Diversity as a Threshold Concept: Graduate Student Teachers' Experiences Negotiating Liminality in the Postsecondary Classroom

Devon Thacker Thomas*
Department of Sociology
California State University, Fullerton, USA
dethomas@fullerton.edu

Laura L. B. Border
Graduate Teacher Program
University of Colorado, Boulder, USA
laura.border@colorado.edu

Abstract

In an attempt to better understand issues of diversity in the college and university classroom, the authors applied two conceptual approaches—the threshold concepts framework and intersectionality—to the study of diversity as a complex, multi-faceted reality, which all instructors confront and sometimes resist at various points in their careers. An examination of qualitative data from open-ended questions on a survey about diversity in the classroom revealed the strength of these two approaches to elucidate hidden instructional complexities. Applying the threshold concept framework through an intersectional lens suggests that the learner's confrontation with new information may be troublesome and disorienting as graduate student teachers described difficulties with their own and their students' identities. The data also reveal the reality of different phases in which the instructors appear to stagnate, begin to realize the need to engage with diversity, then begin to transit and exit the disoriented or liminal space. Because the instructors' transition—from being a teacher who cannot deal with diversity to a teacher who can—appears to be challenging, the authors conclude that issues of diversity in the classroom can be clarified and understood using the threshold theory framework and intersectionality approach in the education and preparation of future faculty. Graduate and professional student developers centrally

---

* Corresponding Author

and within disciplines need programming to help graduate student teachers move successfully through the liminal space to teach contemporary collegiate undergraduates most effectively.

Keywords: diversity, threshold concept, graduate student instructor, intersectionality, troublesome knowledge, liminal space, teacher training

Introduction

As college and university campuses continue to diversify their student populations at both the undergraduate and graduate levels (Parsad, Lewis, & Farris, 2001), graduate students moving into teaching roles experience a heightened need to examine diversity as an aspect of classes they teach. The research questions framing this study are: (1) Do graduate student teachers from different disciplines have similar experiences understanding, explaining, integrating, and addressing diversity in their classrooms? (2) If not, what are the differences? (3) Do they experience resistance to diversity as they attempt to deal with it? (4) If so, what are the signs and causes of resistance to diversity in the classroom?"

Research on preparing teachers to teach in diverse classrooms focuses largely on the preparation of secondary teachers and tends to examine race, ethnicity, social justice, and more recently conceptual change models (see, for example, Bender & Devanas, 2012; Freeman, Faulkner, Izzard, & Charles, 2012; Juárez, Smith & Hayes, 2008; Larkin 2012; Morrell, 2010; Motoko, 2011; Nieto, Rivera, & Quinones, 2012; Renn, 2012; Wisker & Claesson, 2013). Though many professional development programs at colleges and universities do tend to offer support through workshops and courses to teach graduate students how to approach diversity in the classroom, little research data is available on transforming the graduate students into teachers who are able to utilize diverse curricula and engage diverse students (Austin, Campa III, Pfund, Gillian-Daniel, Mathieu & Stoddart, 2009).

Accordingly, this study examines if, and how, graduate student teachers from all disciplines at a major research institution recognize, confront, and integrate diversity into their content and teaching practice. Specifically, this study allows for an

examination of how graduate student teachers make sense of diversity in their classrooms in terms of what Kristeva (2004) calls positionality and Anthias (2011) refers to as standpoint, the course content, and their responses to undergraduate students.

Literature Review

Following the Civil Rights Act of 1964, which authorized the then Office of Education to assist with school desegregation in the United States, efforts to create learning environments that bridged the gaps between races and genders began. An intervention at Harlem Prep in the early 1970's described its efforts as helping students, "whom other schools had labeled 'deprived, different, disadvantaged, and disaffected' to achieve and develop" (Gordon, Ralston Brownell, & Brittell, 1972). Efforts to attend to teaching for diversity at the college and university level were slow to develop. The Jossey-Bass volume on *Teaching for Diversity* raised the issue of preparing professors and graduate student teachers to teach for diversity in colleges and universities (Border & Chism, 1992). Topics in the volume ranged from subsequent interventions and research on the meanings of multiculturalism and diversity and their effect on the classroom environment and student and teacher identity, the learning environment, and the preparation of college faculty to teach.

More recent work focuses on the "diversity paradox" in education, which suggests that although colleges purport to incorporate diversity and multicultural education, the content, focus, students, and faculty are predominantly white (Juárez et. al, 2008). And, Freeman and colleagues stress, "An abundance of research confirms that preservice teachers are unprepared to work with diverse populations" (2012, p.1). While scholarship has focused on identifying knowledge, skills, and attitudes of teachers, efforts to understand how the teachers' conceptual view of diversity affects their classrooms are rare (Pintrich, Marx, & Boyle, 1993; Putnam & Borko, 2000; Sinatra, 2005; Sinatra, & Pintrich, 2003). Likewise, conceptualizations of diversity that go beyond traditional categories of race, class, and gender—disability, sexual preference, socioeconomic class—frequently remain unrecognized and under-discussed in terms of the classroom context (for an exception, see, Border & Thacker Thomas, 2014). However, since Shulman's (1986) call to clarify the importance of content knowledge,

pedagogical content knowledge, and general pedagogical knowledge in postsecondary instruction, academics have attempted to improve teaching and learning in their college courses with consideration to broader definitions and understanding of diversity. Colleges and universities in the United States, in Canada, in the UK, in Australia, and beyond have created national professional associations for teaching and learning (e.g., POD Network, STHLE, SEDA, and HERDSA) to address general pedagogical knowledge. Some have created programs with programming specific to certain disciplines (POD Network, 2014; Weisbuch, 2005). During this time, granting associations such as the National Science Foundation, the Pew Charitable Trusts, and the Atlantic Philanthropies have supported preparing future faculty projects to improve teaching and learning (American Association of Colleges and Universities, 2014; Gaff, 2002). While most of these efforts have addressed the programmatic level or student learning outcomes, they do not examine graduate students' perspectives on their own standpoints, viewpoints, and efforts to deal with common situations that arise in the classroom.

Theoretical Perspectives

To address gaps in extant literature, the authors employ two major theoretical perspectives to frame the current study of graduate student instructors' views on diversity in the classroom: the threshold concepts framework which comes out of educational work done in the U.K. (Cagney, Coughlan, & Andrews, 2012; Meyer & Land, 2006) and intersectionality which finds its home in sociology and law in the United States (Collins, 2000; Crenshaw, 1991).

Threshold Concept Framework

In the UK, Meyer and Land introduced the threshold concept framework, stating that such concepts are binding and are fundamental to one's learning and understanding within a given discipline (Meyer & Land, 2003). Threshold concepts are also, however, often barriers to learning within the context of the discipline under consideration. Land and Meyer describe the threshold concept framework as a "lens through which to focus on critical aspects of variation in student learning and the acquisition or not of

disciplinary-specific ways of thinking, reasoning and explanation" (2010, p. 420). Meyer and Land further suggest that:

> "…the approach builds on the notion that there are certain concepts, or certain learning experiences, which resemble passing through a portal, from which a new perspective opens up, allowing things formerly not perceived to come into view. This permits a new and previously inaccessible way of thinking about something. It represents a transformed way of understanding, or interpreting, or viewing something, without which the learner cannot progress, and results in a reformulation of the learners' frame of meaning" (2008, p. 9).

The framework ultimately defines the nature of threshold concepts as troublesome, transformative, integrative, and irreversible. Within this framework, newly encountered knowledge may be troublesome in that "it is ritualised, inert, conceptually difficulty, alien or tacit…unfamiliar discourse…or…because the learner remains 'defended'" (Meyer & Land, 2008, p. x). Although the framework is usually used to help to understand single disciplines, our research has led us to hypothesize that diversity, a concept that extends across disciplines and impacts all classrooms, might be viewed as a threshold concept in and of itself.

Additionally, Meyer and Land posit that the transformation that occurs during learning may be "sudden or…protracted over a considerable period time" (2008, p. 10) and that the individual undergoing the transformation may experience a "significant shift in perception" (2008, p. 9). Our work leads us to hypothesize that learning about diversity in the classroom also involves time, a significant shift in perception, and that the individual may or may not be transformed.

Also of significance to the current project, Meyer and Land address the learner's reaction to a threshold concept in their framework. They parallel the experience of learning as moving through a "liminal space" characterized by a sense of unsettledness (2008, p. 10). Timmermans (2010) worked to identify the cognitive and affective nature of the transformative process and clarified the idea of "resistance," seeing it as related to the idea of "preserving balance." Considering the notion of liminal space and the work of Timmermans, the authors investigate how graduate student instructors

experience their encounter with diversity (i.e., whether they resist such experiences) in the classroom as well as whether their experiences move them through a liminal space.

Intersectionality

The work of women of colour feminist scholars led to the development of intersectionality. This framework purports the idea that individuals' interactions in the social world are shaped by their multiplicative identities. One's lived experiences and interactions are affected not only by one's race, for example, but by the way their multiple identities (e.g., age, race, class, veteran status, citizenship status, sexual orientation, religion) intersect to create the multiplicity that defines an individual's standpoint. Intersectionality suggests that identities continually overlap and cannot be pulled apart to singularly represent an individual's experience. Doing so, in fact, marginalizes the experiences of various groups and individuals. In terms of the college and university classroom, applying intersectionality serves as a way to imbed "inclusion" into an "appreciation of difference" (Thomas & Dawson, 2010, p. 295).

Hancock suggests that intersectionality is "…*both* a normative theoretical argument and an approach to conducting empirical research that emphasizes the interaction of categories…" (2007, p. 63), which "can generate problem-driven research (2007, p. 75). To build the current study of diversity in the classroom, intersectionality is applied to the overarching population being studied —graduate student teachers from all disciplines, races, ages, genders, nationalities, and varied identities— as well as to respondents' responses about the students they teach and their pedagogical choices in the classroom. Ultimately, by drawing on intersectionality, the authors work to highlight identity categories that may be taken for granted, challenge traditional hierarchies, and uncover oppressions that may be invisible or ignored in most classrooms.

Study Design

In order to better understand the ways graduate student teachers understood, interacted with, and/or resisted diversity in their classrooms, the authors employed content analysis of open-ended survey questions. The study took place at a major research university in the Western region of the United States. At this institution,

graduate students have the opportunity to participate in college, departmental, and centralized diversity workshops. During the year that research for this study was carried out, approximately 25% of 1200 graduate student teachers took part in the centralized diversity workshops.

The primary form of recruitment included emailed fliers to department program assistants and graduate student leaders from all majors. These individuals disseminated the fliers throughout their department graduate student body. Initially, 278 graduate student teachers began the survey; however, five participants elected not to have their information included in the research analysis. Thus, the final sample for this study included 273 graduate students representing approximately 48 majors ranging from engineering, mathematics, and biochemistry, to sociology, classics, and linguistics. Females and males comprise 55 and 45% of the respondents, respectively. One respondent identified as androgyne. Respondent ages ranged from early 20s into mid/late 50s, with the majority of the respondents between 23-30 years of age.

The study includes responses to open-ended questions on a web-based survey about diversity and teaching. Questions analyzed for the present study include, but are not limited to:

- What is your definition of diversity?
- How does your definition of diversity as an instructor differ from your personal definition of diversity?
- What types of issues and topics do you view as integral to discussions of diversity?
- What strategies have you used to address diversity challenges in the classroom?
- When you teach about diversity, what aspect(s) do you find the most difficult to talk about?

The open-ended data from the survey were analyzed using content analysis (Berelson, 1952) of both manifest (Gray & Densten, 1998) and latent content (Hair, Anderson, Tatham, & Black, 1998). Content analysis involves comparing, contrasting, and categorizing a set of data made up of text (Schwandt, 2007). The first author coded the responses on two separate occasions. Several days elapsed between each analysis.

Findings

Meyer and Land (2003) argue that once one understands a threshold concept within a given discipline, a previously inaccessible way of thinking about something is gained. Applying this understanding of a threshold concept, the authors argue that diversity is a threshold concept that traverses all disciplines. Once graduate student instructors recognize and understand diversity within their disciplines and classrooms—an understanding that, for most, has been inaccessible—they are likely to question their pedagogical strategies and choices. Consequently, the graduate student instructors experience uncertainty and, perhaps, self-doubt in their teaching abilities. Such experiences suggest that when graduate student instructors consider diversity as a foundational concept across *all* disciplines, it leads to "troublesome knowledge" (Meyer and Land 2003). Troublesome knowledge is conceptually complicated and may seem counter-intuitive. To move through the liminal space that troublesome knowledge fills, one must grapple with the discomfort in order to gain a more integrated and inclusive understanding of concepts like, in this case, diversity across all teaching disciplines and classrooms.

Diversity is a complex and multi-faceted concept. It holds different meanings and significances for different fields of study. It is, however, unique in that it is present in all fields of study. When asked about their definitions of diversity, the ways they teach about diversity, and the ways they more broadly integrated diversity into their classrooms, respondents' answers fell into four groups. Each of these groups demonstrates a different level of understanding and, thus, represents a different space along the spectrum of liminality. This spectrum illustrates respondents' movement through levels of liminal space as respondents grapple with the uncomfortable movement toward making sense of diversity within their teaching and their classrooms. The spectrum includes a pre-threshold or pre-liminal position (i.e., respondents do not yet recognize or acknowledge diversity in the classroom) and moves, ultimately, to just beyond the liminal space as respondents move through and out of the liminal space (i.e., respondents have a comprehensive understanding of diversity as a foundational concept for all disciplines and they actively integrate various aspects of diversity into their classrooms considering both their own multiplicative identities and those of their students). The authors illustrate these results with quotes taken from the respondents of the study.

Pre-Threshold Position

In the first grouping, respondents demonstrate a lack of understanding of the ways diversity is present and functions within their disciplines and/or classrooms. In consideration of diversity as a threshold concept that stretches across all disciplines (and therefore is significant to all classrooms), individuals in this grouping are unable to see the threshold. When asked about their teaching of diversity in their classrooms, respondents in this grouping made statements such as, "I don't teach about diversity" or "It doesn't really come into play in the classroom." For example, respondent 161, in the field of Physics, stated, "I'm a physics teacher. Involving diversity in any way would be extremely inappropriate." When asked later in the survey how programming on campus could be improved to assist graduate student instructors with issues of diversity in their classrooms or disciplines, this same respondent stated, "None. This is a non-issue." These statements, and others like them, demonstrate insensitivity and a lack of awareness about diversity both disciplinarily and within the classroom as it applies to, among other things, pedagogical practices, the effects of diversity on teacher-student interactions, and the student body more broadly.

In addition to those comments in which respondents acknowledged that they exclude diversity from their teachings, many respondents reported that diversity, as a teaching topic, is limited or even nonexistent within their disciplines. For example, respondent 142, in the field of Chemistry, noted:

> *I do not teach diversity. There is not time to do so in my chem lab classes and I think it is such a sensitive topic that I would want some training in how to do it so that no one is offended before I ever tried to teach it.*

In this case, the respondent's discipline became an explanation for a lack of discussion of diversity in the classroom and thus prevented her from seeing the threshold and better understanding how diversity should—and indeed does—play a role across all disciplines and in all classrooms, including her own. She does remark about the prospect of training around diversity, but maintains her standpoint that diversity is not a topic worthy of time in her discipline.

The above statement demonstrates a failure to recognize the role of diversity in a discipline. However, a third group also emerged within this pre-liminal stage. Some respondents acknowledged diversity as a topic of study, but noted a clear lack of interest in incorporating it into their individual classrooms. For instance, respondent 153, in the field of Chemical and Biological Engineering, said, "I do not intend to teach about diversity in my classes, where students are supposed to learn purely scientific and/or engineering concepts." Similarly, respondent 202, in the field of Atmospheric and Oceanic Sciences, stated, "I rarely have to address diversity in a physical science laboratory setting, so I do not take it upon myself to include such discussion in my classes." The direct lack of interest in integrating diversity in their classrooms illustrates the failure by these respondents to recognize the importance of diversity as a relevant concept not only to disciplines, but also to the learning process and the audience being taught.

While comments such as those above are problematic, perhaps most troublesome and most clearly illustrating the pre-liminal state of the spectrum is the acknowledgement by several respondents that they do not have a definition of diversity as an instructor. Respondent 211, in the field of Geology, stated, "I do not teach about diversity, [s]o therefore I have no definition of diversity as an instructor." Respondent 173, in Molecular, Cell, and Developmental Biology, paralleled this statement, saying, "I don't discuss diversity in my classroom, so my definition as an instructor is not something I have thought about." These statements indicate that not only do these instructors fail to teach about the diversity in their fields, but that their lack of understanding of diversity expands across their classrooms as well. Without a definition of diversity, graduate student instructors cannot effectively teach all students. Thus, these individuals are likely missing opportunities to engage with their students about diversity, may not be meeting needs of diverse student populations, and are likely unable to adequately engage their students in critical thought about diversity within their disciplines. Graduate student instructors who fall in this grouping are far from the liminal space. They have not and are not engaged in the discomfort of troublesome knowledge. Instead, it is easier to maintain a one-dimensional understanding of diversity, justifying such an understanding in the ways described above.

Recognizing the Threshold

Getting closer to approaching the threshold and, therefore, the liminal space, the second grouping of individuals acknowledged diversity for its difficulty, but discussions were vague, general, and, at times, unintentional. Individuals in this grouping were unclear of the parameters surrounding diversity. Thus, individuals at this stage were unable to effectively understand diversity as a foundational classroom concept or tool and failed to recognize diversity as significant within their larger discipline. Respondent 242, in the field of Astrophysics and Planetary Science, said:

> *I don't teach about diversity, other than to briefly present the historical context of some astronomical discoveries made by women in a time when their work was not recognized.*

This respondent suggests that she only briefly skims over one particular type of diversity and that it is not significant within her other aspects of teaching. Likewise, she is not teaching for diversity, but rather about it in the context of other individuals relevant to the field. Similarly, respondent 249, in the field of Music, noted, "I generally am not in a situation when I speak on diversity. The closest I come is when I address being a woman in a predominantly male career." Like the first example, respondent 249 identifies a single instance of diversity within her classroom (and thus her discipline). Neither graduate student instructor, however, recognizes the long-term implications of diversity for either their classrooms or disciplines. This indicates that while they do recognize diversity as present in their fields of study, it is not foundational or important to integrate regularly into their classrooms. Thus, individuals in this grouping may be on the edge of the threshold (and thus of entering liminality), but have yet to enter.

Some individuals on the edge of entering the threshold, and thereby the liminal space, spoke of diversity via unintentional experiences they had. These respondents recognized diversity in their classrooms and disciplines. However, discussions about diversity were not planned and accounting for diversity within one's classroom or via one's discipline did not hold deep significance. For instance, respondent 249, identified above, stated:

> *I am not in a position where I would need to avoid such topics [as diversity], for they are not as applicable in my teaching purposes. However, having been asked the question, it might be interesting to cover this topic with more intention.*

The interest by respondent 249 to further consider diversity from multiple perspectives as the concept relates to her classroom and teaching indicates an initial point from which to launch herself into the liminal space. This statement suggests that prior to her participation in this research her inclusion of diversity in the classroom has been unintentional and unplanned. Notably, individuals in this grouping demonstrate an interest or desire to consider diversity within their classrooms and disciplines, but there has not yet been a push for these individual to enter the discomfort of liminality. This desire to consider diversity is best seen in the final examples for this grouping.

Unlike those individuals above who have, until the time of this research, only minimally considered diversity in the classroom or their fields of study or who waited for issues of diversity to present themselves in the classroom, some individuals in this grouping were on the edge of entering the threshold because of their confusion about *how* to incorporate diversity into their classrooms. Many of these individuals believe diversity is important both within their fields of study and their classrooms, but do not have a complete understanding of how to effectively integrate diversity as a concept or may not overtly recognize its relationship to their discipline, but they would like to improve this understanding. These individuals indicate a longer-term consideration and interest in grappling with the challenge that comes with liminal space. For example, respondent 200, in the field of Mathematics, provides an example: "I teach math and I'd like to address the difficulties that particular groups have in the math world, but I don't know how." Similarly, respondent 168, a male in the field of Atmospheric and Oceanic Sciences, spoke about the challenges he faces with integrating diversity:

> *I would actually say the most difficult thing is finding times when discussing diversity is useful given the material. I've only taught hard-science concepts, which does not really lend itself to such conversations.*

In cases such as these, diversity acts as an example of a pedagogical problem and is not an issue of comprehension or understanding. These individuals demonstrate clear thought about diversity and the ways it might and can relate to their class topics and disciplines, but they are challenged by the troublesome nature of diversity. Instead of

accepting the challenge of grappling with discomfort and gaining a better understanding of diversity, these graduate student instructors shy away. It might be argued, though, that this final subcategory of individuals is more prepared to and interested in entering the threshold. But, they need some type of "push."

Passing through the Threshold

Individuals in this third grouping have entered the threshold and are experiencing liminality. They hold a fractured or fragmented understanding of diversity as they work to gain a more complete understanding of the troublesome knowledge that accompanies a threshold concept. Individuals may understand or integrate diversity through only a few categories; they do not see the ways components interact to affect overarching experiences. Consequently, individuals in this stage on the spectrum may recognize diversity within teaching material, or within their students, or even within themselves, but they fail to see how each of these things affects the others and creates a cumulative teaching and learning experience. Likewise, individuals in this grouping, may recognize only certain types of diversity within their students, their course material, or themselves. For example, respondent 41, in Computer Sciences, stated:

> *I don't feel I have taught about diversity. Computer science is an objective discipline (a program either does what it is supposed to or it doesn't), and I can't think of a way that would change if one came from different backgrounds. I do try to use examples from all of my students' intended majors and interests, and I try to provide interesting material for the advanced students as well as those who are struggling.*

In this example, the respondent recognizes and integrates diversity through student needs and pedagogical decisions. They do not, however, understand diversity as a foundational element in their discipline—computer science. As another example, respondent 186, a male in the field of Astrophysical and Planetary Sciences, recognized diversity solely in terms of student needs, but not in terms of diversity's disciplinary relationship, "Many of these issues seem tangential to a physics classroom, where the diversity of the students matters but the curriculum does not address topics of diversity at all." Thus, as in the first example, respondent 186 recognizes diversity through the lens of a limited aspect of the overall experience.

While the above aspects of this grouping are in the liminal space based on their understanding of student needs and their active integration of diversity on a consistent basis (even if in limited or fragmented form), other respondents found themselves experiencing the discomfort of the liminal space because of their narrow inclusion of diversity in terms of topics that they teach. Respondent 243, in Astrophysical and Planetary Science, for example, only discussed diversity in terms of visible examples of diversity. "In the sciences, I am far more focused on gender and racial diversity than other forms." This type of understanding of diversity illustrates a basic understanding, but is quite limiting overall. Additionally, like others in this grouping, respondent 243 fails to recognize the complexity of diversity and the ways student diversity, diversity of course topic, disciplinary diversity, and instructor diversity interact to create one's teaching and learning experience. Graduate student instructors at this point in the spectrum of liminality are "stuck" in this uncomfortable position. They're actively grappling with diversity within their disciplines and classes. Therefore, though the individuals in this grouping have entered the threshold, they are challenged by the troublesome nature of diversity.

Exiting the Liminal Space

In the final grouping on the spectrum of liminality are those individuals who are exiting the liminal space. This group understands diversity as a fundamental concept across disciplines and as important for integration into every classroom. Diversity is not made up of singular components, but is viewed as the interaction of these singular components in shaping one's overall experience. Respondent 217, in Journalism and Mass Communication, spoke about this intersectionality in diversity, saying:

I think the definitions have merged, with a broader definition evolving over time, beyond the traditional race/ethnicity definition -- the VISUAL definition. Diversity encompasses much more than what we see.

Respondent 217 recognizes the ways definitions of merged and understandings have been shaped as more than just visual representations of diversity. This demonstrates a more comprehensive understanding of diversity. Diversity, as a broad concept, not as a narrow and fragmented concept, must be considered.

Respondent 75, in Ecology and Evolutionary Biology, took their definition of diversity and applied it to their own discipline—a field in which diversity is often not easily recognized. "My person[al] definition of diversity goes beyond humans—as I am an ecologist thinking in terms of species and genetic diversity in the world rather than social diversity." This respondent not only identifies diversity as more than just the visual categories of diversity, but also as it exists in non-human contexts. Respondent 75 demonstrates the ways in which diversity can be, and is, present and important across disciplines—even those where it, arguably, is not present or important.

Finally, respondent 212, in the Geological Sciences, provided a strong example of grasping a threshold concept and overcoming troublesome knowledge:

> *Part of the problem is that the dialogue focuses on narrow identities instead of the intricacies of human beings and how we interact. The question should never be "how can we get more non-white students to participate?" Rather it should be "how can we get all of our students to participate under as equal circumstances as possible." One targets, the other encompasses. See the difference?*

Respondent 212 demonstrates a more complete understanding of diversity through the ability to rephrase a narrow and limited question (demonstrating a simplistic and fragmented understanding of diversity), into a more broad and inclusive question (demonstrating a complex understanding of diversity).

Discussion

Threshold concepts provide a new way of understanding one's discipline. As graduate student instructors undergo their academic training, they experience what is known as 'liminal space' in which they grapple with understanding threshold concepts. In this article, the authors argue that 'diversity' is a conceptually difficult and complicated concept for all disciplines. Further, the authors suggest that by considering the collective experiences of 273 graduate student instructors across a wide variety of disciplines, movement into and out of 'liminal space' becomes apparent. Thus, there is a spectrum of liminality over which graduate student instructors find themselves at different points as they grapple with the 'troublesome knowledge' that accompanies a threshold concept, such as 'diversity.'

To come to an intersectional and, thereby, more complete understanding of diversity regardless of discipline or classroom signifies the crossing of a portal or threshold (Meyer & Land 2003). The graduate student instructors in this research stuck in the early stages of the threshold spectrum were seemingly content with their simplistic, or at times, non-existent, understanding and integration of diversity within both their disciplines and classrooms. These individuals fail to recognize the value of such a subjective concept across disciplines. However, accessing a deeper understanding of diversity affects both one's personal understanding of the concept, and also, one's pedagogical choices. Therefore, in the context of teaching, crossing the threshold and exiting the liminal space has implications for both the instructor and their students. In an ever-diversifying society, universities need to discuss, teach about, and work with departments, to help move graduate teachers more smoothly through the liminal space that serves as the threshold for diversity.

As college and university settings continue to work towards diversification, the need to focus on the significance of diversity as a cross-disciplinary concept is great. Campus diversity discussions typically revolve around sex, gender, race, ethnicity, sexual orientation, ability, social class, religion, and religion. Missing, however, are important student statuses such as: learning style, enrollment status as part time or full time, enrollment straight from high school or non-traditional status, veteran status, commuting or local status, international status. And, as suggested in this research, diversity from an intersectional perspective in which one's statuses are not understood as independent of one another, but rather as they intertwine to create one's lived experiences, is rarely considered, let alone discussed. If graduate student instructors fail to cross through the threshold in their understanding of such a concept as diversity, whereby they come to recognize diversity through an intersectional perspective, students are ultimately at a disservice. Failure to consider diversity through the lens of intersectionality allows for the production and reproduction of inequality. Accordingly, this work indicates the need for further focus on how graduate student instructors traverse the liminal space of this type of threshold concept. Additionally, it calls for an examination of the ways in which universities and graduate student support programs can assist graduate student teachers in moving across the spectrum of liminality so that they can expand their understanding of diversity in disciplinary content, pedagogical skills, and student demographics in order to teach contemporary collegiate

undergraduates most effectively. Ultimately, such focuses ultimately meet not only college and university goals for inclusion of all student populations on their campuses, but also account for student needs and experiences, while simultaneously preparing graduate student instructors for future careers in academe as professors, administrators, and academic officials.

References

American Association of Colleges and Universities (2011). The drama of diversity and democracy. Retrieved from https://www.aacu.org/sites/default/files/files/publications/DramaofDiversity_2011.pdf

Anthias, F. (2011). Intersections and Translocations: New paradigms for thinking about cultural diversity and social identities. *European Educational Research Journal, 10*(2), 204-217.

Austin, A. E., Campa, H., Pfund, C., Gillian-Daniel, D. L., Mathieu, R., & Stoddart, J. (2009). Preparing STEM doctoral students for future faculty careers. *New Directions for Teaching and Learning,* 117, 83-95.

Bender, B., & Devanas, M. (2012). Embracing threshold competencies and concepts as an educational model for the professional development of PhD students. Poster presented at the *Fourth Biennial Conference on Threshold Concepts: From Personal Practice to Communities of Practice*, 28-29 June 2012. Trinity College: Dublin.

Berelson. (1952). *Content analysis in communication research.* New York: The Free Press.

Border, L., & Chism, N. (1992). *Teaching for diversity, New Directions in Teaching and Learning*. San Francisco, CA: Jossey-Bass.

Border, L. & Thacker Thomas, D. (2014, July). *Traversing the liminal space: An Analysis of graduate student responses to diversity in the classroom context*. Paper presented at the 5th Biennial Threshold Concepts International Conference, Durham, England.

Cagney, A. G., Coughlan, P., & Andrews, L. (2012, June). *Doctoral education at the 'eye' of the perfect storm*. Pech Kucha presented at the 4th Biennial Threshold Concepts Conference and 6th NAIRTL Annual Conference: Threshold Concepts in Doctoral Supervision, Dublin, Ireland.

Collins, P. (2000). *Black feminist Thought: Knowledge, consciousness, and the politics of empowerment*. New York: Routledge.

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. S*tanford Law Review, 43*(6), 1241-1299.

Freeman, G., Faulkner, R., Izzard, M., & Charles, J. (2012). University School of Education promoting diversity awareness and initiatives. *The Professional Educator, 36*(1), 1–7.

Gaff, J. (2002). The disconnect: Graduate education and faculty Work: A review of recent research, *Liberal Education, "Changing Course: Preparing Faculty for the future. 88*(3), 6-13.

Gordon, E., Ralston Brownell, C., & Brittell, J, K. (1972). *Harlem Prep* (Report No. UD 016 142 New York City, New York: National Center for Educational Communication. (ERIC Document Reproduction Service No. ED 099458)

Gray, J. & Densten, I. (1998). Integrating quantitative and qualitative analysis using latent and manifest variables. *Quality and Quantity,* 32(4), 419–431.

Hair, H. F., Anderson, R.E., Tatham, R. I., & Black, W.C. (1998). *Multivariate data analysis* (5th ed). Englewood Cliffs, NJ: Prentice Hall.

Hancock, A. (2007). When multiplication doesn't equal quick addition: Examining intersectionality as a research paradigm. *Perspectives on Politics, 5*(1), 63-79.

Juárez, B., Smith, D., & Hayes, C. (2008). Justice means just us white people: The diversity paradox in teacher education. *Democracy & Education, 17*(3), 20–25.

Kristeva, J. (2004). *Psychoanalysis and modernity*. Albany, New York: University of New York Press.

Land, R., Meyers, J. H. F., & Smith, J. (2008). *Threshold concepts within the disciplines* (Vol. 16). Rotterdam: Sense Publishers. ix–x.

Land, R., & Meyer, J. H. F. (2010). Threshold concepts and troublesome: Dynamics of Assessment. In, R. Land, J. H. F. Meyer, & C. Baillie (Eds.), *Threshold Concepts and Transformational Learning (*pp. 61-79). Rotterdam: Sense Publishers.

Larkin, D. (2012). Using the conceptual change model of learning as an analytic tool in researching teacher preparation for student diversity. *Teachers College Record, 114*(8), 1–35.

Meyer, J. H. F., & Land, R. (2003). Threshold concepts and troublesome knowledge 1—Linkages to ways of thinking and practising. In C. Rust (Ed.), *Improving student learning—Ten years on (pp.* 412-424). Oxford: OCSLD.

Meyer, J. and <u>Land</u>, R. (2006). *Threshold concepts and troublesome knowledge: Issues of liminality*,
In: <u>Meyer</u>, J. and <u>Land</u>, R. (eds.), Overcoming barriers to student understanding: Threshold concepts
and troublesome knowledge, London and New York: Routledge, 19–32.

Morrell, J. (2010). Teacher preparation and diversity: When American preservice teachers aren't white
and middle class. *International Journal of Multicultural Education*, *12*(1), 1–17.

Motoko, A. (2011). Identifying program characteristics for preparing pre-service teachers for diversity.
Teachers College Record, *113*(3), 658–697.

Nieto, S., Rivera, M., & Quinones, S. (2012). Connecting the interpersonal, instructional, and institutional
contexts. *Association of Mexican-American Educators, 6*(3), 30-36.

Parsad, B., Lewis, L., & Farris, E. (2001). Teacher preparation and professional development: 2000
(NCES 2001-088). Washington, DC: National Center for Education Statistics. Retrieved March 22,
2007, from http://nces.ed.gov/pubs2001/2001088.pdf

Pintrich, P. R., Marx, R. W., & Boyle, R. A. (1993). Beyond cold conceptual change: The role of
motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of
Educational Research, 63*(2), 167–199.

POD Network. (2014). http://podnetwork.org

Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about
research on teacher learning? *Educational Researcher, 29*(1), 4–15.

Renn, K. A. (2012). Complex ecologies of identity, diversity, teaching, and learning. In J. E. Groccia, & L.
Cruz (Eds.) *To Improve the Academy, Vol.31 (*pp. 261–276). San Francisco, CA: Jossey-Bass.

Schwandt, T. (2007). *The sage dictionary of qualitative inquiry*. Los Angeles, CA: Sage Publications.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*,
15(4), 4–14.

Sinatra, G. M. (2005). The "warming trend" in conceptual change research: The legacy of Paul R.
Pintrich. *Educational Psychologist, 40*(2), 107–115.

Sinatra, G. M., & Pintrich, P. R. (2003). *Intentional conceptual change*. Mahwah, NJ: Erlbaum.

Timmermans, J. (2010). Changing our minds: The developmental potential of threshold concepts. In J.
H. F. Meyer, R. Land., & C. Baillie (Eds.), *Threshold concepts and transformational learning* (pp. 3-

19). Rotterdam: Sense Publishers.

Thomas, K., Tran, N., & Dawson, B. (2010). An inclusive strategy of Teaching diversity. *Advances in Developing Human Resources. 12*(3), 295–311.

Wisker, G. and Claesson, S. (2013) The impact of cross-disciplinary culture on student–supervisor perceptions, *International Journal of Doctoral Studies*, *8*, 22–37.

Weisbuch, R. (2005). The responsive Ph.D.: Innovations in U.S. doctoral education. The Woodrow Wilson Foundation. http://0eric.ed.gov.opac.msmc.edu/?q=source%3A%22Woodrow+Wilson+National+Fellowship+Foundation%22&id=ED536859