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Trouble and transformation in higher education: identifying threshold concepts through faculty narratives about teaching writing

Christopher Basgier^a and Amber Simpson^b

^aOffice of University Writing, Auburn University, Auburn, AL, USA; ^bDepartment of English, Auburn University, Auburn, AL, USA

ABSTRACT

The theory of threshold concepts has given faculty a powerful way to name foundational, but difficult, disciplinary concepts. However, there is no methodological consensus about the best ways to identify them. In this article, we introduce a phenomenographically-derived narrative framework for identifying stages of threshold concept acquisition. We developed this framework through a study of faculty's conceptions of the teaching of writing situated within the normal course of disciplinary education across fields. Because of this focus, our framework has immediate application for anyone who wants to understand faculty members' thinking about the teaching of writing and help them acquire conceptions that support good pedagogy. More broadly, disciplinary faculty and researchers across higher education can use our narrative framework to identify their own or students' stages of threshold acquisition in a range of disciplines, and so adjust curricula accordingly.

KEYWORDS

Threshold concepts;
phenomenography;
methodology; narrative;
writing studies

Introduction

Research into writing and writing instruction in higher education has grown increasingly international in recent years. Organizations and conferences including the European Association for the Teaching of Academic Writing, the International Society for the Advancement of Writing Research, Writing Research Across Borders, and the International Writing Across the Curriculum Conference support scholars and educators who are interested in writing in all of its myriad forms and academic contexts. A number of formalized modes of writing instruction have also evolved in different global contexts, including 'tutoring, workshops, elective courses/modules, writing embedded in many disciplinary courses, modules attached to disciplinary courses, [and] required courses/modules' (Thaiss 2012, 16). Originating in the United States (Russell 2002), writing across the curriculum (WAC) and writing in the disciplines (WID) programs are also being established in institutions worldwide with the aim of helping faculty develop effective writing assignments, give formative feedback, facilitate peer review, and reform curricula around deliberate, structured writing experiences (Thaiss 2012; Plane et al. 2017; Arnold, Nebel, and Ronesi 2017).

Despite this growth, sustained attention to writing instruction remains uneven in higher education institutions across the globe. Thaiss (2012) found that only 25% of worldwide institutions saw 'explicit cross-faculties planning' for coordinated efforts in the teaching of writing at their institutions (16). Years of WAC research underscores the difficulties involved in getting faculty to devote more time, attention, and effort to writing instruction in their disciplinary courses, let alone collaborate with

colleagues within or across units. Even the best-intentioned faculty face obstacles like large class sizes, minimal attention to teaching in tenure and promotion decisions, and lack of time and funding for professional development.

In addition to these structural and cultural hurdles, faculty's struggles to teach writing and engage in curricular planning also stem from their conceptions of writing and writing instruction. Those who see writing as a universal skill that students should learn in primary or secondary school might be less willing to devote class time to writing instruction or professional time to curriculum development with colleagues than, say, a faculty member who sees writing as a developmental process that students learn iteratively over time and contexts. Therefore, researchers and program administrators (current or prospective) in higher education would do well to understand the conceptions of writing instruction that faculty in their institutions bring to the table if they want the kind of cross-faculties planning that Thaiss identifies as missing.

Threshold concepts offer a powerful framework for gauging faculty's thinking about the teaching of writing. Originally proposed by Meyer and Land (2003), the threshold concepts framework (Meyer and Land 2005; Timmermans and Meyer 2017) is, at base, a theory of change. It describes how learners acquire new concepts that are fundamental to participation in communities of practice such as academic disciplines. These concepts can be difficult to learn, but once they are learned, they are irreversible, changing the way learners think and act in their professional worlds – and, perhaps, beyond. Proponents of the framework believe that it can lead to more explicit, deliberate instruction and curricula designed to demystify disciplinary knowledge for newcomers. However, threshold concepts are notoriously difficult to identify, presenting a range of methodological challenges. In this article, we propose a phenomenographically-derived narrative framework for identifying stages of threshold concept acquisition as a methodological tool that will be valuable for research and curriculum development in a range of higher education contexts. Because we focus on faculty teaching writing in their disciplines, our framework can help teachers, scholars, and faculty developers evaluate faculty members' thinking about the teaching of writing and help them acquire conceptions that support good pedagogy. More broadly, disciplinary faculty and researchers across higher education can use our narrative framework to identify their own or students' stages of threshold acquisition in a range of disciplines, and so adjust curricula accordingly.

Methodological challenges to naming threshold concepts

Amidst the wide-ranging research into threshold concepts in higher education, questions remain about the best ways to identify them. According to Atherton, Hadfield, and Meyers (2008), 'the idea of a threshold concept is in itself a threshold concept' with which faculty, students, and faculty developers may have to wrestle, posing methodological challenges for researchers (4; as cited in Barradell 2013). For example, Zander et al. (2008) found that students participating in a study struggled to complete a grid identifying the traits of threshold concepts and that they focused too much on troublesomeness in interviews at the expense of other threshold features, by which we mean the key components of the threshold concepts framework, such as liminality, integration, or boundedness. Because of these difficulties, the authors resorted to interview questions that were worded to elicit discussion of threshold features (see also Male and Baillie 2011b).

Likewise, Shinnars-Kennedy and Fincher (2013) criticize scholarship that names 'basic level concepts' (11), which may be important in a field but are not inherently troublesome or epistemologically and ontologically transformative. In part, they attribute this disconnect between basic level concepts and threshold concepts to issues of methodology: when asking participants to identify threshold concepts, experienced insiders and newcomers alike default to the most readily identifiable concepts in a field rather than ones that entail deeper cognitive transformations. Therefore, Shinnars-Kennedy and Fincher (2013) recommend the use of 'critical incident interviews' – an approach that prioritizes participants' recognition of troublesome and transformative moments of learning, rather than eliciting specific concepts.

However, even some of the basic level concepts may in fact be threshold concepts for some individuals at some stages of learning. Rowbottom (2007) suggests that because of the potential for individuals to experience learning differently, a threshold concept for one person may not be a threshold concept for another, which presents an additional methodological challenge even in the most well-designed studies. After all, if a given concept is not troublesome, transformative, or irreversible for individuals with varying experiences or ways of thinking, then researchers may not be able to christen that concept as a 'threshold' without a significant degree of doubt. According to O'Donnell (2010), such doubts lead to an unproductive 'elasticity' (5) in threshold concepts' characteristics, which are often defined with qualifiers: they are 'likely to' be troublesome or 'potentially' transformative. Therefore, he argues that the framework has too much flexibility to be useful.

As a response to these challenges, we turn to narrative and its corollary methods, such as narrative inquiry and narrative analysis, which have figured prominently in social constructivist higher education research (Marshall and Case 2010). Proponents of narrative methods maintain that stories are significant means through which individuals render experiences meaningful, and indeed can be seen as constitutive of life itself (Petersen 2014; Lessard, Caine, and Clandinin 2018). Thus, narrative methods can address Rowbottom's (2007) criticism that the framework needs to account for individual, meaningful experiences of learning. We have chosen to collect and analyze a wide range of narratives from participants to allow for the disclosure of and attention to their individual experiences. According to Chan (2016), narratives that include conflict and consistency can be markers of agency. Our own efforts to elicit narratives of trouble and transformation from faculty members are aimed at understanding the extent to which faculty who have crossed conceptual threshold have developed a sense of agency over their teaching of writing.

However, our research differs from these social constructivist approaches to narrative in one key way: rather than use narrative methods to get as close as possible to the lived experiences of particular individuals in particular contexts (Marshall and Case 2010; Chan 2016; Annala and Mäkinen 2017), we were interested in looking at the variations of experiences – and the conceptions underlying those experiences – for faculty working in a single institution but a range of disciplinary, departmental, and course contexts. As we elaborate below, phenomenography is fundamentally concerned with mapping the variation in experience – and it has also been used regularly in threshold concepts research (Cope and Staehr 2008; Meyer, Land, and Davies 2008; Male and Baillie 2011a, 2011b; Baillie, Bowden, and Meyer 2013; Åkerlind, McKenzie, and Lupton 2014). Phenomenographic analysis of narratives allowed us to capture the differences across participants' experiences and maintain the particularity of individuals' threshold concept acquisition at the same time. Put differently, we use phenomenography to identify patterns of thinking across a range of narratives – in our case, narratives of the teaching of writing – that are indicative of the stages of threshold concept acquisition, from pre-liminal to liminal to post-liminal (Meyer, Land, and Baillie 2010, xii). The result is an empirically-based, elastic map of threshold thinking. Our outcome space will be valuable for identifying threshold learning in the teaching of writing as well as a range of other contexts in higher education, without muddying the waters by introducing the threshold concepts framework directly to participants and asking them to name concepts that reflect the framework's features.

Background to the study

This study took place at a large, land-grant institution in the southeastern United States. Both researchers have worked for the institution's Office of University Writing (OUW), a comprehensive WAC/WID program that supports the integration of writing into courses and curricula. Like many WAC/WID programs in the US, and an increasing number worldwide, we work with faculty in a range of disciplines who assign writing specific to their fields in the normal course of instruction. For example, faculty in the biological sciences regularly assign lab reports, faculty in history regularly ask students to compose historical narratives, and faculty in social work regularly assign SOAP (subjective, objective, assessment, and plan) notes. Our goal in the OUW is to help faculty design writing

assignments that support students' disciplinary learning and their communication skills. We also help academic departments and programs engage in curricular reform surrounding writing. Because of this complex work of supporting a culture of writing across our institution, we wanted to know how faculty thought about their role in the design, instruction, and evaluation of such writing assignments – in short, the teaching of writing. More to the point, we wanted to understand how faculty changed their conceptual thinking about the teaching of writing after participating in programs offered by the OUW.

Because of our interest in conceptual change, we decided to see whether we could identify a core set of threshold concepts for teaching writing in the disciplines. The broader writing studies community has recently begun this work of naming threshold concepts, both for writing generally (Adler-Kassner and Wardle 2015), and for WAC specifically (Anson 2015). So far, this scholarship has relied upon the perspectives of experienced insiders from writing studies who have named the concepts and articulated their troublesome, transformative, irreversible, and bounded natures.

In contrast, our study examined the experiences of faculty who have attempted to teach writing in their disciplines. A fundamental assumption guiding our study was that faculty are learners, too, with certain, perhaps malleable, conceptions about their teaching generally, and the teaching of writing specifically. With this assumption in mind, we used threshold concepts as a guiding framework. Our initial research questions included: What experiences with teaching writing do faculty in the disciplines find troublesome? What experiences with teaching writing do faculty in the disciplines find transformative? How do they narrate these experiences? And, which threshold concepts for teaching writing in the disciplines arise in their narratives?

Data collection methods

Our study incorporated both open-ended reflective writing (in the form of a survey) and a subsequent focus group discussion with survey participants. A writing prompt encouraged participants to describe their experiences teaching writing without undue influence from researchers, colleagues, and peers (see Alsop and Tompsett 2006, 246). A subsequent focus group then allowed us to ask additional questions about participants' experiences, to solicit a deeper reflection on experiences, and to enable participants to compare experiences (Alsop and Tompsett 2006, 256).

In developing the guiding questions for written reflections and focus group discussions, we followed threshold concepts researchers who did not explicitly discuss the theory with participants (Zander et al. 2008, 109; Male and Baillie 2011a, 255) so they could focus on experiences with teaching writing rather than what counts as a threshold concept.

Survey phase

The initial survey was distributed to all faculty, regardless of rank or status, to garner a diverse set of experiences and disciplines. Participants answered an open-ended question:

Write about a time when you tried to teach writing, or an aspect of writing, in your discipline, and it didn't go as planned. What happened? What did you learn? What did (or might) you try differently to address what happened?

This question asked participants to share an experience, evaluate its success, reflect on its significance, and consider changes they have already implemented or might implement in the future. The question tapped into participants' knowledge of teaching writing, the conceptions of writing undergirding that knowledge, the troublesome aspects of teaching writing, and concepts that may have changed the way they thought or taught. In other words, it was designed to surface many of the features of threshold concepts – especially their troublesome and transformative elements.

Faculty also provided information about their college, department, and faculty rank, as well as their contact with professional development units at our institution. It is worth noting here that our survey collected open-ended responses and demographic data separately to protect participant

anonymity. Therefore, we cannot make causal claims about relationships between these factors and faculty conceptions of the teaching of writing.

Focus group phase

Survey participants could also elect to participate in a follow-up focus group. During these discussions, we asked about participants' struggles and successes with teaching writing, and the conceptions underlying them. Like the survey question, the guiding questions for focus groups gave participants the chance to elaborate their thinking and allowed us to prompt the features of threshold concept acquisition. One researcher facilitated the discussions, asking as many questions as possible within the one-hour timeframe. Because conversations proceeded organically, the facilitator asked probing questions to prompt deeper reflections and keep the conversation on track. The second researcher, meanwhile, took detailed notes and transcribed participants' responses.

Phenomenographic analysis of narratives

We received 85 complete responses to the open-ended question in the survey, representing all thirteen colleges and schools at our institution. A majority of participants (72% of 95 respondents to the demographic questions) had engaged in faculty development opportunities with the OUW, the Center for the Enhancement of Teaching and Learning, or another professional development unit. Twenty-one faculty members elected to participate in the follow-up focus groups.

Because we wanted to understand the range in experiences and conceptions of faculty across disciplines, we used phenomenographic analysis, which centers on the variation in how people experience a given phenomenon. Using qualitative methods, phenomenographers name categories of experience and map the relationships among them to produce an outcome space, which describes the categories' logical relationships, often using a diagram (Marton and Booth 1997, 112; Richardson 1999; Polat 2013, 118). The outcome space does not necessarily represent any one individual's experience of a phenomenon, but rather a collective set of experiences, which itself may only be a subset of the full range of possible experiences anyone may have of a given phenomenon. It is often arranged hierarchically, with some categories of experience encompassing others in nested layers (Marton and Booth 1997, 111; Polat 2013).

In the first phase of analysis, we followed the process of phenomenographic analysis articulated by Alsop and Tompsett (2006). We first read through the data several times to gain a general impression of the full set. We identified five salient issues, or conceptual 'buckets,' representing the initial categories of experience for the teaching of writing in the disciplines: (1) why faculty assign writing, (2) their assignment designs, (3) their pedagogical practices, (4) their approaches to feedback, and (5) how they teach writing to their students. We then coded each salient issue inductively (Haas, Takayoshi, and Carr 2012), first working individually to name the constitutive elements we each saw in the dataset; then we worked together to collapse categories, eliminate redundancy, and develop a final code list with definitions. For example, from an initial set of 12 codes associated with the salient issue of assignment design, we combined closely related codes and eliminated redundant ones into four codes, including realistic contexts for student writing and three different approaches to scaffolding an assignment.

During a second round of coding, we focused less on the content of faculty's stories and more on their form. Consistently, we found three kinds of response in our dataset: (1) some participants articulated a problem in their teaching of disciplinary writing, but not a solution; (2) others described a challenge and a single, often imagined, change to address the challenge; and (3) a third group told detailed narratives of pedagogical change. We came to think of these narratives as 'roadblocks,' 'detours,' and 'journeys,' respectively. We used traffic metaphors to indicate the desired (and often impeded and unrealized) forward movement of knowledge acquisition and application (about the teaching of writing, in our particular case).

Narratives of trouble and transformation

In this section, we describe the phenomenographic outcome space and then expand our description of each narrative type in detail, using examples from our participants to illustrate the structural and threshold features represented in each narrative type.

Table 1 represents the phenomenographic outcome space for faculty participants' narratives. Each column lists the key structural features of the narrative type. Where appropriate, we note structural features that were common but not pervasive for a given narrative type. Roadblocks, for instance, typically included a description of a pedagogical strategy, but not always; they always articulated a problem but lacked a solution. We have grouped similar structural features, as well as their absence, across the rows in the table to emphasize the qualitative distinctions among the narrative types. Below the structural features, we list the stages of threshold acquisition that correspond with each narrative type.

Roadblocks

Most faculty encountered difficulties when teaching writing in their disciplines, but a subset of their narratives did not name strategies or concepts for addressing those difficulties. We call these narratives 'roadblocks.' Structurally, roadblocks included a challenge or obstacle, sometimes described a pedagogical strategy, and occasionally ended with a lament, usually about students' writing abilities. In other words, they included no strategy for moving around or through the obstacle. This structure coincides with features of the 'pre-liminal' stage of threshold learning, in which learners (in this case, faculty) rely on received knowledge, common sense, or habit (Meyer and Land 2006; Meyer, Land, and Baillie 2010). For example, one survey respondent wrote:

In an undergraduate (3000-level) research methods class, trying to teach students how to write a literature review has been a challenge. Students have issues with creating the content of the review, formatting the review, and citing sources for the review. In a course where I lectured on the proper form, content, and structure for citations the results were disappointing, to say the least.

This response was fairly typical of roadblocks: the participant clearly named a challenge, which we coded as disciplinary genre/form, given the difficulties in teaching the literature review. We also coded this person's pedagogical strategy as 'teacher-oriented pedagogy' – a broad category that included lectures and class discussions about writing in general, or specific to a disciplinary context. Finally, the response ended with a complaint, but offered no solution for addressing the difficulty.

In roadblock narratives, participants handled difficulties by defaulting to their habitual ways of addressing writing, such as lecturing or assigning writing without making explicit their intellectual or rhetorical expectations. Such narratives responses resemble what Meyer, Land, and Baillie

Table 1. A phenomenographic outcome space for faculty participants' narratives of teaching writing in the disciplines.

	Roadblock	Detour	Journey
Structural features	Articulates Problem May Name Pedagogy No Solution Named No reflection besides narrative	Articulates Problem Names Pedagogy Considers limited (single) solution May oscillate between old and new conceptions No reflection besides narrative	Articulates Problem Names Pedagogy Describes multifaceted solutions Reflects on effectiveness or additional changes
Threshold features	Pre-liminal: relies on received knowledge, common sense, or habit.	Liminal: encounters new ideas that may begin changing conceptions Oscillates between prior and threshold understandings Encounters conceptual boundaries	Post-liminal: Manifests conceptual changes Represents new, integrative ways of thinking and acting Describes productive ways of dealing with difficulties

(2010) call the 'pre-liminal' stage of threshold learning, characterized by 'an encounter with a form of troublesome knowledge' one that could 'unsettle[] prior understanding' (xi) and push the faculty member into the liminal stage of learning. As it stands, however, most roadblock narratives represent 'stuck' thinking in a pre-liminal state of knowledge. They center on a seemingly intractable problem, and they offer no narrative of change signalling a conceptual shift.

A response from an archaeologist who participated in a focus group represents a pre-liminal understanding that did appear 'unsettled'; however, like the previous example, her narrative still did not move toward a new conceptual resolution:

Within my discipline, we range from ethnographic, thick description papers to more technical assignments. Even when they've received some kind of training in earlier courses, it doesn't necessarily translate to what I want them to do in my courses. So there's a need for additional instruction. Writing for archeology is different from writing a cultural anthropology paper. I don't explicitly talk about that. I will go out and make them collect data in a different way than they have before. It's a different definition of research between fields.

This participant had a clear pedagogical approach to teaching what we coded as a 'disciplinary way of doing' (archeological field methods), and she recognized that students 'need ... additional instruction' in those methods because their prior learning does not necessarily translate to her disciplinary context. Implicitly, she also seemed to recognize that the ways of doing that are characteristic of her discipline equate to different genres: a survey of an archeological site will differ markedly from an ethnographic study. However, these conceptions did not necessarily affect her teaching of disciplinary writing. She did not explicitly talk with her students about differences in disciplinary genres/forms across adjacent disciplines (which are housed in the same department at our institution). Had she imagined a specific strategy for addressing with students the discursive differences across genres in the department's different disciplines, she might have moved past the roadblock and into a detour that represents the beginning of threshold thinking about the teaching of disciplinary writing.

Detours

The second narrative type often included descriptions of troubles with teaching writing, as well as an attempted or imagined change in response. We call these narratives 'detours' because they included a solution for navigating past a challenge or obstacle. They either introduced a new teaching strategy and added it to their repertoire, or else replaced one teaching strategy with another. In other words, faculty's methods of teaching writing in the disciplines were not working as planned, and they were beginning to rethink their pedagogical approach. Some of these changes represented small, but important, signals of threshold learning. Other solutions, however, bypassed the problem. They may have addressed it only indirectly or partially, and they sometimes left the faculty member unable to move forward in ways they felt were productive.

These detours reflected some liminal understanding of new concepts for teaching writing in the disciplines, but we want to acknowledge that liminality is a 'fluid' state, one 'very difficult to get at because [it is] a part of other peoples' experiences' (Land 2014, 1). Nevertheless, we believe detours represent an encounter with troublesome knowledge, as well as different strategies for dealing with that knowledge that either bypass the problem, or else represent the beginnings of what Meyer, Land, and Baillie (2010), call 'a reconfiguring of the learner's prior conceptual schema' (xi).

Our first example illustrates pointedly the liminal 'flux' that Land (2014, 1) describes, or the fact that a new threshold concept 'needs to be approached or negotiated' (Meyer and Land 2006, 19) because threshold learning does not involve an instantaneous change from pre-liminal understanding to a complete conceptual overhaul:

I teach a junior level course that has a lab component. Every time I teach the course, the first lab report is almost close to a disaster but the students improve over the course of the semester. I now know how to manage my expectation at the beginning of the semester and also have a 1 hr lecture that talks about do's and don'ts of technical writing.

This participant seemed to have a two competing conceptions. On the one hand, the response demonstrated a burgeoning understanding of a core threshold concept for writing: learning to write is 'highly developmental' (Anson 2015, 212). In the OUW, we often discuss multiple opportunities to practice a genre as a valuable approach to scaffolding assignments within and across courses because such practice supports students' development as writers. The faculty member seems to have recognized the benefit of this practice because students did in fact improve over the semester.

On the other hand, this encounter with a threshold concept did not appear to have translated into a change in pedagogical practice. Rather, this individual reported a one-hour lecture as the only pedagogical intervention in response to the problem. We cannot tell from this response whether the faculty member engaged in other practices that would signal deep understanding of the developmental nature of learning to write, such as formative feedback on each successive lab report.

In fact, this detour allows us to see how learners can 'oscillate' between prior (e.g. lecture-based pedagogy) and threshold (e.g. developmental learning pedagogy) understandings of the concept, which Cousin (2006) names as a common feature of liminal stages of learning (4). Indeed, we coded the changes in a large number of detours (thirteen) as 'teacher-oriented pedagogy,' suggesting that faculty in the liminal stages of threshold thinking often blend familiar and new conceptions when they encounter difficulties with teaching writing.

Even when competing concepts are not so diametrically opposed, it may take time for a new concept to affect deep changes to thought and practice. For instance, during a focus group, one faculty member in the social sciences worried that her students spent too much time wrestling with what we coded as disciplinary language when writing a literature review – they 'get[] stuck in definitions.' To redirect students' attention, she provided 'a one-page grid to help students work through articles.' We coded this approach as an 'invention activity,' by which we mean activities that help students generate ideas, build components of writing assignments, or practice genre conventions. This particular invention activity was designed to redirect students' attention away from technical vocabulary by focusing on what the participant called 'the important parts of the articles,' such as methodology or research contexts. In narratives like this one, faculty added pedagogical interventions such as invention activities to their teaching repertoire to address novice writers' difficulties with complex disciplinary writing tasks. According to Land (2014), 'Adding a new concept to a learner's [conceptual] collection can affect all the other concepts in that collection' (7). The additive pedagogy taken by this faculty member could therefore be the beginning of a conceptual overhaul that would lead her to see the teaching of writing differently.

For such a conceptual overhaul to take place, though, faculty members need to integrate multiple concepts. Integration is particularly difficult because of the bounded nature of threshold concepts (Meyer and Land 2005), or the notion that a given threshold concept explains a limited set of inter-related phenomena in a disciplinary field. Take, for instance, this narrative from a faculty member in Veterinary Medicine:

In an elective course that is part of the DVM degree at the College of Vet Med, I asked students to write a brief case interpretation of biochemical data to describe possible etiologies. While some students wrote succinct, clear answers, the majority either did not write in complete sentences or wrote in stream of conscious thought!! It was clear that when we select students based primarily on test performance in science related fields we run into a broad range of skill levels in writing. This is particularly problematic as through most of the curriculum in vet school we test them in a multiple choice format. In order to address this problem, I graded that assignment very generously and offered more opportunities to write their case interpretations. I would like to increase the writing obligations in this course, but I don't want to lose participants.

As with the previous example, this participant came to see that students learn to write through practice, suggesting an understanding of the threshold concept that learning to write is a developmental process. However, this faculty member did not extend that understanding to the institutional context. Such an extension is a different, bordering concept: the teaching of writing is a shared responsibility (Anson 2015, 209). As Meyer and Land (2005) explain, 'any conceptual space will have terminal

frontiers' that lead to 'new conceptual areas' – a notion they define as the 'boundedness' of threshold concepts (5). If this faculty member were to cross into new conceptual territory, they might urge colleagues to assign more writing and support students' growth as communicators. As it stands, they struggled with the bounded nature of the concept of writing development. The faculty member was willing to see an isolated classroom as a space for pedagogical experimentation, but institutional constraints, a culture of testing, and a fear of losing students still seemed like intractable problems that prevent engagement with a bordering threshold concept. With time, experience, and support from experienced colleagues, this individual may begin making these connections and begin telling narratives of change that reduce the emphasis on problems and focus instead on multiple integrative solutions.

Journeys

A third group of participants articulated rich narratives of change, which we call 'journeys.' Journeys are structurally distinct from roadblocks and detours because they included detailed descriptions of the obstacles faculty encountered with teaching disciplinary writing; numerous, interconnected strategies and conceptions for navigating the teaching of writing; and reflections on the success or ideas for addressing ongoing challenges with their pedagogical interventions. Reflection has long been seen as important to teacher development (Perl 1980; Schön 1983; Flash 2016), and we believe they are essential features of journeys. In our study, reflection is characterized by faculty participants' self-assessment (typically unstructured and informal), critical examination, and evaluation of their past, present, and future practices and conceptions as teachers of writing. For the journeys in our dataset, reflective practices indicated integrative thinking about the teaching of writing in the disciplines. Indeed, these participants' descriptions of experiments with assignment design, pedagogy, and feedback suggested that they had passed through a conceptual threshold that enabled them to deal with challenges in the teaching of disciplinary writing in productive ways.

According to Land (2014), as a learner encounters and internalizes constellations of threshold concepts, 'the whole collection morphs and develops and is transformed' (7), a process we can see in multiple examples. For instance:

I teach graduate students who are asked to write medical instructions. I frequently encounter students who become frustrated with varying writing styles. Ultimately, I have struggled with students having a lack of fundamental writing techniques (sentence structure, creating a story, etc.) such that their final product is a non-sensical collection of thoughts rather than an organized narrative of the medical progress of a patient. When providing constructive comments and a re-worked version of their document, they are frustrated because they don't have a basic understanding of narrative. I have learned that I have to provide concrete examples with detailed instructions. I include documents with common mistakes to avoid and I have also had students share their documents with their classmates. The students actually submit a much 'better' document to their classmates than to me, and the student-student teaching has been helpful in improving their documents.

At first glance, this response looked like a complaint about surface-level problems with graduate students' writing. The individual fretted over 'fundamental writing techniques' and offered some prescriptive strategies that addressed 'common mistakes.' However, we coded the difficulty in this response as 'disciplinary genre/form' because the faculty member articulated the problem as one of genre: they wanted 'an organized narrative of the medical progress of a patient.' In our reading, this participant originally commented on drafts, but then decided to incorporate other options, which we coded as 'providing models,' 'clearly communicating expectations' (in this case, through instructions), and 'peer review.' Whereas the detours included a small number of strategies, real or imagined, journeys like this one included multifaceted solutions to the teaching of disciplinary writing, and they often described the positive results in students' writing or additional measures the faculty member might like to take in the future. These participants were no longer 'stuck' in the liminal, experimental space narrated in detours. They can imagine, and follow, productive routes through the difficulty.

To be clear, faculty who told journey narratives did not necessarily believe they had solved all their pedagogical problems. (Many were clear about this in their reflection.) Rather, they appeared to understand deep concepts that drove how they change assignments, feedback, or pedagogy to meet their goals for student writing. As Land (2014) puts it, learners are most likely to be successful when they think

they are capable of understanding new ideas (self-efficacy), [are] optimistic about their chances of success, [] can monitor and re-align goals and the pathways to attaining these goals, and [do] not give up in spite of the difficulties they encounter with new knowledge. (14)

Likewise, faculty who told journeys understood new ways of teaching and were willing to critically examine the choices they made in teaching writing with those concepts in mind. They appeared to have crossed a conceptual threshold to ‘a post-liminal state in which both learning and the learner are transformed’ (Meyer, Land, and Baillie 2010, xi).

A particularly rich instance of this post-liminal thinking comes from a faculty member in a design field whose core motivation for assigning writing we coded as ‘make a personal connection to the discipline.’ This faculty member wanted students to ‘make connections between historical developments in graphic design and their own studio work,’ using terminology students had learned in the course. A dynamic set of pedagogical practices, which we coded as ‘scaffolding for the writing process’ and ‘providing models,’ already accompanied the original assignment.

Unfortunately, the faculty member was dissatisfied with students’ struggle to compare their own work to their chosen designer’s. Therefore, the faculty member revised the assignment in several ways: first, the new assignment invited students to imagine themselves writing a newsletter for high school students who might be interested in design. We coded this response as ‘create a realistic context for writing.’ Second, the new assignment refocused students’ attention on ‘a designer whose work and/or philosophy inspires you’ and asked them to ‘devote most of your article to explaining what is significant about your designer’s work and why you find it inspiring.’ The faculty member recognized that the language of the assignment sheet itself mattered and that a motivating rhetorical context might result in better writing. So, too, did additional peer reviews, which provided a necessary element of in-process feedback for students.

Even more significantly, the faculty member recounted ways of dealing with some continued dissatisfaction:

This process has helped with the quality of writing but not as much as I would like. I am devising a way to break the drafts into smaller chunks (i.e. write a brief bio for your designer; chose one example of your designers’ work and explain why it is significant and inspirational; etc.) that we can use to construct the final paper.

These comments suggested that the faculty member took on a new way of thinking about scaffolding, not only as a stepped process of writing, reviewing, and revising, but also as an iterative process that builds over time. This lengthy narrative (one of our longest) indicated multifaceted conceptions about the best ways to teach writing in the discipline, which is indicative of post-liminal threshold concepts. Rather than struggle with closely related, bounded concepts, this individual saw them all as being of a piece, ‘fitting everything together in a new fashion’ (Land 2014, 7). This new, consistent way of thinking about the teaching of disciplinary writing enabled the faculty member to continue working on the assignment in productive ways. Difficulties teaching writing were no longer intractable problems to be avoided. Instead they were intellectual problems worthy of continued investigation.

Conclusion

According to Meyer and Land (2005), ‘any shift in perspective’ is likely to be ‘accompanied by (or occasioned through) an extension of the student’s use of language’ such as ‘that in use within a specific discipline, language community or community of practice’ (374). Typically, threshold concepts researchers notice when learners use technical disciplinary vocabulary more accurately.

These changes offer a foothold for identifying significant shifts in thinking. However, our methodology recognizes that the stories faculty tell about their teaching undergo changes, too, as they acquire new concepts for the teaching of writing in their disciplines.

The use of phenomenographically-derived narratives and the framework of narrative types described here offer a worthwhile method for higher education researchers to identify stages of threshold concept acquisition. While our study focused primarily on threshold learning about the teaching of writing, the structures of roadblocks, detours, and journeys provide a portable methodology that can apply to learners' stories across contexts. After all, they represent the changed language that signals epistemological and ontological transformations entailed in threshold concept acquisition. Higher education researchers can use these narrative types to evaluate threshold concept acquisition among learners. Our outcome space also addresses the methodological question of whether research participants need to understand the threshold concepts framework for a study to be valid. With narratives at hand, researchers need not ensure that their participants are knowledgeable about the nature of threshold concepts in order to identify threshold features in their descriptions. After all, the narratives can manifest trouble, transformation, liminality, integrativeness, and boundedness – precisely the features researchers would be looking for.

We see multiple directions for future research based on this methodology. Most immediately, we plan to publish a follow-up article that uses roadblocks, detours, and journeys to articulate specific threshold concepts for the teaching of writing. By naming these threshold concepts, we hope to help WAC specialists, faculty in the disciplines, and prospective administrators of writing curricula understand ways of thinking about the teaching of disciplinary writing that are particularly troublesome and potentially transformative, pedagogically speaking. With the pathways of threshold thinking mapped, WAC specialists or anyone interested in starting a WAC program can assess faculty's learning in workshops and other events – which speaks to our initial motivation in designing the study.

We also see ample opportunity to test the narrative structures using different methods. Our study used an online survey and focus groups, but it is also feasible for researchers to collect narratives in interviews or self-evaluations. These alternative methods may foreground or background certain threshold features, or perhaps introduce additional narrative structures besides the three we've identified here. New narrative structures may also manifest in national and cultural contexts outside the US, so we see ample opportunity to test our outcome space globally. Future studies may also want to pay special attention to the relationship these narratives have to epistemological and ontological transformations. Because such transformations are particularly difficult to capture (Land 2014), researchers may want to prime participants with questions that name actions and experiences as well as changes in knowledge and sense of self. Most importantly, though, we hope the methodology offered here can be repeated as higher education researchers continue identifying, and refining, threshold concepts across disciplinary, institutional, and national contexts.

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