

**“I Think I’m the Bridge”:
Exploring Mentored Undergraduate
Research Experiences in Critical Multicultural Education**

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ABSTRACT: Although mentored undergraduate research has been shown to deepen student engagement across various disciplines, this type of extended learning opportunity is not a prominent feature of research and practice in teacher education. Our article addresses this gap by analyzing the experiences and growth of a group of five preservice teachers engaged in a mentored undergraduate research experience in introductory critical multicultural education courses. Specifically, we examined how pre-service teachers’ personal, academic, and professional engagement with critical multicultural education is impacted when they are positioned as researchers and receive additional training outside the traditional class format. Our findings indicate that their involvement as student co-researchers fostered a new awareness, sensitivity, and emotional investment in issues of social justice beyond what they gained in their introductory multicultural education course. Pre-service teachers described navigating personal relationships with new awareness and sensitivity and adjusting future plans in accordance with their deeper understanding and commitment to educational equity. We argue that mentored research opportunities are an innovative way to reposition professor/student power differentials in teacher education research and offer a unique model of critical multicultural teacher education that promotes deep engagement with issues beyond the classroom setting.

KEYWORDS: Mentored undergraduate research; critical multicultural education; teacher education; preservice teachers

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Multicultural education courses at the university level seek to accomplish ambitious goals. Not only do such courses help increase “awareness of one’s

social positions and other's social groups and the relation between the two" (Chávez-Reyes, 2012, p. 44), critical multicultural teacher education calls for attention to overlapping structural inequalities in society and school, and the strengthening of dispositions needed to dismantle educational inequalities (Artiles, 2011; Gorski, 2010; Sleeter & Grant, 2006; Sleeter, 2018). Accomplishing these goals can be a tall order for preservice teachers and their teacher educators, especially given the typical constraints of teacher education programs. Most programs require at least one course in multicultural education, presented over 8-14 weeks according to the traditional semester or trimester format. Many have pointed to the challenges in accomplishing the learning outcomes outlined in critical multicultural education literature and national standards for accreditation in the limited time frame of traditional university classes (Gorski, 2010; Hill-Jackson, 2007). Teacher educators need learning models that look outside the box of traditional semester-length, seat-time-oriented multicultural education courses to augment student learning.

Research documents successful models for mentoring undergraduate students in various disciplines that overcome the constraints of traditional seat-time-oriented semester-length courses (Craney, McKay, Mazzeo, Morris, Prigodich, & De Groot, 2011; Hunter, Laursen, & Seymour, 2006;). Although mentored undergraduate research experiences occur in a range of different fields and provide many benefits to students, relatively little research examines how such a model might be productive in the field of critical multicultural teacher preparation (Civitillo, Juang, & Schaner, 2018; Cochran-Smith, Villegas, Abrams, Chavez-Moreno, Mills, & Stern, 2015; Sleeter & Owuor, 2011). Indeed, mentored undergraduate research opportunities have not typically been available for pre-service teachers in the area of critical multicultural education. This article explores the possibilities for creating learning opportunities that extend beyond seat-time-oriented classes through mentored undergraduate research experiences in multicultural teacher education.

Specifically, our study explores the experiences of five undergraduate student co-researchers engaged in a semester-long collaborative research project investigating peer responses to challenging content across five sections of an introductory critical multicultural education course. These courses followed a critical multicultural education approach that sought to prepare teachers to dismantle inequitable structures in their own classrooms and more productively attend to inequity in their interactions with children and parents as well as other educators and society at large (Sensoy & DiAngelo, 2017; Gorski, 2009). This study explores the following research questions:

1. What experiences do pre-service teachers have when they are positioned as co-researchers and receive additional training and research outside the traditional multicultural teacher education classroom format?
2. How does participating in a mentored undergraduate research experience influence pre-service teachers' personal, academic, and professional engagement with critical multicultural education?

We first highlight features of critical multicultural education that are particularly difficult to teach in the confines of a traditional semester-length course. Second, we review existing literature on extended learning and mentored undergraduate research. We demonstrate how these experiences have the potential to promote learning aspects of critical multicultural education that often elude students in traditional classroom models. Third, we describe our methodology and document our data collection and analysis steps. Fourth, we present findings that show how mentored undergraduate research experiences foster new kinds of awareness, sensitivity, and emotional commitment to issues of social justice beyond what students gain in introductory multicultural education courses. Finally, based on our findings, we argue that mentored research opportunities promote deep engagement with equity issues beyond the classroom setting and are an innovative way to reposition professor/student power differentials in teacher education research.

Background and Literature Review

Critical approaches to multicultural teacher education attend to issues of equity and social privileges in addition to racial, gender, sexual orientation, and ability awareness at the individual and institutional levels (Banks, 1999, 2018; Gorski & Swalwell, 2015; Hill-Jackson, 2007; Sleeter & Grant, 1987, 2006). Many of these same commitments are also reflected in national standards for teacher education accreditation, which mandate professional attitudes, values, and beliefs about diverse students, families, and communities (Council for the Accreditation of Educator Preparation Standards, 2013). As dispositional outcomes are essential to the preparation of teachers for their future work with children across a spectrum of social position and privilege, critical multicultural education must engage students in personal, and often emotional, reflection and discussion of these topics (Cutri & Whiting, 2015). Various challenges, including resistance to multicultural education subject matter, are common (DiAngelo, 2011, 2018; Dunn, Dotson, Ford & Roberts, 2014; Flynn, 2015), perhaps due to the emotional and personal nature of this content.

Extended Learning in Multicultural Teacher Education

Research literature has documented various approaches to addressing challenges in multicultural teacher education, including extending learning beyond seat-time in a traditional semester-long course. Extended and non-traditional approaches comprise various methods but, although literature examining undergraduate research experiences was well-represented across a variety of fields, work examining undergraduate research experiences in teacher education was scarcer. Accordingly, in addition to our own review of related literature, we also examined a handful of recent research review articles that provided overviews of the academic literature on preparing preservice teachers for diverse learners (Civitillo, Juang, & Schaner, 2018; Cochran-Smith et al., 2015, Sleeter & Owuor, 2011). These reviews collectively synthesize numerous articles and yet contained sparse reference to undergraduate research experiences in teacher education. In both our related research review and review of research synthesis articles, extended and non-traditional learning opportunities generally included things like

school and community-based field and service-learning opportunities (del Prado Hill, Friedland, Phelps, 2012; Hallman & Burdick, 2015), offering coursework online or in blended formats (Caruthers & Friend, 2014; Cutri, Whiting & Bybee, 2019), and field experiences in international study abroad settings (Bybee, Menard-Warwick, Degollado, Palmer, Kehoe, & Urrieta, 2018; Marx & Pray, 2011).

While each of these extended approaches offers valuable opportunities to students, they nonetheless exist within the conventional grade- and academic-credit-bearing format of a required course. As Civitillo, Juang, and Schaner (2018) point out, much of the research in multicultural teacher education is conducted by teacher educators on their own courses and students. This dual-positionality as both instructor and researcher has the potential to create conflicts of interest because of the power differential between professors and students (p. 76). Undergraduate research experiences outside the traditional class format have the potential to address this inherent conflict of interest by positioning professors and students as co-researchers addressing a problem outside the fraught context of giving/getting grades and academic credit.

While professor/student power differentials were only briefly addressed in the research syntheses we examined, our findings in emergent related work illustrate their role as one of many potential obstacles to engagement in critical multicultural teacher education courses (Bybee, Whiting et al., 2018; Bybee et al., 2019). In their extensive review of teacher preparation research for diversity and equity, Cochran-Smith et al. (2015) characterize much of this research as “ [not] particularly innovative” particularly those that focus on well-established methods for developing understandings of diversity like autobiographical writing and simulations (p. 116). Unsurprisingly, these researchers conclude that while many of the studies reviewed helped prospective teachers consider diversity issues, there was “little evidence of the profound shift in perspective that many researchers consider fundamental to becoming equity-minded/socially-just teachers” (p. 116). As we explain in the next section, mentored undergraduate research experiences are an innovative way to extend preservice teacher learning beyond the traditional classroom and to consider important issues in critical multicultural education.

Extended Learning Through Undergraduate Research

Research on mentored undergraduate research suggests good opportunities and outcomes for both student and faculty development (Cooley, Garcia & Hughes, 2008; Landrum & Nelsen, 2002; Millspaugh & Millenbah, 2004; Wayment & Dickenson, 2008). Much of the research on undergraduate research experiences focuses on the opportunity to augment classroom learning for students with an introduction to their field and profession (Cooley et al., 2008; Millspaugh & Millenbah, 2004). This research emphasizes the tremendous potential these experiences have to (a) socialize undergraduates into a given profession; (b) provide personal and intellectual development; (c) impact affective behavioral and personal discovery experiences; and (d) create opportunities for students to contribute meaningfully to society (Craney et al., 2011; Falconer & Holcomb, 2008; Hunter, Laursen, & Seymour, 2006).

The literature on undergraduate research experiences in multicultural teacher education supports many of the benefits outlined in the broader research literature. Rubin, El-Haj, Graham, and Clay (2016) describe how implementing a youth participatory action research (YPAR) project in the final semester of an urban-focused teacher education program supported civic teaching capacity and teacher learning about the structural inequalities shaping their students' lives (p. 424). Following the YPAR format, preservice teachers (referred to as "fellows" by the authors) facilitated an after-school program at their student-teaching sites that led students through the process of identifying a school/community-based research question and investigating possible solutions. To support their development of the school-based research projects, fellows constructed their own mini-research projects and read academic research about YPAR and related topics. Although scholars have noted the transformative potential of YPAR for K-12 students (Cammarota & Fine, 2008), Rubin and colleagues demonstrate how facilitating the YPAR projects and reading critical texts impacted the perspectives of fellows in the program. As a result of facilitating this school-based research, preservice teachers developed a more critical, structural analysis of racial and economic oppression and commitment to addressing these issues in their future classrooms (p. 434).

Gazeley and Dunne (2007) also reported on a study where preservice teachers were encouraged to research the impact of social class in secondary schools where they were working as student teachers. The project involved (a) providing the undergraduates with related reading and training on collecting qualitative data in schools, (b) having the preservice teachers conduct individual interviews and focus groups with school leaders, teachers and students, and (c) supporting the preservice teachers in writing up their research findings. The authors describe how participating in the research process helped preservice teachers to "identify social class and underachievement as overlapping processes in which the teacher was of central importance" (p. 410). This acknowledgment of the teacher's role moved students from a more deficit-oriented perspective to one that recognized the importance of class and other structural factors. Students' increased understanding of societal and school-based factors was directly connected to their positionality as researchers. As the authors note, "Through the research process, student teachers had been encouraged to raise some difficult questions and think more critically about aspects of educational provision and professional practice...[student teacher's] engagement in the research process opened up spaces for reflection and interrogation..." (p. 419).

Teacher education programs need a model that can provide undergraduate pre-service teachers with space, time, and opportunity to pursue their personal journey of disposition development characterized by (a) intellectual and emotional engagement with issues of critical multicultural education including larger societal critiques and (b) self-reflection on one's own social position and biases and the position and biases of one's peers. Mentored undergraduate research experiences that build on the traditional grade- and academic-credit-bearing format of a required course disrupt traditional professor/student power differentials

and have the potential to provide undergraduate pre-service teachers with such space, time, and authentic opportunities to learn.

Methods

Research Context

This case study (Yin, 2003) examines the ways that undergraduate pre-service teachers participating in a mentored undergraduate research experience were impacted by their work over one semester. The research experience that these five undergraduate pre-service teachers participated in during this study emerged from a larger qualitative research project investigating several issues related to teaching critical multicultural education to undergraduate pre-service teachers at one university. The main requirements for student researchers were that each had taken one of the introductory multicultural education courses offered by our department, and that they were currently enrolled in the teacher education program. An email request was sent to professors and students seeking research assistants interested in participating in the project. Based on this outreach, we ended up hiring five co-researchers in different years of the program who all identified as middle-class, White, cisgender women (See Table 1). Though we recognized how beneficial it would have been to have had diversity in terms of race, gender, sexual identity, and other factors, our student co-researchers reflected the homogeneity of our teacher education program which is predominantly White, female, and middle class. These students were paid through an internal grant from the college of education at the university. We received approval from the Internal Review Board for research with human subjects (IRB) at the university to interview these students about their experiences and how they saw their participation in this research impacting their lives. The three authors of this study are all professors of multicultural education in one department at one university who take a critical multicultural education approach. All of these undergraduate students had taken their classes as students and then participated again as researcher-observers in their courses during the larger study.

Please see Table 1 for a brief description of the pre-service teacher student researchers.

Table 1*Preservice Teacher Student Co-Researchers*

Name*	Year in Teacher Education Program	Race	Relevant Coursework
Claire	Senior	White	Multicultural Education for Secondary Teachers
Ellen	Junior	White	Multicultural Education for Secondary Teachers
Holly	Sophomore	White	Foundations of Multicultural Education
Noelle	Sophomore	White	Foundations of Multicultural Education
Myla	Junior	White	Foundations of Multicultural Education

*All names are pseudonyms.

The larger project aimed to investigate the discomfort and dissonance that students experience in introductory multicultural teacher education courses from the perspective of their peers. Accordingly, the five research assistants were trained to conduct weekly classroom field observations across five different sections of the course. As participant observers in the classes, they were not graded, and their role was explained to the students enrolled in the courses. The research assistants each took field notes of every class session as participant observers throughout the semester. In addition to weekly classroom field notes, our student co-researchers conducted semi-structured interviews with a selection of students from each class as well as pre-and post-interviews with professors from each course. The following questions guided the larger research project: “What does resistance look like in multicultural education classrooms? What role do students, teachers, and curricula play in moments of discomfort and dissonance?” Presentation of research findings from the larger project at conference forums and in peer-reviewed publications is ongoing (Bybee, Whiting, Cutri & Newey, 2018; Bybee et al., 2019)

To prepare the student researchers to interpret what they were seeing in each of the classes, the undergraduates attended a weekly research seminar in which they were trained by the first author to conduct in-class field observations and interviews with their peers. In addition to research methods training, students were also given a weekly reading list of research articles and book chapters on qualitative research methods and on key concepts in multicultural teacher education. These readings provided a framework to discuss emerging findings

from the larger project in weekly meetings conducted by the first author. During initial weekly project meetings, student researchers assigned to each of the five classes described profound changes in their perspectives as a result of participating in the research project. Accordingly, we submitted an amendment to the Institutional Review Board and gained approval to collect data on the experiences of our undergraduate co-researchers as well. While the larger research project focused on student discomfort and dissonance in multicultural teacher education courses, this current case study focuses on our student co-researchers' experiences and perspectives while participating in the research project.

Interest in the experiences of the undergraduate student researchers emerged as they shared their feelings, insights, and reflections about perceptions of learning in multicultural education for the larger study in the weekly seminar with the first author. Their comments represented such complexity and evident grappling that the current study was initiated to better understand their overall experiences.

Our choice of research methods for the current study was intended to focus on the sense-making of the student-researchers regarding the phenomenon of their increased engagement with critical multicultural teacher education. As previously stated, the following research questions guided the current inquiry:

1. What experiences do pre-service teachers have when they are positioned as co-researchers and receive additional training and research outside the traditional multicultural teacher education classroom format?
2. How does participating in a mentored undergraduate research experience influence pre-service teachers' personal, academic, and professional engagement with critical multicultural education?

These research questions allow this case study to inquire into and describe the impact of mentored undergraduate research experiences in the field of critical multicultural education. This case study is bounded by the time and activities of the students' work throughout one 15-week semester. This case, which follows the undergraduate pre-service teachers' involvement in the mentored undergraduate research experience, cannot be separated from the contextual conditions in which it occurs. Additionally, we desire to explore the phenomenon of their active engagement with critical multicultural teacher education from multiple lenses (Yin, 2003). Thus, we attend to crucial elements of the contextual conditions of their research experience, such as the coursework they did as teacher candidates, the mentoring that they received in their capacity as undergraduate researchers, and their activities in their roles throughout the semester.

Data Sources and Analysis

Data collected for this case study included both in-depth interviews with each of the students about their experiences as research assistants and transcripts of the weekly research meetings with the students and the first author over a 15-

week period while they were engaged in the weekly class observations and gathering other data for the larger project.

We intended to place the data sources into conversation with each other in an attempt to provide a rich description of the study context and the phenomena of the students' experience of a new awareness, sensitivity, and emotional involvement in critical multicultural education. Our analytic steps were designed to identify evidence of the students' experiences and explore how the first author fostered their active engagement as both consumers and producers of research and theory in critical multicultural education. Our analytic process was intentionally collaborative. The bulk of the data analysis was conducted by the first two authors with assistance from three of our student co-researchers. Student collaboration in data analysis was crucial to the mentored undergraduate research experiences that the teacher educators involved in this study were trying to create for the research assistants. Our first analytic step was to employ open coding to identify general descriptive parent codes and child codes across the data sources using the qualitative data management system NVivo. This initial pass at the data produced 11 descriptive parent codes with 53 descriptive child codes (See Appendix I). These descriptive codes were presented to the research team in the form of a Microsoft Word document and an NVivo color-coded chart depicting the frequency of each descriptive code.

In our second analytic step, our research team reviewed the 64 descriptive codes in a group meeting. We discussed as a group each descriptive code, affiliated child codes, and identified descriptive codes that we thought related to one another. In this process, we categorized the 64 descriptive codes into three general groupings. The first general grouping we labeled "Descriptive Codes focused on Research Assistants' (RA's) Experience." The second grouping we labeled "Descriptive Codes focused on Pre-service Teachers' Resistance to Critical Multicultural Education." The third grouping we labeled "Descriptive Codes focused on Critical Multicultural Teacher Educators." The first author wrote an analytic memo to the research team describing these three general groupings. In our third analytic step, the lead author more closely examined the data included in the general grouping labeled "Descriptive Codes focused on Research Assistants' (RA's) Experience." He looked for distinct patterns of experiences related to active engagement with critical multicultural education and grouped codes under relevant categories that described the essential characteristics of the students' experience. Finally, he wrote a memo based on these categories to describe emerging themes in the data and, together with co-authors, further refined these themes in multiple data analysis meetings. Our model from moving our codes to themes through an iterative and collaborative process was informed by Saldaña's "codes-to-theory" model for qualitative inquiry (2009, p. 8-13).

The continued involvement of students in the data analysis and presentation of our initial findings was crucial to our process and helped us attend to issues of trustworthiness and participant contribution within our case study methodology (Yin, 2003). We conducted additional member checking through short and ongoing electronic and in-person conversations with our student collaborators. We

wanted to promote dialogue between student co-researchers and authors to keep the broader focus of the research project on improving the experiences of pre-service teachers with critical multicultural education. The five student participants are assigned pseudonyms in the reporting of the findings below.

Findings

In the following sections, we discuss how participating in the mentored undergraduate research experience provided our student co-researchers with a sense of awareness and commitment to advocacy for social justice. We additionally describe how participation in the project influenced students' self-perceptions, and how changes in their awareness and identity impacted their personal relationships. Finally, we demonstrate how our research partnership broadened the possibilities that our student collaborators described for their futures as educational professionals and advocates for educational equity.

New Awareness, Advocacy, and Emotional Commitment

In weekly research meetings and interviews, students discussed developing a sense of awareness and advocacy for their future classrooms. For example, in her final interview, Ellen stated that the experience left her feeling, "prepared to go out and be a proponent of multicultural education" (Ellen, Interview). In like manner, Holly described bringing up conversations related to equity as her way of, "being a little advocate in [her] home" (Holly, Interview). She added:

[Participating in the project has] kind of shifted how I see teachers, like it's really more than just delivering curriculum, it's being an advocate for all students to be able to succeed, and so it's kind of made me a little more stressed about teaching, because you can't just be a good teacher, you have to be a good person, you have to be able to fight for the students and treat them all with respect, with equity and with high expectations. (Holly, Interview)

Claire similarly described how participating in the project made her feel a greater sense of commitment to equity issues as a teacher:

[It] feels like a responsibility to do more with what you know, and I feel like it's been a really great honor to have this [research] experience this semester, which has contributed a lot more to my understanding of the world and what teachers can do and what preservice teacher education looks like, and how it can be improved to change the world, almost like this [is my] calling.... (Claire, Interview)

In discussing the impact of participating in the research experience, Holly, Claire and our other student collaborators used words like "honor," "responsibility," "calling," "advocate," and "proponent." Their descriptions signal the ways that the research experience developed a new sense of consciousness and desire to fight for educational equity.

Student co-researchers also described feeling more emotionally impacted by the multicultural education courses that they observed as researchers than when they initially took the class for program credit. As Claire stated,

“[Experiencing the class] a second time through really allowed me to think more tangibly about how I want to apply all this in my [future K-12] class” (Claire, Interview). In addition to making connections to her future work as a teacher she stated,

Had I not been involved in this project this semester [the social justice topics we discussed] would not have ‘pinched’ me as much, it would have been like a tiny ‘pinch’ that was easy to move past instead of actually doing something about it. (Claire, Interview)

In reflecting on her feelings about multicultural education, Holly similarly stated, “I feel it more deeply rather than just connecting in my head.... The [classroom] material is a lot more meaningful to me....I feel like I’m hypersensitive to it” (Holly, Interview). Claire and Holly’s comments about their feelings illustrate the emotional and often-times uncomfortable process of learning about social inequities in schools and society. Many scholars have documented the way that the emotions of the predominantly White, middle-class, and female population of teacher education students can sometimes derail progress toward the equity-oriented dispositions (DiAngelo, 2011; Matias, 2016). However, Claire’s “pinch” and Holly’s “hypersensitivity” are a more productive kind of discomfort that allows them to think more tangibly about how they might apply concepts from critical multicultural education into their lives and future classrooms. Their descriptions seem more closely aligned with what Boler (1999) describes as the “pedagogy of discomfort”-- a more productive process whereby educators and students of multiculturalism grapple with their complicity in systems of oppression and inequality in society (p. 119).

Alongside the distinct emotional process of experiencing the class “a second time through,” the students also described the personal and cognitive challenge of grasping the wide breadth of topics covered in multicultural education. As Holly stated,

For some people who are just barely thinking, like this is their first time thinking about these things, it might be a little bit slower of a process.... Everybody's kind of on their own path, and maybe some just start a little further along, and for some people who it's their first experience, they're going through this weird shock phase. (Holly, Research Meeting, 11/14/16)

In discussing her aforementioned “pinch” Claire shared, “[Experiencing the course] a second time through [as a researcher] really allowed me to think more tangibly about how I want to apply this in my class” (Claire, Interview). As previously indicated, the traditional structure of university teacher education limits students to one 2 or 3 credit hour course in one 8 to 14-week trimester or semester to cover a broad array of topics ranging from gender and sexual identity to language policy. The students identified this inherent challenge in their observations of our courses and additionally identified the personal benefits of being able to engage the topics multiple times in an academic setting.

Co-Researcher Positionality

Student co-researchers described how their new awareness, advocacy and emotional commitment to multicultural education were tied to being positioned as co-investigators participating in a research project. Noelle described how this co-researcher positionality was distinct from being an undergraduate simply taking the course again as a student:

I think if I had just been required to take the class again, I mean, I wouldn't have paid as much attention, I would have been like, 'Oh I already know this, I've already heard this.' Being in a position as a researcher kind of has forced me to have to think about the topics more. (Noelle, Interview)

Myla also described how her researcher positionality influenced in her engagement in other courses:

In my TELL [Teaching English Language Learners] class, it's hard for me because we talk about a lot of the same issues we talk about in multicultural education, so I have to remind myself that I'm not a researcher and I'm not here to observe, because I find myself being like, 'that's not right,' *laughs* to other [student comments] in my class and I have to remember, 'oh yeah, I'm a student here.' (Myla, Interview)

Noelle and Myla's comments are a telling indicator of the role of positionality in facilitating particular kinds of engagement in multicultural education and reflect how the structures of teacher education programs can encourage a discrete "mastery" (rather than dispositional) focus despite our best efforts (Gorski, 2010).

Furthermore, in framing our predominantly White, female, and middle-class population of prospective teachers as learners (see Lowenstein, 2009) we can fail to draw parallels between our motivations as researchers and those of our students. By connecting their researcher positionality to personal engagement, Noelle and Myla are implicitly referencing something multicultural teacher educators take for granted: the ability to engage complex topics not as students to be assessed in a class, but as agents in charge of our own organic learning.

Claire elaborated on her ownership of her learning experiences as a researcher. She indicated that despite high expectations from her professor-mentors (including readings, data collection, analysis, and weekly debriefs), "the research has felt easy because I enjoyed it so much" (Claire, Interview). The students felt deep engagement and enjoyment with our project because they were given the ability to engage topics with the freedom of researchers. Although multicultural teacher educators in our larger study all described efforts to resist "banking" models of education that treat students as passive receivers of knowledge (Freire, 1972), the traditional grading and scheduling structures of higher education can make this challenging. The new awareness, advocacy, and emotional investment that student co-researchers described stemmed from a changed positionality from knowledge consumers to participants and producers of knowledge tasked with understanding complex questions in multicultural

education. In the next section, we further describe the impacts of this change in positionality on students' identity and personal relationships.

Identity and Personal Relationships

Students described how their identity and personal relationships changed as a result of participating in the mentored research experience. Specifically, the new multicultural dispositions they described required them to consider new ways of navigating relationships in light of their new perspectives and commitments. Some students expressed how their new outlook created conflicts with partners who did not share their new awareness and commitments to social justice issues. Holly discussed how a lack of empathy from her partner about a topic she observed in class led to a major disagreement:

After our class on language and immigration...I actually went and was talking to my husband about it...I expected him to empathize as I talked about these students who don't speak English and they're floundering in your classroom. He responded that [these students should get over it] and I was like 'you should understand!' It was one of the biggest fights we've ever had. (Holly, Research Meeting 10/10/16)

Myla similarly admitted that she found herself talking about social justice topics with her partner "all the time" and that he "was showing a lot of the same resistance that I was observing in the [multicultural teacher education] students" (Myla, Interview). Similarly, in discussing a disagreement over equity topics with her partner, Noelle shared: "I wouldn't say [that it got] heated, there was no yelling involved, but we disagreed and I felt like he didn't understand what he was talking about" (Noelle, Interview).

When asked about how her relationships were affected by participating in the research experience, Claire indicated that it had "created some tension" and affected her relationship with her partner and his family. To explain her feelings, Claire referenced a reading that was shared in our weekly group meeting, stating, "There was one line about being the 'weirdo at the dinner table,' and that's how I feel sometimes in familial relationships, which has been interesting" (Claire, Interview). In addition to generating feelings of isolation with her partner and family, Claire also discussed how she felt about the disagreements caused by her newfound awareness:

Yeah we've had some arguments, I'll open up to it...the hardest thing for me is that there are so many people I know that are really good people, but then they say things and I'm like, 'I can't look at you right now because of what you just said, but I know you're a good person.' So that's been my struggle." (Claire, Research Meeting, 11/21/16)

Claire's comment illustrates the complexities involved in loving and respecting family members but also disagreeing with them as a result of acquiring new awareness of and commitment to social justice concerns. Her "struggle" and the personal disagreements described by the other student co-researchers stem from

assumptions that partners and family will also care about equity issues and a sense of disappointment when they do not.

While some students felt frustration at the gaps between their new awareness and those of partners and family members, others expressed how their critical multicultural dispositions made them feel an urgency for their families to understand issues in multicultural education. In discussing connecting her family and partner to these important issues, Claire stated, "I think I'm the bridge" (Claire, Interview) and discussed the role of her social media in linking her family to important conversations about equity issues in society. Myla similarly discussed how her immersion as a student researcher in critical multicultural teacher education allowed her to "open up with [her] family and talk about these issues that have never been spoken about around the dinner table before" (Myla, Research Meeting, 11/14/16).

The openness that students described not only generated important conversations with family members; some also described the way that it improved the quality of their relationships with others. For example, Ellen expressed how her thinking about the research project's emphasis on the development of multicultural dispositions and positionality, in her words, "helped me with my relationships with other people, because I can be like okay, I need to calm down, or I can see where they're coming from, I can see why they're acting this way." Many of the students who felt frustrated at gaps in awareness with loved ones also described instances of newfound closeness and new insights into other good qualities of partners or family members. For example, Holly described how sometimes heated discussions with her partner and friends also revealed how they were "more socially aware" than she expected and were ultimately supportive of her new commitments (Holly, Interview). Ellen described a similar experience with her mother, stating:

I've actually been talking to my mom about stuff that gets me mad, and...I never thought she was outright racist, but I never really knew...[that she had] really good dispositions. It's just been really cool to kind of bond with her over like, that one article that was in our online session about white privilege as a bicycle. I shared that with her and she was like, "That was amazing!" It's just cool to be able to talk with someone about both my frustration but also share cool things with them that I find.... (Ellen, Research Meeting, 11/14/16)

For our student collaborators, the experience of deep engagement with topics in critical multicultural education also influenced their commitments and dispositions toward equity topics in general. The dispositional change that occurred as a result of their participation in the research experience required them to consider new ways of navigating personal relationships that they had not previously considered. In some instances, these new dispositions made students alternately feel like "weirdos at the dinner table," while at other times they opened up new insights into the experiences and perspectives of their loved ones. In the next section, we discuss how participation in the research experience provided students with a sense of empowerment and influenced their plans for the future.

Empowerment and Future Plans

In addition to changes within their awareness, identities, and personal relationships, student co-researchers also shared how the research experience, though intimidating at times, provided them a sense of empowerment. Many expressed feeling initially intimidated by the research meeting format, where they were asked to report to fellow students and professors on the week's observations and provide interpretations of what they were seeing based on weekly background literature readings. For example, Myla stated that it was "a little intimidating to realize that I'm presenting my information to Dr. [John] and other professors," (Myla, Interview). Claire felt similarly nervous in the group setting, and admitted that she

felt vulnerable probably at every research meeting, we would talk about what we were seeing in the classroom, and it was kind of a scary thing for me to say what I was observing and what I thought was happening and wonder if people were going to agree or if I was going to be totally off base. (Claire, Interview)

Claire's feeling of vulnerability stemmed from being asked to report what she was seeing from the position of an expert to her peers and professors. She further shared how her anxiety related to navigating the aforementioned issues of positionality, stating that "it's really hard for students to move out of that position of being a student and actually like critique what's happening in the classroom of a professor" (Claire, Interview).

However, students also reported how these initial feelings of intimidation and vulnerability gave way to a sense of empowerment as they became more confident in their roles as researchers. Noelle remarked,

Developing relationships with professors through this research gave me a lot of confidence....[it made me feel] empowered to recognize that confidence of being able to say to a professor who I do respect as someone being you know, kind of in a position that's above me, but still being able to voice my opinions.... (Noelle, Interview)

Ellen expressed a similar newfound confidence as Noelle and stated, "I feel more confident in my ability to talk about these issues and not back down from scary people who might try and shut me down" (Ellen, Interview). Claire also reported how her initial reluctance to critique the practice of professors "eased over the semester as [she] became more comfortable in [her] role doing research and understanding that this is research, it's not personal" (Claire, Interview). Although our student collaborators described feeling initially intimidated by their roles in the project, the sense of being trusted as research partners gave students a sense of confidence in their ability and expertise to engage with complex issues in multicultural education.

In discussing feelings of empowerment, students also discussed how their future plans and perspectives about their impact in education changed through their participation in the research experience. Claire stated, "I think [the

experience] has been pivotal in me thinking about my future....Being involved in research really opened some doors for me that I had never thought about before” (Claire, Interview). Ellen similarly described having “redone [her] life plans” as a result of participating in the project (Ellen, Interview) and Myla described how it had changed her and her partner’s plans for the future (Myla, Interview).

When asked to elaborate on their future plans, students mentioned a range of different roles in education. Ellen discussed how the experience had solidified her plans to go to graduate school after graduating (Ellen, Interview), and Claire discussed how the experience “opened up things that I had never thought about before. Like graduate school, like teaching at a university level,” and showed her

what teachers can do and what preservice teaching education looks like, and how it can be improved to change the world....I wouldn't say it's been easy, but reading the articles has been easy even if they're dense because I've enjoyed learning about it and feeling that has been like a confirmation almost that it is something worth doing for me, and something that's a good fit for me. (Claire, Interview)

Although the students discussed newfound interest in scholarly work (in graduate school, as university professors, etc.), many also shared how the experience influenced what they envisioned for themselves in the PK-12 settings as in-service educators. Myla shared that the experience had made her want “to work at a Head Start [early childhood education center]” or start a similar kind of program (Myla, Interview) and Holly expressed a similar desire to work in a higher need setting, stating that the project

made me want to teach in a Title I school, before I was kind of like, ‘Oh, it'd be really cool to teach in a really nice school because you'd have so much parent involvement and stuff’ but now I'm like no! Those schools that are struggling need teachers who are committed and a lot of times that's a huge problem that we have. (Holly, Interview)

While the students expressed commitment to PK-12 teaching (particularly in high need settings), these desires were expressed alongside other possibilities that they had not previously considered. Claire described this expansion of her “sphere” stating,

I just always thought I'll be a teacher, I'll work in my own sphere, but now I'm kind of feeling like there's more I can and should do, because my sphere is only so much, and I feel like there's a greater sphere available. (Claire, Interview)

In a similar vein, although she articulated a desire to teach in a Title I school, Holly also expressed how that she was now aware of options “beyond being a school teacher,” and this opened her up to the possibilities of “maybe being an administrator, or policymaker or something like that” (Holly, Interview).

The changes that students expressed in their future plans also reflected deeper dispositional shifts in what they personally valued as educators and possible changes to how they see themselves as members of society. For

example, Myla discussed how the experience made her want to “live somewhere where I’m interacting with lots of people who have lots of different ideas, I don’t want everyone around me to be the same and think the same that I do....I want more diversity” (Myla, Interview). While Myla’s desire for “more diversity” in her surroundings reflected a change in the kind of setting where she saw herself in the future, Noelle described how the research experience created more abstract changes in her relationship to knowing and being in the world. She stated:

It’s almost ironic to develop confidence in being uncomfortable, right? But I feel like that’s true, being, learning to live in the space of discomfort doesn’t mean not being confident. I think that being confident helps you to live uncomfortably, as strange as that sounds. (Noelle, Interview)

Students expressed how their positionality as research collaborators with professors made them feel empowered and changed their perspectives and plans for the future. As the statements from student attest, these changes were expressed in concrete plans to expand their “sphere” of influence in ways that included teaching in high-need settings, graduate school, and work as university educators and policymakers.

The changes that students saw for themselves were tied to a new sense of awareness and advocacy for multicultural education, which were reflected both in their emotional commitments and in their personal relationships. Finally, these changes in perspectives were also reflected in more abstract values like diversity and a greater willingness to live in a space of epistemological and ontological discomfort such as Noelle described in her comment above. In the next section, we conclude with a discussion of our findings and explore both the possibilities and challenges of implementing mentored research models of learning in multicultural teacher education classrooms.

Discussion of Findings

Findings from this study document how mentored undergraduate research experiences transpire in the field of critical multicultural teacher education. First, students in this study described a new awareness, sense of advocacy, and emotional commitment to social justice issues that was greater than when they took an introductory course for program credit. These commitments were reflected in the discourse that our student collaborators used to describe the impact of the research experience, including terms like “honor,” “responsibility,” “calling,” “advocate,” and “proponent.” We argue that this emotional experience reflected a productive discomfort aligned with what Boler (1999) calls a “pedagogy of discomfort.” We further assert that this dispositional development was tied to the co-researcher positionality that framed students with greater agency than what they experienced in their multicultural teacher education courses.

Second, participants reported developing new self-perceptions and ways of interacting with close family members that included advocating for social justice issues. Participants described being frustrated by some partners’ and family members’ gaps in awareness and, alternately, appreciative that other family members were more open than they had initially assumed. Their deep

dispositional changes were further reflected in one collaborator's description of herself as "the bridge" between equity issues that she cared about and her family members (Claire, Interview). Finally, participants described how the emphasis on positionality emphasized in the research project helped them develop greater empathy for the perspectives of their personal relations, even as they brought up issues that had "never been spoken about around the dinner table before" (Myla, Research Meeting, 11/14/16).

Third, student co-researchers delineated how their future educational and professional plans were positively influenced by their mentored undergraduate research experiences. Although students initially reported feeling intimidated by some research tasks, these feelings gave way to a sense of empowerment as they gained confidence in their role as researchers. In discussing feelings of empowerment, participants discussed how participation in the project "opened doors" that they had not previously considered, including working in high-need PK-12 settings, as university teacher educators, and as administrators and policymakers. Changes to our student co-researchers' future plans also reflected deeper ontological shifts that one student described as "develop[ing] confidence in being uncomfortable" (Noelle, Interview).

Based on these findings, we argue that mentored undergraduate research experiences have the potential to promote critical multicultural disposition development and contribute to socializing pre-service teachers into the profession of a critical multicultural educator. Results from this study indicate numerous benefits for mentored research experiences congruent with findings from the broader research literature including (a) personal and intellectual development, (b) affective behavioral and personal discovery opportunities, (c) personal and professional growth, and (d) opportunities to contribute meaningfully to society (Craney et al., 2011; Hunter, Laursen, & Seymour, 2006; Ishiyama, 2002; Russell, Hancock, & McCullough, 2007; Seymour, Hunter, Laursen, & DeAntoni, 2004). Findings from this work also reflect the benefits of undergraduate research experiences in multicultural teacher education, including developing a more critical, structural analysis of systems of oppression (Rubin et al., 2016) and "open[ing] up spaces for reflection and interrogation" through participating in the research process (Gazeley & Dunne, 2007, p. 419). Although the aforementioned research frames these benefits as secondary to other outcomes, our findings illustrate that mentored undergraduate research experiences have direct and significant benefits for helping preservice teachers develop into critical multicultural educators.

The findings of this study reported on five preservice teachers, all of whom identify as middle-class, White, cis-gendered females, and these social group memberships likely influenced their experiences during the mentored research project. Though our findings are not generalizable (and are not intended to be) the nuanced particular experiences of our participants in a specific research context highlight the possibilities and affordances of involving undergraduate students in research experiences. Despite the limitations, we believe our findings demonstrate the potential of mentored undergraduate research experiences to

address key challenges for preservice teachers and researchers in multicultural teacher education. These kinds of experiences support the development of an awareness of one's social position (Chavez-Reyes, 2012), help students think critically about structural inequalities in schools and society, and strengthen dispositions needed to dismantle educational inequities (Artiles, 2011; Gorski, 2010; Sleeter & Grant, 2006).

Conclusion

Mentored undergraduate research opportunities present an additional opportunity to accomplish the learning goals outlined in critical multicultural education literature and the national standards for accreditation governing teacher education programs (Hill-Jackson, 2009; Gorski, 2010). For preservice teachers, mentored research experiences extend learning beyond classroom seat-time in the traditional 8-14 week semester. In describing the deep kinds of learning they experienced as research collaborators, our participants offered an implicit critique of the kinds of dispositional change that are possible in traditional multicultural education courses (including our own). By investigating the possibilities of mentored research in multicultural teacher education, our work responds to Cochran-Smith and colleagues' (2015) call for "innovative" research that supports "the profound shift in perspective" that is necessary for preservice teacher to "becom[e] equity-minded/socially-just teachers" (p. 116). Our findings indicate that our student collaborators' involvement in the project did indeed foster new awareness and emotional commitments to issues of social justice beyond what they had gained when they took our introductory multicultural education classes for course credit. Our participants also described how their new dispositions required them to consider new ways of navigating personal relationships in accordance with their perspectives and commitments to educational equity. Finally, our student co-researchers described how the research experience, though intimidating, provided a sense of empowerment, expanded their consideration of future educational roles and impact, and influenced deeper dispositional shifts in their values and in how they viewed themselves in society.

For multicultural teacher educators and teacher education researchers, collaborating with student co-researchers has the potential to disrupt professor/student power differentials in teacher education research and offer a unique model that promotes deep engagement beyond the classroom setting. Although the large size of many teacher education programs limits the ability to extend research collaboration opportunities broadly, this work demonstrates the potential benefits of fostering undergraduate involvement into the existing research programs of faculty members. While many research institutions limit these opportunities to graduate students, our research illustrates the advantages of extending the research experience to preservice teachers. For teaching institutions and in other contexts where professor/student research collaborations are not possible, teacher educators might consider incorporating student-directed research projects on topics in multicultural education as an additional approach that complements more traditional school, community-based, and other forms of extended learning. Our work builds on existing literature demonstrating the

secondary benefits of student research in teacher education for equity (Gazeley & Dunne, 2007; Rubin et al., 2016) and asserts that engaging students as co-researchers has fundamental value for prospective teachers' personal, academic, and professional engagement with critical multicultural education. In this way, we believe that mentored undergraduate research experiences facilitate critical goals in multicultural teacher education and have the potential to create more caring, critical and competent educators.

Future research should explore additional models for incorporating mentored undergraduate research into teacher education settings (Gazeley & Dunne, 2007; Rubin et al., 2016). To understand the practical applications and challenges across various teacher education settings, research could focus on variables such as the time commitment required by the teacher educator and student readiness for these kinds of deep mentoring relationships. Additional work also might examine the particular affordances of collaborative undergraduate research relative to other types of extended and non-traditional learning experiences like (a) school and community-based field and service learning opportunities (Hallman & Burdick, 2015; del Prado Hill et al., 2012), (b) offering coursework online or in blended formats (Caruthers & Friend, 2014; Cutri, Whiting & Bybee 2019), and (c) field experiences in international study abroad settings (Bybee, Menard-Warwick, Degollado, Palmer, Kehoe, & Urrieta, 2018; Marx & Pray, 2011).

Notes

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Appendix 1: Parent and Child Codes

1) RA Vulnerability	2) Navigating Relationships with New Dispositions
<ul style="list-style-type: none"> a. Research Meetings b. Vulnerability c. Discomfort in shift of roles d. Got better over time e. Difficulty Finding Patterns f. Feelings of Inadequacy g. Disregarded or Invalidated Comments h. Worried to say something stupid or wrong i. Objectivity Balance j. Not sure what to do k. Intimidation 	<ul style="list-style-type: none"> a. "Weirdo at the dinner table" b. Feeling the need to speak up more c. New sensitivities d. Discussions with husbands/friends e. Tension f. Arguments g. Like-minded people
3) RA and Professor Relationships	4) RA Future Plans Shifted
<ul style="list-style-type: none"> a. Intimidating to be peers with professor b. On the same team c. Apprehensive to offer feedback or critique d. RA feels trusted and valued e. Became more comfortable 	<ul style="list-style-type: none"> a. Graduate school plans b. Expanding sphere of influence c. Desire to work with minority students d. Seeking more diversity
5) Confidence Found from RA Experience	6) Effects of RA Experience
<ul style="list-style-type: none"> a. RA feels trusted b. RA feels valued c. RA feels empowered d. Find confidence in discomfort 	<ul style="list-style-type: none"> a. More concrete understanding b. More prepared for the future c. Critical thinking d. Metacognition e. Material is more meaningful/emotional f. Greater commitment g. Taking the course initially was an entry point h. Understanding responsibilities of a teacher
7) Importance of Research Meetings	8) Importance of Readings
<ul style="list-style-type: none"> a. Meetings informed what to observe for b. Collaboration 	<ul style="list-style-type: none"> a. Readings informed what to observe for b. Gave confidence c. Supported finding d. Set us apart from other students
9) "What Makes Us Different?"	10) Emotional Work
<ul style="list-style-type: none"> a. Readings b. Focusing on content rather than grades c. Past experiences 	<ul style="list-style-type: none"> a. RAs get emotionally drained b. Professors get emotionally drained c. Microaggressions