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2024 Issue: Call for Manuscripts

Theme: Mentoring: Learning, Collaboration, and Growth

Mentoring is a powerful approach for fostering learning and growth among students, teachers, administrators, and other education professionals. Districts have worked to implement a range of mentoring programs to increase teacher knowledge and improve pedagogical awareness. Similarly, teachers have worked to implement various models of mentoring for PreK-12 students, while administrators and instructors at all levels have taken part in mentoring programs aiming to support and encourage growth among both new and experienced colleagues.

For this issue, we encourage Pacific Northwest educators working at all levels of education to share their experiences with mentoring programs and professional learning. What were the impacts, successes, and challenges you experienced? This work could include district or school-level professional learning communities with mentoring program elements, district or university-level induction/mentoring programs for new faculty, or school or classroom-level mentoring programs for students PreK-12. We welcome a variety of submissions, including:

- Research studies on mentoring programs
- Practitioner pieces describing concepts and ideas in practice
- Essays providing perspectives on salient issues pertaining to mentoring concepts and programs

In addition to the mentoring-issue theme, *WEJ* is a collection of academic papers, professional reports, book reviews, and other articles and summaries of general significance and interest to the Pacific Northwest educational research and practitioner community. Topics in *WEJ* cover a wide range of educational research and related disciplines, including, but not limited to, the topics listed below:

- Early childhood education
- Curriculum and instruction
- State and national standards
- Special populations (e.g., gifted, ELLs, students with disabilities)
- Assessment
- Early warning indicators
- Social and emotional issues
- School and district effectiveness
- Education finance and policy
- Educational technology
- Educational leadership

School and district practitioners are encouraged to write for *WEJ*. We also encourage the submission of condensed versions of dissertations and theses that are reader-friendly.

Manuscripts for the 2024 issue are due August 1, 2023. For information about *WEJ*, see the Submission Guidelines posted on the [WERA website](#). If you have questions about the process or about possible submissions, email smithant@uw.edu.

Antony T. Smith, Ph.D.
Editor, *WERA Educational Journal*

WEJ Invited Feature:

Diversifying the Teaching Workforce: Lessons Learned from a Self-Study in a Teacher Preparation Program Serving Candidates of Minoritized Backgrounds

Yue Bian, Allison Hintz, and Amy Couto

American Association of Colleges for Teacher Education (AACTE) posited that in 2022, 55% of students in our nation’s public schools are projected to be Black, Indigenous, and people of color (BIPOC), but only 28% of teachers are BIPOC (AACTE, 2022). In the state of Washington, the ethnoracial disparity between teachers and students exceeds the national data. During the 2020-2021 school year, 48.9% of Washington State students identified as BIPOC, while only 12.7 % of Washington State teachers identified as BIPOC (Washington State Professional Educator Standards Board, 2021). National and state data show that despite increasingly diverse demographics of students in PreK-12 classrooms, people entering the teaching profession are not representative of the students they serve. Concerted efforts are needed to establish and sustain a more ethnoracially, culturally, and linguistically diverse teacher workforce nationally and locally.

In response to the call for increasing educator diversity in sustainable ways, two faculty members and an academic advisor from the Elementary Teacher Certification program (hereafter “Program”) in the School of Educational Studies at the University of Washington Bothell (hereafter “School”) designed and conducted a needs-assessment self-study focusing on supporting diverse teacher candidates (hereafter “candidates”). Specifically, we aimed to understand the Program’s strengths and areas of improvement for preparing minoritized candidates who identify as members of one or more underrepresented groups in teacher preparation, such as BIPOC, immigrants, multilingual speakers, first-generation college students, community college transfer students, student parents/caregivers, veterans, and/or students with disabilities. To guide our research, we asked:

- What barriers are experienced by minoritized candidates entering the teaching profession?
- What is needed to build sustainable opportunities and support systems for minoritized candidates to thrive?

From this study, we developed a beginning framework to help inform the development of a Program and School diversity blueprint for action to expand and deepen ways of recruiting, sustaining, and graduating minoritized candidates and building a more diversified teacher workforce in our region.

Methods

Needs Assessment Self-Study

In this self-study, we examine how we designed data-collection instruments and solicited and analyzed feedback from Program alumni who graduated between 2020-2022. As the goals of

self-study are “to optimize practice and contribute to a grouped and public knowledge base of teacher education” (Percy & Sharkey, 2020, p. 106), we also discuss lessons learned from hearing the voices of alumni and make recommendations for teacher education practitioners and researchers who share the same goal of making systemic and structural transformation centering on equitable access and inclusivity for diverse teachers.

Purpose and Co-Design of Data Collection Instruments

In the fall of 2021, supported by an internal university seed grant to promote diversity and equity, we developed survey and interview instruments to understand the experience of Program graduates, many from minoritized backgrounds. With a draft list of questions, we invited 13 consulting partners to provide insights on the design of data collection instruments. Partners in this stage of design included Program faculty (five), staff (four), and alumni (four). With the goal of improving the recruitment and retention of minoritized candidates, we asked what they considered to be core issues to center in data collection and what questions could be added, removed, or reworded in the draft. Lessons learned from co-developing instruments with partners will be shared in the Discussion.

The finalized survey included four sections of questions: demographics, background, learning, and well-being. The first section included demographic questions about participants’ year of graduation, age, gender, race/ethnicity, first and home language(s), transfer student status, and first or continuing-generation college student identity. The second section included background questions about factors that may have impacted candidates’ experience in the Program and in the field, such as employment (type of employment, working hours, changes to employment due to full-time student teaching); finances (ways of paying college tuition); transportation (ways of commuting to campus and teaching placements); and caregiver responsibilities. The third section included questions about participants’ learning experiences in the Program and the field. In particular, we asked what they considered as the Program’s strengths and gaps in teacher preparation curriculum and pedagogy; learning opportunities offered and missed during student teaching; the alignment between university courses and field experience; readiness to implement anti-racist teaching; challenges and barriers encountered; and supported needed from the Program/university. The last section asked questions about participants’ mental health and well-being. We were curious about the participants’ capacity for managing workload, knowledge of campus and community resources, and their sense of belonging, agency, and self-advocacy. We concluded the survey with an invitation for a follow-up interview, and participants indicated their interest by leaving their emails. A copy of the survey instrument can be shared upon request with the authors.

We sent the survey in June 2022 to three cohorts of students ($N = 156$) who graduated from the Program between 2020 and 2022, and we received 26 responses. Acknowledging the low response rate, which may be impacted by pandemic fatigue and our timing coinciding with the end of the school year, we nevertheless collected valuable insights from program graduates when we account for the length and comprehensiveness of the survey and for how survey questions capture different aspects of candidates’ experiences in the program. From those responses, we purposefully selected five participants who indicated an interest in and availability for a follow-up interview via Zoom. Interviews were audio-recorded with the participant’s consent. All

interview participants graduated before 2022 and worked at local schools as classroom teachers, substitute teachers, or specialists. Interview questions focused on participants' reflections on and recommendations for improving their experience in the Program and as novice teachers. As part of the interview protocol, we encouraged participants to give specific examples of moments, incidents, and people that gave rise to their feedback.

Findings

Survey and interview data reveal a range of challenges encountered by minoritized teacher candidates in their efforts to complete program and field-based experience requirements to obtain certification and enter the teaching workforce. These challenges include structural requirements, missing areas of knowledge in the teacher preparation curriculum, as well as barriers experienced in the field, particularly in terms of relationships and coaching approaches of mentor teachers and field supervisors. In this section, we describe and briefly analyze salient themes identified in the data.

Structural Challenges for Candidates

Participants reported structural barriers that limited their capacities to simultaneously complete the program and fulfill life responsibilities. For example, 19 out of 26 survey participants indicated they had worked while in college, and 11 paid for college tuition, partially through student employment. However, 17 out of the 19 had to reduce working hours or quit their jobs after entering the Program due to increased workload, less-flexible course schedules, and full-time student teaching. Participants also reported receiving anecdotal or implicit messages that discouraged working during student teaching. Candidates were thus under great financial pressure to afford school and living costs. One participant shared their struggle in the survey:

It was so hard not to work and not have my own income, especially because I had to move back home and the furthest north I could teach was X district, which is still a 45-minute drive for me, and with no income, I had to rely on my parents, who also don't have much money, to pay for my gas.

Besides financial challenges, eight out of 26 participants reported having caregiving duties at home, most of whom were students who were caregivers for children. The Program's course schedule, including the requirement to take evening classes in addition to full-time student teaching, made it difficult to fulfill home responsibilities. One survey participant shared,

It was honestly tough as a mother. There was no childcare offered anywhere near campus, so I struggled when classes were in person. During placement for student teaching, I asked that my caregiving needs be taken into consideration, and they were not. I was placed in a district quite far from home. During my second placement, I repeatedly asked that my parenting duties be taken into consideration, and was told to "pack my patience." I ended up losing my daycare provider.

While having reduced access to childcare services due to coursework and student teaching, some students with caregiver responsibilities were reluctant to advocate for themselves and ask for

support. For example, when we asked whether they felt the Program created a welcoming and belonging space, one student caregiver, S, commented, “It’s definitely an ‘equity not equality’ thing, which makes it hard for me to talk about it sometimes because I feel like I am asking a favor because I am a parent.” We invited S to share recommendations for the Program to better support her and other student parents, and S proposed priority placement—placing student parents in schools closer to their children’s daycares and preferably with mentor teachers who understand and have a flexible outlook on parenting. S also advocated for priority placement for candidates who need to work part-time throughout their student teaching. Survey participants additionally suggested the Program or university offer more scholarship opportunities for student parents, collaborate with childcare centers to provide student parents with easier access, and provide more resources, such as student-parent support groups.

Overall Positive Experience in the Program

Across surveys and interviews, we received consistent feedback on participants’ overall positive experience in the Program. More than 70% ($N=18$) of survey participants indicated that the Program’s diversity statement on “building an inclusive community for all” was reflected in their experience. Alumni spoke highly of the Program’s deeply embedded foci on anti-racism, equity, and social justice across courses taught by diverse faculty who shared commitment to preparing and supporting critically engaged educators. As one participant shared during the interview,

One of the things that I think is really important that [the Program] did is having faculty that’s actually passionate about it [equity and social justice], like when you know they brought up different issues and they spoke on it, you could see how important and impactful it was to them, and it impacted us as people as well.... When you have somebody that is, at the time, maybe speaking on it, but isn’t actually passionate about it, you don’t feel it the same way, and it doesn’t impact you the same way.

Participants also appreciated wrap-around support from the Program faculty, academic advisors, and other staff. Most participants found the Program a supportive space and a place of belonging, believing they could ask for help and self-advocate when communicating with faculty and staff.

In addition to their insights into positive experiences, participants also commented on changes within campus-based coursework that would better support their learning. Curriculum-wise, they suggested deeper attention to classroom management with diverse learners, integrating technology into teaching, and implementing social-emotional learning. Participants advocated for more preparation about, in their words, “the nuts and bolts of teaching,”—practical aspects of teaching that were not often addressed in courses, such as physically setting up a classroom; unit and lesson planning with a given curriculum; collecting, analyzing, and organizing student data; holding effective family-teacher conferences and communications, etc. Additionally, participants requested opportunities for learning about the “people aspect” of teaching, such as networking with Program alumni and other educators in the region, building relationships and collaborating with colleagues, as well as communicating and self-advocating with school and district administrators. Considering data were collected from participants who graduated between 2020 and 2022 during a time of remote and hybrid learning due to the COVID-19 pandemic, we wonder how online versus in-person learning impacted the data and findings.

Mix-Results for Field-Based Experiences: Challenges and Barriers

There are many aspects of field-based experiences that candidates appeared to appreciate and value. In the survey, more than 60% ($N=16$) of participants named student teaching as the most valuable learning opportunity, claiming they appreciated the hands-on experience with learners and the opportunity to put coursework and theory into practice. They also appreciated how the Program offered student teaching in both general education classrooms and specialty endorsement areas (Special Education or English to Speakers of Other Languages).

At the same time, disturbing comments were made by survey participants regarding their interactions with mentor teachers and/or field supervisors, such as, “There wasn’t a connection between my mentor and I;” “I was kept to do menial or not meaningful tasks;” “I had a lot of self-doubt and didn’t feel supported enough;” “The student teaching was toxic, and I was ignored.” Participants identified three challenges as most salient during their student teaching: implementing justice and equity-oriented teaching practices, receiving coaching responsive to their learning needs from mentor teachers and field supervisors, and greater alignment with the demographics and lived experiences of teacher candidates and those in mentoring roles.

Having received preparation in Program coursework committed to promoting justice- and equity-oriented teaching, participants expressed frustration when they were placed with mentor teachers who did not always model or facilitate the use of teaching practices advocated by the Program. “While I felt my coursework and the faculty prepared me, I was met with STRONG resistance to this in my student teaching and offered little support when I asked how to best deal with the situation,” commented one participant. Echoing this statement, some candidates realized these challenges went beyond certain classrooms or teachers and were rooted in the culture of the district or region. “The area I was placed in has some severe equity challenges,” said one survey participant, “and the teacher I was placed with was definitely part of that.” While some candidates tried to make changes at their placements, they were conscious of their identity as novice teachers: “I felt like I was equipped in knowing how important it is to implement justice and equity-based teaching, but I lacked knowing how to bring this up with my future colleagues as a new, inexperienced teacher.”

In addition, participants raised concerns regarding how their mentor teachers communicated expectations and provided feedback, which was not always nurturing, constructive, or even respectful. Participants indicated that mentor teachers did not seem to recognize nor leverage the rich personal and professional funds of knowledge (Moll et al., 1992) that diverse candidates brought to the classrooms. One participant shared in the survey,

My classroom teacher would give me feedback in a very disrespectful way that often made me feel that I was never going to be a good teacher. Then, she would say that her biggest feedback is that I need to work on my confidence. It was hard to build up my confidence when she would give me feedback that was extremely rude and was not things that I could actually implement or change.

Similar concerns were raised about field supervisors, some of whom positioned themselves more as an evaluator than a mentor, prioritizing progress checks and evaluations over other aspects of mentoring such as relationship building, problem-solving, facilitating reflective thinking, and promoting self-directed learning. One survey participant recalled,

My field advisor was hypercritical of my lessons and teaching style and would often nitpick my performance. I have a vivid memory of her observing me in the morning, taking up my entire lunch period to tell me everything that I had done wrong [...] She had told me that the school would find me a substitute position after I graduated because I wasn't ready to handle my own classroom. She left me in tears and seriously considering quitting the program.

Besides failing to communicate feedback in a respectful and constructive way, some field supervisors did not demonstrate an understanding of the unique learning situation of teacher candidates, particularly how candidates were “borrowing the [mentor teacher’s] class for a few months [to learn to teach],” as one survey participant commented, and thus were constrained in what feedback they could incorporate. Candidates often needed to follow the lead of their mentor teachers and did not have much autonomy regarding curriculum, instruction, or management. “It’s very difficult when you are docked points on things like classroom management simply because the class is behaving how your co-teacher allows them to behave,” shared by the same participant in the survey.

It is important to note that more than 40% of the candidates in the Program were from racially, linguistically, and culturally minoritized backgrounds, while field supervisors, mentor teachers, and school administrators were overwhelmingly white, monolingual, middle-class women. The discrepancies between candidates’ and mentor teachers’ ethnoracial backgrounds, socioeconomic status, and sociocultural experiences made it less common for minoritized candidates to receive *linguistically and culturally sustaining mentorship*, mentoring practices that recognize and interrupt inequitable policies and practices, model and facilitate linguistically and culturally sustaining pedagogies, and prioritize relationship building and engagement of BIPOC and multilingual candidates (Kibler et al., 2021). Minoritized candidates paired with mentor teachers of similar backgrounds, on the contrary, reported powerful learning-to-teach and mentoring experiences. A BIPOC candidate talked about her student teaching with a BIPOC mentor teacher in the interview:

One of the biggest things that I will continue to talk about is the fact that I was put into a placement with a teacher of color was really really important as a person of color myself. He’s a black man; I’m a Latino woman, so we’re not exactly the same, but I had the opportunity to learn about shared experiences, ways in which we can help support those minorities that are most impacted by a lot of systemic oppression. So it’s an opportunity to learn something that I wouldn’t have learned if I was placed with somebody who might have not been a person of color.

To enhance their field experience, participants advocated for recruiting more BIPOC mentor teachers who share “similar perspectives, values, and goals,” as one participant shared in the survey. Participants also suggested ensuring all candidates have pre-placement interviews for

both general education internship and endorsement practicum with potential mentor teachers that provide candidates with agency and choice regarding where and with whom they would work during student teaching.

As candidates juggled coursework, student teaching, mentor teacher and field supervisor relationships, home duties, and navigating all the structural barriers that came along, they expressed an urgent need for support and resources regarding anxiety and stress management, mental health, self-doubt and imposter syndrome, workload and time management, and social emotional wellbeing—salient challenges during their time in the Program as identified by survey participants. We do acknowledge that responses from participants may also reflect the impact of the global pandemic on their initial preparation and their beginning years of teaching.

Discussion

This needs-assessment self-study enabled us to learn important lessons from listening to alumni describe and discuss the challenges they experienced in entering and staying in the teaching profession. We conclude this paper by offering a beginning framework that will help inform our Program and School-wide development of a diversity blueprint for action. We also hope this framework will inspire discussion and action among regional and national teacher education practitioners and researchers who strive to support minoritized candidates and diversify the teaching workforce. This framework contains six elements for reducing barriers experienced by minoritized teacher candidates and building sustainable opportunities and support systems for them to thrive in the profession.

A Holistic Approach to Understanding Candidates

Through the process of co-constructing survey instruments with consulting partners who bring multiple perspectives (alumni, staff, and faculty), we learned two important lessons. First, to understand and enhance minoritized candidates' experiences, we need to have a clearer sense of who they are—"the professional, cultural, political, and individual identities which they claim or which are assigned to them" (Varghese et al., p. 22). To do so, we need to move away from attending only to their professional self and life and follow a *holistic approach* in designing the survey and interview questions, which acknowledge the interconnectedness of candidates' multiple identities and attended to the impact of "personal experiences, family backgrounds, sociocultural contexts, influential people, and the psychological, emotional, and intellectual features" on learning to teach (Bukor, 2015, p. 307).

Second, consulting partners reminded us how mental health has influenced all prospective and practicing teachers, especially during the COVID-19 pandemic. A newly released study (Kush et al., 2022) reported teachers were 40% more likely to report mental health problems, including anxiety, depression, and isolation, than were healthcare, office, and other workers during the pandemic, potentially due to uncertainty with instructional modes, limited support for planning and teaching remotely, and rapid adoption of new technologies (Pals & Koenigsknecht, 2022). As mental health plays a pivotal role in teachers' job satisfaction, retention, and student learning, it is important to attend to issues of mental health and well-being when learning about the experiences of teachers.

Centering the Expertise of Academic Advisors

Building a research team of faculty and a professional academic advisor revealed benefits beyond what we imagined in the design stage of this study. Through the process of engaging in research together, our team learned about the power of dedicated space for academic advisors and faculty to work closely in program design and decision-making. Academic advisors bring essential student development and holistic academic-support knowledge and experience to teacher preparation programs. With expertise in student counseling and retention, program administration, and university systems and policies, professional academic advisors are able to identify barriers that students from minoritized communities experience from the moment of applying to the program, through their coursework and field experiences, to their induction years into the teaching profession.

Our research team intends to continue exploring faculty-advisor collaboration, specifically our noticing that when academic advisors are included in discussions on curriculum and program design, and are empowered to share their professional knowledge, programs can develop more student-centered and equitable values, policies, and processes that carefully attend to students' academic growth, mental health, and wellbeing. For example, our Program has experienced a rapid demographic shift with the recent introduction of undergraduate certification pathways. Academic advisors identified barriers and surfaced the changing needs of an increasing number of minoritized candidates. Legacy policies and processes are being reexamined and reshaped to remove barriers and to better support those candidates. Moving forward, we advocate for amplifying the expertise of academic advisors and strengthening Program structures for purposeful collaboration between academic advisors and faculty in design and decision-making, especially in efforts focused on recruiting and retaining minoritized candidates.

Co-designing Professional Learning with and for Mentors

In the field, there is a need for multilayered professional learning designed with and for educators serving in mentoring roles. In this section, we choose to highlight two particularly salient needs, namely supporting the learning of mentors to co-plan and co-teach with candidates, and building infrastructure for Diversity, Equity, and Inclusion (DEI) focused mentor education.

Co-Planning and Co-Teaching

In the field, candidates and their mentor teachers are often in the same classroom planning and teaching. Who is in the lead and what roles each is taking on can vary. At times, the mentor may be in the lead role while the candidate observes or assists with planning and teaching. At other times, the candidate takes the lead while a mentor assists or observes (possibly alongside the field supervisor). Candidates expressed a desire for more modeling and coaching in the moment of planning and teaching, as opposed to passive observing followed by after-the-lesson feedback. They advocated for a shift of mentor positionality from evaluators or gatekeepers to people who guide and walk them through the hidden curriculum of learning to teach. These kinds of in-the-moment support can be mutually beneficial to the mentor and the candidate in treating

classrooms as lab spaces for the collective learning of students, novice teachers, and mentors. Even pausing with students present to (re)consider teaching decisions is a powerful practice and paradigm shift from a stance of evaluation to one of curiosity and learning (Gibbons et al., 2021). We call for teacher preparation programs, in collaboration with partner districts, to consider how to co-design and nurture professional learning that supports mentors to enact in-the-moment coaching and collaboration with candidates across the planning, instruction, and assessment cycle.

DEI-Focused Mentor Learning

Participants' feedback highlighted how although the Program's focus on DEI in teaching is embedded within the coursework, the Program's commitments to DEI in teaching and learning often break down in field-based experiences. Candidates' learning to teach is deeply embedded and sometimes constrained by the culture and traditions of their particular classrooms and school placement. With the current discrepancy of predominantly white educators serving as mentor teachers and field supervisors of candidates from minoritized communities, we must take the following actions moving forward: (1) build more purposeful infrastructure for DEI-focused professional learning for mentor teachers, and (2) actively recruit mentor teachers of color, particularly Program alumni, and support their professional learning and well-being over time.

Working in Partnership to Create System-Level Changes

Teacher preparation programs must dedicate effort to partnership building with regional school districts that focuses on system-level changes. Informed by our learnings from the self-study, we applied for and received funding through the LEADER (Leaders in Education Advancing Diversity, Equity, and Racial Justice) Grant, a community-driven initiative focused on elevating community representation in Washington's education workforce. We embark upon this two-year planning grant to work in collaboration with a regional coalition of 14 partners, including school districts, educational foundations, and the Tulalip Tribes to increase and sustain ethnoracial, cultural, and linguistic diversities in the education workforce. We hope that through collaboration with school districts and community organizations, we will go beyond enhancing minoritized candidates' experiences in the university and during student teaching to providing sustainable, coordinated, and systematic support throughout their induction years and prepare them for mentoring roles for the next generation of educators.

Conclusion

As teacher preparation programs work to diversify the PreK-12 workforce, dedicated efforts are needed to identify and remove barriers experienced by candidates from underrepresented and marginalized communities to make them feel welcomed and supported in the teaching profession. From our Program's needs assessment self-study, we have developed a beginning framework to help inform the collaborative development of a Program- and School-wide diversity blueprint for action for recruiting and retaining candidates from minoritized backgrounds and marginalized communities. The framework emphasizes:

- understanding and listening to candidates following a humanistic, holistic approach;

- centering the professional knowledge of academic advisors;
- promoting in-the-moment coaching and mentorship;
- providing antiracist professional learning for predominantly white mentors in field-based experiences; and
- working with community partners to build system-level changes.

We hope our work will inspire more regional and national teacher preparation programs, researchers, and educators to join the efforts in building more inclusive, responsive, and nurturing learning and work experience for minoritized prospective and practicing teachers.

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Examining the Intersection of Race and Special Education Placement Across K-12 Schools in Washington State

Kathryn Sheridan Stiefel and Genna Kieper

Abstract

The purpose of this study is to explore intersections in the state of Washington between special education placement, exclusionary school removal to interim alternative educational settings, and students' racial backgrounds. Using public data from the U.S. Department of Education, rates of student removal by race over a five-year period were paired with projected figures proportional to the corresponding racial groups' population provided by the U.S. Census Bureau. For students of White/European, Black/African American, Hispanic, Indigenous/American Indian, and Asian groups, statistically significant differences were found across two statistical tests. The results of these statistical tests would suggest that in the state of Washington from 2014-2019, students of White/European and Asian backgrounds are underrepresented, whereas students of Black/African American, Hispanic, and Indigenous/American Indian backgrounds are overrepresented in instances of school removal to interim alternative educational settings. Some directions for policy change and future research are also discussed.

In the field of special education, *disproportionality* is defined as “the over- or underrepresentation of student groups in special education relative to their overall school or population presentation” (Cooc & Kiru, 2018, p. 163). When present, this phenomenon indicates systemic problems in identification of disability and delivery or location of services. Some researchers argue that disproportionality is “a symptom of larger cultural and historical processes that shape the educational experiences and opportunities of students from historically underserved groups” (Artiles et al., 2010, p. 296). For example, data collected at the national level has revealed greater likelihood of special education identification, restrictive placements, and disciplinary consequences for Black students (Sullivan et al., 2009). The overrepresentation of Black students in special education brings Oluo (2019) to question if this process functions as a component of the school-to-prison pipeline, a phenomenon defined by Connor et al. (2016) as the “complex network of relationships that naturalize the movement of youth of color (many with identified or unidentified disabilities) from our schools and communities into underemployment or unemployment, short-term detention, and ultimately long-term (or even lifelong) incarceration” (p. 132).

Though disproportionality occurs at the individual student and school levels, its impacts have broader implications when wider patterns emerge. Since disproportionality is measured at both the national and state levels, it is also important to understand the nuances of state systems and their responses to patterns of disproportionality. At the state level, the Washington Office of the Superintendent of Public Instruction (OSPI) calculates a risk ratio to determine disproportionality. The state defines significant disproportionality as a risk ratio of >3.0 for three consecutive years for any racial/ethnic group in any of the following areas:

- the identification of children as children with disabilities, the identification of children with a particular disability,
- the placement of children in particular educational settings,
- or the incidence, duration, and type of disciplinary actions, including suspensions and expulsions (Washington State Legislature, 2009)

Based on the public information provided about risk ratio calculations, it is unclear how these estimates are calculated or recorded over time. Rather, OSPI may collect and track this data privately. With regard to student placement, analysis categories that are available to the public include age range, students' percentage of time to access the general education environment, and placement at separate schools and residential facilities. Another area to consider is the placement of students who are removed to an Interim Alternative Educational Setting (IAES), yet this category is missing in the state's analysis. An IAES is operationally defined by OSPI as:

A temporary placement used when a student is removed from their current placement due to a violation of a code of student conduct. As IAES should allow a student to receive educational services in a manner that is comparable, equitable, and appropriate relative to the regular educational services a student would have received without the exclusionary discipline. Example alternative settings include, but are not limited to, alternative schools, one-on-one tutoring, and online learning. (OSPI Special Education Technical Assistance Paper No. 2, 2022)

Considering the rates at which different groups of students are removed to an IAES can help us to understand another dimension of the disproportionality of special education placement in the state of Washington.

As schools follow due process procedures when responding to challenging behaviors in classrooms, individual decisions are made to remove students with disabilities from the previous least restrictive environment (i.e., a general education classroom) to an IAES. However, it is also important to analyze the rates of IAES placements more broadly to understand how these individual decisions could be contributing to a wider pattern of disproportionate placement of students of color in exclusionary settings where these students are separated from their same-aged peers in their community school. The present study explores the intersection of race and school removal to IAESs across Washington state with the following question: When analyzed by ethnicity, are the rates of student placement in IAESs across Washington state proportional to the overall racial demographics in the state? To answer this question, two statistical tests were administered, including paired samples t-tests and chi-square tests of independence.

Method

Research Design

Paired sample statistical tests were applied to public data collected in accordance with the Individuals with Disabilities Education Act (IDEA), Part B, regarding student placement by race in IAESs along with projected values based on data from the most recent U.S. Census.

Specifically, the researchers created pairs by locating disaggregated data of exclusionary student placement by race and pairing these values with projections calculated to be proportionate to the population of demographic groups across Washington state. Following this, a chi-square test of independence was administered for groups whose observed rate of placement in exclusionary settings was significantly different than the projected rate of exclusionary placement.

Materials

Public data from the U.S. Department of Education was obtained concerning the number of children and students in Washington state, age 3-21, with disabilities who are served under IDEA, Part B, and were removed to an IAES. Specific data points concerning the removal of students for any reason in Washington state were extracted for all available school years (2014-15 through 2018-19). Data was available regarding IAES placement across the following ethnic groups: White, Black/African American, Indigenous/American Indian/Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and Hispanic/Latinx.

The total number of school removals per ethnic group was then compared to projected school removals. Based on the most current U.S. Census in 2020, the percentage of the population identifying within each ethnic group was multiplied by the total number of school removals for each school year. The product of these values provided a hypothetical number of school removals that would be proportionate to the population of each ethnic group within the state. For example, since White people comprise 78.5% of Washington state's population, in order to estimate a proportionate number of school removals for students within this ethnic group, 0.785 was multiplied by the total number of school removals for each of the five school years within the data set.

Procedure

Using statistical analysis software, the researcher completed a paired-samples *t* test. Each ethnic group (White, Black/African American, American Indian/Alaska Native, Native Hawaiian and Other Pacific Islander, multi-racial, and Hispanic/Latinx) was paired to the proportionate value calculated from census demographic percentages for each of the five school years within the data set. Alpha was set to 0.05 in order to determine statistical significance. For groups that were found to contain significant differences between their observed and projected exclusionary placement rates, statistical software was used to complete a chi-square test of independence (Preacher, 2001). For this test, alpha was also set to 0.05 in order to determine statistical significance.

Results

When comparing the rates of White students' observed and projected placement in IAESs, results of the paired-samples test indicate that the observed and projected frequencies contain statistically significant differences, $t(5) = -5.672$, $p = .002$. These results indicate that for this five-year period, White students with disabilities enrolled in public schools in Washington state have been disproportionately underrepresented in instances of school removal to IAES. To

analyze these differences further, a chi-square test of independence was performed, which also suggests that the differences between the observed and projected rates of school removal for this group are statistically significant, $X^2(5, N = 5) = 509.637, p < .00001$. Put simply, these results show that White students with disabilities were less likely to be identified for school removal than peers of color with disabilities.

Significant differences between observed and projected placement in IAESs were also seen for Black and African American students, $t(5) = 4.173, p = .009$. The results of this paired-samples test indicate that from 2014 to 2019 in Washington state, Black and African American students have been disproportionately overrepresented in instances of school removal to IAESs. Following these results, a chi-square test of independence was completed, which also resulted in significant differences between the observed and projected groups, $X^2(5, N = 5) = 1736.093, p < .00001$.

For students with Hispanic backgrounds, significant differences were also found between the projected and observed rates of placement in IAESs, $t(5) = 4.161, p = .009$. These results indicate that Hispanic students have been disproportionately overrepresented in instances of school removal to IAESs during this five-year period in Washington state. A chi-square test of independence was also completed for these groups, which yielded significant results, $X^2(5, N = 5) = 307.569, p < .00001$.

For students with Indigenous backgrounds who identify as American Indians for the U.S. Census, significant differences were also found between the projected and observed rates of school removal to an IAES, $t(5) = 2.75, p = .04$. The results of this paired-samples test suggest that students of Indigenous and American Indian backgrounds have been disproportionately overrepresented in instances of school removal to IAESs from 2014 to 2019 in Washington state. Following these results, a chi-square test of independence was completed, which also returned significant results, $X^2(5, N = 5) = 151.185, p < .00001$.

When comparing the projected and observed rates of placement for Asian students, significant differences were found, $t(5) = -5.367, p = .003$. These results suggest that over this five-year period in the state of Washington, students with Asian backgrounds have been disproportionately underrepresented in instances of school removal to IAESs. A chi-square test of independence similarly indicates significant differences between the observed and projected rates of school removal for Asian students, $X^2(5, N = 5) = 247.138, p < .00001$. These results demonstrate that Asian students with disabilities were less likely to be identified for school removal than their other peers of color with disabilities.

Finally, a paired-samples test was completed for students of Native Hawaiian and/or Pacific Islander backgrounds. The comparisons between observed and projected frequencies of school removals to IAESs did not contain significant differences, $t(5) = -1.417, p = .216$. It is likely that the discrepancies between this group's observed and projected rates of placement in IAESs did not reach statistical significance due to the small population of this group in the state. Based on the results of the paired samples test, a chi-square test of independence was not explored for this group. Based on the available data, it would appear that there are not significant differences between the observed and projected rates of placement in IAESs for students who identify as

Native Hawaiian and/or Pacific Islander. An overview of results of the paired samples test can be found in Table 1.

Table 1
Paired Samples T-test by Race/Ethnicity

	<i>df</i>	<i>t</i>	<i>p</i>
White	5	-5.672	.002**
Black/African American	5	4.173	.009**
Hispanic	5	4.161	.009**
Native American/Indigenous	5	2.75	.04**
Asian	5	-5.367	.003**
Native Hawaiian/Pacific Islander	5	-1.417	.216

**p < .05

Discussion and Implications for Future Research

The results of the paired samples test indicate that the rates of observed and projected school removals were significantly different for five out of six racial groups. When analyzing the placement of students of White/European and Asian backgrounds, students were found to be underrepresented in IAESs. This means that students with White/European and Asian backgrounds were less likely to be removed to an IAES. In contrast, students of Black/African American, Hispanic/Latinx, or Indigenous/American Indian backgrounds were overrepresented. This means that students of Black/African American, Hispanic/Latinx, or Indigenous/American Indian backgrounds were more likely to be removed from their community school to an IAES. These findings are similar to patterns in the extant literature regarding disproportionality and are an important reminder that Washington is not isolated from the problems of practice occurring with special education identification and placement nationwide. These results also suggest that restrictive school placements to IAESs have been informed to some degree by race.

These results contribute to the pattern of unequal access to special education in inclusive settings based upon a student's racial background (Artiles et al., 2010, Cooc & Kiru, 2018), and demonstrate that systemic change to policy is required in order to address the implicit bias informing our current models of service delivery and removal of students to IAESs and other restrictive settings. Transparency, especially in the state's calculation and use of risk ratios, is critical. This will allow schools to be more active in the process of identifying patterns of disproportionality and taking corresponding action to address it. Future research should consider the present findings within the context of risk ratios and other calculations used to determine disproportionality at the state level.

Additionally, systemic change can be pursued by preparing pre-service and practicing teachers to understand and respond to disproportionality. Professional development in culturally responsive instruction can help teachers be more aware of systemic issues and their role within the educational system (Bergstrand Othman, 2018). Providing educators in the field of special education with knowledge and tools will empower them to address these problems of practice as they arise and advocate for the needs of historically marginalized groups of students.

At the classroom level, educators hold the power to create opportunities and supports for students, regardless of students' eligibility for special education services (Sullivan et al., 2009). In the field, teachers can also incorporate and apply elements of culturally responsive instruction into their routines (Bergstrand Othman, 2018). Trauma-informed pedagogical practices or approaches incorporating principles of Universal Design for Learning (UDL) could be beneficial in creating accessible and safe spaces for students at risk of being excluded in an IAES; therefore, future research should examine if these or other practices can promote increased and prolonged access to inclusive spaces in the general education classroom. While change can be pursued at the classroom level, support from larger entities (such as building, school district, and educational service district leadership) is also required in order to produce sustainable change that improves the lives of historically underserved groups of students. For example, when a whole-school approach utilizes a multi-tiered system of supports, such as Positive Behavior Interventions and Supports, with high fidelity, this is associated with significantly fewer suspensions than schools that didn't use a multi-tiered system of supports model (Scott, Gage, Hirn, Shearer Lingo & Burt, 2019).

It is worth noting that this analysis was conducted using data spanning from 2014 to 2019; that is, before the COVID-19 pandemic impacted school operations across the state. The present analysis provides a thorough view of placement practices during "precedented" times before large shifts in special education service delivery began in response to the ongoing pandemic. While the analysis of national trends in placement in IAESs since the beginning of the COVID-19 pandemic has yet to be explored, the Centers for Disease Control and Prevention has shared that emergency department visits related to mental health concerns rose by 31% for children aged 12-17 (Leeb et al., 2020). While emergency departments are distinctly different from IAES placements, the drastic increase speaks to the increasing prevalence of emotional and behavior challenges experienced by youth throughout the pandemic. Future research should consider the impact of COVID-19 on exclusionary practices, especially as COVID-19 has had varying impacts on people of color and marginalized populations.

This study was inspired in part by researchers Connor et al. (2016, p. 136), who utilized quantitative methodologies to "provide an empirical backdrop to understand the processes that are involved in positioning students located at the intersections of race, class, and disability in punitive segregated educational facilities. The evidence presented throughout this article exists within a larger pattern of discriminating against students of color when determining access to and placement in special education services across the nation, while the present study of special education placement in IAESs allows us to observe a new dimension of the impacts of disproportionality within special education in Washington state. The authors sincerely hope that the information presented and the suggested directions for future research and practice are helpful to the field in efforts to increase equitable access to inclusive educational experiences in community schools.

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Student Responses to a Bullying Prevention Program

Hunter Olden and Heidi Perez

Abstract

The impact of bullying on students can be difficult to measure, and it is even challenging to define bullying in a consistent way. Research measuring the impact of social-skills and bullying-prevention programs available for use in schools is also vital. To help understand the impacts of one of these prevention programs, third graders were provided with lessons from the Second Step Bullying Prevention Unit and then assessed to determine their reported experience of bullying and whether they understood the definition of bullying. Outcomes of the study are discussed.

Current literature in the area of bullying has shown that over two-thirds of students have directly experienced aggression at school, that one third have been bullied, and that students of all ages are prone to experiencing bullying (Bradshaw et al., 2007; Hunter et al., 2007). Research has shown that students are impacted by bullying in a variety of ways. These impacts include but are not limited to increased depression, anxiety, somatic complaints, and increased crime and dropout rates later on in life (Olweus, 2011; Hunter et al., 2007). To address the many symptoms and negative outcomes associated with bullying, prevention programs have been developed to provide students with skills and support systems (Committee for Children, 2014; Frey et al., 2005; Olweus & Limber, 2010).

Bullying in the schools is a complex issue. The environment of the school and student perceptions of the school as a community have a large impact on bullying behavior (Low & Van Ryzin, 2014). Research has shown that students who feel more connected to their school and experience an enriched environment within the school setting are more likely to defend against bullying behaviors (Metha et al., 2013; White et al., 2014). Other literature has shown that a sense of community and a connection to school may provide more positive outcomes, and as a result, bullying programs often aim to develop a stronger sense of community within the school (Committee for Children, 2014; Olweus & Limber, 2010). Student perceptions of their environment are similarly important. Students who feel a connection to their environment and who perceive their environment to be safe may be less impacted by the negative outcomes of bullying (Espelage et al., 2014).

Problematic Definitions

Olweus and Limber (2010) have defined bullying as *an ongoing aggressive act which can include physical and verbal violence, harassment, social exclusion, repeated name calling, spreading rumors, and more*. Using this definition, bullying is defined not only by physical violence and aggressive actions, it also may include verbal and social actions that harm others as long as these actions are done repeatedly and with intent to harm. This definition of bullying was utilized for the current study.

Although many prevention programs exist, research has highlighted challenges in implementing such programs, including the importance of educating staff and teachers (Bradshaw et al., 2007; Olweus & Limber, 2010). Implementing successful programs can be difficult for a variety of reasons. Differences exist between students, parents, and teachers with regard to how they report and define bullying (Demaray et al., 2013). Current research has examined the impact of understanding the definition of bullying as it relates to how bullying is reported (Chen & Cheng, 2013; Kert et al., 2010). Demaray et al. (2013) looked at perceptions of the prevalence of bullying between different groups whereas Kert et al. (2010) conducted research to investigate the impact of the presence or absence of the definition of *bullying* on reports of bullying. The research indicated that those who were exposed to the definition of bullying were less likely to report having been bullied on the questionnaire. If understanding definitions of bullying impacts the way students report their experiences, there may be a need for more education on the exact definition of the term bullying.

Chen and Cheng (2013) assessed impacts of the definition of bullying on high schoolers reports of bullying in Taiwan. This research indicated that there was no difference in bullying reports when a definition of bullying was presented to students compared to when it was not. These results contradict the work of Kert et al. (2010), who found that providing a definition of bullying did impact the extent to which bullying was reported. Although these two research studies yielded different results, both studies provide support that seeking to understand bullying may be helpful in providing a definitive avenue of collecting data about bullying behaviors. Results from these studies indicate that knowledge of bullying seems to impact how it is reported. With a more precise and collective understanding of the definition of bullying, reports of the problem may be more accurate and reflect true bullying behavior.

Second Step Program

The Committee for Children (2014) provides a theoretical foundation to support the Second Step Bullying Prevention Unit (formerly named the Steps to Respect Bullying Prevention Unit) with a background of the current research in the field. The Committee for Children (2014) explains that the Second Step bullying prevention unit utilizes the social-ecological model of development. This model stresses the importance of both learning from and interacting with peers as well as considering important aspects of the environment that play a role in each student's experience. The research base behind the Second Step bullying prevention unit involves teaching students' skills to manage their own emotions and to get along with others (Committee for Children, 2014). To improve their ability to get along with others, this program focuses on friendship skills, problem solving, and assertiveness training for students. The goal of this program is to enrich the environment that the students have at school by enabling them to be active and cooperative members of the school community. Frey et al. (2005) indicated that the *Steps to Respect* program produced observable and significant results in reducing negative bullying behaviors while also increasing positive pro-social behaviors represented by being an active bystander when bullying occurs. These results are promising and indicate that prevention programs may provide students with the skills and supportive environments they need to reduce bullying in their schools.

Purpose of the Study

This research examined whether a bullying prevention program impacted student understanding of their experiences with and the definition of bullying. It was believed that students would be better able to define bullying after the administration of the Second Step Bullying Prevention Unit. The researchers hypothesized that students would share that they had experienced less bullying after participating in bullying prevention lessons.

Method

Participants

Third grade students from a large urban school district in the Pacific Northwest of the United States were recruited for this study. Racial data for the participants was collected through collaboration with the school, which only made distinctions between White (which included Hispanic and Latino students) and non-White. Based on demographic data provided by OSPI, the elementary school students in the school are reported to be 91.2% Hispanic or Latino, but because the school does not distinguish between White and Hispanic/Latino students, the 40 research participants were reported as 100% white (Office of the Superintendent of Public Education, n.d.). The true racial makeup of the participants used for this research is not known, but participants likely included a majority of Hispanic or Latino students. The school district reported that 82% of students were eligible for free or reduced-price lunch programs at the time of the study (Office of Superintendent of Public Instruction, n.d.).

Participants came from four third-grade classes. Two classes were selected to be the control group and the remaining two classes were selected to be the experimental group. Each group included a roughly equal number of students. The control group did not receive a bullying prevention curriculum during this project, whereas the experimental group did receive a bullying prevention curriculum for the duration of this research project. All 108 students in four classes were given the approved consent form to take home to their parents. After one month, 52 had been returned (a response rate of 48%). Participants initially included 52 third-grade students from all four third-grade classes at one elementary school. During the course of this research, 12 students either moved or were not present during pre-test or post-test data collection, which reduced the number of students included in the control group. Participants ranged in age from 8 years-old ($n = 18$) to 9 years-old ($n = 22$). Females comprised 67.5% of the participant group ($n = 27$). Males comprised 32.5% ($n = 13$). Thirty students comprised the experimental group, and 10 were in the control group.

Measures

To assess knowledge of the definition of bullying, the researcher developed a questionnaire using the definition of bullying provided by the Second Step curriculum (Committee for Children, 2014). The questionnaire isolates each part of the definition of bullying in order to assess student knowledge of each part. The definition of bullying used in the development of this questionnaire is provided below as it appears in the Steps to Respect curriculum: “Bullying is unfair and one-sided. It happens when someone keeps hurting, frightening, threatening, or leaving someone out

on purpose.” (Committee for Children, 2005, p. 17). The developed questionnaire is included in Appendix A.

To measure student experiences with bullying, the Peer Interactions in Primary School Questionnaire was chosen to assess direct and indirect bullying experiences. This survey, developed by Tarshis and Huffman (2007), provides a measure of experiences related to bullying with regard to experiences of being a victim as well as a bully. The measure was developed for ages 8 to 12 and contains 22 items that assess direct and indirect bullying by asking students to rate experiences as happening a lot, sometimes, and never (Hamburger et al., 2011). Items on the Peer Interactions in Primary School (PIPS) questionnaire include self-reports of experiences of being teased, punching or slapping others, being mean to others, feeling bad about being mean to others, and feeling sad or ignored (Tarshis & Huffman, 2007). The overall reliability of this measure is high, with Cronbach’s $\alpha = .90$. The Bullying Scale has a test-retest internal consistency of .84 and the Victim Scale has a test-retest internal consistency of .88 (Tarshis & Huffman, 2007). Dr. Tarshis gave his permission to use the PIPS measure for this research.

Procedures

Prior to this investigation, approval was obtained from the Human Subjects Review Council (HSRC) at a regional university to ensure that all methods and practices of this research were appropriate. The primary researcher obtained district approval to conduct the study and one elementary school whose personnel responded with interest in participating was selected. The researcher presented about his proposed study at a staff meeting at the participating school. The third-grade teachers were willing to support the research by sending and collecting consent forms and making their students’ available for the Second Step lessons and pre-and post-test time. In addition, a school counselor was willing to implement bullying-prevention lessons for the purpose of this project.

Students who had obtained parental consent were given pre-test surveys to assess their experiences and understanding of the definition of bullying. Students who did not provide parental consent to participate were given word search activities to complete during survey administrations. An assent form was orally presented to third grade students. The PIPS measure to assess experiences of bullying and the Bullying Questionnaire to assess knowledge of the definition of bullying were then administered. These pre-test surveys were read aloud to students so that reading was not a barrier to understanding the materials. To ensure privacy of answers and to decrease the stigma surrounding responses regarding bullying and victimization, privacy folders were available for students. The researcher and school counselor were both available to assist students if they did not understand an item. The school counselor was bilingual and was able to assist students in Spanish.

After students in the four classes were given pre-test surveys, the school counselor provided Second Step Bullying Prevention Unit lessons to students in two classes over an 8-week period. Lessons focused on teaching students how to identify bullying, intervene when bullying was observed, and respond if bullying was occurring personally (Committee for Children, 2014). Students in the remaining two third-grade classes were provided with the counselor’s typical programming that did not focus on bullying prevention. After 8 weeks of instruction from the

counselor for 30 minutes once per week, the researcher collected post-test data in the four classrooms using the PIPS questionnaire and his Bullying Questionnaire. After this research was completed, the school counselor provided students in the control group with the same bullying prevention curriculum that the experimental group received during this study.

Results

Data were screened prior to analysis. Results of these screening procedures indicated that the data was appropriate for analysis. Main effects of gender were examined at pre-test and post-test intervals using analysis of variance (ANOVA). Gender had no significant impact on overall experience and no significant relationship with knowledge of the definition of bullying at pre-test or post-test.

An ANOVA was conducted to determine if the two groups of students (treatment and control) demonstrated significant differences in overall experiences with bullying at pre-test and post-test intervals. A second ANOVA was conducted to examine the differences between the two groups with regard to knowledge of the definition of bullying at pre-test and post-test. Results indicate that at pre-test, no significant differences between the treatment and control group were found in bullying experiences $F(1, 39) = .02, p = .90$ or in knowledge of the definition of bullying $F(1, 39) = .44, p = .50$. ANOVA results from the post-test analysis indicate that the treatment condition had a significant main effect on knowledge of the definition of bullying at post-test; $F(1, 39) = 5.07, p = .03$ but no significant effect on student experiences with bullying $F(1,39) = .18, p = .68$. The change in knowledge in the treatment group was significant at $t(29) = 4.70, p < .0001$. Treatment had very little impact on overall experience $t(29) = .30, p = .76$. Results found no significant effect of treatment on victimization at post-test $F(1,39) = .35, p = .56$. With regard to the bullying of others, treatment also had no significant impact on bullying of others at post-test, $F(1,39) = .01, p = .92$.

Responses on the PIPS questionnaire showed that a relatively high number of students had some kind of experience with bullying ($n= 34$) and relatively few engaged in bullying behaviors themselves ($n= 13$). Of the 13 students who reported having bullied someone else at pre-test, 7 reported engaging in more than one bullying behavior. At pre-test data collection, students in both groups rated experiences with bullying on the PIPS fairly similarly, with those in the treatment group ($M= 7.63, SD = 7.54$) rating experiences with bullying and victimization as slightly higher than the control group ($M = 7.3, SD = 7.00$). At post-test, group means in both conditions remained fairly consistent with regard to overall experiences with bullying, victimization, and bullying others. Group means across measures are shown in Table 1. Group means are presented by overall experiences with bullying as measured by the PIPS questionnaire. Experiences are also measured by Victim and Bully Subscales included on the PIPS questionnaire. Knowledge of the definition of bullying is represented in Table 1 by the total score of the Bullying Questionnaire created by the researcher.

Table 1

Group Mean Responses on the Peer Interactions in Primary School Measure

Group		PIPS Total (Pre)	PIPS Total (Post)	Bully Total (Pre)	Bully Total (Post)	Bully Subscale (Pre)	Bully Subscale (Post)	Victim Subscale (Pre)	Victim Subscale (Post)
Treatment	<i>M</i>	7.63	7.93	8.60	10.43	1.03	1.53	6.57	6.40
	<i>N</i>	30	30	30	30	30	30	30	30
	<i>SD</i>	7.54	8.15	2.67	1.87	2.06	4.13	6.33	6.96
Control	<i>M</i>	7.30	6.70	7.90	8.90	1.70	1.70	5.60	5.00
	<i>N</i>	10	10	10	10	10	10	10	10
	<i>SD</i>	7.04	7.83	3.31	1.85	3.13	4.72	4.86	4.55

Discussion

The results of this study indicate that the bullying prevention lessons taught to students in the treatment group likely impacted their understandings of the definition of bullying when compared to their understanding of bullying at the beginning of this project. This finding was significant and indicates that the bullying-prevention lessons were able to provide students with the instruction needed to improve their ability to correctly identify parts of the definition of bullying. This discovery is important because it demonstrates that the bullying prevention lesson had an impact on what students knew about bullying in response to the curriculum. With a better understanding of bullying, students may be better able to identify it when it occurs and to report it accurately and appropriately to adults at home and within the school environment. Although students were better able to define bullying, results did not support the idea that this increased knowledge alone impacted their experiences. Rather, overall experiences with bullying remained relatively unchanged across both treatment and control groups. While both groups demonstrated some fluctuations of overall experience, bullying, and victimization, none of these changes were statistically significant. The researcher's hypothesis that the program would have an impact on the students' experiences of bullying behavior was not supported in the current study.

One concern is that 85% of students in the study reported experiencing bullying behaviors and 33% of the participants reported demonstrating some bullying behavior of their own. No student in this research reported being only a bully, and those who did report being bullies had some of the highest ratings of victimization as well. Both of these self-report rates of bullying and victimization fit with expected rates reported in previous studies. For example, Bradshaw et al. (2007) conducted a study with roughly 16,000 individuals that showed bullying rates of approximately 30%.

Limitations

One of the limitations of the current study is that a convenience sample was used for participation. Based on the requirements for this current study, that bullying-prevention lessons needed to be implemented in the school environment, it was challenging to find schools with the means and staff willingness to provide these lessons to students. Controlling for student attendance was not feasible within the parameters of this project, and this may have impacted the extent to which those in the treatment group experienced the full benefits from the prevention

program. This study was also impacted by a rather small sample size ($n = 40$). Additionally, the lack of racial demographic information is a limitation. Based on data from the school differing from state database information, the exact racial makeup of the participants is unknown. Given that this research showed that the Second Step Bullying Prevention Unit had significant impacts on student knowledge of the definition of bullying, a continued focus on this aspect of the topic may be important in understanding students' needs and developing focused bullying programming.

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Appendix A

Bullying Questionnaire

My name is _____

Please tell us what you know about bullying. Answer each question the best that you can by putting an X by your answer for each question.

1. Bullying is unfair.

Yes___

No___

Not sure ___

2. Bullying is one-sided.

Yes___

No___

Not sure ___

3. Bullying happens when someone keeps hurting someone on purpose.

Yes___

No___

Not sure ___

4. Bullying happens when someone keeps frightening someone on purpose.

Yes___

No___

Not sure ___

5. Bullying happens when someone keeps threatening someone on purpose.

Yes___

No___

Not sure ___

6. Bullying happens when someone keeps leaving someone out on purpose.

Yes___

No___

Not sure ___

A Roadmap to Reducing Barriers to Educational Justice in Washington State

Manka M. Varghese, Ana Elfers, and Margaret Plecki

Abstract

With Diversity, Equity, Inclusion, and Justice being critical concerns for schools in Washington state, this article provides a road-map summary of issues of equity and educational justice in the state. This summary is based on a group of studies under a project jointly funded by the Washington Education Association (WEA) and National Education Association (NEA) undertaken in the years 2020-2021 by researchers from the University of Washington (UW) and including community partners as well as colleagues from Washington State University (WSU).

In this article, we report on a researcher and community partnership with families, communities, and educators invested in racial equity from across Washington state and working to create a bold, direction- setting “roadmap” for reducing barriers of institutional racism in Washington state’s P-12 education system. This project aimed to understand the level and types of investments and practices (i.e., policies, decision-making, and actions within Washington’s specific historical context) needed to address and eliminate systemic educational inequities from the perspective of families, students, and communities that have been historically underserved. In order to understand which investments have been effective and to learn from ongoing family engagement efforts, we sought to discover what might be done to reduce inequities for students from non-dominant groups. As researchers, we engaged with communities of color¹, including students of color, families of color, teachers and administrators of color, and their networks, Indigenous communities as well as other educators throughout the state through various research efforts, focus groups, and other forms of data collection. This research was driven by the fact that non-dominant communities have not been provided authentic opportunities to describe and influence the types of investments and policies they believe are most needed to address educational justice in Washington state’s PreK-12 education².

A multifaceted team of researchers and community members with specific expertise and commitment to advancing educational equity and justice in our schools and communities was engaged in this project. Team members participated in ways that leveraged their individual areas of expertise, while also contributing to whole group discussions about the specifics of the study design, data collection methods, and drafting of project deliverables. Many project partners had existing connections to this work through ongoing community engagement activities and many are also part of the national conversation about educational justice.

¹ We use the term “of color,” recognizing that it is an imperfect descriptive term and especially fails to acknowledge anti-Blackness and anti-Indigeneity, and for many Indigenous peoples it is not a term in which they feel included.

² Washington state’s ethnic commissions produced a 2009 report which resulted in the Washington State Legislature statutorily creating the Educational Opportunity Gap Oversight and Accountability Committee (EOGOAC) to address educational inequities. This document builds on the work of these organizations.

To facilitate community engagement, we partnered with the Equity in Education Coalition, a non-profit community-based organization to support the work with communities of color, Native/Indigenous, refugee and immigrant communities. In addition, we had community partners supporting specific faculty projects, such as Dr. Melodi Wynne from the Spokane Tribal Network and Laina Phillips, a principal from Wellpinit Public Schools who collaborated on the project focused on Indigenous perspectives. We also consulted with UW College of Education doctoral student Aditi Rajendran, whose area of expertise involves teachers' associations and affiliates and issues of educational justice.

Adaptations under COVID-19

The project was underway for only a few months when the COVID-19 crisis upended plans and activities. The pandemic further revealed systemic injustices that were worsening conditions for historically underserved students, students with special needs, communities of color, as well as Indigenous, immigrant, and refugee communities. Consequently, the project pivoted to alternative approaches in reaching out to educational communities through Zoom, online surveys, and other strategies. The scope of the project also expanded to include an examination of the types and scale of inequities that were emerging regarding educational services and supports in response to remote learning and other COVID-19 related challenges. Throughout this time, the UW leadership team met with the WEA point person to provide updates, share a draft outline, receive feedback, and ensure continuity in the transition to a new WEA lead.

Research Questions and Conceptual Framing

Since the project's inception, the research team has expanded to include new partners and organizations in order to support the statewide breadth of the work. Each of these efforts has produced an appropriate smaller product that contributes to the collective final article and informs other types of dissemination. As a whole, these individual projects helped us address the study's key questions:

1. What current state investments have been effective in reducing inequities in inputs and outcomes for students of color, Indigenous students, and historically marginalized students? What types of investments and activities at what levels of the P-12 system are not effective?
2. How have historically marginalized communities previously mobilized around school investment levels and priorities? What kinds of claims and challenges have been successful, and what strategies have they identified as having potential?
3. What additional investments are needed? These investments include consideration of educational standards and assessments informed by non-dominant groups, staffing, professional learning, curriculum, community engagement, and other supports and resources.
4. What recommendations can be made about changing systems that perpetuate inequities in systemic ways?

Through this review of literature and by prioritizing the perspectives especially of historically marginalized communities, including families, students, and community-based organizations in

policymaking and professional development, we offer a set of concepts that supports and guides our thinking and how they relate to positionalities, pedagogies, organizations/systems.

The conceptual foundations of this article rest on an understanding that public schooling and education in the United States, including Washington state, have from their inception been built on an unjust and unequal system for communities of color (Anderson, 2015), and especially (though not only) Indigenous, Black, Latinx, Southeast Asian, and Pacific Islander students and families. Major historical structural realities contributing to educational injustice have been the seizure of lands and genocide of Indigenous peoples; the forcible migration and enslavement of Africans; and territorial conquest, including most notably, areas of the Western United States by European colonizer/settlers. Schooling has participated in the process as an economically (through capitalism), racially, culturally, linguistically assimilative and often destructive mechanism during, after, and since. Throughout, these communities have nevertheless creatively engaged in sustaining and nurturing their ways of knowing and living (Sabzalian, 2019).

We start by proposing the term, *education debt*, (Ladson Billings, 2006) instead of “the achievement gap” to frame why students of color have, by and large, not been able to meet the same levels of educational attainment (as measured by standardized testing, discipline, attendance, and drop-out rates, postsecondary outcomes) as their white counterparts. Education debt takes into account these historical, economic, and moral injustices and frames this as a debt accrued over time due to various forms of injustice that disproportionately impact students and families of color. It is important to note that neither term, however, challenges the inherent validity of the ways in which educational attainment is measured. Education debt can be buttressed by the connected foundational and structural concepts of *Settler Colonialism* (Grande, 2015; Wolfe, 2006) and *Critical Race Theory* (Bell, 1980; Crenshaw et al., 1995; Ladson-Billings & Tate, 1995) (especially the latter’s notions of counter-storytelling, interest convergence, and whiteness as property) with understandings of countering *Anti-Blackness* and *Anti-Indigeneity*. The concept of Settler Colonialism posits how the contemporary United States, including its public education system, came to be through a relentless vision of replacement of Indigenous peoples and colonization of their lands and ways of life. This was mainly done through genocide and the invasion and continued assertion of state sovereignty and juridical control by white European settlers driven by an underlying assumption of white Anglo-racial superiority. Although not originally inclusive of the racially motivated genocide of Indigenous peoples, Critical Race Theory (CRT) provides a similar and related structural explanation of how U.S. society is basically structured by racism that it is embedded in legal and educational practices, policies, and institutions. Connecting Settler Colonialism and CRT as conceptual foundations in educational (in)justice provides powerful and far-reaching explanatory power to the way structural and material racism have historically and contemporaneously driven the inequities experienced by students, families, and communities of color. Moreover, both frameworks center the perspectives and experiences of those who have not been listened to when educational policies and practices have been instituted.

Along with the relevant CRT tenets of centering the importance of race and racism, challenging dominant perspectives, and committing to transformation, the CRT tenets of paramount importance are *counter-storytelling*, *whiteness as property*, and *interest convergence*. Counter storytelling within CRT is viewed as a way to emphasize experiential knowledge, especially how

the stories told by people of color are of prime value and essentially proof of evidence in describing racial oppression in opposition to majoritarian accounts and modes of accountability. The construct of whiteness as property proposes that in order to examine the effect of whiteness, we must go beyond looking at it as a particular set of phenotypes and ancestry and view it as a racialized system of meaning and domination. In such a system, interests of communities of color are only validated in mainstream society when there is interest convergence; that is, when they intersect with or are not seen to impede the interests of racialized white communities.

Proposals such as linguistic and cultural *revitalization* and *resurgence* (Lomawaima & McCarty, 2006) through Indigenous ways of knowing and being and *liberation* and *abolition* and (Love, 2019) *Afro-futurism* by Black activists, thinkers, and educators all embed a desire for something that has been anti-assimilative and not defined in and through racial and capitalist settler colonialism. These all constitute invitations to *reimagine* education in ways that have been articulated by and through their communities and in service of their sustenance, health, and healing, and ultimately, their reinvention.

Developing Core Principles and a Road Map for the Future

The research studies³ undertaken for this project provide clear direction and a path forward for reducing inequitable practices and institutional racism in Washington state's P-12 system. The fundamental premise underlying all the studies is the need to change our assumptions and beliefs about education and how it is currently practiced and financed in Washington state. The studies' overlapping areas for change were summarized into *four core principles* which need to be considered *simultaneously and interactively* to guide ongoing and future work. Within each of the four principles discussed below, we draw from and reference the individual studies providing deeper insight and examples of how changing assumptions, beliefs, and materialities invite opportunities for action toward more just educational practices.

Principle #1: Disrupting Settler Colonialism, Racism, and Whiteness in Educational Structures and Values

The structural inequities that permeate Washington's current education system have historical roots in Settler Colonialism and segregationist policies and practices. Prior to western expansion in the 1840s and 1850s, Indigenous communities had tribal sovereignty over their own territories and responsibility for the education of their youth. The importance of tribal sovereignty and the acknowledgment of Washington state as a settler colonial government are important basic assumptions in understanding Indigenous practices and knowledge systems that shape ways of life for Native students, their families, and communities (Navas, 2021). The expansion of white settlers and appropriation of Native land increased the federal government's involvement in and concerns for how to govern new territories and integrate them into a nation state, with education playing an increasingly important role.

³ The studies/reports are referred to throughout the rest of the article, and a table of their titles, findings, and key quotes are provided in Appendix A.

When Washington became a state in 1889, it adopted “paramount duty,” what remains the country’s strongest constitutional principle for education. Yet the founding of the state also brought racism and white supremacist values in education policy and practice. This included the historical challenges of organized teachers in advancing or contesting white supremacy in education policy that have prevented prioritizing educational justice and efforts to decolonize practice (Beadie, 2021).

Across the individual studies in this series, the partnership revealed racism and white supremacist values as normalized and perpetuated in schools and curriculum, and in policy and practice, as well as a general lack of will to address it by many racialized white educators. The studies found a denial of racism and a marginalization of students of color by a number of educators (Elfers & Plecki, 2021), the presence of a climate of normalized racism evident in disproportionate discipline in many schools (Oh Park & Li, 2021), rampant microaggressions, a lack of accountability and empathy, and isolation of students of color (Washington et al., 2021). The studies frequently found a failure to even name racism in schools and in student handbooks.

Many educators do not have standards of anti-racism that are meaningful to students of color, and they have not provided reporting systems that produce justice for students of color (Roidad & Srinivasan, 2021). The partnership revealed misunderstandings of the differences between cultural competency and anti-racist education and the need to resist harmful notions of “competence” that position children with disabilities (Beneke et al., 2021) and children of color outside the bounds of schooling and enriching learning opportunities (Headrick Taylor et al., 2021).

Principle #2: Building an Equity-Based School Finance System

The Washington state constitution clearly asserts that providing for education is the “paramount duty of the state” and specifies that the level of support be “ample.” It further declares that what the state refers to as ample provision be made for all children “without distinction by race, color, caste, or sex.” Simply put, a high-quality education in Washington state should be fully funded by state sources and must be non-discriminatory in implementation. However, structural inequities have been built into state finance policies, and Washington has never fully provided the resources necessary to deliver on these constitutional requirements (Beadie, 2021).

The lack of substantial funding for education is coupled with longstanding inequities in the distribution of education resources. While the majority of revenues for education in Washington come from state sources (thereby making education revenue less reliant on local property taxes) local community wealth determines the amount and quality of educational services provided by districts and schools. To this day, students who are low-income and students of color lack access to some of the resources available to students residing in communities with higher property tax valuation (Knight & Plecki, 2021).

In our research, we heard from a number of leaders at state and local levels, especially leaders of color, who assert that radical changes are needed in the state’s finance system to address both the adequacy of funding and the equitable distribution of resources (Elfers & Plecki, 2021). These

changes include: (1) eliminating funding inequities related to the differences in property values across school districts, (2) providing substantial additional resources for culturally and linguistically diverse students and for students with a disability, (3) forming cross-sectoral partnerships with other agencies to support students and their families experiencing financial hardship, housing instability, food insecurity, or a lack of access to digital devices or mental health resources (Elfers & Plecki, 2021) and (4) creating a system of school funding that is centered on the needs of students and families (Johnson, 2021; Navas, 2021; Varghese, 2021).

While the *McCleary* decision did increase the level of school funding, it was not focused on the equity of the distribution of education resources. Instead, the state's policy response to *McCleary* was primarily focused on increasing educator compensation, which represented the vast majority of new dollars infused into the state funding model. Improvements in educator compensation were certainly warranted, but these compensation investments do not address the lack of other necessary resources for students and their families. In fact, in an attempt to address differences in cost of living, the recent implementation of the regionalization factor has driven additional dollars to those districts with higher property valuations (Knight & Plecki, 2021). Addressing the lack of equity in funding remains a central challenge. The state needs to direct far more funding to school districts that enroll greater proportions of students from low-income households. This could be done either through expanding the Learning Assistance Program or by creating new funding streams that directly support communities of color and low-income students. Eliminating reliance on local property taxes for school funding is another way to advance equity and address one of the structural inequities.

Principle #3: Being Led by Students, Families, and Communities of Color/of Indigenous Backgrounds

For all children and youth to thrive, the state's education system must be reimagined in ways where students and families of color and other historically marginalized groups lead with their experiences and voices. This recentering principle also applies to organizations and agencies that primarily serve educators, and it calls for leadership and decision makers to put students first, instead of educators. Rather than educators making decisions for others, decisions are made together in authentic partnerships with or led by families and communities. Recentering students and families towards educational justice requires listening to and amplifying community voices, acknowledging the history of discrimination, learning what families and communities need, perceive, and know, and then taking action based on their direction (Arviso et al., 2021; Navas, 2021; Oh Park & Li, 2021). The studies in this series document the broken trust within communities and the need for safe spaces that invite community self-determination, activism, and healing (Washington et al., 2021). For families of children with disabilities, it involves pushing back on status-quo systems that promote whiteness and fail to recognize and value ability differences (Beneke et al., 2021).

Despite these challenges, the project revealed pockets of support for immigrant, Indigenous, and refugee youth and other historically marginalized students, and spaces that invite problematizing and re-imagining education (Arviso et al., 2021; Headrick Taylor et al., 2021; Washington et al., 2021). These redefined spaces of learning are culturally sustaining, holistic, and student-centered, and empower youth to co-create their education. Beyond these spaces, students deserve

authentic opportunities to engage in educational decision-making processes and anti-racist work in ways that aren't burdensome (Roidad & Srinivasan, 2021). This becomes particularly apparent when examining geographic differences across the state in supporting linguistically and culturally diverse students (Johnson, 2021)

Principle #4: Creating an Interdependent System of Supports for Students, Families, and Educators of Color/of Indigenous Backgrounds

A fourth principle borne out of these research studies is the need for a web of support and care for students, families (Navas, 2021), and educators of color (Varghese, 2021). A web of supports assumes an expansive and holistic view of care, with multiple avenues for addressing well-being (Washington et al., 2021). Children cannot learn if they are hungry, homeless, or in unsafe situations, and schools already attend to issues beyond education. Schools also partner with government agencies or local non-profits to support mental health care, nutrition/food assistance, and other health and social services. Addressing these multifaceted needs resulting from their intersecting identities in holistic ways requires breaking down the silos of services that exist within and among fragmented state agencies and organizations in order to increase their capacity to assume joint responsibility (Elfers & Plecki, 2021) As the crises of the pandemic and the most recent racial reckoning have brought to light, educators have been inflexible and unresponsive to the needs of children and families. During the pandemic, much of what we have seen in terms of access to food, healthcare, and technology are dependent on a family's zip code and language skills, and leadership responses often have been technical rather than bold and adaptive (Navas, 2021). Adaptive leadership does more than tinker around the edges; it requires reimaging the education system and whom it is meant to serve, beginning with valuing the knowledge, experiences, and ideas of those most impacted by educational decisions: students and families. For example, many students of color feel that the Black Lives Matter movement has not been addressed with urgency, empathy, or accountability (Roidad & Srinivasan, 2021).

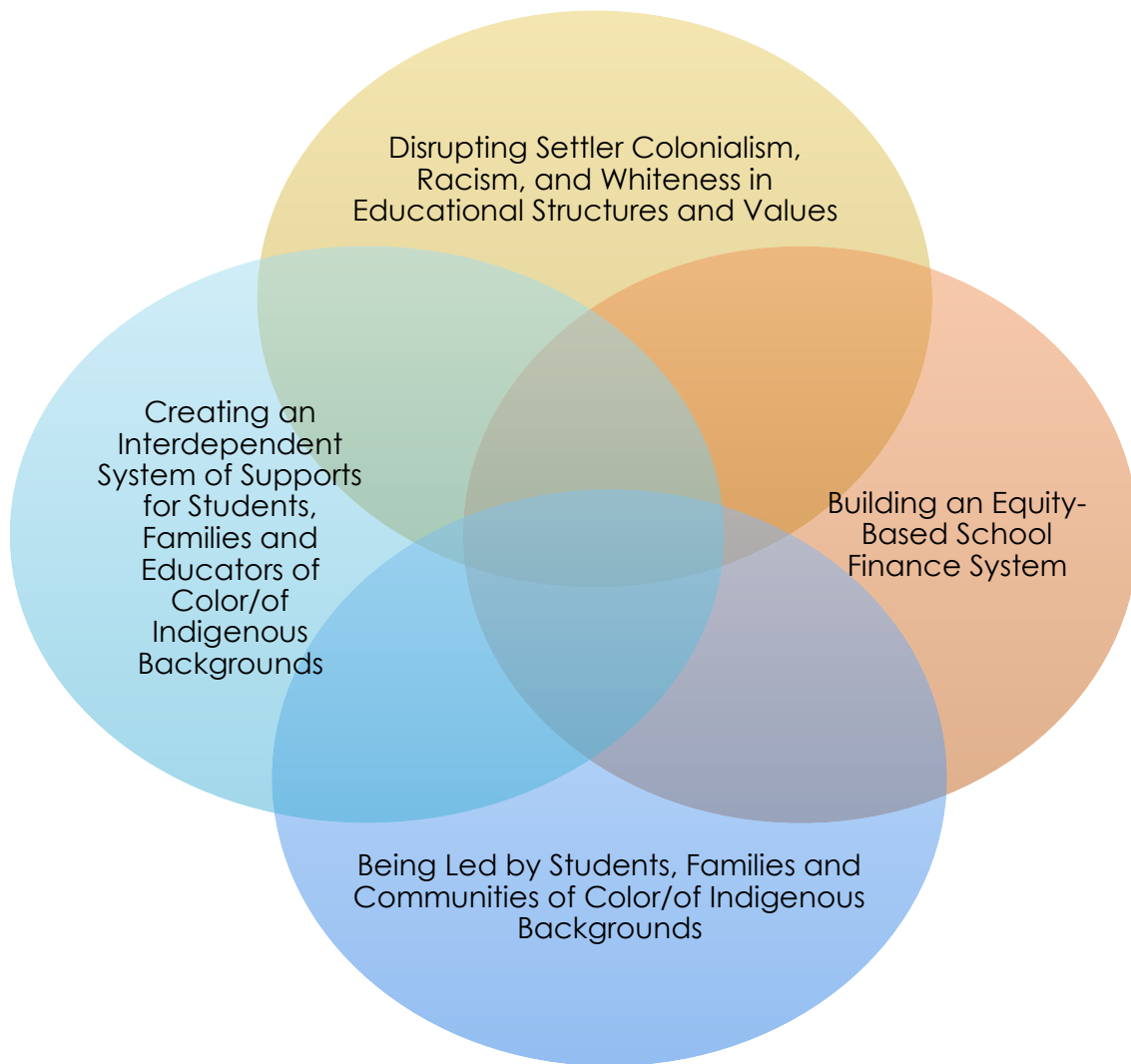
A web of supports also extends and encompasses educators of color at all levels of the system. It is disingenuous to promote the recruitment and retention of educators of color without providing them an explicitly anti-racist web of supports. Educators of color face the challenge of racism within a white system of dominance that actively works against them (Varghese, 2021). Much of the emotional labor and cost of doing anti-racist and educational justice work is borne by leaders of color (Elfers & Plecki, 2021) and a web of support necessarily centers Black-led, People of Color, Indigenous, and immigrant organizations and spaces (Arviso et. al, 2021; Washington et al., 2021). For educational organizations like the WEA (and others) to be included in a web of support, they would need to address their own current and historic complicity in racism and restructure their organization to center students, families, and educators of color in setting legislative agendas, policies, and practices (Park & Li, 2021). The web of support extends to the lack of racial, ethnic, and linguistic diversity in the educator workforce, and the need to change hiring and retention practices and as well as what is valued within organizations and schools. Differences in retention rates exist among teachers of color (and Black teachers specifically) with known factors that impact it (Elfers et al., 2021). Linguistically and racially diverse educators often come to their work with a rich understanding of the community and have cultural and linguistic skills that enable them to form deep connections to students; support for the work of these educators is necessary.

Conclusion and Potential Directions for Future Work

Developing a roadmap for the future begins by anchoring the core principles as the bedrock supporting the weight of the work to be done. This was translated into a series of questions for WEA to consider in making potential changes to the organization. Our collective studies communicate a unified set of principles that include addressing past systemic educational injustices. These educational injustices will continue to haunt us until they are confronted and changed (Principle #1: Disrupting Settler Colonialism, Racism, and Whiteness in Educational Structures and Values). The roadmap requires reordering our priorities with regard to the use and distribution of resources. We can fulfill the “paramount duty of the state” with ample funding for all children in the state without discrimination (Principle #2: Building an Equity-Based School Finance System). Reimagining an educational system that works for all requires centering the work around historically marginalized children and families and including their voices in all aspects of decision making (Principle #3: Being Led by Students, Families, and Communities of Color/of Indigenous Backgrounds). Finally, those who have been marginalized in our educational system need to experience a web of support and care that is expansive, antiracist, grounded in indigenous knowledge, and embracing of collaborative approaches to serving one another (Principle #4: Creating an Interdependent System of Supports for Students, Families, and Educators of Color/of Indigenous Background). The Venn diagram in Figure 1 reflects the overlapping and interconnected nature of this work.

Figure 1

Four Core Principles for Reducing Barriers to Educational Justice



The principles, strategies, and guiding questions we have posed for enacting sustainable practices toward educational justice in bringing about lasting systemic change do not and cannot operate in isolation. Rather, they must be considered *simultaneously* and *interactively* to guide ongoing and future work. Like a three-legged stool, if one element is missing or impaired, the structure will not be stable or sustainable. The studies conducted in support of the roadmap reflect restorative attempts to erode the cumulative ‘education debt’ and create a starting point for reimagining just schools in Washington state. While the task may seem daunting, it should be emphasized that these recommendations are feasible within the confines of our current systems. Many educators already possess a deep understanding of these issues and some have even experienced pockets of exemplary and refreshing possibilities for change. As a state, Washington can be at the forefront of leading for educational justice and addressing racial inequities, but it requires individual and

collective will to do so and trust in allowing historically marginalized children, families, and communities to lead.

Potential Directions for Future Work

While we have examined numerous challenges and barriers to achieving educational justice in Washington state, we acknowledge that there are additional issues, systems, and policies to be explored. For example, our inquiry has focused on the P-12 educational system, but we note that significant barriers to educational justice occur in higher education settings as well. In the higher-education context, this includes issues such as access to opportunities, financial aid, persistence, and graduation for students of color, Indigenous students, immigrants, students with disabilities, and other marginalized groups. Similarly, where racial disparities exist prior to enrollment in formal preschool or kindergarten settings, challenges exist in providing equitable access to education and other essential resources for infants and toddlers.

Yet another area of future work would involve a deep examination of the policies and supports surrounding teacher, principal, and other educator-preparation programs, including how these programs can help prepare educators who represent especially the racial, cultural, and linguistic characteristics of the students they serve and who are fully prepared to make the necessary systemic changes to achieve educational justice. Additionally, it would be important to conduct further work on the deep inequities inherent in the areas of student discipline, testing and assessment, dual language, and programs for highly capable students and students with disabilities.

Conducting this research during the Covid-19 pandemic meant that our approach and outreach efforts were significantly altered, resulting in fewer opportunities to engage with students, families, and communities across the state. Because of those limitations, further inquiry into the perspectives of those most impacted by educational policies and decision-making should be pursued, and these findings and recommendations should be vetted by broader communities.

We emphasize that all future work addressing educational justice should include, or rather, be led by students, families, and communities in authentic and empowering ways. We hope this will start with the way this work is discussed and disseminated.

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Appendix A

Reports, Key Findings, Quotes/Vignettes

Authors	Name of report	Findings	Quote(s)/Vignettes
Arviso, D., Guerrettaz, A., Phillips, L., Wynne, M.	<i>Native Perspectives on Educational (In)equity in Washington State: Reclaiming Educational Sovereignty</i>	Educational equity does not exist for tribes in WA state. Educational sovereignty would be a key move towards equity.	“if we are going to really serve our students, the concept of Tribal sovereignty... educational sovereignty and self-determination are things that people [namely Washington educators] need to have a good understanding of” (educator)
Beadie, N.	<i>Paramount Duty of the State: A Brief History of Educational Equity and Inequality in Washington State</i>	Even as Washington state institutionalized equitable ideas and principles in its constitution, it always carried fundamental tensions and contradictions within the commitments they embodied.	This was a historical study so there were no quotes/vignettes)
Beneke, M., Collins, S. & Powell, S.	<i>Who Gets to be a Child? Mothering Young Children of Color with Disabilities and the Politics of Resisting Normalcy</i>	Mothers of young children of color with disabilities positioned themselves and their children in relation to “competence,” as well as their priorities for justice in early childhood, especially (a) mothering against normalcy; (b) learning systems and pushing back; and (c) dreaming beyond the status quo.	“I want him to be considered as a whole person [but it’s] really hard because they want to focus on the deficit and what he can’t do.” (mother)
Elfers, A. & Plecki, N.	<i>Working Towards Educational Justice at State and District Levels: Perspectives of Educational Leaders</i>	The work should be centered around children and families and building anti-racist principles in	“I think a lot of us white people would really benefit from being in situations where we are the minority and just

		all kinds of educational policymaking.	sitting there and listening, because there's a lot to learn. And there's a lot of brilliance that we have ignored in both Indigenous culture and Black and other cultures, in how community is centered and how things are done.” (educational leader)
Elfers, A., Plecki, M., Bei, N., & Kim, Y.	<i>How Retention and Mobility Outcomes Differ for Teachers of Color in Washington State</i>	This paper demonstrates the importance of using disaggregated data about the retention and mobility of teachers of color because the outcomes for individual racial/ethnic groups vary significantly, and policy responses need to become more targeted to address these differences.	This was a quantitative study so there were no quotes /vignettes.
Headrick-Taylor, K., Lee, J., Riesland, E., & Ikeru, M.	<i>STEM Learning as Care Work</i>	Looking at programming in this particular partnership through a feminist lens of care, the partnership revealed STEM learning as <i>nourishment</i> , a form of <i>maintenance</i> , and supporting <i>families of choice</i> for youth and adult facilitators.	In World through Food, facilitators guided youth through various cooking projects that allowed learners to experience properties and processes like macromolecules, protein chains, and pH. Making hummus, for instance, provided a familiar context for youth from several African countries to consider the best ratio between starch and lipids for the longest (read creamiest) macromolecule. Youth and facilitators considered arriving at the “answer” as synonymous with providing delicious and smooth nourishment for their

			parents and siblings at home and for each other in the program.
Johnson, E.	<i>Challenges and Possibilities in Culturally and Linguistically Diverse School Districts.</i>	This study described challenges and recommendations to enhance language programming and family advocacy from teachers, administrators, and students in Eastern Washington.	“Cultural competency courses should be mandatory for staff members, so they are equipped with tools to better understand the lives of immigrant youth and be of more help. This can be accomplished by hiring staff for those roles and by asking parents to chime in and express their concerns and ideas.” (student)
Knight, D. & Plecki, M.	<i>Establishing Priorities for Education Finance Under Fiscal Uncertainty: Recommendations for Washington State Policymakers</i>	This paper describes how Washington State legislators can prioritize finance equity when making changes to the state’s K-12 funding system over the coming years. The authors use school district finance data from the Washington Office of the Superintendent for Public Instruction to understand post-McCleary funding allocation and to identify specific state funding accounts within the Washington school finance system that disproportionately benefit predominantly white and low poverty school districts.	This was a quantitative study so there were no quotes /vignettes.
Navas, S.	<i>A Community Perspective on Educational Justice in the Time of COVID</i>	This study was based on two surveys of educators, families, and community leaders undertaken by the Equity in Education Coalition; findings showed that desire of families to transform the	During a two hour meeting regarding the topic of Learning Loss with over 40 Washington state educators, community leaders, parents, and students of color and/or whose dominant language is not English, the conversation

		educational system to be anti-racist, fully funded, and a source of engaging digital curricula and beyond (assistance with food, rent, paying bills)	quickly changed from the constant and historical reality of learning loss experienced by students of color, into a re-imagining of an educational system that centered the lives and experiences of students of color, immigrant, refugee, native, and non-English dominant speakers.
Oh Park, S. & Li, K.	<i>Restoring the 'Education Debt': Equity Priorities for Children and Families in BIPOC and Immigrant Communities in Washington</i>	This report provided an overview of the most critical dimensions of educational injustice experienced by BIPOC communities and the investments and policy practices needed to redress these.	This was an overview report and did not contain quotes and vignettes.
Roidad, A. & Srinivasan, D.	<i>Achieving Educational Justice for Washington's Students of Color</i>	This study found that students sought ways to be co-creators of decision making that impacted them. They also desired curriculum that was relevant to them and educators and a system that was more accountable to be anti-racist.	"Anywhere in the world youth are being discussed or changes about our lives and our education are happening, we need to be in the room and we need to be part of the decisions" (student)
Varghese, M.	<i>"We know what's right for kids": Washington State Educators for Racial Justice Speak Up and Speak Back</i>	Most educators viewed education beyond that of students' academic achievement, with many decrying this excessive focus as being a distraction or actually potentially harmful when set as a target to meet for students of color. When students of color were asked to describe their ideal world, they described a world where students would be safe and cared for in ways	"get off the throttle of academics...I want people to understand the community" (principal talking about his teachers)

		where their mental and physical health and personhood were protected, nourished, and sustained.	
Washington, S. A., Germinaro, K. Chui, K. & Ramirez, J.	<i>Spaces of Belonging: Learning with and from Black-Led Community Organizations and Community Members of Color</i>	Qualities of Black-led and POC community learning spaces that fostered a sense of belonging were seen as liberatory, culturally sustaining, and to be homeplaces.	A final way that TROU centers the expertise and desires of students, families, and educators of color was through the creation of a video titled, "I Can Return to School When...". In the video, mainly students, parents, and educators of color from across the state of Washington are seen sharing their needs and requests for a critical and culturally sustaining curriculum; an end to bullying and racially charged discipline against students of color; anti-racist training and accountability for teachers; the hiring of more teachers and administrators of color; and a commitment from educational leaders across to state to disrupt historical and present day racism and inequities in schools.

School District Staffing Challenges in a Rapidly Recovering Economy

Dan Goldhaber, Trevor Gratz, and Nate Brown

There is much discussion of late about the significant challenges that schools face with hiring staff and implementing COVID-recovery initiatives. Numerous stories report increasing difficulties recruiting and retaining all manner of school personnel, from bus drivers to teachers (Barnum, 2021). But it is also true that stories about staffing challenges and teacher shortages in particular have been out in popular media for years, including years when it *did not* appear that these challenges were acute according to large-scale available data (Goldhaber & Theobald, 2016; Jacobs & Olson, 2021). Thus, while the COVID pandemic and recovery efforts may have created unique challenges, the stories pointing to COVID as the primary reason schools face staffing issues could be missing underlying labor-market dynamics.

Unfortunately, it is challenging to get a clear and *timely* picture about the staffing challenges schools face, as comprehensive data on the supply and demand of school personnel is generally only available long after the fact. This is a problem if there is a desire to implement targeted solutions to staffing challenges, as opposed to, for instance, across-the-board pay increases (Cowan et al., 2016). Such policy solutions might include targeted changes to working conditions (e.g., reduced class sizes and extra release time) or compensation. For there is evidence on the effects of salary bonuses to teachers in key subjects who are employed in high-poverty schools (Clotfelter Glennie, Ladd, & Vigdor (2008), as well as loan forgiveness programs for in-demand subjects (Feng & Sass (2015). Federal, state, and local education agencies cannot offer timely retention incentives in response to teacher attrition or sign-on bonuses for positions that are particularly difficult to staff without knowing which areas are experiencing shortages (Dee & Goldhaber, 2017).

In this paper, we describe what we have learned about the staffing challenges faced by various kinds of school districts endeavoring to hire different school personnel in fall of 2021. We view job postings in the fall of the school year as reasonable proxies for shortage areas (at least for teachers, see further discussion below); the underlying assumption is that districts would have liked to have filled these positions prior to the start of the school year either through finding the right staff member before the start of the year or by retaining staff. The extant literature on late hiring in schools has focused primarily on teachers, finding that districts trying to fill positions at the start of the school year or later are often forced to draw from smaller and/or lower quality teacher-applicant pools (Keo et al., 2020; Liu & Johnson, 2006). Moreover, research also finds that teachers hired late can have negative effects on student achievement (Engel, 2012; Papay & Kraft, 2016).

We present descriptive findings on teacher job postings in addition to a range of other vacancy types (described in greater detail below). Unfortunately, while we are confident that teacher job postings in the fall are closely associated with immediate staffing challenges, we are less sure about this for other position types. This is both due to data limitations and that hiring trends differ considerably across job-type categories (e.g., paraprofessionals are often hired at the start of the school year after districts needs have been assessed or on a rolling basis due to shifting

needs or other factors). Overall, there is a lack of research on many non-teaching staffing positions despite that it is likely these positions play a key role in supporting student learning and instruction. While they do not provide findings on hiring cycles, Bisht et al. (2021) offer a number of key insights into paraeducator workforces, just one of the important and growing classes of school personnel. Lastly, we also cannot say whether our findings for fall 2021 reflect a business-as-usual (i.e., what is typical in other years) state for school systems or are unique in this time period as, to our knowledge, this is one of the first studies examining school job vacancies at scale in the context of Washington state. With that said, our findings reflect more broadly on conversations about school hiring trends and education labor markets.

Data Collection and Analysis

To better understand the nature of schools' current staffing challenges, how pervasive it is across types of school personnel (e.g., bus drivers), different teaching specialties (STEM, Special Education, etc.), and for different types of school systems (e.g., high- and low-poverty), we collected data on jobs posted on school district websites for the great majority (about three quarters of the districts in Washington state). We collected data for 216 of 295 districts using automated web scrapers. The remaining 78 districts either had unique webpages and required fine-tuned scrapers, did not post jobs in a consistent manner precluding the construction of a reliable scraper, or at the time had no jobs posted on their webpage.

It is worth noting that web scraping is relatively nascent data-collection tool and the literature on the usage of web scraping in research points out several caveats which are also applicable to this study. Landers et al. (2016) argue for a theory-driven approach to web-scraped data collection and highlight biases that researchers should consider when deploying web-scraping methods. Namely, Landers et al. (2016) caution that scraped data may be incomplete, contain sampling bias, and have external and internal validity issues. These points are important as the 78 districts we were unable to scrape are indeed not randomly or uniformly distributed across certain district types or characteristics. The districts for which we lack job-posting data are highly rural and/or small districts, serving on average fewer than 300 students. Relatedly, there are cases (typically in rural settings) where Educational Service Districts (ESD) list job openings on their respective websites on behalf of the districts they serve. We do not account for those postings in this paper, and it is unclear to what degree some postings would be duplicative (i.e., a job opening might occur on an ESD website as well as a district website).

Despite these data limitations, the districts contained in our analytic dataset serve over 1.1 million students and represent over 98% of students in the state. Data collected include the job title, date posted (and if this information is missing, we record the first time a posting was observed), district IDs, school IDs (when available), and job numbers. We began collecting data on September 24th of 2021 and compiled subsequent snapshots of active job postings. The data reported in this study are the data collected through October 26th. Using job titles, we classified postings as belonging to one of the following categories: administrative, athletics, bus drivers/other transportation, facilities, food service, health, paraeducators, and teaching. Within the teaching positions the following subcategories were created: English Language Learner (ELL), Elementary, Special Education, Substitutes, STEM (includes science(s), technology, engineering, and math), and Other. The STEM category is somewhat unique in that it includes

job postings from all science- and math-related subject areas (i.e., biology; chemistry; computer science; mathematics; middle-level mathematics; middle-level science; physics; general science; earth & space science (non-CTE)). We use the list of state-approved endorsement areas and compare these to the posting data to assign job openings to the broader categories of teaching areas mentioned above. However, we are unable to know for certain whether a teaching job posting requires a particular endorsement. In fact, while we believe it is generally not the preference of districts to staff middle-school level science and math teachers with teachers only certified in K-8 it is permissible by state law and does occur.

After obtaining the job-posting data, we then link to information about the individual school districts. Specifically, we merged in school report-card data from the Office of the Superintendent of Public Instruction on the percent of students eligible for free-or-reduced-price lunch (FRPL) and from the National Center for Education Statistics on the urbanicity of the school district. Based on the percent of students eligible for FRPL we constructed quartiles at the district level and refer to districts in the top quartile as “high-poverty” and districts in the bottom quartile as “low-poverty” districts. Below we present the number of open positions for all categories of jobs and for subcategories of teaching positions.

Figure 1 displays the number of posted job positions for all categories. Interestingly, while the media tends to focus on the “teacher shortage” (Bauerlein & Koh, 2020; Pandey, 2021; Singer, 2021), the position with the most postings statewide is that of paraeducator, about twice as many as teachers. Paraeducators can be many things, but they often provide one-on-one support, support to students with disabilities, life-skills support, and support to students with English-language needs. The number of athletic positions (mostly coaches) also far surpasses teaching positions.

Figure 1
Postings by Job Type

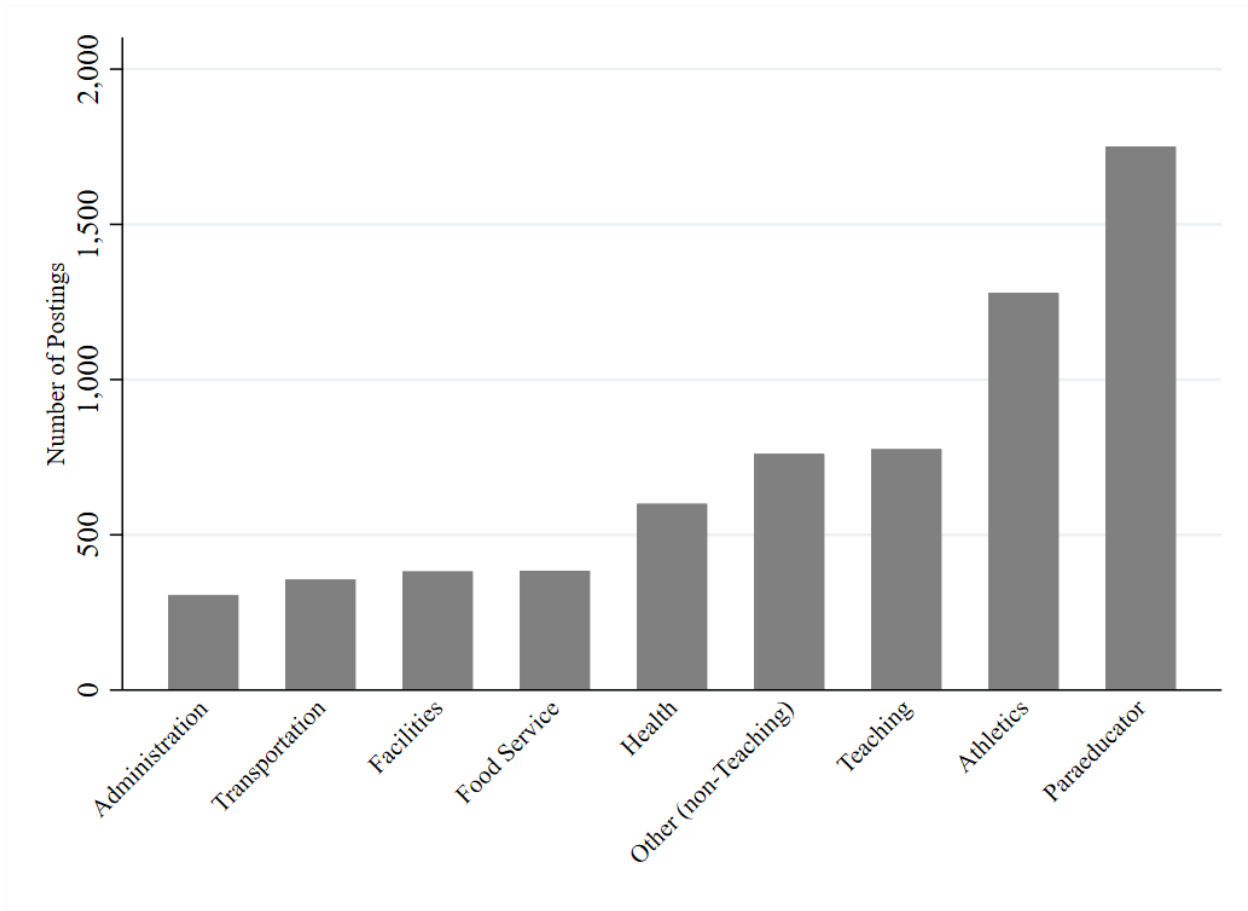
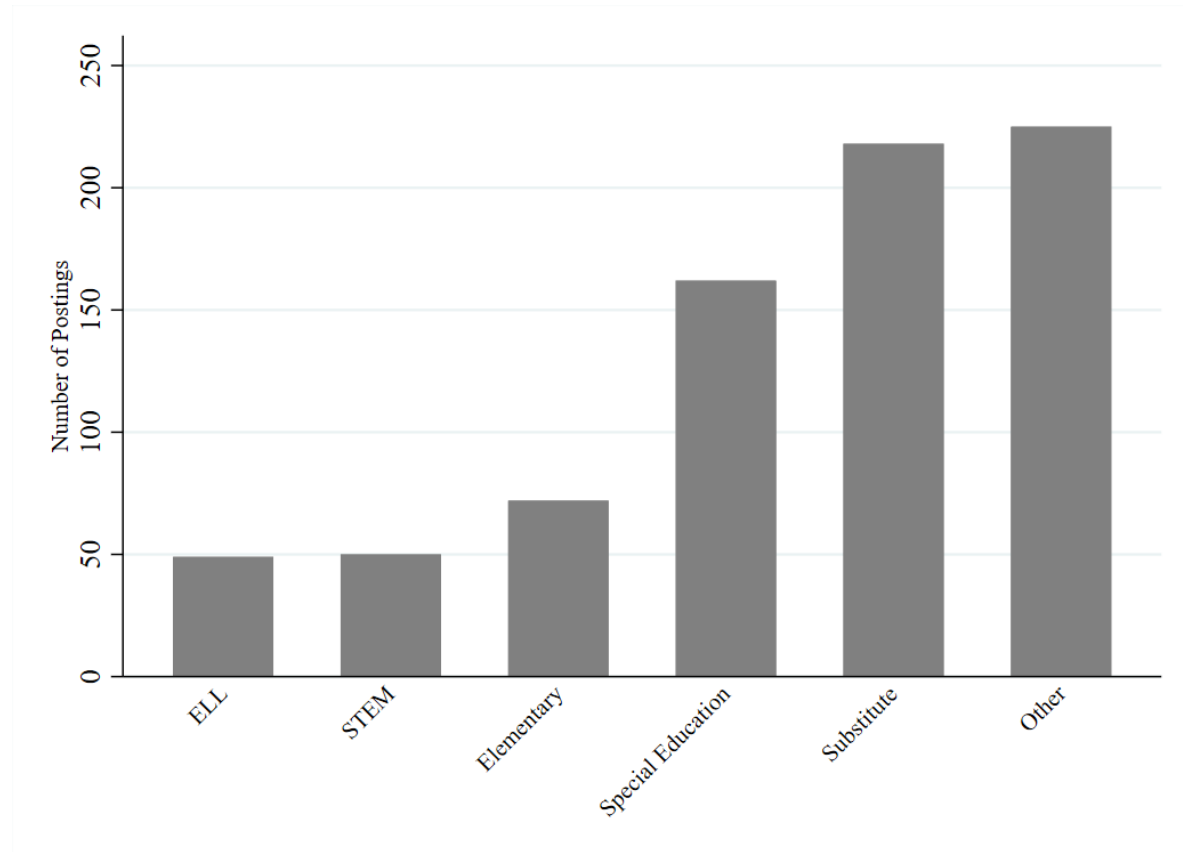


Figure 2 takes the 776 teaching positions from Figure 1 and delves deeper by disaggregating into different teacher categories (for some perspective on the 776 figure, public schools in Washington employed about 66,000 teachers in the 2018-19 school year; Bazzaz, 2019). By total postings, districts are most in need of substitute teachers and Special Education teachers, after which comes Elementary, ELL, and STEM postings, all of which added together roughly equal the number of Special Education postings.

Figure 2

Postings by Teaching Subcategory

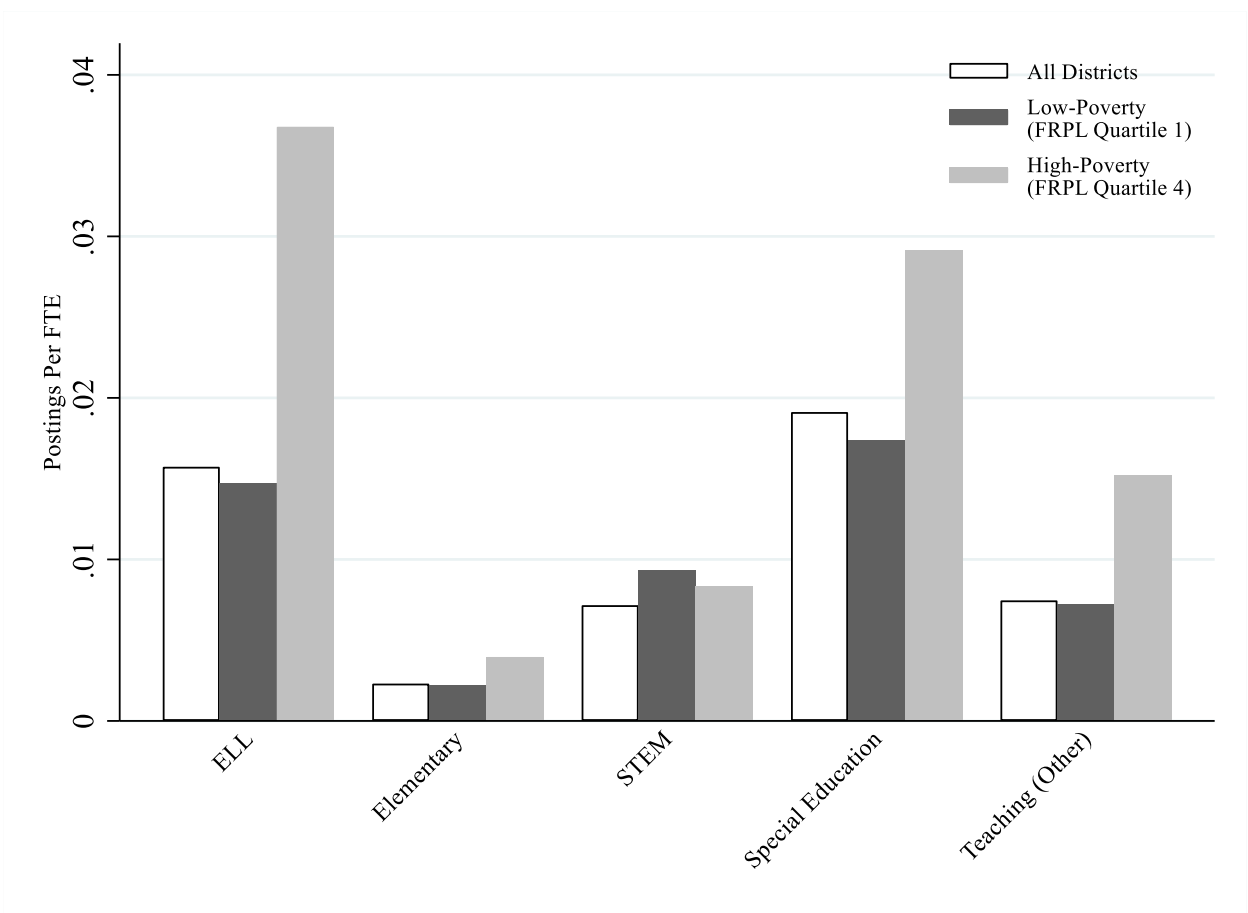


While Figures 1 and 2 are useful for getting a sense of aggregate demand by job classes, these figures can mask districts’ relative needs. For instance, the typical Washington school district employs 3.5 times as many full-time Elementary Education endorsed (the area of specialty) teachers as Special Education endorsed teachers, so we might expect the number of postings to be around 3.5 times higher. Thus, to create a more apples-to-apples comparison of staffing challenge across different teaching categories, we constructed a measure which we refer to as the “vacancy rate.” We follow Goldhaber et al. (2020) and divide the position postings within a given category, e.g., ELL, by the number of teacher FTEs endorsed to teach in that area in the 2019-20 school year, the most recent year of available data. Unfortunately, we cannot do this for substitute teachers because the state’s administrative data do not accurately track the number of substitute teachers in the state. We then also weight the average across the state by the total enrollment in each district, so that the numbers we present are representative of students rather than districts. This accounts for the fact that there are, for instance, a few very small districts that have very high vacancy rates in some areas where very few teachers are employed. For example, Inchelium School District has approximately 210 students and is looking to hire one Special Education teacher; without the weighting this district would have equal representation in the state to large districts (e.g. Seattle) and thereby skew overall rates.

The vacancy rates for different teacher categories appear in Figure 3. The first bar for each teacher category is the vacancy rate for all districts, the second bar shows the vacancy rate for districts in the lowest poverty quartile (according to FRPL), and the third bar for the top poverty quartile. Two points jump out from this figure. The first is that Special Education is even more of a challenge to staff than is apparent in the overall posting figure (Figure 2). For instance, the statewide number of Special Education teacher postings is roughly three times larger than the number of Elementary Education postings, but relative to the number of teachers that get hired into those areas, the ratio between Special Education and Elementary Education is about 8 to 1. Thus, not surprisingly research finds relatively high workforce entry rates (over 80%) for teacher candidates with Special Education credentials (Theobald et al., 2021).

Figure 3

Vacancy Rate for Teaching Positions by Subcategories and District Poverty Level



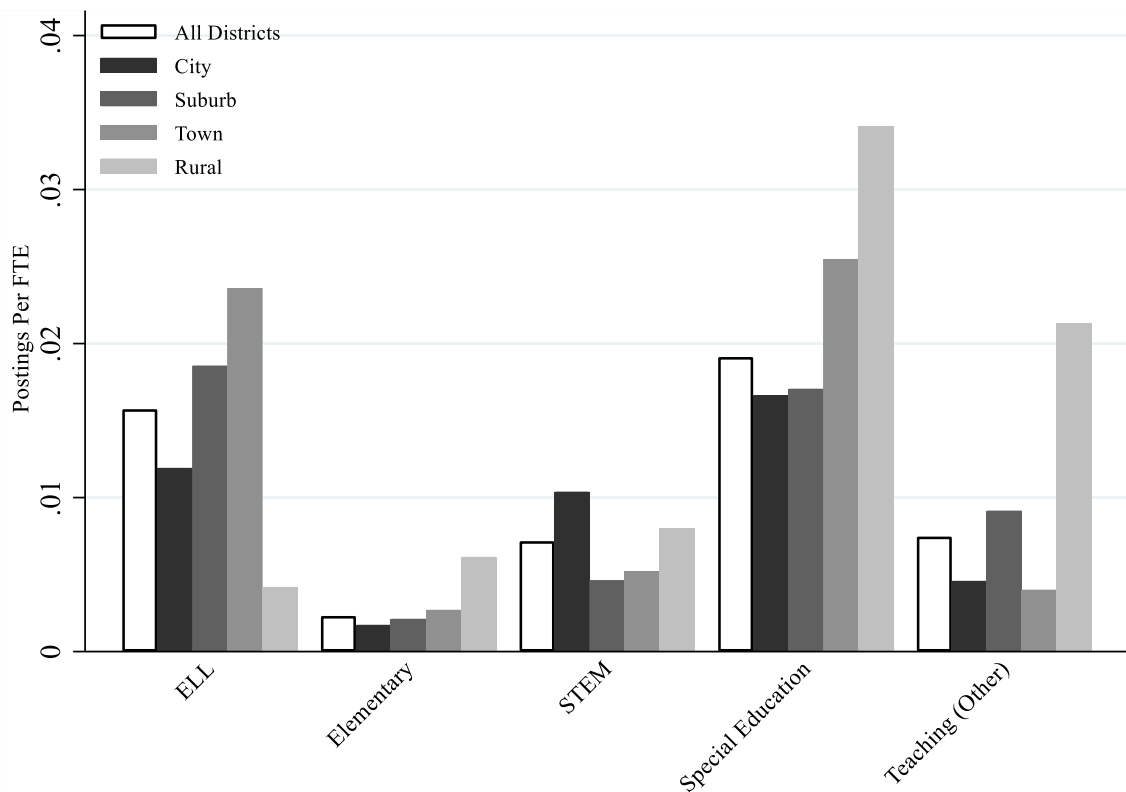
This figure also illustrates the far greater staffing challenge faced by high-poverty school districts. Districts in the highest FRPL quartile tend to be smaller than districts in the lowest FRPL quartile, with 2,900 students on average compared to 7,200 in the lowest FRPL quartile. Thus, were we to use job posting counts rather than vacancy rates, we would show that the lowest FRPL quartile districts have the greater staffing challenge. With the notable exception of STEM. It may seem puzzling that the average vacancy rate for STEM positions is lower than both the low-poverty and high-poverty district rate, but the low- and high-poverty districts

represent 50% of all districts (i.e. the top and bottom quartiles), and the middle two quartiles have vacancy rates lower than the “All Districts” rate. The vacancy rates are far higher for high-poverty than low-poverty districts; for instance, it is more than double in the case of ELL teachers and about 1.7 times higher for Special Education positions. All of these findings are broadly consistent with recent (though pre-pandemic) research on job postings in school districts in California (Goldhaber et al. 2020). We also see that while the raw number of postings reported in Figure 2 was higher for Elementary, relative to ELL and STEM, the *vacancy rates* for these areas are actually much higher. Vacancy rates for ELL are more than six times higher and for STEM roughly three times higher than the rates observed for Elementary.

In Figure 4, we disaggregate vacancy rates by urbanicity (urban, suburban, town, and rural) as there is some evidence that rural districts face greater staffing challenges (e.g., Goldhaber et al., 2021). We do not find consistent evidence of this across position type. For instance, ELL vacancy rates relatively low in rural districts, but these same districts have relatively high Special Education vacancy rates. It is worth noting that not all school districts in Washington have high schools (e.g., roughly 12% of rural districts do not), and certain teaching positions (e.g., STEM) are disproportionately likely to be at found at the high-school level. Nonetheless, this is consistent with prior research findings that rural districts in California had the highest vacancy rate among all district urbanicity types for Special Education and the lowest rate among all urbanicity types for ELL positions.

Figure 4

Vacancy Rate for Teaching Positions by Subcategories and Urbanicity

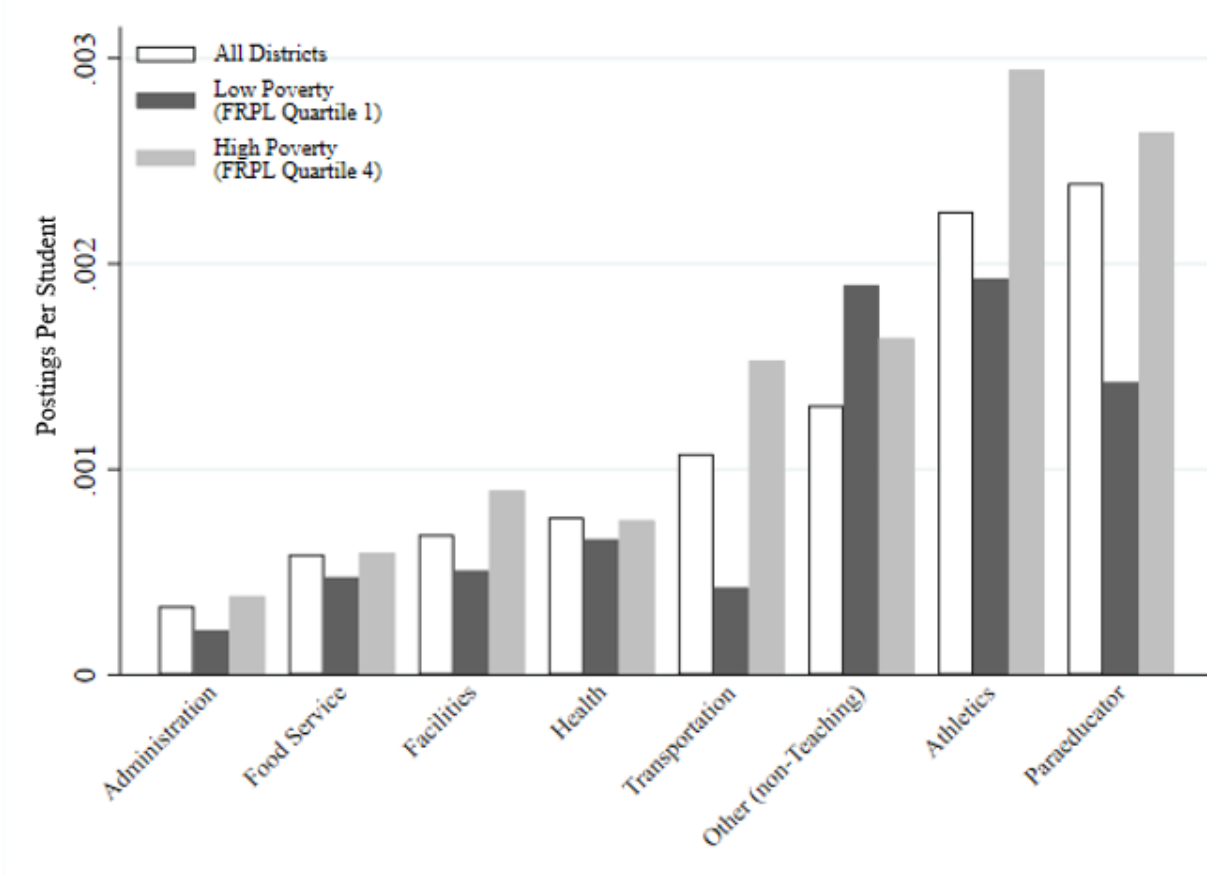


Finally, we also take a closer look at non-teaching positions. Unfortunately, we cannot create vacancy rates as we did in the above figures by adjusting for the number of positions in a category. The state administrative data do not include enough detail about staffing in these non-teacher areas for this type of adjustment. In lieu of this, to adjust for district size, we divide the number of open positions in a district by the number of students in that district. Because these rates are not adjusted by a category's prior hiring, it is likely not informative to compare across categories of jobs. Paraeducators, for instance, may be employed to work one-on-one with students, whereas bus drivers help transport large numbers of students. However, we can compare across different types of districts, which we do for districts of varying poverty levels in Figure 5 and for district urbanicity in Figure 6.

The findings by district poverty are strikingly consistent with the findings on teaching positions. For nearly every position category, the number of postings per student is higher for districts in the top FRPL quartile relative to the lowest quartile. This is particularly true for paraeducator positions, where the postings per student are nearly twice as high as low-poverty districts.

Figure 5

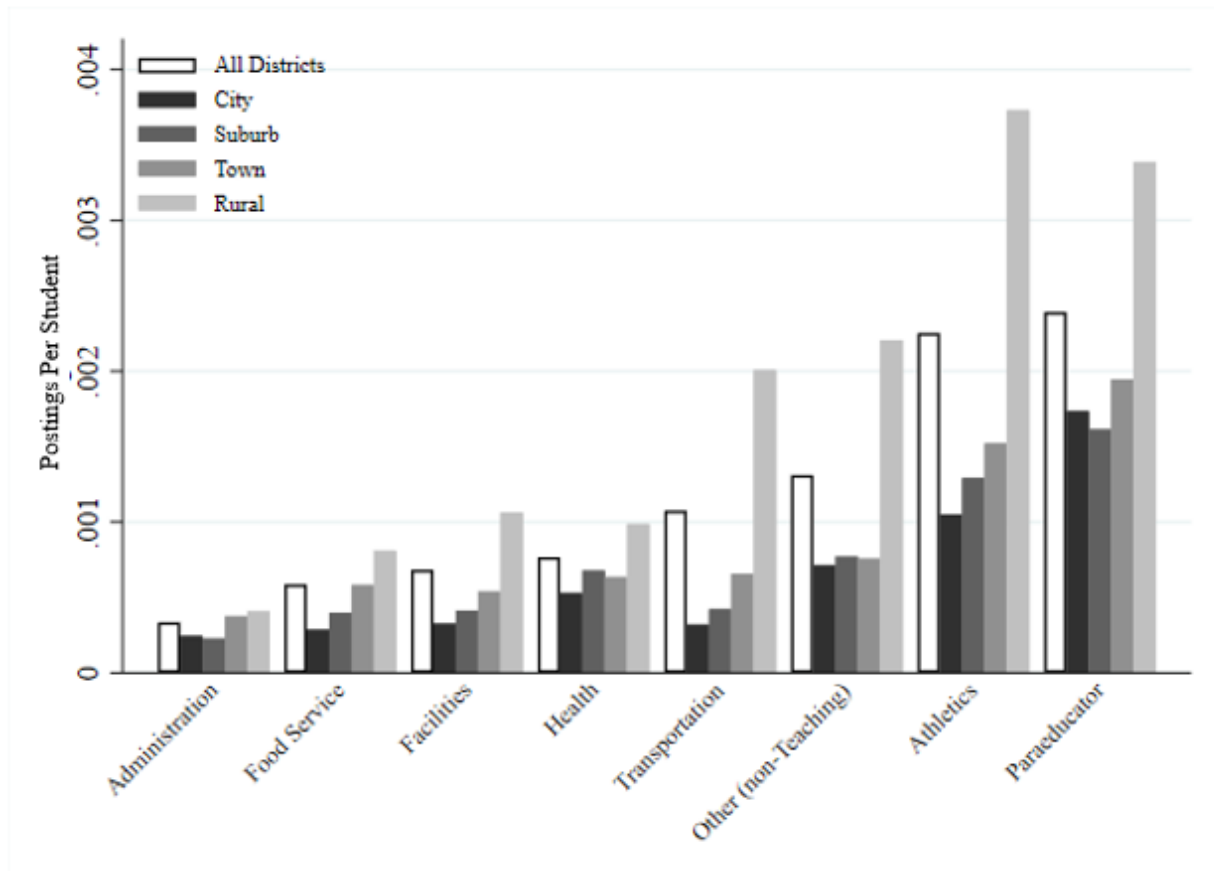
Postings Per Student for Support Positions by Subcategories and District Poverty Level



As Figure 6 makes clear, there are also large differences in postings per student by urbanicity. Across all categories, rural districts have more postings per student. And the difference between rural districts and districts in other urbanicities is particularly stark for the Transportation, Facilities, Athletics, and Paraeducator positions. For each of these categories the number of posting per student for rural districts is more than 30% higher than the postings per student for any other urbanicity. It is important to note that a large number of Athletic postings appear to be for coaching positions and the hiring cycle for these position types likely differs in meaningful ways from longer-term positions like traditional teaching positions. For instance, we observe postings for coaching positions that, according to the state sports calendar, occur in the spring. Though we cannot know for certain, this would suggest that the hiring cycle for many of the postings in this category are likely to appear in the fall, even if the position does not formally begin until later in the school year.

Figure 6

Postings Per Student for Support Positions by Subcategories and Urbanicity



Conclusions

Our findings on district hiring needs suggests dramatic differences in hiring challenges across teaching specialty-, job-, and district- types. High-poverty districts are facing more significant staffing challenges for nearly all job types. This is important given that abundant evidence suggests it is these districts that serve students whose achievement has been most affected by the COVID pandemic. We also see large differences in vacancies across teaching specialty areas.

It is difficult to know for certain if the variation we observe across vacancy rates could be described as business as usual or if there are more acute trends occurring in the wake of COVID, though there has certainly been considerable discussion in the media tying teacher shortages to COVID-related issues (Edelman, 2022). Increased stress, Zoom fatigue, and unsafe working conditions have all been listed as reasons educators are leaving the profession, though research on actual teacher attrition rates suggests only a modest year-to-year uptick in teacher attrition over the past year (e.g., Goldhaber & Theobald, 2022; Will, 2022).

Interpreting the findings is further complicated by the fact that the sizeable infusion of funds from the Elementary and Secondary School Emergency Relief (ESSER) program to schools

likely would affect district hiring trends, though despite availability of ESSER funds, evidence suggests relatively little ESSER spending had occurred during the period reported in this paper (Boughton et al., 2021). Indeed, even though the pandemic and pandemic-related ESSER funding makes the context we examine unique, it is striking how similar the findings are to decades of research showing differential challenges across teaching specialty types and by district poverty (e.g., Boe & Cook, 2006; Cowan et al., 2016; Dee & Goldhaber, 2017; Goldhaber et al., 2020; Ingersoll, 2003). Thus, a primary conclusion is that there is not enough policy attention focused on the nuances in evidence about school staffing challenges, nuance that is often missed in the media.

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Pivoting Clinical Experiences to Remote Learning Environments during COVID-19: Exploring Prospective Teachers' Development of Equitable Mathematics Teaching Practices

Kathleen M. Nitta

Abstract

This paper reports on a qualitative, instrumental case study that explored how clinical experiences situated in remote learning environments supported prospective teachers' learning and development of equitable mathematics teaching practices. Findings are primarily based on narrative reflection papers from eleven prospective teachers enrolled in a teacher preparation program in the Pacific Northwest. Thematic analysis of the data suggests that remote clinical experiences have the potential to support prospective teachers' development of student-centered teaching practices and mathematics teaching practices that align with principles of equitable instruction. Implications for expanding the diversity of clinical-experience sites in teacher preparation programs are discussed.

The implications of COVID-19 on PK-12 schooling, specifically the advent of remote learning environments, brought unique challenges to existing clinical experience structures in teacher education. Many programs found they would need to modify or adapt clinical experiences (also known as “field experiences”) to complement this emerging learning paradigm. Teacher education programs and teacher educators were thrust into a problem of practice that had to be addressed in real time with limited knowledge and experience to draw upon.

As the academic year began in the fall 2020 I, like many other teacher educators, had to rethink my elementary mathematics-methods course and aligned clinical experience in an elementary school. The clinical experience pivoted from a face-to-face classroom environment to a remote learning environment where teaching and learning occurred in on-line platforms (e.g., Microsoft Teams, Google Meet, Zoom). Contemplating this swift pivot to a “remote clinical experience” generated a myriad of questions regarding my prospective teachers’(PTs) development of equitable teaching practice. The most crucial question for me (and consequentially bringing the most angst): Would clinical experiences in remote learning environments provide opportunities for PTs to contextualize student-centered, equity-based teaching practices and support PTs’ development of equitable mathematics teaching?

The context for this paper is my experience pivoting the clinical experience aligned with my undergraduate elementary mathematics-methods course to a K-6 remote learning environment during the fall and spring semesters of the 2020-21 academic year. My purpose is to share what I have learned from exploring a “remote clinical experience” as a context for supporting PTs’ learning and development of equitable teaching practices. In this paper I discuss my analysis of PTs’ narrative reflections of their experiences and learning of equity-based practices through the remote clinical experience. My analysis yielded insights regarding the connections PTs were able to make between knowledge of practice developed in the methods course and the application of contextualized practice in a remote-learning field-experience setting. These insights led to

envisioning remote clinical experiences as an innovative context for clinical experiences in teacher preparation programs.

Grounding Literature

The American Association of Colleges for Teacher Education (AACTE, 2018) report, *A Pivot Toward Clinical Practice, It's Lexicon, and the Renewal of Educator Preparation*, proclaims the centrality of clinical practice in high-quality teacher preparation programs. Well-designed clinical experiences interweave university coursework with school-based experiences providing opportunities for PTs to explicitly connect knowledge of theory to the application of practice in PK-12 classrooms (AACTE, 2018; Darling-Hammond et al., 2005; National Council for Accreditation of Teacher Education [NCATE], 2010). Similarly, the Association of Mathematics Teacher Educators, in the *Standards for Preparing Teachers of Mathematics*, highlight the importance of explicitly linking mathematics-methods coursework to clinical experiences to “narrow the theory-practice gap lamented by many teacher educators” (AMTE, 2017, p. 4). In the following section I will provide a brief review of the literature on clinical experiences in teacher education and mathematics teacher education. In the subsequent sections I describe contemporary clinical-experience models and my clinical-experience setting prior to COVID-19.

Clinical Experiences in Teacher Education

Guided by critiques, scholarship, and policy documents, the structure of traditional clinical experiences has been reexamined in recent years. Traditional clinical-experience models are often missing structural elements that move the experience beyond a primary observation model (Grossman et al., 2009; Horn & Campbell, 2015). In these models, PTs are expected to connect theory acquired in university coursework to their clinical experiences. Yet there are often limited opportunities for PTs to explore connections between context and pedagogy with practicing teachers in clinical experiences. This limitation can hinder PTs’ productive examination of incongruities observed between theory and practice in classroom settings (Rust & Clift, 2015). Further, clinical experiences often lack structures for university-based teacher educators to provide critical feedback that directs PTs’ examination of their enacted teaching practice and its impact on student learning (Zeichner & Bier, 2015). Along with these well-established critiques, there is a pressing need for clinical models that develop PTs’ knowledge of the social, political, community, and cultural contexts in order to help them cultivate an instructional practice that is responsive to the needs of historically marginalized students and disrupts systemic educational inequities (Zeichner, 2010; Zeichner & Bier, 2015).

The *Standards for Preparing Teachers of Mathematics* (AMTE, 2017) establishes the importance of clinical experiences in preparing future teachers that are positioned to improve PK-12 students’ learning in mathematics. The document asserts that clinical experiences where university-teacher educators along with school-based partner teachers co-construct opportunities for PTs to integrate mathematics-methods coursework, research-informed theory, and pedagogical practices in PK-12 classrooms are critical to PTs’ professional development. In teaching mathematics, professional knowledge of theory into practice focuses on the development of a set of student-centered teaching practices (see Appendix A). The eight

identified practices work in concert to develop students' deep understanding of mathematics by positioning students as capable of making sense of mathematical ideas through implementing tasks that promote reasoning and problem solving and engage students in meaningful discourse on those tasks (Huinker & Bill, 2017; Leinwand et al., 2014). Significantly, scholars have also identified five equity-based mathematics-teaching practices (see Appendix A) aimed at intentionally strengthening mathematical learning and cultivating positive mathematical identities for all students (Aguirre et al., 2013). These practices promote equitable instruction that provides students with access to meaningful mathematics and use students' mathematical strengths as resources for learning in ways that value and affirm their contributions to the shared construction of mathematical ideas. Preparing PTs with the requisite knowledge, skills, and dispositions to improve PK-12 mathematical learning requires explicit linkage of the knowledge of effective and equity-based mathematics-teaching practices developed in methods coursework to the application of knowledge in action in the clinical experience (AMTE, 2017). The *Standards for Preparing Teachers of Mathematics* (AMTE, 2017) argue that school and university partnerships are consequential for designing clinical experiences that effectively bridge theory to practice.

Contemporary Clinical Experience Models

University and school partnerships are foundational to contemporary models of clinical experiences in high-quality teacher preparation programs (AACTE, 2018; NCATE, 2010). Rust and Clift (2015) assert that these partnerships provide a vehicle to bring knowledge of theory into practice and work toward substantive change in the professional learning environment. One type of partnership model is a Mediated Field Experience (MFE). Horn and Campbell (2015) describe the MFE as a hybrid space where the expertise of PK-12 partner teachers alongside university instructors guide PTs' development of equitable teaching practices. MFE is characterized as a school-embedded clinical experience centered on building relationships among and between PTs, PK-12 students, university-based teacher educators, and partner teachers (Campbell & Dunleavy, 2016; Horn & Campbell, 2015). In partnership, university-based teacher educators and partner teachers co-construct scaffolded experiences intended to develop PTs' contextualized knowledge of teaching and learning. Horn and Campbell (2015) studied the implementation of MFE as a structure to guide the development of teaching practices. They found MFEs supported PTs' perception of connections between practice and theory and aspects of the classroom ecology consequential for student participation, and this resulted in the development PTs' pedagogical judgement. A related study examining MFEs across five differing university methods courses found MFE structure drew upon partner teacher expertise in ways that supported alignment of university-based teacher educators and partner teachers' pedagogy, resulting in bridging ideas and practices of the methods course to clinical experience classrooms (Campbell & Dunleavy, 2016). Additionally, the study noted that in the MFE structure and mediated by partner teachers and university-based instructors, PTs had opportunities to practice the interactive aspects of teaching, which resulted in deeper theory-to-practice connections. MFE, as a contemporary clinical experience model, leverages school and university partnerships to interconnect the structure of academic learning in university coursework and professional application of that knowledge in classroom settings.

Clinical Experience Setting Prior to COVID-19

Structural aspects of the MFE model informed my design of the clinical experience that serves as the setting for this study. This clinical experience, aligned to a semester-long elementary mathematics-methods course, is situated in a partner Title I elementary school. I serve as the methods course instructor and clinical experience supervisor and am present in partner teachers' classrooms with PTs during the designated clinical experience time. Our common classroom experience provides opportunities to consider the observed practices of the partner teacher and reconcile that practice with the learning theories and research-based mathematics practices being discussed in the methods course. The PTs are placed in pairs or triads in partner teachers' classrooms and engage in a variety of activities that include observation of partner teachers' mathematics instruction, engagement with students in small groups and one-on-one to support student learning goals, and the teaching of formal mathematics lessons.

A primary goal of this mutually beneficial partnership is to prioritize the needs of K-6 students by envisioning ways PTs could offer added instructional support to help students meet mathematics learning goals. Each semester, given student needs, partner teachers and I select instructional activities for PTs to engage in with students. The instructional activities provide authentic experiences for PTs to contextualize the student-centered, equitable instructional practices presented in the methods course to the clinical experience setting. Additionally, as PTs engage in the interactive aspects of teaching, partner teachers and I can "mediate" PTs' enacted practice through debriefing sessions with partner teachers. For example, a partner teacher identified an instructional activity in which PTs facilitate small group discussions around a mathematical problem where students would be prompted to share their mathematical reasoning and problem-solving strategies. Facilitating the discussions became a vehicle for developing PTs' equitable practice through engaging students in mathematical discourse by posing purposeful questions, fostering student-to-student interactions, and building on students' mathematical thinking.

Clinical Experience Setting during COVID-19

To trace my exploration of clinical experiences in remote learning environments, I will now describe how the clinical experience setting described above shifted in structure due to the implications of COVID-19. I will then outline the qualitative approach I used to gain an understanding of PTs' learning and development of equitable teaching practice in the remote clinical experience.

Like many schools throughout the country, in the fall 2020, our partner elementary school, a Title I school serving students and families from diverse socioeconomic, cultural, and linguistic backgrounds, started their school year in a virtual learning environment. This change necessitated that I reimagine the structure of the clinical experience. Fortunately, I was able to leverage my relationships with teachers in the established university-school partnership to continue the MFE model. Partner teachers had come to value the instructional support the PTs placed in their classrooms had provided students in previous years. They anticipated the added support would be more important than ever. Despite the time and effort it would take to

creatively work within new educational paradigms, the partner teachers and I committed to continuing the clinical experience. Together we imagined avenues for PTs to support students' mathematical learning within a remote learning environment. We contended with logistics including coordination of the daily elementary school schedule with the university clinical experience timeframe, remote learning platforms, school district security and safety protocols for on-line learning environments, but eventually landed on a structure to pivot the previous in-person clinical placement to a remote clinical placement.

The daily elementary school schedule included a designated afternoon intervention time where teachers could request for students to return to the remote classroom environment for academic support after their lunch break. It should be noted that although named "intervention time," this daily scheduled learning time did not follow common notions and contexts of math intervention. Although partner teachers invited all students to the intervention time, only a very small number of students would return to the remote learning environment and these students varied from day to day. We decided that PTs would work with students during the designated time to support student progress towards the mathematical goal of the lesson presented earlier in the day by the partner teacher. The PTs would work as partners with small student groups, usually three to four, in breakout rooms in Microsoft Teams, which, in order to adhere to the school district safety protocols, we joined virtually from a classroom located on the university campus. Because the partner teacher and I would be present in the breakout rooms, we would be able directly monitor (and intervene, if necessary) PTs' interactions with students. Although this clinical experience structure gave PTs direct interaction with students, the PTs would not be able to directly observe the teaching of whole-group mathematics lessons. I was concerned that without these rich, contextualized representations of equitable teaching to discuss and analyze in the methods course, PTs might struggle with theory-to-practice connections. Would PTs adopt a more teacher-centered approach in their work with these small student groups?

The remote clinical experience in the fall 2020 semester included four PTs in a placement with a sixth-grade teacher and her students. The PTs worked with students in the breakout rooms on assigned problems related to the mathematics lessons taught earlier in the day. In the methods course, I introduced the teaching practice of eliciting and responding to student thinking, hoping to counteract any tendencies for the PTs to "tell" students how to solve the problems. Mid-way through the semester, based on PTs' successful interactions with students, the partner teacher requested that the PTs move to implementing number-string routines during the intervention time. Number strings are short, structured activities designed to engage students in mathematical thinking and reasoning around a related string of computational problems. The partner teacher found she was unable to "get to" this type of instructional activity and saw the potential for PTs to fill this void. The PTs then planned and facilitated number-string routines, giving PTs practical applications for developing mathematics and equity-based teaching practices (see Appendix A).

As expected, the virtual learning environment added complexity to creating a student-centered environment. PTs were challenged to foster student-to-student interactions when the number of students in their groups was small. Additionally, PTs had to find user-friendly technology tools that allow students to easily record their mathematical thinking for their peers to see and engage with. At the same time, the virtual clinical experience provided a new route for my partner

teacher and I to mediate the clinical experience. We found that in the breakout rooms we could actively provide feedback on the interactions between PTs and students, offering PTs in-the-moment suggestions for responding to or leveraging student thinking and in this way supporting PTs' development of skills to enact equitable teaching practice.

The 2021 spring semester clinical placements included seven PTs placed with two partner teachers. Four PTs' worked with the same sixth-grade teacher from the fall semester and three PTs worked with a fourth-grade teacher. We began the semester by implementing the same clinical experience structure used in fall. Both partner teachers again lamented the limited opportunities for students to share their thinking, reasoning, and problem-solving strategies with peers during the formal mathematics instruction time in the morning, and therefore saw the afternoon intervention time as an effective context to meet this need. As in the fall semester, the number of students attending the intervention time was limited in the sixth-grade classroom. The fourth-grade partner teacher was more successful in having established student groups attend the intervention time. During this time, all PTs began with problem solving activities and then moved to planning and implementing number-string routines about midway through the semester.

It is noteworthy to mention that the sixth graders remained in a remote learning environment for the entire spring semester, but the fourth graders transitioned back to face-to-face about midway through the semester. The three PTs assigned to the fourth grade were able to be in-person with students for the remainder of the clinical experience. However, due to social-distancing protocols, in-person small-group discussions were not possible in the classroom. The teacher continued to place students in breakout rooms (using individual computers and headphones) and PTs interacted with students using this structure. At the very end of the semester, social distancing protocols changed again, allowing each PT to plan and facilitate a face-to-face number string with a small group of students.

Methodology

I undertook a qualitative, instrumental case-study approach to examine PTs' ability to make connections between theories and practices presented in the methods course and apply those connections in a remote clinical experience. Although not a formalized study, this approach was well suited to exploring how PTs' constructed meaning of mathematics and equity-based teaching practices in the clinical experience setting (Stake, 2005; Yin, 2014). The eleven participants in my study, ten self-identifying as female and one as male, were enrolled in the undergraduate elementary teacher education certification university in the Pacific Northwest. Four of the participants were also pursuing an undergraduate degree in Special Education. The PTs were students in my elementary mathematics-methods courses and clinical experience during the fall and spring semesters of 2020-21. As a course assignment, PTs wrote a clinical experience reflection paper that was collected at the end of the semester. In the assignment, PTs were prompted to describe connections to mathematics teaching practices and equity-based teaching practices. The reflection paper served as my primary source of data. The eight mathematics teaching practices and five equity-based mathematics teaching practices (see

Appendix A) were used for preliminary structural coding of the data (Saldaña, 2009). In the first round of coding, I used the descriptive elements of each practice to identify where PTs mentioned the practices, or their descriptive elements in their reflections. In a second round of coding, I chose to focus on the five equity-based practices. The coding scheme (see Appendix B) included the characteristic elements that are representative of equity-based practice as outline by Aguirre et al. (2013). I coded each PT's reflection for evidence of all five practices. Following the coding, I searched for emerging themes in the data. These emerging themes provide the basis for insights on the remote clinical field experience as a potential context for PTs' development of equitable teaching practice.

Discussion of Insights from Remote Clinical Experiences

My analysis of the clinical experience reflection papers provided two key insights about knowledge of theory-to-practice connections PTs were able to make in the remote clinical experience. The first insight is that PTs were able to describe connections between theories of student-centered instruction to their application of mathematics teaching practices in the clinical experience setting. The second insight is that PTs saw facilitating mathematical discourse as a key practice for making connections to principles of equitable mathematics instruction. In the sections below I will illustrate these insights by weaving together narrative excerpts from PTs' reflections. I have used pseudonyms to identify individual PT's quotes.

Student-Centered Instruction

My analysis of PTs' clinical reflection papers revealed that PTs were able to connect theoretical concepts of student-centered instruction to their enactment of mathematics teaching practices in their remote clinical experience. In mathematics, student-centered instruction is multi-faceted; it involves positioning students as competent learners, engaging students in challenging mathematical tasks, and creating space for discussion of student ideas in order to build a shared understanding of mathematical ideas (Huinker & Bill, 2017; Leinwand et al., 2014). To position students as competent learners, a teacher has to believe that students are capable of deep learning of mathematics as well as trusting that students can engage in sense-making and persevere when given challenging tasks. Overall, the PTs' reflections showed how over the course of the semester they came to believe in their students as active "doers" of mathematics. For example, Jamie described that through their clinical experience they learned "every student is capable of doing math and succeeding at it." A second PT, Tracy, connected this belief to instructional practice indicating students "learn by grappling with concepts on their own instead of being told what to do," and they "have the capability to explore math topics through productive struggle." While Andrea recognized that positioning students as capable requires "providing a classroom environment where students feel safe making mistakes."

PTs' reflections demonstrated their understanding of how implementing challenging tasks that engaged students in active meaning through reasoning and problem solving promoted mathematical learning. For example, Jamie reflected on how the challenging tasks "provided opportunities for students to dig deeper with their mathematical thinking explain strategies and how they came to answers—this contributes to the development of deep understanding." Nina describes the practice of using challenging tasks and makes connections to equitable instruction:

...when using these rich tasks that involve problem solving and discourse students have moments where they struggle but not so much that they get discouraged[—]it seems that this gives the students a feeling of greater success when they do make the connections and learning. These practices that I noticed in my field experience also seemed to create a more equitable environment for the students.

Student-centered instruction in mathematics involves creating a space where together, through discussion, students make sense of mathematical ideas. Overall, my analysis showed PTs understood the importance of creating a learning community where student ideas are solicited, valued, and contribute to others' learning. Janessa described the learning community in their clinical experience this way:

...when students I worked with would have the opportunity to problem solve together I began to see the students who were watching others['] reasoning make connections to their own thinking correct their own thinking or gain a deep understanding...with whatever math was being worked on.

Janessa characterizes the student-centered learning community as one in which “students support one another in the development of mathematical understanding.” Additionally, Carley reflected on their role in building a space that valued students contributions by stating: “I learned how important it is to utilize the knowledge and perspective of each student and every one of your students to optimize learning and engagement.”

As the clinical experience in the remote learning environment began to unfold, I questioned if this unique context would provide opportunities for PTs to contextualize and actualize practice-reflecting theories of student-centered instruction. My analysis of PTs' end-of-semester reflections provided evidence that PTs seemed to be developing a robust image of student-centered-mathematics instruction in their clinical experience. Further, my analysis suggests that a remote clinical experience may have the potential to support PTs' development and enactment of mathematics and equity-based teaching practices that sustain student-centered learning.

Equitable Instruction

My analysis of the clinical reflection papers revealed that PTs prioritized promoting discourse in their clinical experience and viewed this practice as significant to enacting equitable mathematics instruction. Discourse in mathematics is a “purposeful exchange of ideas” (Leinwand et al., 2014, p. 12) where teachers elicit students' mathematical thinking and each student's contribution plays a part in building shared understanding of ideas. Promoting meaningful discourse among students affirms students' identity as competent, capable, doers of mathematics (Aguirre et al., 2013). Brenna shared her insight on the relationship between facilitating discourse and building understanding of mathematical ideas:

...a key insight I made was how important it is for students to have conversations about math and their thinking...Teachers need to facilitate meaningful discourse in their classrooms. When students are able to share their thinking with one another, they can

analyze and compare their thinking to others[']. Learning how other students reason and also learning how to share their thinking about certain concepts deepens their understanding of what they are learning.

Their reflections suggested that PTs recognized the positive impact of student-to-student interactions in discussion, specifically where students' ideas are heard and valued. Nina illustrates this in her reflection stating:

... this use of discourse also allows students to have their voice and thinking heard. The use of discourse also helps students develop a sense of agency. Their view of themselves as mathematics learners is important to helping them persevere when some math concepts get difficult to understand.

Nicole described her and her partner PT's practice in this way:

...we promoted student discourse by having students share if they had a different answer or a different solution to a problem. This allowed students to share their thinking and engage in a discussion over how there can be multiple ways to solve one problem... We used the equity-based mathematics practice of 'affirming mathematics learners['] identities' in order to promote an environment that felt safe for the students to share their thinking and ideas.

Nicole relates her knowledge of practice in the clinical experience stating, "The eight effective teaching strategies helped me understand the benefit of eliciting and using evidence of student thinking." She connected to her vision and hope for her future mathematics instruction, revealing her plans of "implementing equity-based teaching practices so that my students feel valued and heard in my mathematics classroom."

Developing PTs' knowledge of equitable mathematics teaching is a primary emphasis in my mathematics-methods course. I leveraged the clinical experience to connect principles of equitable instruction to the mathematics and equity-based practices in order to deepen PTs' understanding of these practices. This happened as PTs were able to observe how the principles can play out in learning environments, as well as see themselves as capable of enacting these practices themselves. The reflections demonstrated PTs' understanding of how prioritizing discourse in mathematics teaching and learning is key to equitable instruction. My analysis suggests that the remote clinical experience has some potential to support the development of equitable instructional practice.

Envisioning Possibilities of Remote Clinical Experiences in Teacher Education

As PK-12 schools transitioned to remote learning environments as a result of the pandemic, a novel setting for clinical experiences emerged for teacher preparation. My experience and exploration of the potential for a remote clinical experience to support PTs' development of professional practice has pushed me to envision the unique possibilities this context may hold for teacher preparation programs. I see two possible implications for teacher education moving forward post-pandemic: 1) remote clinical experiences can expand access to clinical experience

sites and, 2) remote clinical experiences provide a new lens to imagine innovative school-university partnerships.

PK-12 classrooms are the traditional clinical-placement site for most teacher preparation programs, but other settings (e.g., community-based sites) have been investigated as potential contexts for PTs' development of professional practice (Darling-Hammond et al., 2005; Hallman & Rodriguez, 2015). Schools that are in reasonable proximity to college and university campuses often serve as clinical placement sites for varied reasons; one being ease of access for PTs, university instructors, and clinical supervisors. This reality can limit access to clinical placements in schools located beyond a reasonable distance from the university that may serve communities with varying diversity. As a result of the pandemic, technology infrastructure now exists for PK-20 to support remote learning environments, thereby granting teacher education programs expanded access to K-12 schools and communities. For example, my university campus is located in a city but surrounded by many outlying rural communities. Clinical placements in our program are typically confined to local school districts within the city boundaries. It is now possible to imagine providing PTs with a clinical experience in one of the rural schools in our region, thus broadening the diversity of our clinical-experience placements. Remote clinical experiences in rural schools could bring mutually beneficial outcomes that were not previously imagined or possible to K-12 students, rural communities, PTs, and our teacher education programs. Conversely, remote clinical experiences may also benefit universities located in rural or suburban areas but desire opportunities to access urban schools as clinical placement sites. In other words, remote clinical experiences could expand clinical-placements sites offered in teacher education programs potentially increasing opportunities for PTs' to contextualize their teaching practice in diverse learning environments serving K-12 students with varied cultural, social, and linguistic backgrounds.

University and school partnerships underpin effective clinical experience models (AACTE, 2018). Successful clinical partnerships employ structures focused on strengthening interactions between universities and schools that have a direct impact on PK-12 learning (AACTE, 2018). The interactions between university and schools in the MFE model feature PTs, partner teachers, and teacher educators working side-by-side in school classrooms to develop and improve professional practice while attending to the specific learning needs of the K-12 students. The MFE model is resource intensive, and university infrastructure constraints (e.g., academic schedules, clinical experience funding) have been seen as barriers to implementing this or similar models in teacher education programs. Experiences with remote learning environments during COVID-19 present an avenue for addressing perceived obstacles to implementation. For example, teacher educators can now join K-12 classrooms remotely, giving teacher educators opportunities to bridge ideas and practices in university coursework with partner teacher's pedagogy, yet can also offer increased flexibility which may lessen scheduling concerns and time constraints for program faculty. Experiences with remote learning environments and clinical experiences in these environments provide a new lens for envisioning innovative and sustainable clinical partnerships and clinical practice models that respond to the contextual variables of K-12 schools and universities.

Conclusion: Celebrating Success

The pandemic presented a unique challenge to teacher education programs as PK-12 schools moved to remote learning environments in the fall of 2020. The nature of clinical practice became tenuous, raising uncertainties about maintaining quality teacher preparation in the midst of the pandemic. Alongside other stakeholders in teacher education, I was pressed to pivot in response to a new educational paradigm that required reconfiguring clinical experiences to complement an unfamiliar teaching and learning environment. I approached the challenge as a problem of practice with the intention of learning what I could about how this novel clinical-experience setting might support PTs' development of professional practice. My exploration showed some evidence that PTs were developing student-centered, equitable mathematics teaching practices in the remote clinical experience, suggesting the potential for this setting to support PTs' learning of equitable teaching practice. This uncovered potential creates an avenue for envisioning the possibilities of remote clinical experiences to inform future directions in teacher preparation programs and is certainly a success worth celebrating.

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Appendix A

Eight Effective Teaching Practices for Mathematics
Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solutions strategies.
Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students reasoning and sense making about important mathematical ideas and relationships.
Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
Elicit and used evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress towards mathematical understanding and to adjust instruction continually in ways that support and extend learning.

Note. From *Taking Action: Implementing Effective Teaching Practices* by D. Huinker & V. Bill, 2017. National Council of Teachers of Mathematics. (p. 5)

Five Equity-based Mathematics Teaching Practices
Go deep with mathematics. Develop students conceptual understanding of procedural fluency, and problem solving and reasoning.
Leverage multiple mathematical competencies. Use students' different mathematical strengths as a resource for learning.
Affirm mathematics learners' identities. Promote student participation and value different ways of contributing.
Challenge spaces of marginality. Embrace student competencies, diminish status, value multiple mathematical contributions.
Draw on multiple resources of knowledge (math, language, culture, family). Tap students' knowledge and experiences as resources or mathematics learning.

Note: From *Taking Action: Implementing Effective Teaching Practices* by D. Huinker & V. Bill, 2017. National Council of Teachers of Mathematics. (p. 8)

Appendix B

Coding Scheme for Equity-based Practices

Practice	Elements representative of practice
<i>Going deep with mathematics</i>	<ul style="list-style-type: none"> • Supports students in analyzing, comparing, justifying, and proving their solutions. • Engages students in frequent debates. • Presents tasks that have high cognitive demand and include multiple solution strategies and representations.
<i>Leveraging multiple mathematical competencies</i>	<ul style="list-style-type: none"> • Structures student collaboration to use varying math knowledge and skills to solve complex problems. • Presents tasks that offer multiple entry points, allowing students with varying skills, knowledge, and levels of confidence to engage with the problem and make valuable contributions.
<i>Affirming mathematics learners' identities</i>	<ul style="list-style-type: none"> • Is structured to promote student persistence and reasoning during problem solving. • Encourages students to see themselves as confident problem solvers who can make valuable mathematical contributions. • Assumes that mistakes and incorrect answers are sources of learning. • Explicitly validates students' knowledge and experiences as math learners. • Recognizes mathematical identities as multifaceted, with contributions of various kinds illustrating competence.
<i>Challenging spaces of marginality</i>	<ul style="list-style-type: none"> • Centers authentic student experiences and knowledge as legitimate intellectual spaces for investigation of mathematical ideas. • Positions students as sources of expertise for solving complex mathematical problems and generating math-based questions to probe a specific issue or situation. • Distributes mathematics authority and presents it as interconnected among students, teacher, and text. • Encourages student-to-student interaction and broad-based participation.
<i>Drawing on multiple resources of knowledge (math, culture, language, family, community)</i>	<ul style="list-style-type: none"> • Makes intentional connections to multiple knowledge resources to support mathematics learning. • Uses previous mathematics knowledge as a bridge to promote new mathematics understanding. • Taps mathematics knowledge and experiences related to students' culture, community, family, and history as resources. • Recognizes and strengthens multiple language forms, including connections between math language and everyday language. • Affirms and supports multilingualism.

Note: Adapted from *The Impact of Identity in K-8 Mathematics: Rethinking Equity-Based Practices* by J. Aguirre, K. Mayfield-Ingram, & D. Martin, 2013. National Council of Teachers of Mathematics. (pp. 45-48)

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