). *Coming in from the margins: Faculty development's emerging organizational development role in institutional change*. Stylus.

Schroeder, C. (2015). Unpacking and communicating the multidimensional mission of educational development: A mission matrix tool for centers of teaching and learning. *To Improve the Academy: A Journal of Educational Development*, *34*(1-2), 20-62. http://dx.doi.org/10.3998/tia.17063888.0034.114

Shank, M., & Cruz, L. (2023). Driver's seat: A qualitative study of transformational student partnerships in SoTL. *International Journal for Students as Partners*, *7*(1), 110-127. https://doi.org/10.15173/ijsap.v7i1.5063

Simmons, N. (2016). Synthesizing SoTL institutional initiatives toward national impact. New Directions for Teaching and Learning, 146, 95-102. https://doi.org/10.1002/tl.20192

Spronken-Smith, R., & Walker, R. (2010). Can inquiry-based learning strengthen the links between teaching and disciplinary research? *Studies in Higher Education*, *35*(6), 723-740.

Starr-Glass, D. (2013). Portals of access: engagement, sharing, and SoTL in online distance learning. *Progressio*, *35*(2), 209-226. https://hdl.handle.net/10520/EJC149394

The Carnegie Classification of Institutions of Higher Education (n.d.). *About Carnegie Classification*. Retrieved from http://carnegieclassifications.iu.edu/.

Thomas, F. N.L. & Ribera, T. (2011). Institutional encouragement of and faculty engagement in the scholarship of teaching and learning. *To Improve the Academy* 30:1, 112-125.

Toni, N., & Cindy-Leigh, M. (2014). The role of academic development practitioners towards institutionalizing the scholarship of teaching and learning: A case study. *Mediterranean Journal of Social Sciences*, *5*(11), 11.

Trigwell, K. (2013). Evidence of the impact of scholarship of teaching and learning purposes. *Teaching and Learning Inquiry*, 1(1), 95–105.

Verwoord, R., & Poole, G. (2016). The role of small significant networks and leadership in the institutional embedding of SoTL. *New Directions for Teaching and Learning*, (146), 79- 86. https://doi.org/10.1002/tl.20190

Wade, J. M., Bean, A., & Teixeira-Poit, S. (2019). Students, universities and employers: Why we all win when we promote social justice through SoTL. *International Journal for the Scholarship of Teaching and Learning*, *13*(3), 2. https://doi.org/10.20429/ijsotl.2019.130302

Williams, A. L., Verwoord, R., Beery, T. A., Dalton, H., McKinnon, J., Strickland, K., Pace, J. & Poole, G. (2013). The power of social networks: A model for weaving the scholarship of teaching and learning into institutional culture. *Teaching and Learning Inquiry: The ISSOTL Journal*, *1*(2), 49-62. doi: https://doi.org/10.20343/teachlearninqu.1.2.49

Wright, M. C. (2023). *Centers for Teaching and Learning: The New Landscape in Higher Education*. Johns Hopkins University Press.

Wuetherick, B., Yu, S., & Greer, J. (2016). Exploring the SoTL landscape at the University of Saskatchewan. *New Directions for Teaching and Learning*, *2016*(146), 63-70. https://doi.org/10.1002/tl.20188