

Instructor Conceptions of Diversity in Higher Education

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Subject and Problem

Universities and colleges have increasingly made the commitment for diversity, yet the unequal representation of minoritized populations remains a concern in higher education. Curriculum and instruction in biology education have the power to reinforce or reduce racial biases (Donovan 2019). Instructors further play integral roles in creating an inclusive culture and environment, as they directly interact with students. Research has documented the pervasive problem of implicit biases and microaggressions in the classroom (Moss-Racusin 2012; Suárez-Orozco 2015). These biases affect instructors' perceptions and expectations of student behavior, and minoritized individuals are placed in disadvantaged positions that limit their access to opportunities and overall impact their academic success (Carter 2017). Instructors' implicit theories or mindsets on intelligence can also substantially affect student achievement and motivation (Canning 2019). While the reasons behind the observed equity gaps in academic achievements are complex and multifaceted, a growing body of literature indicates that instructor-student interaction is a crucial factor.

Diversity has been described as a vague and neutral term that encompasses a myriad of dimensions of identity (Tienda 2013). Though many universities and colleges have come to value diversity in certain aspects, mainly through the commitment to racial diversification on their campuses (Tienda 2013), what remains an untapped area of investigation is how instructors understand what diversity means (Maruyama 2000). To address this gap in the literature, this study examines how instructors conceptualize diversity. Specifically, our research questions are: How do instructors conceptualize diversity in higher education, and how do these conceptions influence curriculum and instruction?

This study uses phenomenography as the overall theoretical perspective that guides the approach to the research questions and interpretation of the results. Phenomenography investigates the qualitatively different ways that individuals experience, understand, or think about a phenomenon (Marton 1981), i.e. diversity in this case. The different awareness is organized into an outcome space, which represents a set of descriptions that are logically related to one another and reveal the distinctive ways in which individuals conceptualize the phenomenon (Marton 1997). Variation theory further formalizes this outcome space into specific features (called "aspects") that individuals attend to when describing the phenomenon, as well as the differences (called "variations") within each aspect that articulate how different individuals conceptualize the same phenomenon (Marton 2004). Phenomenography has been used to explore many aspects of higher education, such as instructor conceptions of teaching and learning (Åkerlind 2005) and is especially suited for investigating and ultimately describing different conceptions of a phenomenon (Marton 2005).

Design and Procedure

This study was conducted across multiple two-year and four-year minority-serving institutions in Southern California. While our study participants may not be representative of instructors in higher education at large, they interact with diverse study populations and thus represent an information-rich sample suitable for the generation of a phenomenographic outcome space based on a broad range of experiences. The sample included 32 instructors with 10 in the

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biological sciences, nine in other natural sciences, eight in the humanities, three in the social sciences, and two in engineering. These instructors teach undergraduate courses with a wide range of subject matter and class sizes. While the study sample was not exclusively in the biological sciences, the inclusion of broader disciplinary perspectives ensures a complete or at least potentially saturated outcome space. As diversity as a phenomenon spans disciplinary boundaries, our work remains applicable to biology education.

Individual participants were interviewed using a semi-structured protocol designed to explore their conceptions diversity in relation to teaching and learning. Interviews were transcribed verbatim and de-identified. Data analysis took an inductive approach following grounded-theory methodologies (Corbin 1990). In open coding, qualitative codes were constructed to capture individual descriptions diversity. In axial coding, five aspects were identified from our data: student features, legitimized membership, intelligence mindset, faculty role, and learning environment. In selective coding, variations among experiences were organized into an outcome space with three distinct conceptions of diversity. Data were independently analyzed by two researchers to ensure reliability, and all disagreements were resolved through dialogic discussions with the full team of four researchers to reach consensus. The team consisted of diverse perspectives including different nationalities and varying combinations of race, ethnicity, and gender. Throughout the iterative coding process, preliminary aspects, variations, and outcome spaces were presented to various communities of discipline-based education researchers, education researchers, and science researchers, thus ensuring communicative and pragmatic validity (Åkerlind 2005).

Analyses and Findings

From our data, we identified five aspects through which instructors experience diversity as a phenomenon: student features, legitimized membership, intelligence mindset, faculty role, and learning environment. Variations among these experiences were organized into an outcome space with three distinct conceptions of diversity, which we termed essentialist, functionalist, and existentialist. In Conception I (essentialist), instructors attend to demographic features of students and view students with a fixed mindset of intelligence and as outsiders to higher education. This is aligned with equal treatments of all students and a curriculum approach that considers diversity as an impediment to learning. In Conception II (functionalist), instructors attend to different student viewpoints and consider students with a deficit mindset and as guests who transiently pass through higher education institutions. This is aligned with accommodations for student needs and a curriculum approach that supports struggling students. Conception III (existentialist) includes and expands on Conception II (functionalist) by attending to how lived experiences intersect with demographic features and viewpoints to shape the kinds of learners that individual students become in the classroom. Implicit power dynamics are considered, and students are viewed as rightfully present in higher education regardless of their backgrounds. Specific curriculum approaches are intentionally implemented to foster productive conversations around different student characteristics and to center social justice issues, and diversity enriches learning in the classroom. Below, we highlight two of the five aspects to illustrate the differences among these three conceptions.

Students features

This aspect represents the features of student diversity that individual instructors recognize in their classrooms. In Conception I, instructors primarily attend to the demographic characteristics of students that are typically collected and reported by the institution, e.g. race,

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ethnicity, and gender. The diversity acknowledged here is simplified to assumptions based on demographic characteristics. For example: “I think about diversity in terms of racially and ethnically diverse. I think of gender diversity.” Because these characteristics are often implied to be fixed traits, we termed Conception I **essentialist**.

In Conception II, instructors view diversity in terms of different student viewpoints and abilities. For example: “There are students who take really, very verbally, conservative views in my class, and students who take very leftist views in my class. So, I actually do see this pretty broad range of perspectives on criminal justice issues.” In addition to the example above, other instructors recognize student characteristics such as having a certain mathematical ability or a specific level of academic preparedness or motivation. Whereas Conception I views students as being a certain fixed way, Conception II attends to the characteristics that students can have. Therefore, we termed this latter conception **functionalist**.

In Conception III, instructors primarily attend to how students’ lived experiences intersect with their demographic features and viewpoints to shape the learners that students are in the classroom. For example: “We have a lot of students that have backgrounds where the parents require the students to be involved in a lot of family things, like taking care of younger siblings, cleaning, working in the house or apartment, or stuff like this. Which takes a lot of time away from study. Or I have students where the parents say, ‘Well if you went to school all day, why do you have to study at home? You have studied.’ So it’s very hard to address all these different limits from an academic point of view but also from a cultural point of view.” Instructors with this conception also acknowledge the features that are salient in the previous conceptions; however, rather than students being a certain kind of person or having a certain attribute, their individual lived experiences are viewed as having an impact on their actions and learning in the classroom. Therefore, we termed Conception III **existentialist**.

Legitimized membership

This aspect embodies how instructors think about and position students within higher education. In Conception I, instructors highlight how students are outsiders or newcomers into the world of higher education. When students’ cultural assets and lived experiences do not align with the norms of higher education, they must shoulder the responsibility of learning and navigating this new space themselves. For example: “I would just give a midterm, and then I would say, ‘Oh my God. We did all these problems and lectures. How come they don’t know how to do this?’ Because the first expectations when you teach is everything you say, students should know how to do. And I tell them when I teach, ‘Everything I say, I assume you know how to do. If you don’t, you’re not doing the minimum.’”

In Conception II, rather than putting the responsibility on students, instructors recognize that they play some role in welcoming students into higher education and granting them access to resources to help them succeed. This conception reflects that of a guest-host relationship because an implicit power dynamic still exists. For example: “Very often they might have kind of reading difficulties, but I feel that it’s a great thing trying to prepare them for the inevitable load of reading that they will be confronted with during their, kind of like, four or ten years in college. Giving them some tools that might help them at the start of that journey is great.”

Instructors in Conception III, recognize an importance in ensuring that students have a rightful presence in higher education (Calabrese Barton 2020). These instructors believe that all students and their cultural knowledge and experiences are valuable and contribute to the classroom, thus restructuring the relationship between instructor and students in a way that situates knowledge and authority among both parties. For example: “I felt it was important to

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invite the students into the exploration process and to make them feel like they could be experts about some piece of it. There's so much about the discourse of academic English and the discourse of higher ed[ucation] that is still couched in a really WASP-y White way. And if we presume that's the only knowledge to value and the only way people will display or perform knowledge, then we're cutting people out automatically who don't want to present that way or don't want to speak that way."

Contribution

This study establishes three conceptions of diversity that higher education instructors may hold and how these conceptions can inform their approaches to curriculum and instruction. Our results provide valuable insights into teaching and learning in relation to diversity, equity, and inclusion. For example, a participant instructor (Engineering) with Conception III indicated specific curriculum approaches that intentionally center social justice issues: "I feel like it's my duty, that I have to do it. And so, that's why I did that assignment on diverse products and using, the very first female crash test dummy was just designed. Because we've always used the standard male crash test dummy, women are more likely to be injured and die in car accidents, because the cars have been designed to protect a standard male crash test dummy. And so, I showed them this picture, 'Here's the first female crash test dummy. Why is this important? Why do we need to create different crash test dummies?'" Another participant instructor (Astronomy) with Conception III shifted all forms of diversity into assets from which others can learn and acknowledged of the diversity of students and the utilization of these characteristics as resources for learning. While these examples are from instructors in other disciplines/, the described approach is analogous to the Humane Genetics curriculum that centers race as a topic of complex genetic and social interactions and fosters student dialogs around different human characteristics, which has been shown to reduce racial prejudices (Donovan 2019). We argue that diversity is a phenomenon that transcends disciplinary boundaries, and therefore, as biologists, we can learn from colleagues from other science, technology, engineering, and mathematics disciplines to enhance our work in teaching and learning.

General interest

Overall, our results indicate that individual instructors have varying understanding for what diversity means and why it is important in higher education, and some conceptions of diversity (i.e. essentialist and functionalist) do not necessarily suggest an inclusive culture. To improve and diversify higher education, it is imperative that instructors recognize and appreciate the diversity of students beyond traditional demographic characteristics to reveal the lived experiences that impact the learners they are today. Professional development that introduces these ideas, such as the social justice education framework (Adams 2009), is critical to creating an inclusive culture where students feel a sense of belonging and empowerment. Conclusions from this study provide an evidence base to inform professional development programs to bring certain features of diversity into the focal awareness of instructors, with the ultimate goals of creating more inclusive learning environments and campus culture.

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