

Demystifying and Defending Diversity, Equity, and Inclusion

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Abstract. The constructs of diversity, equity, and inclusion are complex and the DEI movement evokes a variety of strikingly different feelings and responses. One of the challenges to diversity, equity, and inclusion initiatives is that people often have very different views on these endeavors. In this short paper, I offer a concise, global perspective on the conceptualization of diversity, equity, and inclusion that might provide a method for communicating across differences. Though the DEI movement, and associated movements such as the DEI and belongingness movement and the DEI and access movements are important, the length of this paper does not allow for a discussion of these topics. I conclude this paper with a defense of diversity, equity, and inclusion and a discussion of implications for the physics community.

1 Introduction

In this paper, I aim to provide a global perspective to conceptualizing diversity, equity, and inclusion individually. One of the challenges to doing so is that the three individual ideas of diversity, equity, and inclusion and the DEI movement are sometimes referred to interchangeably and at other times they have very different meanings [1]. This is further complicated by the fact that the meanings of these words are different for different people - even within local contexts. Indeed, a global perspective must acknowledge that the conceptualization of these ideas are different from one region to the next. For example, the discourse around and approaches to racial and ethnic diversity in France is in sharp contrast to that of the United States [2]. Further, in both countries the discourse around the idea of diversity and approaches to diversity has changed in response to political and social factors within those countries [3, 4]. As another example, while the conceptualization of inclusion in China is similar to that of Western societies, there are also unique dimensions to the Chinese conceptualizations of inclusion [5]. Given these challenges, my humble attempt at demystifying diversity, equity, and inclusion includes a general definition of each of these constructs and suggestions for making meaning of these constructs when employed in different contexts. Finally, I conclude with a discussion of why this topic should be of interest to all physicists. I reserve this motivation for the end of the paper rather than including it in the beginning because it is imperative that I first articulate what I am defending and for what I advocate.

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2 Diversity

There are many definitions of diversity. For the sake of clarity, when using the term diversity I am referring to the state of being diverse. When I use the term diverse, I mean nonuniform or made of different parts. So, a diverse organization may be an organization in which the people are nonuniform or different. Worded differently, diversity "constitutes members of a community who have one or more markers of difference [6]." That raises the question of how an organization could actually be classified as diverse. All people are different. So, who or what determines which differences matter when it comes to diversity? In other words, what markers of difference make a difference? I argue that this is socially constructed and based on two things: sociodemographic identities and "othering".

2.1 Sociodemographic Identity and Othering

Most people have experienced the phenomenon of being othered. Think of a time when you were either treated differently than other people within a community or you felt differently in that community. Maybe you simply walked into a room and noticed there was something about you that made you different than all others in the room. Othering is connected to social dynamics. It is experienced by individuals or groups of people and it is often based on interactions with people. Now let's expand that idea to a situation in which more than one person is being othered. In fact, multiple people who share a sociodemographic identity are othered. There are many sociodemographic categories that societies use to describe people that have been constructed culturally, historically, and politically. Within these sociodemographic categories of identity - ways of understanding and identifying people - there are identities that are considered the norm or dominant and those that are minoritized or marginalized. These identities are markers of difference.

These sociodemographic markers of difference can change over time and may be different from one region to another. For example, the social construct of race has changed over time within the United States [7]. Further, the social construction of race in Japan is intertwined with multiple sociodemographic identities such as ethnicity, citizenship, language, and culture [8]. While there are many ways to think about sociodemographic markers of difference there are three ways that I often categorize these identities: *sociopolitical*, *socio-historical*, and *sociocultural*. I acknowledge that some markers of difference fall into multiple categories. Moreover, sometimes the three terms are used interchangeably or all three are lumped into one category of sociocultural, which encompasses sociopolitical and sociohistorical identity. Thus, the discussion below is more of a guide to identify and understand the markers of difference that *make a difference* in various regions or societies.

Sociocultural identity is connected to how people see themselves within a particular culture. This may be related to aspects of culture such as foods eaten or ways of cooking, traditions, religion, or language spoken. However, markers of sociocultural identity vary by region and can change over time. For example, despite sharing a language and culture with Chinese people, Hong Kong people may identify as culturally Hong Kong Chinese, indicating a distinct culture [9]. Sociocultural markers of difference may be linked to sociopolitical markers of difference. Sociopolitical identity is often connected to similar political views or a shared political struggle. It could be in relation to political party, but it also may be in relation to ideas of nationalism or shared views on national issues or intranational or international relations. Using the same example of Hong Kong Chinese people, they often share a sociopolitical identity as illustrated through protests surrounding anti-subversion legislation [9]. Finally, sociohistorical markers of difference connect social identity to history, often

historical artifacts. Sociohistorical identity is referenced often in literature on education. Indeed, sociohistorical theory - and also sociocultural theory - is based on the work of Lev Vygotsky [10]. While some people used the two terms and theories interchangeably, there are notable differences in that sociohistorical theory in education really focuses on the impact of historical social contexts - things that happened prior to our birth and that impact our sense of cultural identity and our learning [11].

With these three sociodemographic markers in mind, it is easy to identify some of the markers of difference within the United States. Race can be considered a sociohistorical, sociopolitical, and sociocultural marker of difference in the United States. It continues to be a major theme in political discourse and historically there have been laws within the United States denying people rights based on race. This is a *marker of difference that makes a difference* within the United States because there has historically been a race that has been dominant within the United States and other races that have been minoritized and/or marginalized [7, 12] even as the social construction of race in the United States has evolved in connection with politics. Gender is a sociopolitical and sociohistorical marker of difference within the United States. Historically, there have been laws denying people rights based on gender and it continues to be an important part of the political discourse. Recent discussions on Women's Rights, research on the experiences of women in physics and astronomy [13] and calls to move away from a binary view of gender in research [14] indicate that there is a sociocultural aspect of gender as well. Indeed, the construct of gender has been defined differently in various cultures and subcultures [15]. Within the United States the dominant gender identity has been men/male and women and nonbinary people have been othered.

2.2 Strategies for Improving Diversity

As with most topics diversity-related if you discuss the same topic with two different people, you will likely get two different responses. The same holds true for identifying and implementing successful strategies for improving diversity. While a thorough examination of all strategies for improving diversity is not possible in this short paper, I present here thoughts on two - at times - opposing strategies for increasing diversity within an organization: identity blind and identity conscious selection. Research demonstrates that both of these strategies are successful at improving diversity [16, 17]. In identity conscious selection one or more sociodemographic markers of difference are considered in the selection process. This can be via a rubric that considers the sociodemographic identity(ies) as a plus factor or it may be via weighting applications from marginalized or multiply marginalized people differently than applications from people from dominant groups. For example, race-conscious admissions was previously used in college admissions in the United States. However, a recent 2023 Supreme Court decision (20-1199 Students for Fair Admissions, Inc. v. President and Fellows of Harvard College) found that race conscious admissions was unlawful. Identity blind admissions - on the other hand - uses merit criteria in the selection process, but focuses on recruitment of people from minoritized or marginalized identity groups to increase the number of applications from people from othered identity groups. Proponents and advocates of identity blind selection argue that the focus should be on recruitment. They assert that people from marginalized groups will be competitive against people from dominant groups, but often lack the social capital or incentive necessary to apply. Thus, the focus for identity blind selection is on creating large diverse applicant pools. Proponents and advocates of identity conscious selection indicate that historical and persistent injustices result in inequitable opportunities for selection and bias. Thus, they advocate for consciously considering and favoring applications from marginalized or minoritized people. Within the United States there is an ongoing

debate regarding this issue and the recent Supreme Court decision has complicated and - in some situations - stifled efforts to increase diversity.

2.3 Making the Case for Diversity

It is extremely important than an organization interested in improving diversity, articulate why they have set that goal. However, some caution is in order as research indicates that the reason given for setting diversity initiatives within organizations can have either a positive or a negative effect. For example, in a study of Fortune 500 companies, Georgeac and Rattan (2023) found that using the business case undermined sense of belonging for LGBTQ+ individuals, women in science, technology, engineering and math (STEM) and African Americans decreasing their interest in an organization [22]. So, just what is the business case?

In short, the business case for diversity asserts that diversity is good for business. This case is supported by several research studies. For example, one study found that diversity within small groups led to aspects of creativity (as determined by higher quality, more effective, and more feasible ideas) [18]. A quantitative study of data from the 1996 to 1997 National Organizations Survey - a survey of work establishments in the United States found that racial diversity was associated with increased sales revenue, more customers, greater market share, and greater relative profits and that gender diversity was associated with increased sales revenue, more customers, and greater profits [19].

The equality case is similar to the ideas around identity conscious selection discussed above. Equality arguments initially centered on the fact that discriminating against someone based on demographic identity was unlawful and this led to affirmative action and equal employment opportunity initiatives, which were largely successful in increasing diversity within organizations [20]. As mentioned above, there have been recent challenges to this framing and affirmative action policies. Thus, many organizations have moved toward using the business case rather than the equality case. However, some - like van Dijk, van Engen, and Pauwe, argue instead for a virtues-ethics based case for diversity [20, 21]. They assert that organizations should identify the kind of virtues or qualities an ideal candidate would demonstrate in the workplace and then frame recruitment and selection based on those qualities. They use as one example, compassion as a relevant virtue in the field of nursing. While there are various strategies for increasing diversity in the recruitment and selection process, another strategy is addressing inclusion and climate within the organization as a means to attract quality candidates from a variety of sociodemographic groups.

3 Inclusion

I define an inclusive environment as one in which "all people, regardless of their social identities, have equitable access to opportunity and advancement, receive credit for their work, and are valued for more than just their membership in a social identity group" [1]. Thus, inclusion is connected to who fits in the organization, whether or not the organization is free of discrimination, if opportunities for advancement are transparent and available to all, and how contributions in the workplace or organization are credited and valued. As mentioned in the introduction, the conceptualization of inclusion means different things across the globe. The same is true across disciplines. For example, within the field of special education - and particularly within the United States - inclusion focuses solely on disability, whereas in discipline-based STEM education research and education research outside of the United States, inclusion includes other markers of diversity [23]. While some see inclusion as a strategy for increasing diversity, others use it in arguments against initiatives for increasing

diversity and instead assert that organizations should focus on creating inclusive environments for the diverse groups of individuals already in the organization [24]. I would argue that inclusion leads to greater diversity and diversity is necessary to address issues of inequity. One successful strategy for improving inclusion with organizations is having external evaluators perform a climate assessment and then creating and implementing a strategic plan for improving climate.

4 Equity

I define equity as correcting historical or existing injustices to make things more just or fair. I loosely base this definition on definitions of equity presented in an article on multicultural science education and discussions with the author [25]. As a physics education researcher, I advocate for equity and engage in equity-oriented research with a focus on physics education and physics workplaces. If the focus then is on historical and existing injustices, then the historical and existing injustices must be identified. Globally historical injustices in education are well known. Within the United States, educating people minoritized and marginalized due to race was unlawful, largely - though not exclusively - impacting Black and Brown people. Education of Indigenous people included cultural and literal genocide. Thus, race has been an important marker of difference when it comes to striving for equity in education. Race, of course, is not the only marker of difference in education or physics education. While the majority of the space in this paper is dedicated to discussions of diversity, it is not because equity is less important. Indeed, equity - or more appropriately addressing inequity - is of the utmost importance. However, to understand and address inequity, it is necessary to understand how equity connects to diversity and the various forms that diversity takes in varying contexts. Indeed, there is much work to be done in relation to all three constructs presented. Understanding them individually, rather than using the collective and conflated term DEI - not to be misconstrued as the DEI movement - is a first step.

5 Implications for the Global Physics Community

There is a lack of diversity within the field of physics. However, that lack of diversity is not well documented or understood. To be clear, it is well documented for some markers of difference at some levels and in some regions, but not for others. It is documented in some ways - for physics as a whole, but not in various subfields of physics. To address inequities in physics, there is a need to document the lack of diversity in physics and understand the historical and local injustices and inequities that have led to the lack of diversity. I personally advocate for research that identifies, mitigates the negative impact of, and seeks to eliminate injustice and inequity in physics. One central theme through this short paper is that all of these things are socially constructed. The existing inequities and injustice are the result of human interactions and human-made policies that govern human interactions. Even the way we think about diversity and inclusion is socially constructed. Thus, addressing issues of inequity require people - particularly members of the community to work toward change. I encourage all members of the physics community - not just those involved in physics education research - to call out, identify, and support those who are seeking to address inequities in physics through work to diversify physics and improve classroom and workplace climate in physics. I offer as an example a subset of past and present executive committee members for the Relativistic Heavy Ion Collider/Alternating Gradient Synchrotron Users' Executive Committee and their collaborators who are working with physics education researchers to document gender representation in the heavy ion collision community. While these social

constructs differ from one region to the next, the physics community is a global community, and we can learn from the differences in approach to striving for diversity, equity, and inclusion.

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