

Designing Online Professional Learning to Support Educators to Teach for Equity During COVID and Black Lives Matter

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The massive racial inequities exposed by the COVID-19 pandemic and the nationwide protests in response to the killings of unarmed Black people forced a reckoning among many educators about racial injustice in the educational system. In March 2020, we launched a massive open online course designed to support teachers in adopting antiracist equity mind-sets and practices. We used a mixed-methods approach to describe how the participants experienced the online course between March and July 2020. Participants in immediate post- and follow-up surveys reported statistically significant shifts in their mind-sets and practices toward equitable teaching practices (effect size = 0.18–58 SD). In interviews, participants described how the course helped them change their practice through acquiring new language, reflecting collaboratively on practice, and engaging in calls to action. The findings provide insight to designers of online professional learning experiences focused on equity and open up new research areas on online professional learning for equity teaching mind-sets and practices.

Keywords: equity, online learning, teacher education, MOOC, COVID-19

In the spring of 2020, the United States and its education system were hit with two pandemics. First, COVID-19 prompted schools across the country to shut down and rapidly adopt emergency remote learning. The switch to online instruction exacerbated existing inequalities along racial and class divides (Kraft & Simon, 2020; Reich et al., 2020), as the virus brought disproportionate suffering to Black, Latinx, and Indigenous communities while many Asian American communities were targeted by hate crimes (Centers for Disease Control and Prevention, 2020; Kwon, 2020). Second, large-scale protests erupted in response to the pandemic of White supremacy and anti-Black racism that included a series of police and vigilante killings in the United States. Educators were faced with an urgent need to respond to these twin pandemics (Cheng & Conca-Cheng, 2020), which presented a challenge: Many U.S. educators were looking for professional learning on anti-oppressive practices; however, because of the pandemic, nearly all professional learning was now online. Yet prior to the pandemic, antiracist, equity-oriented professional development was typically conducted in-person (Parkhouse et al., 2019). As a result, there was virtually no infrastructure for doing this type of work online for teachers.

In this article, we describe our implementation of an online professional learning course on antiracist, anti-oppressive teaching practices within a massive open online course (MOOC) at the start of the COVID pandemic. In

examining this course, we explored whether equity-driven content based on critical practice-based teacher education (PBTE) principles can be successfully translated into an online environment. We examined the following research questions:

Research Question 1: To what extent did participants improve in their mind-sets and self-reported practices related to equity both immediately following the course and in the following 4 months?

Research Question 2: What features of the course did participants identify and describe as critical in helping them shift in their mind-sets and practices?

Research Question 3: How did the course help participants understand and address issues of inequity related to COVID-19 and the Black Lives Matter protests?

Background

In-person settings are typically more conducive to creating a learning community in which participants tackle issues of racism and other forms of oppression. Much of the existing research on antiracist professional learning activities focuses on in-person learning (Parkhouse et al., 2019). Certain components of powerful antiracist professional learning—such as peer observations and feedback (Johnson & Marx, 2009), in-the-moment coaching (Averill et al., 2015), and group debrief and reflection (Domínguez, 2021;



Mason, 2016)—can be difficult to replicate online. Additionally, in-person facilitators can help participants navigate feelings of anxiety, guilt, or defensiveness (Chung et al., 2018; Wing Sue et al., 2009). Unsurprisingly, with the notable exception of online gatherings on social media such as #ClearTheAir and #Educolor, nearly all of the existing examples of antiracist professional learning opportunities we found were conducted in person.

Good reasons exist to be skeptical of anti-oppressive professional learning conducted online, especially within a large-scale, asynchronous platform such as a MOOC. In particular, MOOCs have been criticized for weak pedagogical practices (Margaryan et al., 2015; Milligan & Littlejohn, 2016). Furthermore, researchers have found that highly educated participants are more likely to have the skills to succeed in a largely asynchronous learning environment independently (Kizilcec et al., 2017; Littenberg-Tobias & Reich, 2020). As a result, some researchers have expressed concerns that MOOCs as a learning technology perpetuate inequalities in learning (Bartolomé & Steffens, 2015; Milligan & Littlejohn, 2016).

We share many of these skepticisms and have written about them at length in our other work (Littenberg-Tobias & Reich, 2020). However, there are more than 3.5 million teachers in the United States alone, and when events like the twin pandemics generate a surge of interest in anti-oppressive professional learning (Barnum & Belsha, 2020), online environments are positioned to address large and fast-growing needs. Open, asynchronous, online learning like MOOCs have garnered great interest and substantial enrollments from teachers and educators (Seaton et al., 2014). Moreover, there is evidence that when MOOCs are designed according to the needs of educators, they can improve teaching practice (Avineri et al., 2018; Brennan et al., 2018; Laurillard, 2016). For these reasons, MOOCs deserve careful experimentation and evaluation to determine how they might support anti-oppressive teacher professional learning. In the following section, we describe the theories we drew on to design an online learning experience on equity teaching within a MOOC.

Theoretical Framework

In developing our learning model, we drew primarily on the concepts of equity mind-sets and opportunity-centered teaching. Additionally, we used a critical PBTE approach, including the use of equity-focused teacher simulations in digital spaces.

Equity Mind-Sets and Opportunity-Centered Teaching

The content of our course was built around the frameworks of opportunity gaps and opportunity-centered teaching proposed by Milner (2012, 2020). In drawing on the

work of Milner, whose primary lens is race and racism, the course centers issues of racial equity in U.S. K–12 schools. However, similar to Milner and consistent with *intersectionality*, the course also addresses the intersecting vectors of oppression that exist in schools in addition to racism, such as sexism, ableism, classism, and English language hegemony (Crenshaw, 1991). In his article, “Beyond a Test Score: Explaining Opportunity Gaps in Educational Practice,” Milner (2012) laid out a series of educator mind-sets that stymie equitable educational opportunities in K–12 schools: *color blindness*, *cultural conflicts*, *myth of meritocracy*, *low expectations and deficit mind-sets*, and *context-neutral mind-sets*. In our instructional framing, we drew on Filback and Green’s (2013) work that arranged Milner’s mind-sets and their equitable counterparts as a set of paired mind-sets. In our course, we addressed four of these paired mind-sets: (1) *equity versus equality*, (2) *asset versus deficit*, (3) *aware versus avoidant*,¹ and (4) *context-centered versus context-neutral*.

To summarize the more equitable half of the paired mind-sets, educators who operate from an *equity* mind-set believe that students should receive different types and amounts of support based on their individual learning needs. Those who use an *asset-based* lens draw on students’ assets that are not always recognized in school settings that typically value dominant norms and cultures. Furthermore, educators who employ an *aware* approach recognize and actively engage with issues of identity (e.g., race, class, gender, disability/ability) in their teaching and in larger school culture conversations. Finally, an educator who takes a *context-centered* stance draws on students’ lives outside of schools and the cultural strengths of students’ families and communities in their teaching (see Figure 1 for a visual representation of the four mind-sets that includes more details).

Critical Practice–Based Teacher Education

In designing our course, we drew on the field of PBTE. A key tenet of PBTE is that teachers should be given opportunities to practice pedagogical skills and behaviors, often in low- or no-stakes simulated environments and with the support of teacher educators (Grossman et al., 2009; Loewenberg Ball & Forzani, 2009). Recently, a number of authors have critiqued PBTE advocates for suggesting that there is a fixed set of “core practices” that cut across all contexts (Daniels & Varghese, 2020; Horn & Kane, 2019; Philip et al., 2019). These critiques contend that being prescriptive about what constitutes core practices can overlook the role that context and teacher subjectivity play in teacher practice. Moreover, a hyperfocus on prescriptive practice also runs the risk of ignoring the material effects of oppression inside and outside of the classroom, while the absence of an analysis of teacher subjectivity can reinscribe dominant beliefs and practices, especially those aligning with whiteness.

Educator Mindsets for Equity

Navigating the chart: The chart can be read from left to right. Each mindset has an orientation (common ideas or thought patterns), an explanation of the orientation (describing the reason behind the thought patterns), and a consequence that results from the mindset.

Mindset	Orientation	Explanation	Consequences
EQUITY	Structural injustices distort success	See society as benefiting some and disadvantaging others	Low academic performance analyzed through lens of societal inequities and individual needs
EQUALITY	Everyone has a chance	View societal systems as basically fair or just	Low academic performance explained with "blame the victim" approach
ASSET	Student Potential	Identify and build on students' strengths	Culturally diverse students receive challenging and meaningful curriculum
DEFICIT	Student limitations	Students framed by shortcomings relative to school standards	Culturally diverse students taught with less rigor and lower expectations
AWARE	Courageous conversations	Understand student background informs learning	Consider race and other demographics in instruction and decision making
AVOIDANT	Deny difference	Do not recognize role of student background	Ignore race and other demographics in instruction and decision making
CONTEXT-CENTERED	Look at lived realities	View academic success as product of totality of students' daily lives	Students' lives in local context taken into account
CONTEXT-NEUTRAL	Focus on classroom	View schools and classrooms as closed systems of learning	Students' everyday interactions outside of classroom ignored

Adapted by the MIT TSL from R. Filback and A. Green of USC Rossier School of Education, and derived from the work of Bartolome, 2008; Hancock, 2011; Milner, 2010; Pollock, 2008"



FIGURE 1. *Educator mind-sets for equity.*

In an attempt to address these concerns, we embedded issues of equity and teacher reflection explicitly within our PBTE approach. Specifically, we looked to the work of researchers who, in recent years, have begun using simulations to call teachers' attention to issues of equity in practice (Dotger, 2013; Dotger & Ashby, 2010). These simulations are not overly prescriptive; there is often no "right" answer. However, they prompt teachers to critically examine particular components of teaching through an equity lens.

Another example of equity-focused teaching simulation comes from Self and Stengel (2020) who used trained actors to engage teacher candidates in what they call "critical incident simulations" that explicitly address issues of equity and approximate the difficult conversations teacher candidates will have in the future. The authors articulated a five-phase process—the "SHIFT cycle"—for employing critical simulations: prepare, interact, react, review, and reconsider. In this process, teacher candidates read a briefing packet about the context of the scenario in which they will participate (prepare), role-play the scenario with a live actor (interact), and then immediately engage in a debrief with a partner or

small group (react). Subsequently, candidates individually review video footage of their scenario (review), and then they finish the cycle by engaging in a group debrief in class that is designed to spur teachers to rethink previous assumptions around issues of equity and consider how to act differently as future teachers (reconsider).

Equity-Based Digital Teaching Simulations in an Online Environment

In developing the online equity course, we sought to integrate the components of the SHIFT cycle in equity-oriented teaching simulations in an online learning environment. The first challenge was adapting the scenarios from in-person interactions with trained actors to interactions with scripted digital avatars. However, scripted digital simulations lack the flexibility and responsiveness of a conversation with a human, which may reduce their perceived authenticity (Kaka et al., 2021). To address this challenge, we built our digital simulations around "trigger phases" (Dotger, 2013). In live-actor simulations, trigger phases are specific conversational

In this practice space, you will be looking at Jeremy's work after each class day and then deciding how and if to change your instruction for the next class day. You will also be given a short description of what Jeremy does during each class day.



Monday

A snapshot of Jeremy's journal is shown below:

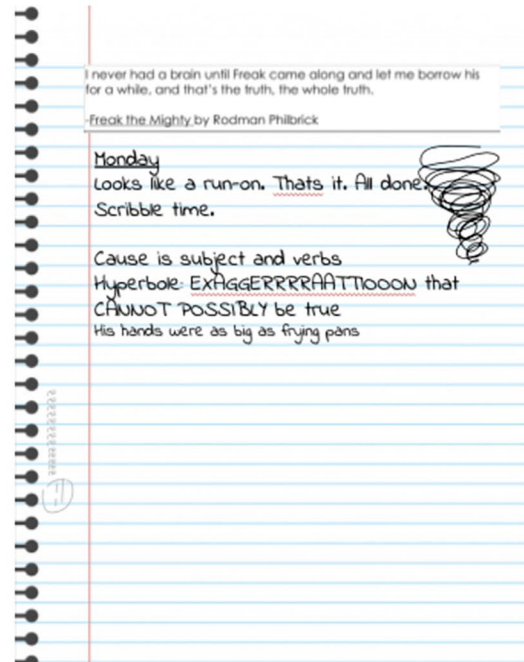


FIGURE 2. Screenshots of simulated pages from the practice space “Jeremy’s Journal.”

interventions that drive the scenario narrative forward in a particular direction; for example, the actor may accuse a teacher of singling them out for violating classroom rules because of their race (Self & Stengel, 2020). Since these trigger points are determined before the simulation begins, we hypothesized that they could be replaced with static narratives from text, images, and videos. With our trigger points, participants receive a prompt to respond with text or recorded audio. Instead of an improvisational back-and-forth, participants respond to a series of prerecorded set pieces. From prior research (Borneman et al., 2020; Robinson et al., 2018), we found that if these static narratives presented authentic classroom challenges, then participants perceived themselves as reacting in authentic ways. In other words, compelling scripted narrative seems to be a suitable substitution for live human actors. We call these narratives “practice spaces” because they are digital environments where teachers can engage with and reflect on issues of practice within low-stakes environments.

For example, one of our four practice spaces embedded throughout the course (the components of which are described in detail in the next section) is called *Jeremy’s Journal*, in which participants interact with a single student over a week while examining his classroom behavior and reading through his class journal (Figure 2). The practice

space has various trigger points embedded in its structure: For example, Jeremy demonstrates questionable understanding of course concepts in the notes he takes in his journal, and he is absent one day without a doctor’s note, which violates school policy. At the end of the simulation, the participant—playing the role of Jeremy’s teacher—has to decide whether to give Jeremy a quiz on the topics of the week. This simulation asks participants to wrestle with taking an equality stance—Jeremy must take the quiz, regardless of circumstances, like all of his peers—versus an equity stance, where various circumstances inside and outside of school are considered, which may require students to be treated differently. Our practice spaces use these various trigger points to capture authentic aspects of teaching and prompt educators to reflect on how they would act “in-the-moment.”

A second issue with online asynchronous simulations is that in-person simulations are generally debriefed by a human facilitator who guides the conversation and intervenes to provoke critical reflection (Self & Stengel, 2020). Since it is impossible to group together MOOC participants taking the course asynchronously in a debrief section synchronously, we created what we call *debrief videos*—videos of groups of teachers debriefing their experiences who had engaged in the four practice spaces that we use in the course.² We asked participants in the MOOC to watch these debrief

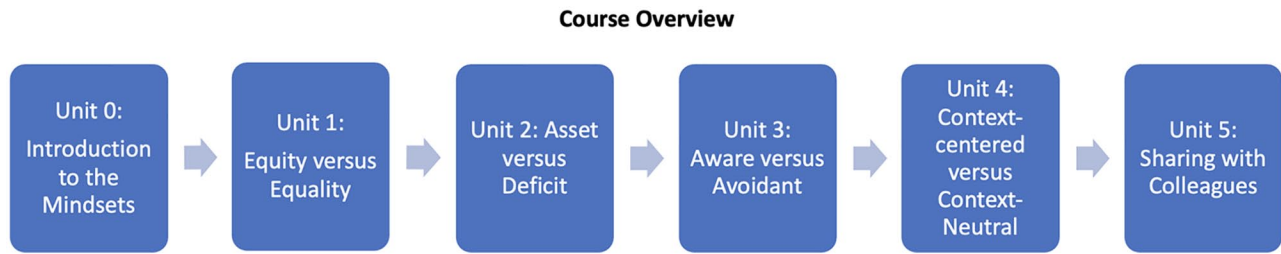


FIGURE 3. *Course overview.*



FIGURE 4. *Typical unit sequence.*

videos, reflect on the choices as well as the reasoning behind the choices the teachers in the video made, and then discuss in online community forums. The community forums were highly recommended—though not required, like all components of the MOOC—and participants were provided with fairly open-ended prompts, such as “Share your reflections on the Jeremy’s Journal practice space and debrief.”

Course Description

The course was designed primarily with the needs of U.S. K–12 educators in mind, though we believed that the course would also speak to the issues faced by educators in other contexts. In turn, we structured the course around the four pairs of equity mind-sets based on Milner’s work that we described earlier, developing a practice space and supporting materials for each pair of mind-sets, and then concluding with a final unit that asked participants to share their learning from the course with colleagues (Figure 3).

Each of the four units focusing on one of the mind-sets contained a combination of repeated elements with options that allow learners to engage with the course in a variety of ways (Figure 4).

The typical unit began with *expert instructional videos* from the course instructors that introduced participants to one of the four equity mind-sets from the course. Then, short documentary videos filmed in schools wrestling with equity issues, which we call *Voices From the Field*, showcased how teachers implemented the mind-sets in practice. Next, course participants practiced the mind-set in low-stakes environments by participating in the aforementioned *practice spaces*, for example, *Jeremy’s Journal*, that included the *debrief videos* of teachers in our partner schools reflecting

on their own experiences in the practice spaces. After going through the practice spaces, *community forums* allowed participants to engage in conversations with educators from all over the world asynchronously. Finally, participants engaged in a *culminating activity*, where they were asked to apply the mind-sets to their current context; examples included conducting an audit of their class rosters to list one strength for each student, and choosing a focal student to follow and adjusting a lesson based on their strengths, needs, and interests.

Furthermore, we strongly encouraged participants to learn with others throughout the course. At the beginning of the course, we urged participants to take the course with colleagues and to learn together through *learning circles*—groups from similar contexts that meet synchronously together—and we provided a facilitator’s guide for creating and maintaining these learning circles. Then, at the end of the course, our final unit encouraged our participants to share course elements, including new ideas and practices, with colleagues in their local contexts.

Methodology

We used a convergent mixed-methods approach. Quantitative and qualitative data were collected simultaneously based on a shared set of research questions and then integrated during the analysis stage (Creswell, 2014). In taking this approach, we hoped to capture both the breadth and depth of participants’ experiences. Quantitative data helped us understand in aggregate to what extent participants as a whole changed their mind-sets and reported engaging in new equity practices. Qualitative data provided insight into how and why U.S. educators who took the course changed their

TABLE 1
Demographics of Analysis and Interview Sample

Variable	Analysis sample	Analysis sample (U.S. only)	Interview sample
<i>N</i>	1417	649	22
Gender			
Female	68%	79%	76%
Male	31%	21%	24%
Nonbinary/other	1%	<1%	0%
Education level			
Doctoral degree	8%	10%	5%
Master's or professional degree	53%	58%	67%
Bachelor's degree	32%	27%	29%
Associate's degree	3%	2%	0%
High school or less	4%	2%	0%
Race			
Asian	19%	12%	0%
American Indian or Alaska Native	0.3%	0.3%	0%
Black or African American	8%	12%	5%
Hispanic, Latino, or Spanish	10%	6%	5%
More than one race	8%	8%	10%
Other	3%	6%	5%
White	52%	66%	75%
Works in K–12 School	51%	52%	90%
Percent student economically disadvantaged in school			
0% to 10%	23%	16%	11%
11% to 25%	19%	16%	32%
26% to 50%	19%	23%	32%
More than 50%	39%	46%	26%

mind-sets, providing rich details about the actions they took and their experiences in the course overall. The qualitative interviews were not intended to be a subset of the quantitative in order to triangulate findings but rather to enrich the quantitative findings with meaningful examples from educators in the course and offer possibilities for what antiracist equity learning in digital spaces can look like.

Participants

The *Becoming a More Equitable Educator* course ran from March 17, 2020, to June 30, 2020. The course was publicized through email listservs, social media, and through the edX platform. During the course run, it had 7,918 registered participants, of whom 5,678 (72%) clicked into the course at least once. In our analysis, we restricted our analysis sample to participants who spent at least 1 hour in the course platform in edX ($N = 1,417$; 18% of registered participants). This allowed us to remove participants who never accessed or only briefly browsed the course content. Participants in the analysis sample spent a median of 6.84 hours engaged in the course through the course platform,

forums, and simulation exercises. A significant portion (41%, $N = 587$) completed the entire course, defined as having earned a 60% or more on all of the course assignments. Completers spent a median of 14.70 hours engaged in the course.

Course participants largely reflected the general population of U.S. K–12 educators and those working in education-aligned industries (see Table 1 for a course demographics of participants). All edX users consent to allow their data to be used for research purposes when they sign up for an account.

Data Collection Procedures

Surveys. Pre- and postcourse survey instruments (with consent forms) were embedded within the course platform. All of the equity mind-sets and practices scales were administered on both pre- and postsurveys. Four months after the course ended, we sent a follow-up survey to all participants in the analysis sample. Response rates for the survey were generally high for a target sample in a MOOC where response rates are often very low (van de Oudewetering & Agirdag, 2018; pre = 47%, post = 33%, follow-up = 14%).

Interviews. We conducted semistructured interviews with a sample of participants who were diverse along several dimensions, including race/ethnicity, geographic location, school type, and role (see Table 1 for demographics of interview participants). Participants were recruited through the precourse survey, and we used a purposive sampling procedure of selecting participants who agreed to participate in interviews. We limited interview participants to U.S. educators because we designed the course with U.S. educators in mind, even though we believe educators in other contexts would benefit from the course. Furthermore, we are U.S.-based researchers who understand the U.S. PreK–12 education system the best and, thus, could have more informed interview conversations with U.S.-based educators. Between May and July 2020, we interviewed 22 course participants a single time with the interviews lasting between 30 and 60 minutes after signing a digital consent form.

To answer our research questions, we interviewed our participants about their beliefs and practices around equity before the course, how (if at all) those beliefs and practices changed during the course, and which parts of the course supported their learning. We first asked open-ended questions about any components of the course that supported their learning. Then, if they did not speak specifically about the practice spaces, we asked probing questions about the practice spaces because they are the key component in the course aligned with critical PBTE. Additionally, we asked teachers in what ways, if any, the course helped them better understand and navigate the COVID pandemic and the Black Lives Matter protests (see interview protocol in Appendix A).

We had hoped to interview participants once they had completed the course, but because participants worked at their own pace without hard deadlines, several of the earliest interviewees had not finished the course. That said, these participants had completed most of the major components of the course since the elements of each module are repeated; however, they were unable to provide us with any information about conducting the final task, which is to share the learning with colleagues. In those cases, we modified relevant interview questions to ask what they planned to do when sharing their learning with colleagues.

Measures

Equity Attitudes. We used a survey instrument designed to measure each individual's equity mind-sets that was administered on the pre-, post-, and follow-up survey. Each item conveyed a different statement about the mind-set (e.g., "Teachers should consider students' race when teaching"), which participants rated on a 6-point scale from 1 = *Strongly Disagree* to 6 = *Strongly Agree* (see survey items and descriptive statistics in Appendix B). The survey instrument was developed through a rigorous process of piloting and

revision that included content validity review by experts in equity in K–12 schools and convergent validity with established measures (Littenberg-Tobias et al., 2021). For the study, the scales displayed evidence of reliability and validity. Three of the four attitude scales consistently had Cronbach alpha statistics of around .70 or higher on every administration. The Asset versus Deficit scale had a lower Cronbach alpha statistics (.5–.7) but still met the generally accepted threshold. Additionally, we administered an established scale, the Colorblind Racial Awareness–Blatant Racial Issues (CoBRAS-BRI; Neville et al., 2000) scale concurrently with all survey administrations to assess convergent validity. All of the mind-set scales were moderately to strongly correlated with the established scale ($r = .33$ – $.71$) suggesting the scales measured similar constructs (see Appendix B for full correlation matrix).

Equity-Promoting Behaviors. We also developed a survey instrument to measure participants' use of equity-promoting behavioral practices. This five-item instrument assessed participants' self-reported use of activities such as "reflecting on how your identity influences your actions," "identifying student strengths," and "participating in networks on equity" on a 5-point scale ranging from 1 = *Never* to 5 = *Very often*. The instrument was included in the pre-, post-, and follow-up survey and in all cases had acceptable Cronbach alpha statistics of greater than .8 (pre = .79, post = .81, follow-up = .81) indicating a high level of internal consistency (see survey items and descriptive statistics in Appendix B).

Participation and Satisfaction With Course Elements. We measured participation in various course elements—such as completing practice spaces and watching video debriefs—using log records from the course. Satisfaction was assessed in the postcourse survey. Participants indicated which of the 12 course elements they participated in the course (e.g., practice spaces, course assignments, *Voices From the Field* videos). If they indicated they had participated in a specific element, they were then asked to rate on a 5-point scale from 1 = *Not at all* to 5 = *To a great extent* how much that element contributed to their learning experience. In our analysis, we focused on five key course elements: (1) the expert instructional videos, (2) the *Voices From the Field* videos, (3) practice spaces, (4) practice space debrief videos, and (5) discussion forums. We focused on these elements because, as noted earlier, these elements were key innovations in the design of the digital learning experience on anti-oppressive teaching practices.

Analytical Approach

Positionality Statement. At least two important sets of biases shaped our work. First, our identities as relatively affluent, White men inevitably shape our analysis. All three

of us are committed to antiracism and all other forms of equity, and two of us identify as Jewish and have faced anti-Semitism throughout our lives. The course was developed by a diverse team along lines of race, gender, sexuality, class background, and other identities but analyzed by a more homogeneous subset. Researchers from different backgrounds and life circumstances may have interpreted data differently and come to different conclusions than the three of us. Second, as designers and an instructor in this course, we are personally and professionally invested in the success of the course, even as we tried to effectively and credibly evaluate the results. We sought to make our positionality transparent here to help readers evaluate the credibility of our interpretations.

Quantitative Analysis. We analyzed clickstream data from the course to identify which elements of the course participants accessed and how many times they accessed those elements. Descriptive statistics from the postsurvey data were calculated to assess satisfaction with various course elements. Finally, we measured changes in equity mind-sets by calculating the mean differences for each mind-set scale between the pre- and postsurveys and the pre- and follow-up surveys. We also calculated a combined mind-set scale that equally weighted all four mind-sets. Paired *t*-tests were used to test whether the changes between the pre- and subsequent time points were statistically significant, and we also calculated Cohen's *d* effect size for all indicators.

Qualitative Analysis. In our analytical approach, we used a multistep process, which was primarily deductive in nature, using thematic analysis (Braun & Clarke, 2006). First, we created a codebook based on the research questions the team developed before analyzing the data, attempting to identify patterns related to (1) equity mind-sets, (2) equity practices, (3) course components that supported learning, and (4) their course experience during COVID and the Black Lives Matter protests. We then applied etic codes to the interview transcripts using Atlas.ti coding software. Then, we shared the codebook and a selection of coded interview transcripts with other researchers in our lab, including people of color, women, and nonbinary people, in an attempt to gain perspectives of people from social locations different from the authors. Finally, comparing, paring, and synthesizing codes, we collaborated to identify themes from patterns that existed across the data set that best addressed our four criteria above and our overarching research questions (Braun & Clarke, 2006). All names in the qualitative findings are pseudonyms selected by either the participants themselves if they chose to do so or by the researchers.

Integrated Analysis. To address our design hypothesis that effective professional learning about equity mind-sets and practices can be taught in a MOOC, we used these various

data sources to address our three evaluative research questions: For RQ1, we drew from our quantitative data exclusively to examine how participants' mind-sets and self-reported practices changed during the course and 4 months after. For RQ2, we used both quantitative and qualitative data to identify how specific features of the course contributed to shifts in mind-sets and practices. Finally, for RQ3, we used our qualitative data to demonstrate how the specific timing of the course, during the COVID pandemic and Black Lives Matter protests, influenced how participants experienced the course. We integrated these findings together within our discussion section.

Findings

Equity Mind-Sets and Practices Shifted During the Course, Persisted After

Overall, we found that participants changed their equity mind-sets and self-reported equity practices, and that these changes in attitudes and behaviors persisted—and in some cases increased—on the 4-month follow-up survey. Summary statistics for all the pre-post comparisons can be found in Appendix B. On the immediate postsurvey, there were statistically significant increases ($p < .001$) for all four dimensions of equity mind-sets during the equity course with effect sizes ranging from .38 to .58 *SD* and an effect size of .76 *SD* on the combined mind-set measure, which weighted all four elements equally (Figure 5). When we surveyed participants 4 months after the course ended, many of these differences persisted. On the follow-up survey, for three of the four dimensions of equity, there were statistically significant increases ($p < .01$) compared with participants' scores on the presurvey, with effect sizes ranging from .25 to .51 *SD* and an effect size of .54 on the combined mind-set measure. The only dimension of equity where there were no statistically significant increases on the follow-up survey was on the context-neutral versus context-centered mind-set, an area where participants started the course with high overall scores; thus, the lack of change may be due to the presence of a ceiling effect.

Additionally, participants reported greater use of equity-promoting practices after completing the course (Figure 6). Of the five indicators we examined, participants increased the frequency of reflecting on how their identity influenced their interactions with students ($p < .001$; effect size [ES] = .23 *SD*), sharing resources with colleagues about equity issues ($p < .001$; ES = .20 *SD*), and participating in educator networks around equity issues ($p < .001$; ES = .32 *SD*). There were no statistically significant changes on the postsurvey for identifying strengths for the students they work with or for discussing equity issues with colleagues in their school or context.

These changes in self-reported behavior persisted 4 months after the course ended on the follow-up survey with



FIGURE 5. *Cohen's d effect sizes for mind-set changes from presurvey for immediate postsurvey and follow-up survey.*

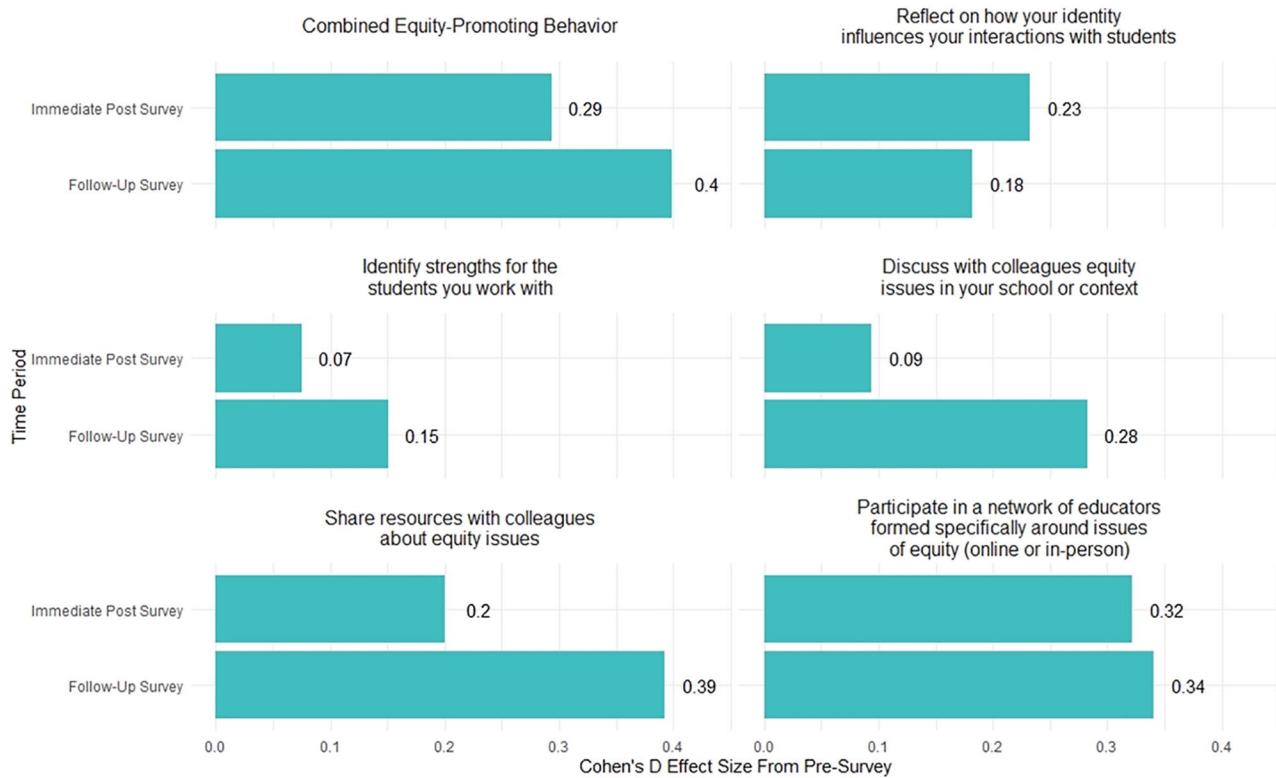


FIGURE 6. *Cohen's d effect sizes for self-reported practices changes from presurvey for immediate postsurvey and follow-up survey.*

effect sizes ranging from .18 to .39 *SDs* and a combined effect size of .29 *SD*. In addition to three survey items with statistically significant changes on the postsurvey, participants on the follow-up survey reported statistically significantly higher frequencies of discussing equity issues with colleagues than they did on the course presurvey ($p < .001$; $ES = .28$). In the months following the course, participants reported ongoing and, in some cases, higher engagement in equity-promoting practices. These increases may reflect the cementing of the mind-sets within their practice as they processed their learning about equity over time. Additionally, the follow-up occurred in fall 2020, when teachers were more used to teaching remotely, so teachers had more time than during the previous spring to engage in conversations with colleagues about equity issues.

A New Equity Lens and Teachers Learning From and With Other Teachers

In this section, we present the quantitative findings from survey data and clickstream course logs along with qualitative data from the 22 educators we interviewed to gain a more nuanced understanding of *how* the course affected participants through the lens of two key themes: *A New Equity Lens* and *Teachers Learning From and With Other Teachers*.

A New Equity Lens. The distillation of Milner's opportunity-centered teaching mind-sets into a framework of unbalanced mind-sets in tension was a central feature of the course. According to clickstream data, 75% of participants in the analysis sample watched at least one of the expert instructional videos describing one of the mind-sets, and 43% participants watched all four videos. Participants rated the expert instructional videos highly, with 90% of postsurvey respondents who reported watching these videos, saying they very much contributed to their learning.

In interviews, participants told us that our framework gave them a new lens to identify, understand, and discuss with colleagues the way oppression works in their local contexts. Additionally, five of our interviewees told us that some of the concepts embedded within the framework—for example, asset-based thinking—were new concepts to them that made them think differently about how they might see their students and their own role as teachers going forward.

Interviewees also told us that placing the mind-sets on a spectrum had a practical aspect in that they were now able to identify where their actions, including interactions with students, fell on the spectrum. For example, Wanda, a Latina middle school world language teacher, told us that the idea of mind-sets being out of balance “makes me feel like I have some language with which to identify problems better . . . It gives me more of a roadmap . . . the idea that it's a balance issue—it's not all or nothing.” Another interviewee, Carrie, a Latina secondary math educator assessed her own teaching

and her school's culture along the four dimensions of the equity mind-sets framework:

I was already really strong in the asset mindset. I obviously needed some work on equity because I wasn't aware enough of how inequitable [the school culture] was. It really called out how avoidant the culture [at the school] that I was around was—like extremely avoidant and how it needs to be called out.

Participants also appreciated that the course provided an accessible framework for identifying equity without oversimplifying equity into a list of best practices. Love, a Black female English teacher, said she appreciated that this was the first time she took a course that examined educators' mind-sets—“what they are thinking, how comfortable they are talking about equity, are they leading from an asset-based stance”—unlike many courses that teach decontextualized “best practices” that “typically distance educators from issues of equity.” These comments from interviewees indicate that the course provided them with a new lens to recognize and name issues of inequity, and Love acknowledged our attempt to center equity in PBTE.

Teachers Learning From and With Other Teachers. Another common refrain from interview participants was that the course enabled them to learn with and from other teachers through the various course components. We start by discussing elements of the course that enabled and encouraged learning from other teachers, beginning with practice spaces.

Learning from other teachers through practice spaces. An important component of the course that facilitated learning from teachers online were the practice spaces. The majority of course participants (57%) completed at least one practice space and 19% completed all four practice spaces in the course. On postcourse surveys, 92% of respondents who reported completing a practice space generally found the practice spaces to be important to their learning experience.

The interview data provided additional support for the practice-based approach: virtually all of our interviewees stated that going through the practice spaces was a valuable learning experience and the scenarios presented challenges similar to those they have faced as educators.³ Participants told us that the practice spaces “represent realistic scenarios” that “pop up often, very, very often in practice.” Taylor, a White female high school science teacher in the Midwest, echoed the sentiments of many of our interviewees when she told us that she appreciated the practical nature of practices spaces:

I really like the practice space where it forces you to think through “What would you do?” in this situation because that's what I was really missing. I knew a lot of the theory behind [educational inequity] and I knew a lot of what the issues were. But again my issue was really like, “Well then what do you do about it?” And so

being given those tasks of like, “Here’s a way you can start to address it and kind of go from there” has been super helpful for me.

Arguably, the most important component of a practice space is the debrief process at the end, which is typically meant to be done in groups and facilitated by someone with experience participating in the practice space who uses our facilitation guides. As mentioned earlier, we could not facilitate debrief sessions in-person—both due to the nature of MOOCs and COVID—and instead had to rely on participants watching other groups of teachers debrief the practice spaces in our debrief videos. On average, 77% of participants watched at least one of the debrief videos, and 40% watched all four videos. On postcourse surveys, 89% of respondents who reported watching the debrief videos said that these videos contributed at least “very much” to their learning experience in the course.

Interviewees told us that hearing the different perspectives of teachers in the practice space debrief videos was one of the most powerful aspects of the course. One interviewee commented that it was inspiring to hear from a “group of educators who were all clearly very devoted to the work,” and another appreciated the challenging conversations that are often left out of teacher gatherings in school: “We kind of get in this mindset of that’s not something we can talk about or that’s not how teacher PD or meetings work. And it should be.” Steven, a White male educator working with 11th and 12th graders in a private school in the Southwest, told us that the experience of watching debrief videos felt like he was back in his teacher preparation program:

I see a video of the classroom where they have all of these educators around a table and I kind of feel like I’m part of that, like I’m back in sort of my teacher training program, and it’s like you’re kind of juggling these ideas around together—I find that really engaging.

Interviewees also told us that the debrief videos allowed them to hear perspectives that were not available to them in their local contexts. For example, Danielle, a White elementary school teacher in the South, told us that it was helpful to learn from secondary teachers: “They are not elementary school teachers. And it’s different seeing that perspective. . . . What can I take back from what these people were talking about at the high school level and bring down to the elementary level?” Additionally, Lindsay, a White high school science teacher working in a school where the staff is also predominantly White, spoke about the power of hearing from a teacher of color in the debrief videos:

The Black woman who was one of the primary contributors to that conversation, again, just pointing out that the dynamics with her in a classroom with students of color is going to be really different than like the White guy’s interaction with students of color, and that that dynamic is really important to acknowledge.

The debrief videos allowed for some participants in homogenous settings to hear a diversity of perspectives.

Learning from other teachers through other course components. Another way that educators we interviewed learned from others online was through our community forum discussions. Forums were not universally appreciated; some interviewees told us the forums were a bit unwieldy to navigate—an ongoing and perhaps somewhat insurmountable challenge for MOOCs. However, most participants (51%) posted at least once in the forums, and 62% of postsurvey respondents who reported participating in the forums said it contributed at least “very much” to their learning experience.

In general, interviewees reported that their interactions with others in the forums were engaging and helped stimulate “aha moments” while “learning from peers about what their challenges are in their particular contexts.” Richard, a White male high school AP Psychology teacher, stated that he appreciated the “semi-anonymous” nature of the discussion boards that allowed him to be “open and honest” about his potential biases in a way he might not have been able to in an in-person staff meeting. Lucas, a multiracial middle school teacher from the West Coast, appreciated the feedback he got from others in the forums: “I loved the feedback. I really appreciated just hearing responses and getting to see other people’s suggestions. It gave me some good ideas that I was able to write down.”

A final way interviewees described learning from other teachers online was through seven *Voices From the Field* videos, which were short clips (around 3 to 5 minutes) of interviews of individual practitioners in schools around the country about their equity mind-sets and practices. Many participants (74%) watched one of these videos and 36% watched all seven of the videos. Participants rated these videos highly on the postsurvey with 93% of those who reported watching them saying that it very much contributed to their learning experience. Wanda, a Latina middle school world language teacher, called one of the teachers in our videos her “sister teacher” because of her equity stance on using a tiered approach to meet the needs of all her students—which sometimes requires different things for different students (unlike an equality stance)—and she planned on creating a presentation for her colleagues centering on that approach.

Learning with other teachers. The online learning space allowed educators to connect across long distances who would not have been able to do so even if in-person meetings were not prohibited due to COVID. Two of our interviewees were from a national experiential learning organization, and different chapters of this organization in the states along the East Coast met online once a week to discuss the course modules. They described bringing learning materials from the course such as the practice space debriefs and *Voices From the Field* videos into their online meetings to spur conversations about equity.

Additionally, Jeff, who identifies as an educator of color and works as a dean of students in a charter school in the

western United States, took the course along with four teachers from his school and they met once a week online for an hour to discuss the course units. Jeff said the course is helping him and others to think about equity beyond simply discipline (e.g., detentions, suspensions) but also in the “instructional decision space.” He planned to use the practice spaces in professional development during the upcoming school year.

Taking Action for Equity During COVID and the Black Live Matters Protests

The time period of the course overlapped with the start of the COVID pandemic and the shutdown of in-person schooling across the United States. In interviews, participants said the course was particularly important during remote learning that resulted from school closings due to COVID. For example, Leslie, a White female world language teacher, described how some of her colleagues were grading students based in part on turning assignments in on time, which did not take into consideration the extremely challenging and unequal contexts in which students were learning. As the department head, she had been receiving emails from teachers during remote schooling who wanted to grade students based on turning in work on time versus the quality of their work, which she now views as a form of deficit-based thinking:

I’ve had some teachers email me about particular students asking about these kinds of things, and I can definitely tell that it’s their [deficit-based] perspective of what a student’s behavior or lack of response is. [This] also guides how they’re looking at that kid’s grade. So I had to say, “Are we grading on competency in the content area? Or are we grading on compliance? And those are two very different things.” So I’ve really appreciated the terminology being used in the course and things having a name.

Will, a volunteer at the aforementioned experiential learning group, discussed how the online nature of the course gave him an outlet to connect with others during COVID. Will reflected,

I think it’s nice to have . . . on a social level in the midst of this apocalypse, it’s nice to see friends and coworkers [online]. It’s nice to have another opportunity to kind of reflect on and revisit and process the material [from the course].

He said the weekly meetings he and his colleagues had around our course have led to discussions within the organization about ways to implement more equitable practices, in proactive rather than reactive ways. Furthermore, he and his colleagues are discussing creating an equity, diversity, and inclusion curriculum for their students who are predominantly White affluent students.

The course also coincided with the protests for Black lives and racial justice that reached a peak around June 2020. About a third of the interviewees described how the equity mind-set framework and the larger course helped them

navigate talking about the protests and the tensions around race that previously existed in their schools. Jeff, the aforementioned dean of students, explains how the Black Lives Matter protests inspired his teachers to take the course:

I had signed up for the course maybe in April or early May. . . . And then given the events of George Floyd and Breonna Taylor and I guess the spotlight that is being put on the inequities and the crimes that have been happening for the past 400 years, a few other of our staff members—so me and this teacher are people of color—but . . . there’s four White staff members and three of the four White staff members signed up to take the course with us and felt some responsibility in learning more about being an equitable educator.

Finally, Mary, a White volunteer in a national service organization told us that she hopes to use our online course and activities with new staff—recent college graduates—going forward, especially those without an education degree or exposure to issues of equity in education:

I think this will be really interesting to be able to integrate, and to use some of these activities as we start working with new staff and explaining a little bit more, like how we approach equity and how we talk about some of these things.

The online nature of the course helped participants connect during school closures and plan for antiracist, equity-oriented education and action necessary to fight against anti-Black racism and all other intersecting vectors of oppression.

Discussion

COVID and the Black Lives Matter protests have underscored the need for online professional development for educators to support the development of equitable teaching and learning environments for students in K–12 schools. Prior to COVID, it was largely assumed that antiracist, equity-oriented training for teachers and other educators needed to take place in-person (Parkhouse et al., 2019). However, both the quantitative and qualitative findings from our study support the design hypothesis that this work can be done online effectively, while providing insights to both teachers and other educators working inside and outside schools, as well as to those charged with preparing and supporting educators to adopt antiracist, equity-oriented mind-sets and practices.

Our most important finding in terms of creating more equitable learning environments for students is that course participants, including K–12 classroom teachers for whom the course was primarily designed, reported changes in their mind-sets and practices during the course that largely persisted 4 months later. Our qualitative findings demonstrated how Milner’s opportunity-centered mind-sets distilled into a single framework gave educators a new lens and language that they could use to analyze their own practices and school cultures. Additionally, our participants were able to learn with and from other teachers in the course, supporting each other in the work and hearing from different perspectives

about issues of equity. Furthermore, several of our interviewees indicated that the course was particularly resonant with what was happening during the COVID pandemic and Black Lives Matter uprisings. Several of the participants told us that the school shutdowns prevented them from sharing with colleagues and implementing classroom practices, which suggests that during nonpandemic times, our course may influence even more participants to engage in equity-oriented practices in the classroom and with colleagues. These findings from our study support the theory that online equity-focused learning can change mind-sets and behaviors to make them more equitable.

The findings from our study lend themselves to important design principles when creating antiracist, equity-oriented learning environments in online spaces during the pandemic and beyond. First, our study demonstrates that providing multiple pathways for learners to take in information, connect with others, and engage with ideas about equity—particularly from other educators—can lead to changes in mind-sets and practices. Additionally, our findings suggest that participants can have meaningful learning experiences watching other teachers debrief practice spaces even when they cannot participate in synchronous debriefings themselves. Finally, we found that some aspects of equity learning experiences may even be better online, as demonstrated by Richard’s stance that he was more open given the relative anonymity of community forums and by the teachers who told us they appreciated the range of responses across a diversity of contexts, which is not possible in local, in-person professional development.

Of course, we cannot disentangle the impact of the courses from the larger changes in consciousness about racism that occurred during this time period of the spring and summer of 2020. However, the concurrence between the qualitative and quantitative data in terms of recognition of the value of the course and the changes in practices reported months after the course ended leads to more confidence that the course was responsible in part for these changes. Additionally, we found in other research on this course that participants shifted in their responses to practice space prompts toward more equitable thinking (Littenberg-Tobias et al., 2021). Taken together, these findings suggest that the course is likely, at least partly, responsible for the reported changes in mind-sets and practices.

That said, our findings also suggest a number of implications for the design and deployment of antiracist teacher professional learning within online environments. The first is the importance of pairing new concepts with specific examples of how educators can apply these concepts within their own practice. Too often, equity issues in education are discussed separately from discussions of applied practice (Kavanagh & Danielson, 2020). Consequently, while educators may be aware of broader structural inequities, they struggle to translate this knowledge to their own teaching

practice (Duncan-Andrade, 2007; Milner, 2010). By contrast, in this study participants noted that the representations of practice within course videos, particularly the *Voices From the Field* case studies of schools and the debrief videos of the practice spaces, allowed them to make connections between the equity concepts articulated in the course and their own practice. These findings build on existing research that shows the benefits of observing videos of other teachers’ practice (Borko et al., 2011; G. Chen et al., 2020), suggesting that videos of teaching practice may be a potentially valuable tool for preparing to teach using antiracist practices.

Second, opportunities to practice are critically important within online environments related to equity. We found that the practice spaces helped participants rehearse within low-stakes environments and thus gain greater comfort with using these practices, which they then applied in their own setting. These results are consistent with research that suggests benefits from interactive scenarios and simulations for learning about equity issues (J. A. Chen et al., 2021; Okonofua et al., 2016). Moreover, these findings are aligned with previous online learning research that found that interactive learning activities yield greater learning gains than passive activities such as reading text (Koedinger et al., 2015). Designers of online professional learning on equity should consider ways to include practice spaces or similar practice-based pedagogy within their own learning environment.

Third, learning about equity needs to be a community rather than an individual endeavor. Our research found that participants benefited from both interacting with others within the course, through course discussion forums, and from sharing the ideas they learned in the course with others in their context. These findings suggest the importance of opportunities for collaborative learning (i.e., teacher-to-teacher) within online professional learning on equity for teachers. Theories of online learning have long emphasized the importance of collaborative learning within online learning environments (Harasim, 2000; Reeves et al., 2004). However, research on online professional learning for educators often ignores teachers as constructors of knowledge, treating teachers as objects rather than as subjects in learning (Brennan et al., 2018). Yet research in informal educator online learning environments, such as Twitter chats, has found that teachers often co-construct knowledge within these settings and translate this knowledge for their local context (Britt & Paulus, 2016; Trust, 2016).

Online professional learning for educators works best when educators can draw on the knowledge and ideas of other educators. Developers of equity-focused online professional learning for educators should include opportunities for educators to learn from one another through, but not limited to, discussion forums, peer-reviewed assessments, or synchronous video calls. Additionally, designers should

consider making resources easier to disseminate through “to-go” course resources, video playlists, and facilitation guides to encourage learning with others in their own teaching local context.

Although the confluence of events in the spring of 2020 were unprecedented, the underlying inequities they exposed are unlikely to go away any time soon. We anticipate that future demand for professional learning will continue to surge during movements of social upheaval and change. Developing asynchronous, open, online courses, schools, districts, and individual educators can have at the ready a form of professional learning to turn to when such matters feel particularly urgent to a community. Of course, we believe that face-to-face, in-person connections are still important, so a good learning experience online should drive further local, in-person actions, connections, and sharing.

Future Research

One important limitation of our study is that we use self-report data to evaluate the effect of the course on teacher practices outside of the online course. We had planned a series of follow-up classroom observations that were canceled due to COVID, and future research on online approaches to equity professional development should evaluate systematically whether such courses lead to observable changes in teacher practice and student experience and outcomes. Furthermore, taking a primarily deductive approach where we looked for instances in the course where participants indicated they had changed mind-sets and practices to make them more equitable may have downplayed instances where participants’ learning was less clear or maybe even had regressed. Our primary goal in this study was to see if antiracist equity teaching was possible in massive online spaces given the dearth of research in this area, and if so, what did it look like. In future research, we intend to design studies that examine instances of partial or incomplete learning.

Our findings on positive reactions to recorded practice space debriefs spark a second potential line of research: the effectiveness of media to shift people’s mind-sets. Many forms of in-person professional learning related to equity put a special burden on practitioners of color as people expected to lead diversity work, to share their experiences, or to intervene when White colleagues engage in racist language or behavior. An important insight from our study is that participants indicated that they learned effectively from and with other teachers, including, but not limited to, the teachers featured in our course videos. This finding is related to what Schiappa et al. (2005) refer to as the *parasocial contact hypothesis*, which found that people can lessen their prejudices against other groups by watching interactions captured in media that are similar to interactions they might have

in-person. Digital media approaches may be another way to lessen harm experienced by people of color in these contexts. In future research, we plan to explore this theory further by the role of video reflections as a way of prompting changes in mind-sets and practices.

Conclusion

Our study provides important insights into supporting teachers and other educators online to adopt equity mind-sets and practices. Furthermore, it gives these actors more tools in the fight to dismantle systemic and interpersonal racism inside and outside of schools, making learning environments safer for all students, especially those from historically and presently disenfranchised groups.

Appendix A

Interview Protocol

1. What is your role at your school and how long have you been in that role?
2. Can you describe your school for me? What is it like to be there on a day-to-day basis? If I was a fly on the wall what would I see?
 - a. *Probe:* What are the demographics of the students/teachers at the school? What is the culture around learning like? How do teachers assess learning? How much autonomy do teachers have at this school? How much do teachers collaborate with one another?
3. How did you think about equity teaching before taking the course?
4. What has your experience been like/was your experience like taking this online equity course?
5. What have you learned/did you learn from taking this course?
6. Which aspects of the course had the biggest influence on your learning? How did they influence your learning?
7. Did you participate in any of the practice spaces?
8. Practice space questions:
 - a. How, if at all, did engaging in the practice spaces change the way you’re thinking about your students, and teaching and learning in general, with regard to equity?
 - b. How, if at all, did watching the debriefs at the end of the practice spaces enhance your learning and/or change your thinking?
 - c. What changes, if any, do you intend to make to your practice after engaging in the practice space?
9. After taking the course, how, if at all, are you thinking differently about issues of equity?
 - a. Equity versus equality approaches?

- b. Asset versus deficit framing?
 - c. Race/gender/and so on aware versus avoidant thinking?
 - d. Contextualized versus a-contextualized teaching and learning?
10. In general, what changes to your practice do you intend to make, if any, after taking this course and why?
 11. Were you able to participate in sharing materials from the course with a wider audience? If so, what did that look like? What worked and what was challenging?
 12. In what ways, if any, has the course helped you as a teacher understand and navigate the current moment where schools are shut down, Black and Native people are dying at disproportionate rates due to COVID-19, and protests are happening all over the country in the wake of George Floyd’s killing?
 13. Is there anything I didn’t ask you about that you’d like to share?

Appendix B

TABLE B1
Descriptions Statistics for Survey Measures

Survey measure	Presurvey			Postsurvey			Follow-up survey		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Equality-equity overall	4.61	1.09	653	4.79	1.10	448	4.94	0.85	199
Success in school is primarily the student’s responsibility.	4.48	1.25	648	4.77	1.14	446	4.88	1.01	199
All people are born with the same opportunities to be successful.	5.00	1.42	652	5.00	1.49	448	5.29	1.18	199
Today’s schools help all students equally.	4.83	1.31	648	5.00	1.24	445	5.03	1.19	198
Anyone who works hard enough can do well in school.	3.75	1.52	650	4.15	1.50	446	4.24	1.41	199
Students from poor families have the same opportunities to succeed as students from rich families.	5.04	1.37	651	5.02	1.45	445	5.28	1.10	198
Asset-deficit overall	5.12	0.60	656	5.27	0.59	448	5.22	0.59	200
Teachers should have high expectations from all students.	5.09	1.17	652	5.34	1.02	447	5.28	1.05	200
Every student can be successful given the right supports.	5.41	0.82	653	5.56	0.65	448	5.38	0.96	198
Teachers should identify all students’ strengths even if they do not fit within traditional school norms.	5.50	0.74	650	5.58	0.73	448	5.53	0.94	200
Teachers do not need to know much about their students beyond their grades and behavior in class.	5.31	1.05	651	5.44	1.11	447	5.42	1.10	199
All students should be expected to follow the same traditional school norms.	4.28	1.34	649	4.46	1.34	447	4.66	1.22	200
It is a teacher’s job to challenge all students academically.	5.12	1.00	649	5.24	0.96	447	5.06	1.07	199
Avoidant-aware overall	4.72	0.95	652	5.04	0.82	449	5.08	0.85	200
Teachers should consider students’ race when teaching.	4.41	1.49	644	5.00	1.25	446	4.94	1.34	198
Students’ race affects their experiences in schools.	4.98	1.18	651	5.30	0.96	448	5.27	1.08	199
The current school curriculum is meaningful for students from almost all backgrounds.	4.08	1.45	647	4.23	1.48	445	4.46	1.36	198
Students’ identities affect their access to opportunities in schools.	5.01	1.13	650	5.26	1.06	448	5.29	1.03	200
Teachers should talk with their colleagues about how race affects students’ experiences in schools.	5.13	1.02	645	5.43	0.82	449	5.42	0.89	200

(continued)

TABLE B1 (continued)

Survey measure	Presurvey			Postsurvey			Follow-up survey		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Context-specific neutral overall	5.34	0.57	653	5.55	0.57	447	5.44	0.70	200
Acknowledging the context in which the school is located can help students learn.	5.21	0.81	647	5.52	0.72	445	5.35	0.82	199
Students' surroundings affect the way they engage with the material.	5.43	0.66	650	5.59	0.64	447	5.49	0.78	198
Engaging with the community can help motivate students.	5.39	0.65	650	5.54	0.67	446	5.45	0.82	200
Communities play a big role in students' success.	5.39	0.70	650	5.53	0.67	447	5.47	0.80	199
Educators should include elements of students' lives outside of school in their teaching.	5.30	0.81	651	5.56	0.68	445	5.45	0.86	200
Composite equity attitudes	4.95	0.63	643	5.17	0.59	440	5.18	0.58	199
Equity-promoting behaviors overall	3.49	0.76	718	3.67	0.77	475	3.79	0.77	205
Reflect on how your own identity influences your interactions with students	3.92	0.91	717	4.08	0.89	471	4.10	0.89	205
Identify strengths for the students you work with	4.08	0.82	716	4.17	0.79	473	4.25	0.80	203
Discuss with colleagues equity issues in your school or context	3.46	1.00	716	3.55	1.04	472	3.72	0.99	204
Share resources with colleagues about equity issues	3.20	1.10	714	3.41	1.09	474	3.66	1.08	205
Participate in a network of educators formed specifically around issues of equity (online or in-person)	2.78	1.23	716	3.15	1.22	471	3.25	1.29	204

TABLE B2

Cronbach Alpha Statistics for Survey Measures

Survey measure	Presurvey	Postsurvey	Follow-up survey
Equality-Equity	0.84	0.86	0.76
Asset-Deficit	0.60	0.62	0.53
Avoidant-Aware	0.81	0.77	0.79
Neutral-Centered	0.83	0.90	0.91
Equity-Promoting Behaviors	0.79	0.81	0.81

TABLE B3

Correlation Matrix for Equity Attitudes

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	1.00	0.74	0.76	0.64	0.47	0.34	0.51	0.47	0.44	0.71	0.58	0.65	0.39	0.24	0.34	0.75	0.60	0.59
2	0.74	1.00	0.77	0.50	0.52	0.55	0.35	0.53	0.53	0.56	0.61	0.71	0.26	0.33	0.40	0.58	0.66	0.70
3	0.76	0.77	1.00	0.44	0.56	0.52	0.41	0.49	0.55	0.53	0.66	0.71	0.27	0.30	0.45	0.54	0.67	0.72
4	0.64	0.50	0.44	1.00	0.68	0.69	0.41	0.51	0.34	0.62	0.51	0.58	0.32	0.22	0.16	0.83	0.67	0.59
5	0.47	0.52	0.56	0.68	1.00	0.78	0.33	0.48	0.40	0.43	0.51	0.61	0.21	0.24	0.19	0.61	0.81	0.66
6	0.34	0.55	0.52	0.69	0.78	1.00	0.39	0.50	0.44	0.57	0.62	0.60	0.22	0.26	0.30	0.65	0.74	0.78
7	0.51	0.35	0.41	0.41	0.33	0.39	1.00	0.56	0.57	0.50	0.39	0.45	0.48	0.28	0.24	0.71	0.51	0.53
8	0.47	0.53	0.49	0.51	0.48	0.50	0.56	1.00	0.62	0.44	0.56	0.61	0.36	0.45	0.31	0.62	0.77	0.64
9	0.44	0.53	0.55	0.34	0.40	0.44	0.57	0.62	1.00	0.38	0.56	0.61	0.29	0.30	0.56	0.49	0.60	0.78
10	0.71	0.56	0.53	0.62	0.43	0.57	0.50	0.44	0.38	1.00	0.61	0.65	0.47	0.25	0.23	0.87	0.58	0.61

(continued)

TABLE B3 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
11	0.58	0.61	0.66	0.51	0.51	0.62	0.39	0.56	0.56	0.61	1.00	0.79	0.31	0.42	0.37	0.63	0.82	0.75
12	0.65	0.71	0.71	0.58	0.61	0.60	0.45	0.61	0.61	0.65	0.79	1.00	0.33	0.35	0.49	0.67	0.78	0.87
13	0.39	0.26	0.27	0.32	0.21	0.22	0.48	0.36	0.29	0.47	0.31	0.33	1.00	0.37	0.33	0.66	0.40	0.38
14	0.24	0.33	0.30	0.22	0.24	0.26	0.28	0.45	0.30	0.25	0.42	0.35	0.37	1.00	0.32	0.34	0.61	0.39
15	0.34	0.40	0.45	0.16	0.19	0.30	0.24	0.31	0.56	0.23	0.37	0.49	0.33	0.32	1.00	0.29	0.37	0.71
16	0.75	0.58	0.54	0.83	0.61	0.65	0.71	0.62	0.49	0.87	0.63	0.67	0.66	0.34	0.29	1.00	0.74	0.69
17	0.60	0.66	0.67	0.67	0.81	0.74	0.51	0.77	0.60	0.58	0.82	0.78	0.40	0.61	0.37	0.74	1.00	0.80
18	0.59	0.70	0.72	0.59	0.66	0.78	0.53	0.64	0.78	0.61	0.75	0.87	0.38	0.39	0.71	0.69	0.80	1.00

Note. Reference table: (1) COBRAS-BRI (Pre), (2) CoBRAS-BRI (Post), (3) CoBRAS-BRI (Follow-up), (4) Equality-Equity (Pre), (5) Equality-Equity (Post), (6) Equality-Equity (Follow-up), (7) Deficit-Asset (Pre), (8) Deficit-Asset (Post), (9) Deficit-Asset (Follow-up), (10) Avoidant-Aware (Pre), (11) Avoidant-Aware (Post), (12) Avoidant-Aware (Follow-up), (13) Neutral-Centered (Pre), (14) Neutral-Centered (Post), (15) Neutral-Centered (Follow-up), (16) Combined Equity Mind-set (Pre), (17) Combined Equity Mind-set (Post), (18) Combined Equity Mind-set (Follow-up).

TABLE B4

Inferential Statistics for Mean Differences Between Time Points

Survey measure	Pre to post difference				Pre to follow-up difference			
	Mean	<i>t</i>	<i>df</i>	Sig.	Mean	<i>t</i>	<i>df</i>	Sig.
Equity mind-sets combined	0.32	12.87	289	<.001	0.24	6.36	139	<.001
Equality-Equity	0.36	7.14	298	<.001	0.35	5.65	140	<.001
Asset-Deficit	0.24	7.49	299	<.001	0.13	2.93	141	.004
Avoidant-Aware	0.45	10.05	296	<.001	0.35	6.00	139	<.001
Neutral-Centered	0.24	6.48	297	<.001	0.11	1.81	140	.073
Equity-promoting behaviors combined	0.20	5.40	338	<.001	0.32	5.01	157	<.001
Reflect on how your own identity influences your interactions with students	0.23	4.26	335	<.001	0.19	2.29	157	.023
Identify strengths for the students you work with	0.06	1.37	336	.17	0.14	1.89	156	.061
Discuss with colleagues equity issues in your school or context	0.10	1.72	335	.086	0.32	3.54	156	<.001
Share resources with colleagues about equity issues	0.22	3.67	336	<.001	0.46	4.94	157	<.001
Participate in a network of educators formed specifically around issues of equity (online or in-person)	0.39	5.90	335	<.001	0.48	4.27	156	<.001

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Open Practices

The data and analysis files for this article can be found at <https://doi.org/10.3886/E155185V1>

Notes

Although coauthor Justin Reich is currently an associate editor of *AERA Open*, this submission was under consideration before he became the associate editor.

1. An avoidant mind-set is often referred to as a “colorblind” mind-set; however, responding to the calls from disability rights activists and others, we have shifted this language away from ableist terminology that positions blindness as a deficit.

2. The teachers work in schools around the country—Massachusetts, Florida, Indiana, and California—with whom we have working relationships. This is a link to one of the debrief videos: <https://learning.edx.org/course/course-v1:MITx+0.503x+1T2021/block-v1:MITx+0.503x+1T2021+type@sequential+block@5df2189e57e745da8db2f6b469f893d2/block-v1:MITx+0.503x+1T2021+type@vertical+block@043ffa223ae44bc08c2997e81a676cc2>

3. Two participants were not asked about practice spaces explicitly due to time constraints of the interviews.

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