

EDUCATION IN A DEMOCRACY



A Journal of the National Network for Educational Renewal

#YESALLWOMEN: Advancing Community in a Democratic Society

Volume 11 | October 2019



Editor

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EDUCATION **IN A DEMOCRACY**

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— JOURNAL INTRODUCTION —



Editors' Introduction

The Experiences and Contributions of Women Toward a Democratic Society

Rhonda B. Jeffries
University of South Carolina

Introduction

Despite periods of focus on women's access and achievement within the educational arena, the field of education has yet to actualize the knowledge gleaned from studies of the issues, challenges, and social gains impacting the educational experience of women. Historically, feminist studies have largely been isolated to disciplines such as women's studies, sociology, and ethnic studies with tangential discussions of these disciplines' relationship to democracy in the United States. In the female dominated field of education, examinations on the unique contributions of women marginally capitalized on the groundbreaking work of Gilligan (1982) and Noddings (1984) which challenged the normative, patriarchal systems governing United States education and society. Further research that significantly shaped perceptions of United States education and called into question the effects of race and ethnicity upon gender oppression emerged from hooks (1981) and Collins (1990) and highlighted identity differences that exist within the realm of the female experience aside from the dichotomy traditionally associated between female and male (McCarthy & Apple, 1988; Weis, 1983).

This collective body of work left us with persistent questions about how democracy is defined regarding gender and the complexity of serving the interests of females through the political construct of formal, public education. A call for more flexible concepts of citizenship and the ways in which women

contribute to the social state underpins the quest to enhance the acknowledgment of women as valued producers of knowledge who shape policy and practice through education (Arnot & Dillabough, 1999).

Contemporarily, we are reminded of the critical nature of human rights education and the persistent need to monitor and maintain transformative spaces where ideological discussion about civil liberties occur with the expected outcome of advancing the rights and privileges of women, children, people of color and immigrants (Giroux, 2015; Spreen, Monaghan, & Hillary, 2018). The ongoing struggle for democratic education grounded in an ethic of care continues to emerge across the literature as calls for restoring a primary focus on justice and equality in schools in the United States are championed. Furthermore, a vision for revolutionary leadership to guide this charge might be realized through a greater reliance on and inclusion of the contributions of women (Horsford, 2017).

The need still exists for research that moves beyond the binary exchange of women's ways of knowing as a wholesale replacement for masculine political power. Educational institutions are primary among the social organizations that will benefit from a broadened narrative about women and democracy; however, the rudimentary challenges of strengthening public institutions regarding gender inequality remain at the forefront of democratic governance research (Jaquette, 2017). This nuanced dilemma is firmly couched within the socio-economic frameworks that drive much of the challenges against a democratic society. Inglehart (2018) reminded us that this work is more critical now than ever with "many marginally democratic countries hav[ing] become increasingly authoritarian and authoritarian, xenophobic populist movements hav[ing] grown strong enough to threaten democracy's long-term health in several rich, established democracies including . . . the United States" (p. 20).

With the acknowledgement that our current trajectory is off course, women at the center of democracy work should not be viewed as a radical adjustment in the 21st century. The reactionary pendulum swings of principles and ideas might accurately settle on a feminist ethic of care that accounts for the

advancements and achievements of women over time despite prevailing norms that counter these ways of thinking, knowing and behaving. The impact of women's contributions continues to be grossly undervalued in the political, professional and personal realms. We will remain limited in our resources to counter attacks on democracy until we are fully committed to educational transformation that comprehensively explores the outcomes of educational practices on and by women.

Exposing the Inequities in Educational Spaces

What are the issues? What are the needs? If balance across fundamental social issues is critical to the public's perceived road to success, we must first seek balance in our education leadership and practices. While research suggests that educational preparation, professional mentorship, response to job demands, personal life status, and career trajectory for men and women is similar, "men are still four times more likely than women to serve in the most powerful positions in education, and both women and men of color are still significantly underrepresented" (Robinson, Shakeshaft, Grogan & Newcomb, 2017, np). Furthermore, women make up an average of 75% of education professionals, but only 30% of the leadership positions in education are held by women (Morey, 2017).

Beyond issues concerning women in positions of educational leadership, we also wrestle with significant problems of disenfranchisement among women and girls in educational institutions. We continue to find that adopting a one-dimensional gender lens to study and address important work on inequality, exclusion, and the pushing out of female students away from the full scope of curricular programs of study and future economic opportunities invariably limits our full understanding of the possibilities of a new democratic education.

Moving beyond issues affecting specific populations, there are broad challenges that impact all participants in education system whose experiences might be enhanced by diversifying the teaching profession, including how we address and respond to issues of ability, class, economics, gender, health, race, and sexual orientation. These dynamics of difference, which include explorations of women's ways of knowing, cultural diversity

among educators, the impact of economics on teachers, students, schools and communities, and social insecurity among students are essential aspects of concern when democracy is centralized in the school curriculum.

We know exclusionary approaches to social topics that impact a vastly diverse population leaves our society largely uninformed. We need information, from both research and practice, that helps us to understand all the various issues that serve to sustain the continued oppression of women and girls. This must include the myriad ways in which all these issues intersect and impact the entire field of education. We are also in need of answers—stories of successes and gains toward resisting this oppression by channeling our work on activism in the vein of movements like #YesAllWomen¹ which drive our efforts toward increased intervention and change for women and girls.

The contributors to this volume interrogate these persistent challenges of creating and sustaining democracy in education and offer pieces to a puzzle that has yet to be solved. “Keeping Women in Their Place? Post-Secondary Math Placement Testing as a Barrier to Gender Equity in STEM” by Robin L. Angotti, Karen Rosenberg and Rejoice Akapame examines the ongoing underrepresentation of women in STEM fields such as engineering and computer science. This disproportionate representation of women based on their majority status at most college campuses, and the campus under investigation in this study, begs the questions: Why and how is this happening, as well as, who is responsible? While women arrive at universities with varied experiences—some having been discouraged from pursuing STEM related content throughout their K-12 schooling experiences—still some women arrive prepared to successfully navigate the rigorous mathematics based content. However, a common denominator that routinely excludes marginalized students from reserved academic tracks is the gatekeeping standardized test. The authors noted this single, high stakes metric as the primary factor barring women from STEM majors and certainly hindering their progression if they persistently pursue despite requirements for remediation that lengthen time to

¹ Social media campaign in which users share examples or stories of misogyny and violence against women

degree. Their observational research exposed cultural beliefs and behaviors that further impacted women's success in STEM fields and provided specific avenues for policy changes and procedural supports that might enhance the outcomes of women in this economically rewarding career path.

Democracy for immigrant children is one of our most pressing social issues in contemporary United States politics and Mary DeBey and Shaheen Usmani explored the impact of democracy on early childhood education in "Choosing to Teach Young Children: Compensation and the Intersectionality of Gender, Race and Immigration." This ethnographic study carefully documented the expansive contributions of early childhood teachers to one of our most vulnerable populations and highlighted the gross inequity that pervades salaries and compensations packages for this profession that falls predominantly within a female domain. Further exacerbating this injustice are the prevailing characteristics of an early childhood educator which include woman of color who may also hold immigrant status. This call for equity of respect for women in this field also recognized the importance of teaching and learning at this critical stage in children's lives, in particular for children who may receive their primary instruction in early childhood education settings as opposed to their homes. Most importantly, as credentialing requirements increase at the expense of practicing early childhood educators, salaries remain stagnant and further disenfranchise the undervalued women who fill these vital roles in education.

Tricia Niesz offered direct instruction on how democracy might be achieved in and through schooling efforts in "Connect, Cultivate, Campaign: Toward a Social Movement Approach to Educational Change" which relies heavily on the fundamental contributions of activism. She highlighted the historical value in a social movement approach to achieving significant educational change and stressed the consequence of collective engagement to foster change across the masses. The engagement of women who represent the majority of educators in classrooms and parents providing primary care to students in schools is offered as the catalyst for effective network building and community strengthening. These female alliances can be the source of common visions for change that are a direct outcomes of shared

knowledge construction and stewardship of the creation of socially just and democratic schools.

The creation of democratic spaces for individuals to flourish as citizens was reviewed in “Feminist Epistemology and Epistemological Pluralism: Implications for the Development of Democratic Citizens by Aaron S. Zimmerman. His conceptual essay maintained the position that schools are moral learning communities that could prepare students for democratic participation in society; however, the current construct of education fails to embrace the epistemological pluralism that might sustain the investigations and re-conceptualizations of education as a space for diversity, equity and inclusivity. The author argued for a theoretical framework of feminist epistemology as the fundamentals of education to foster a democratic state which acknowledges the experiences of marginalized students. The ways in which the plethora of students in the United States understand and exist in the world might be more successfully supported and cultivated by educators using what is recognized as a woman’s way of knowing. Dismantling existing hierarchies of knowledge and privilege might be enhanced in the public school setting through a more focused implementation of feminist pedagogies in public school classrooms and teacher education programs.

Keeping Democracy Alive

Through our research and our continued professional development to member settings, the National Network for Educational Renewal (NNER) strives to support best educational practices and increase opportunities and paths to socially just societies through education at the local, state, and national levels. Narrow accountability that pervades current education policy defies the deliberate communicative exchanges that characterize the democratic process (Englund, 2016). Furthermore, our failure to examine the fundamental cultural conventions that create opposing values and beliefs and undermine democratic education (Karaba, 2016) are responsible for the ongoing need to work toward a socially just community via education. Hytten (2017) noted that at no point in United States history have we fully realized the ideals of democracy and that the tensions mired

among myriad uncomplimentary agendas demand continued consideration of the goals toward a just society as economic and health care gaps continue to expand and women's rights are on the forefront of attack.

The research that acknowledges Goodlad's fundamental beliefs articulated through the four pillars and 20 postulates suggests we remain dedicated to the development of critical communication skills that enable citizens to effectively deconstruct arguments that threaten to erode democratic principles (Pickett & Kleinsasser, 2016). We implore agents working for democracy to continue to share insight and information on the issues impacting democracy and to remain invested in the health and welfare of the community at large by utilizing and prioritizing the experiences, knowledge, and lives of women and girls. This aligns with the unique diversity that democracy demands in the fight for equality and against hegemonic structures that push against progress (Rogers, 2016). We do this by continuing to tell stories of students and schools that help illuminate how diversity in our daily experience improves the lives of all constituents involved and how women provide a unique contribution to our collective story. We do this by continuing to study and critique historical and current educational contributions to the democratic state while underscoring women's social movements as a critical aspect of the advancement of social justice in the United States and abroad. We do this by continuing to take a multidisciplinary approach to understanding the intersections of education with other institutions such as economic, healthcare, political and other social service organizations.

In keeping with the purpose of *Education in a Democracy*, this volume of the journal continues to foster inquiry related to the Agenda for Education in a Democracy (AED) and to support the mission of the NNER which is to: 1) foster in the nation's young the skills, disposition, and knowledge necessary for effective participation in a political democracy; 2) ensure that the young have access to those understandings and skills required for satisfying and responsible lives; 3) develop educators who nurture the learning and well-being of every student; and 4) ensure educators' competence in and commitment to serving as stewards

of schools. We hope this volume supports the advancement of the NNER goals and will inspire continued conversations and commitment toward democracy.

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— JOURNAL ARTICLES —

Keeping Women in Their Place?

Post-Secondary Math Placement Testing as a Barrier to Gender Equity in STEM

Robin L. Angotti
Karen Rosenberg
Rejoice Akapame
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Abstract

Although women comprise the majority of students on college campuses, they are severely underrepresented in disciplines such as engineering and computer science. The journey into these STEM fields begins with success in mathematics, which has an entry point of a placement test. When the results of placement tests are used as a single high-stakes metric to determine where students will start in mathematics, how are different groups of students affected? And is there a better way? One university used an observational study to answer these questions and create change at the local level and, in doing so, brings a call to action.

Introduction

It is Spring 2019 at a mid-sized “progressive” university in the United States that touts “inclusiveness” as a core value. The instructor looks out at a sea of 50 faces in the junior level statistics class which primarily serves the engineering department but also has a few students from other STEM disciplines. Seven of those faces belong to female students; six of those identify as White. The afternoon section of the same class has a similar demographic. This scene plays out on “progressive” college campuses around the United States; schools whose mission statements pay homage to diversity, equity, and inclusiveness. Yet when one studies the demographics of STEM majors, the inclusive language in mission statements rings hollow.

College students who want to major in STEM fields must first demonstrate proficiency in mathematics by getting high grades in prerequisite math classes. Those who do not make the required entry score in “gateway” courses such as Calculus can repeat the

course, choose a different major, or decide to leave college. Students marked as “underprepared”, a designation that comes as a result of a placement test or scores on standardized college entrance exams (SAT or ACT), are placed in developmental mathematics courses. These “underprepared” students must pass course(s) that may not count for credit in order to be “worthy” of placement into the “gateway” course by which, if they pass with a high enough metric, allows them to enter majors of their choice. Failure to obtain a high enough score at any point from placement test to gateway course bars students from entry into the subsequent course.

Although it may seem that these metrics are fair and impartial for people of any gender and ethnicity, the rhetoric of merit which suggests that hard work and mathematical ability is all that is necessary to be successful ignores the structures that provide benefit to particular groups of people, (Rubel, 2017; Bowles & Gintis, 2002; McIntosh, 1988). This argument also denies that lack of success by these metrics could arise from systemic bias rather than a lack of individual ability or effort (Milner, 2012). Most universities utilize merit-based placement testing while at the same time are stymied by the gap of female and underrepresented minority (URM) students in STEM fields which persists regardless of all the good-intentioned programs to “close” this gap. This “gap gazing” between male and female students and between White and URM fails to address the role of gender and racial bias within STEM disciplines. This phenomenon is evident in placement testing for mathematics.

Placement testing, either with a mandated entry exam or by interpreting standardized test scores such as the ACT or SAT, serve as the first filter of who gets to participate in upper level mathematics, and thus STEM fields, with a single high-stakes metric. However, most standardized tests have shown limited efficacy for accurately placing students (Scott-Clayton, Crosta & Belfield, 2014) as well as significant bias against female students (Mattern, Sanches, & Ndum, 2017). Therefore, placement testing, which has shown to be uncorrelated to successful completion of collegiate math courses and biased against women, is used as the sole metric for determining where students begin their mathematics journey at most universities throughout the U.S. This is even true

at our university, where the Goodlad Center for Educational Renewal is based.

John Goodlad defined education in a democratic society as a fundamental right for all people (Goodlad, 1997). The Goodlad Center for Educational Renewal was “founded on the belief that ongoing local renewal is the key to good schools” (University of Washington Bothell, n.d, Goodlad Institute for Educational Renewal: para. 3). Studies have also shown that regular use of local data to guide curricular and programmatic decisions is one of the keys to successful university mathematics programs (Bressoud & Rasmussen, 2015). Thus, universities and colleges, including ours, must also be engaging in a process of renewal and continually asking, “How can we do better for all students?” and “Do we know who we are, and are we in line with who we project ourselves to be?” We need to be doing more than “gap gazing” in mathematics placement and have a serious conversation about the systemic factors that contribute to that gap. The research featured in this paper is an attempt to do just that. We turned the lens on ourselves in what has become for us a call for action and a change of practices in placement testing to allow more people through the “gate” with a particular focus on women from both White and racialized identities. Our research suggests that rather than serving as an objective tool for assigning math classes, math placement tests perpetuate the conditions that exclude women and URM from STEM majors.

Theoretical Framework

We use Gutierrez’s theoretical framework on equity to more deeply understand the role the math placement test may have in either ameliorating or perpetuating inequitable access to STEM majors on our campus. We share the belief that “equity is ultimately about the distribution of power--power in the classroom, power in future schooling, power in one’s everyday life and power in a global society” (Gutierrez, 2009, p. 5). Gutierrez conceptualizes her equity framework in terms of four dimensions along two axes. The first axis, called the dominant axis, has *access* on one end and *achievement* on the other, often but not always, operating in tension with one another. To achieve equity, access to

resources and support is a necessity. However, access in and of itself does not translate into success. It is a necessary, but not sufficient condition. Attention to achievement--setting the conditions necessary for students to succeed within and beyond the university context--is a crucial component of Gutierrez's equity framework.

Gutierrez's second axis, termed the critical axis, places power on one end and identity on the other. Power for Gutierrez, as intimated in the quote above, is most usefully conceptualized broadly. Power encompasses both material and discursive resources and attention to how resources are distributed is key in this theoretical framework. Finally, identity focuses on the interplay between social markers such as race, gender, ethnicity and how these markers -- and the histories that attach to them -- "show up" and are (de)valued in contexts such as classrooms.

Using Gutierrez's equity framework, we sought to examine the role that placement tests played on intersectional gender equity in STEM. That is, were all groups of students provided the same level of *access* to STEM fields or was the placement test a barrier for some? In order to answer this question, we first examined prior research, considered the context and demographics of the university, used statistical analysis to examine the effect the placement test had on subgroups of students, and with these results, considered a path forward.

Literature Review

High-stakes testing has a long history in the U.S. educational system which has masked underlying structures of racial and gender inequality within a rhetoric of meritocracy (Au, 2016). From the formation of the College Entrance Exam Board in 1900 to current tests such as the SAT, SAT II, PSAT, ACT, and AP exams, these tools have been regarded as objective measures of a student's capacity for college-level work (U.S. Congress, 1992) and used to separate those who would go on to obtain a college degree from those who were deemed not "college-ready". In fact, U.S. students are barraged with "gatekeeper" testing throughout their schooling. In K-12 education, students must make "adequate yearly progress" throughout elementary and secondary education

in order to progress to graduation. The presumption of objectivity of all of these tests gives rise to the idea that it is solely on the basis of merit that an individual can successfully proceed through these “gateways” without considering other factors which may affect students’ ability to perform on a test. This ideology of meritocracy perpetuates rationalization of socio-economic, racial, and gender inequities (Au, 2013) from K-12 education through college admissions.

For most students, admission to college comes with one more high-stakes testing hurdle, placement testing for mathematics and writing. Previous research has shown that these tests typically have little or no correlation or predictive power in measuring student success (Scott-Clayton, 2012; Belfield & Crosta, 2012) and often underestimate students’ abilities (Bahr et al, 2019). Approximately 30% of students entering 4-year institutions in the United States will be enrolled in at least one developmental math class and this percentage is significantly higher among Latinx, African-American, first-generation, and low-income students (Jimenez et al, 2016). Completion of remediation in mathematics has been identified as the single largest barrier for increasing graduation rates (Attewell et al, 2006; Complete College America, 2012). Since there is a positive correlation between taking developmental courses and students’ time to degree completion, the more developmental courses a student must take, the greater their time to completing their degree which reduces the potential for graduation.

As many as 60-70% of students who have to take at least one developmental class are less likely to complete college than those who start in a gateway course such as calculus in their first year (Armstrong & Zaback, 2014; Barry & Dannenberg, 2016). At least 25% of students placed in developmental courses could have made a B or better in a college level course with no remediation (Scott-Clayton & Rodriguez, 2012). A significant amount of effort has been put into treatment of “underprepared” students yet very little attention has been given to the consequences of labelling students as “underprepared” in the first place.

As we considered the demographics of our own campus in light of this previous research, we began to contemplate how the policies we had in place regarding placement testing were affecting access,

one of the dominant dimensions in Gutierrez's equity framework. Was placement testing, found in previous research to be uncorrelated from student success, disproportionately negatively affecting women and students of color? If so, this would require them to take additional developmental courses at a significant economic cost in addition to extra time and effort while potentially keeping them from access to STEM majors which tend to lead to higher paying jobs. It would also decrease their probability of graduating from college, which is at the achievement end of the dominant axis of the equity framework while perpetuating the existing gender, racial and classist structures in current operation in the U.S.

Campus Context

A primarily undergraduate-serving institution, the University of Washington Bothell (UWB) is part of the larger, public, tri-campus University of Washington in the northwestern United States. Primarily a commuter campus with a student population of approximately 6,000, the university has a stated commitment to underserved students: of the students who enter in their first year of college, 61% are classified as coming from "diverse racial and ethnic backgrounds" and approximately 50% of incoming freshmen and 39% of transfer students are first in their families to seek a 4-year university degree with approximately equal numbers of male and female students. The university mission statement affirms the intention to "[b]uild an inclusive and supportive community of learning and incorporate multicultural content and diverse perspectives on ethnic and racial groups, gender, sexual orientation, social class, and special needs." (University of Washington Bothell, 2002, Mission & Vision: para. 1).

The university has invested heavily in STEM education and actively cultivates partnerships with technology employers located just a few miles from campus. Our School of STEM has funded diversity education for faculty and signaled support for diversity-related work such as the Dean's request that all faculty read *Whistling Vivaldi* (Steele, 2010) and *Presumed Incompetent* (Gutiérrez et al, 2012). As part of its commitment to diversity and in response to student protest and advocacy, during the 2017-2018 academic year, the university created a Student Diversity Center,

hired an interim Dean of Diversity, and engaged in a campus-wide process where each school was required to craft its own diversity statement.

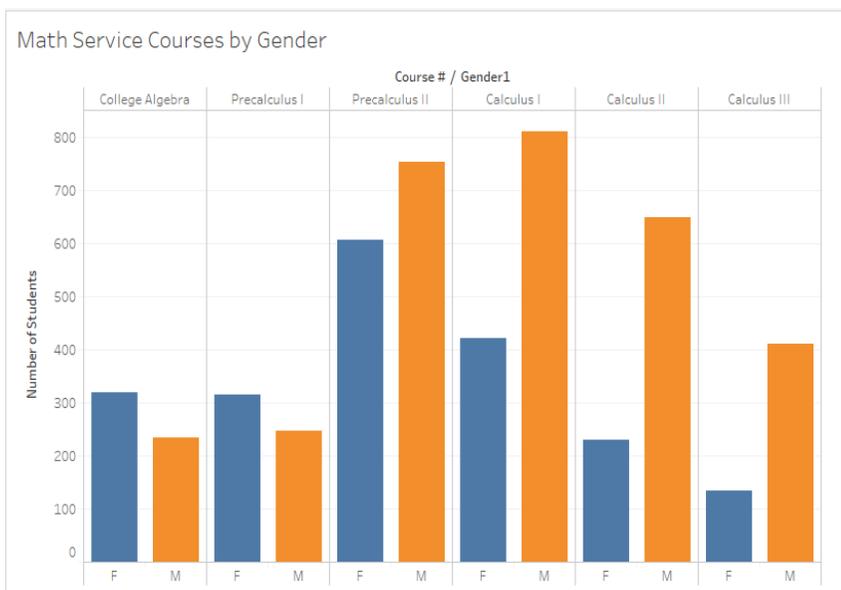
A key component of operationalizing the campus' STEM education equity agenda is the university's Quantitative Skills Center (QSC). Staffed by a team of 30 peer tutors, the QSC is a drop-in center open over 50 hours a week during the academic year. Informed by growth mindset pedagogies (Dweck, 2008), tutors help students see themselves as quantitatively competent as they increase their quantitative reasoning skills. The QSC is a popular destination for students: it has outgrown its space twice in the past decade and provides over 12,000 tutoring sessions a year.

After noticing a significantly larger number of male students utilizing the QSC, Angotti and Rosenberg conducted research to determine if the QSC was being utilized equitably by all groups of students. This research showed that, proportionally, there was actually a higher percentage of women from most courses utilizing the services at the QSC especially from developmental courses (Angotti & Rosenberg, 2018). In the analysis of gender and intersectionality of gender and ethnicity, this research also revealed that the QSC was providing equality of service when evaluated solely on use of services by females in developmental and gateway mathematics courses. The analysis revealed that women and underrepresented women (i.e., women from minoritized groups) used the QSC *more* than their non-underrepresented counterparts in developmental math courses. However, the reason that there appeared to be such a high number of males was that there was an overwhelmingly higher proportion of males in mathematics courses in general.

This previous research study revealed a questionable pattern in gender breakdowns in undergraduate mathematics courses (Figure 1). To determine if the gender proportionality of students whose use of the QSC was equivalent to that of the gender makeup in mathematics courses, researchers first had to determine the proportionality of gender breakdown in those mathematics courses. Since we focused on service courses (courses that are required by multiple majors) as well as developmental mathematics courses, we looked at College Algebra; Precalculus I and II' and the three-quarter Calculus sequence. Although the Calculus sequence shows

the typical pattern of more males than females and higher levels of White and Asian students who are not underrepresented in STEM, we found it more problematic that the developmental courses showed opposite trends. Twenty years of research shows no difference between males and females as they leave secondary school mathematics (Lindberg, Hyde, Peterson, & Linn, 2010), we therefore questioned why these patterns emerged at a university with an almost equal number of male and female students. One possible explanation was placement testing. Was our current placement test biased against women? If so, this would result in a higher proportion of females being required to take as many as two courses of developmental mathematics to even get to the same level as their male counterparts. This could significantly affect their chances of college completion as well as their ability to major in STEM fields. This is the question we were determined to answer.

Figure 1: Total enrollment in undergraduate "service" courses (2014-2017) by gender



Depending on the outcome of that answer, we would then have to ask a deeper question: what do we do about it? How do we

propose change so that we can help students who may be missing important prior knowledge yet not hold back students who may be prepared but just not test well? How do we sway colleagues who adamantly support placement testing? Asked how to create change when faced with serious educational issues, Goodlad once said that, after gathering relevant information, ask the question “What is a better way?” and then ground the conversation in concrete, defensible language. This is followed by making decisions, formulating action and measuring the results of those actions (Goldberg, 1995).

Research Methods

After noticing a pattern in the enrollment of women in developmental mathematics, researchers examined the corresponding placement test data to see if a similar pattern was replicated in placement test data. The placement test used at the university is managed by the Office of Educational Assessment and is part of a testing agreement which is a cooperative program of the state’s public colleges and universities. The test takes approximately an hour and students may choose either the General Math Placement Test which is “directed toward students who have less than three or four years of high school math and who will be entering pre-calculus or general college-level math classes” or the Advanced Math Placement Test for “students who have taken at least three or four years of high school math and who wish to enroll in Calculus” (University of Washington Bothell, n.d, Math Placement: Test Format section, para. 3). The test costs \$25 per administration. Students who take the advanced test and score too low must go back and take the general placement test. Transfer students with college credit for algebra or calculus, or entering students with a Calculus Advanced Placement (AP) score of 2 or higher, or an International Baccalaureate (IB) Mathematics (Higher Level) score of 5 or higher do not have to take a placement test. Thus, the test is only given to entering students without prior credit in mathematics at the college level or its equivalent.

Placement test data were provided to the researchers by the Office of Institutional Research and contained data for the 3-year period, 2014-2017, for which the math course data were collected.

The placement test data were combined with student background data which included the math courses in which the student enrolled, gender, ethnicity, and course scores. The data were analyzed using one-sided alternative, Z-tests for the difference in the proportions (Ha: proportion of females > proportion of males) placed in developmental mathematics courses and a one-sided alternative, Z-test for the difference in the proportions (Ha: proportion of males > proportion of females) placed in higher level courses. The assumption was that, if there is no difference in math ability between males and females upon high school graduation (Lindberg, Hyde, Peterson, & Linn, 2010) and equal numbers of males and females entering the university, the proportion of students being placed in developmental mathematics courses should be equal. A similar hypothesis also tested the intersectionality of gender and ethnicity.

As a quantitative measure of the magnitude of the difference between groups, an odds ratio was used to measure effect size (Sullivan & Feinn, 2012). This is appropriate because of the binary nature of the data and comparison between each of the groups. Odds ratios will quantify how much more likely a student from one subgroup is to be placed in a certain course over a comparison group.

Student ethnicity was divided into two groups: a group whose ethnicity is historically underrepresented in STEM fields such as Black, Latinx, Native-American, etc. and a second group of Asian and White students who are historically not underrepresented in STEM. Our institutional data does not disaggregate different Asian groups, some of which are underrepresented in STEM.

Combining Asian and White students in this research was done to avoid structurally marginalizing underrepresented students of color. That is, we are not saying that underrepresented students achieve lower than Asian or White students because of lack of effort or ability, we are saying just the opposite. In fact, the very idea of meritocracy produces a “racial hierarchy” in STEM education which benefits White Americans by creating obstacles to achievement for underrepresented Black, Latinx, and Native Americans, and legitimizes the notion of White superiority. On the other hand, if we combined Asians with other students of color, the resulting analysis would render invisible the inequities for

underrepresented groups such as Black, Latinx and Native American and would make it appear that our university had no problems of placement test bias (Chen & Buell, 2018).

We also have no intention of trivializing the experiences of Asian-Americans who have been racialized to justify meritocracy as an excuse to describe the perceived lack of performance of other ethnic groups and thus promote White supremacy or who have also been seen as a threat because of their perceived abilities in math. We chose to group White and Asian students together solely because they are not underrepresented in STEM on our campus and we wanted this research to highlight the inequities for students who are underrepresented.

Results

Once the data were prepared and cleaned, the placement test data were aligned with institutional metrics of gender and intersectionality of ethnicity and gender. The data were then visualized and analyzed using the methods described above and summarized. Because of significant differences in standard preparedness for mathematics, international students were removed from the data. Due to low numbers, transgender students were also removed to protect anonymity, thus only cisgender students were used in this study.

Significance of Gender on Placement Test Outcomes

With the remaining data, in the three years of this study, there were equal numbers of male and female students who took the general placement test (Table 1) while over double the number of males than females took the advanced test (Table 2). This is consistent with research on lower self-efficacy by females than males which correlates to higher anxiety (Sainz & Eccles, 2012; Pajares, 2005), thus they would opt for the less rigorous test. Of the students taking the general test, it was hypothesized that females were placed into the two lower, developmental courses (college algebra and precalculus I) at higher rates than males, whereas males were placed into precalculus II at higher rates than females. Although all three tests were significant at a 0.05 level, they were more practically significant for the lowest and the highest placement

possibilities for the general test. Females had more than 2:1 odds of being placed in the lowest developmental class, whereas their male counterparts had over 2:1 odds of being placed in the highest class predicted by the general placement test (Table 1).

For the advanced test, the results were similar. The odds of a female being placed into the lower of the two classes predicted by the advanced placement testing instrument were over twice that of a male. Thus, the odds of a male being placed in a higher level class (Calculus I) is over twice as high as the odds for a female (Table 2). Thus, both the general and the advanced test give a significant advantage to males to be placed higher in mathematics.

Table 1

Significance test for placement by gender using the General Test						
Course Placed	Number of Females	Number of Males	One-tailed Alternative Hypothesis	Z Test Statistics	p-value	Odd's ratio
College Algebra	196	111	$H_a: \hat{p}(\text{women}) > \hat{p}(\text{men})$	5.590	<0.001	2.120
Precalculus I	159	125	$H_a: \hat{p}(\text{women}) > \hat{p}(\text{men})$	2.297	0.011	1.351
Precalculus II	267	386	$H_a: \hat{p}(\text{women}) < \hat{p}(\text{men})$	-6.756	<0.001	2.176
Total	622	622				

Table 2

Significance test for placement by gender using the Advanced Test						
Course Placed	Number of Females	Number of Males	One-tailed Alternative Hypothesis	Z Test Statistics	p-value	Odd's ratio
Precalculus II	167	307	$H_a: \hat{p}(\text{women}) > \hat{p}(\text{men})$	3.835	<0.001	2.08
Calculus I	45	172	$H_a: \hat{p}(\text{women}) < \hat{p}(\text{men})$	-3.835	<0.001	2.08
Total	212	479				

Significance of Intersectionality of Gender and Ethnicity on Placement Test Outcomes

Treating gender and ethnicity as discrete categories invisibilizes the experiences of women of color. Heeding the call initially brought forth by Black feminists (Crenshaw, 2016; Hull & Smith, 1982), we extended the quantitative analysis to explore the intersection of gender and ethnicity. As with gender and ethnicity separately, the odds for both underrepresented males and females

of being placed in the lowest class are over two times greater than the odds for their respective male and female majoritarian counterparts (Table 3). The odds are 4.375 times more likely that an underrepresented female will be placed into the lowest level of developmental mathematics than a White or Asian male student. That scenario is reversed when examining the odds for the upper limit of the general test prediction of Precalculus II. For this course, non-underrepresented male and female students are significantly more likely to be placed in this highest course over their respective underrepresented counterparts. A non-underrepresented male's odds of being placed in Precalculus II are 4.5 times greater than an underrepresented female's odds. These statistics point to systemic issues and are very unlikely due to random chance.

One area where these patterns change is in the data on intersectionality with the advanced placement test (Table 4). In this test, female students from both underrepresented and non-underrepresented groups are approximately equal in their placement in the lower course predicted by the advanced test (Precalculus II). However, there are still significant differences in the two groups of male students. Thus, there are significant differences between White and Asian male students vs. all other groups. As noted, there is a large drop in the number of females of both groups who take the advanced test. This drop is consistent with previously noted research on gender in mathematics.

Table 3

Significance test for placement by intersectionality of gender and ethnicity using the General Test							
Course Placed	Gender	Number of Underrepresented Students (UR)	Number of Students not Underrepresented (NUR)	One-tailed Alternative Hypothesis	Z Test Statistic	p-value	Odds ratio
College Algebra	M	53	58	$H_a: \hat{p}(UR\ male) > \hat{p}(NUR\ male)$	3.35	<0.001	2.018
College Algebra	F	109	87	$H_a: \hat{p}(UR\ Female) > \hat{p}(NUR\ Female)$	4.737	<0.001	2.285
Precalculus I	M	49	76	$H_a: \hat{p}(UR\ male) > \hat{p}(NUR\ male)$	1.35	0.088	1.32
Precalculus I	F	69	90	$H_a: \hat{p}(UR\ Female) > \hat{p}(NUR\ Female)$	0.473	0.318	1.091
Precalculus II	M	110	276	$H_a: \hat{p}(UR\ male) < \hat{p}(NUR\ male)$	-3.76	<0.001	1.911
Precalculus II	F	82	185	$H_a: \hat{p}(UR\ Female) < \hat{p}(NUR\ Female)$	-4.853	<0.001	2.267
Total	M	212	410				
	F	260	362				

Table 4

Significance test for placement by intersectional of gender and ethnicity using the Advanced Test							
Course Placed	Gender	Number of Underrepresented Students (UR)	Number of Students not Underrepresented (NUR)	One-tailed Alternative Hypothesis	Z Test Statistic	p-value	Odd's ratio
Precalculus II	M	94	213	$H_a: \hat{p}(UR\ male) > \hat{p}(NUR\ male)$	3.456	<0.001	2.27
Precalculus II	F	50	117	$H_a: \hat{p}(UR\ Female) < \hat{p}(NUR\ Female)$	-0.722	0.235	1.291
Calculus I	M	28	144	$H_a: \hat{p}(UR\ male) < \hat{p}(NUR\ male)$	-3.456	<0.001	2.27
Calculus I	F	16	29	$H_a: \hat{p}(UR\ Female) > \hat{p}(NUR\ Female)$	0.772	0.235	1.291
Total	M	122	357				
	F	66	146				

Considerations

Note that this study was not experimental but observational. There are many variables involved in performance on standardized tests as well as success in subsequent coursework that cannot be explained solely by the outcome of a test. This study in no way implies that the particular assessment used here is faulty. We are suggesting that using a single high stakes metric as the authority on placing students in mathematics is a practice that we should consider changing if we ever hope to diversify STEM.

Discussion

The underrepresentation of women in certain STEM fields such as engineering and computer science is undeniable. Since half of the population are women, these critical fields are not capturing some of the brightest talent in the world today, talent that could be used to find solutions to the complex problems facing humanity. The road to these disciplines requires passage through higher level mathematics, not just in K-12, but also in higher education. To gain access, students who did not take previous college credit courses such as AP, IB or junior college must pass through the gate of placement testing. Based on the ideas of meritocracy, it would seem that mathematics is the gatekeeper, but it is not. The current system that determines placement based on a single, high-stakes metric, which is shown to be uncorrelated to success and biased towards women, is more likely the actual gatekeeper.

This system enacts a higher price for passage through the gate of higher level mathematics for women and underrepresented groups. Women, who start two courses behind in developmental mathematics courses must pay a much higher price both financially with two extra courses but also in added time, energy, and resources in order to be able to pursue high demand, high paying fields such as engineering and computer science. If they achieve the level of mathematics they need to gain entrance, then they have a host of other obstacles to deal with in the culture of those fields.

If this were just a problem at one university, the solution to the problem would be simple, but it is not. It is a problem in universities around the U.S. and the world. At our university, once we identified the problem, our next step was, as Goodlad suggested, to have a serious educational conversation. A conversation was started between representatives from mathematics from each of the campuses in our system. One suggestion was to eliminate the placement test completely and allow students to place into mathematics with Directed Self-Placement (DSP), a process which our university has already adopted for its first-year composition classes.

“Is There a Better Way?”

In DSP for the composition courses, students themselves choose which level writing course they feel is most appropriate for them. The role of the institution is twofold: 1) to inform students about the goals and expectations of the different course options, and 2) to provide tools for students to assess their level of writing competency. Students generally learn about different course options through written materials and discussions with academic advisors. Common tools for students to assess their writing competency include self-guided assessments (often offered online), and suggestions for soliciting feedback from high school teachers and others with knowledge of the students’ writing abilities. Crucially, students can exercise more agency and grow as learners through the placement process. Proponents of DSP for writing placement argue that it empowers students to participate in their education, reduces stigma for students enrolled in lower level courses, and is effective in placing students (Chernehoff, 2003; Royer & Gilles 2003). Empirical research shows generally positive

results with DSP (Chernekov, 2003; Frus 2003; and Royer & Gilles 2003), though there are also studies showing that DSP is not an effective placement mechanism (Gere, Aull, Green, & Porter, 2010). Taken together, the research suggests that DSP is a promising alternative to placement testing when skillfully tailored to the local context. A similar approach could be taken to placement in mathematics.

At our university, we discussed eliminating the initial two developmental courses (College Algebra and Precalculus I) which would make the floor course for all students Precalculus II. In order to address the anxiety of females in mathematics, we discussed creating an optional co-requisite course which would provide “just-in-time” support on prerequisite algebra concepts that would be used at that particular time in the Precalculus II course. We would also provide drop in “just-in-time” tutoring at the QSC by aligning the concepts being taught in the Precalculus II classroom with tutoring. In addition, we have formed a diversity action team within our Quantitative Skills Center (QSC) to review services and service delivery through a diversity, equity, and inclusion lens. Comprised of students and staff, the diversity action team aims to create a more “identity conscious” (Pendakur, 2016) center that supports women and underrepresented minorities (URM) as they progress through their STEM courses. In an “identity conscious” frame, student success programming is tailored to best meet the needs of different groups of students.

Changing Placement, Changing Culture

Placement is not the end of a student’s mathematics journey nor the ultimate answer to the question, “Is there a better way?”. In order for women and URM students to progress through mathematics and into upper level STEM courses, we need to have a conversation regarding what makes an effective mathematics program, and locally at our university we need to question what we are doing to achieve such a program. Going back to Gutierrez’s (2009) equity framework with its dual axes, in the plan discussed above, we have addressed the Dominant Axis consisting of Access and Achievement. Our plan provides Access for all students to participate in mathematics (removing the placement test) and Achievement by providing resources (optional co-requisite “just-

in-time” help) in order to provide tangible results such as the “benchmark” grade to the subsequent course or program entry. What we have not considered is the Critical Axis of Identity and Power.

In terms of Power, how are we helping students use mathematics to achieve personal goals (solving problems in their local communities, for example)? Having agency in the world around us is the fundamental principle of power. We must consider how we are or are not fostering agency in our students through their knowledge of mathematics. The power dimension is the heart of social transformation.

The other end of the Critical Axis is Identity. Identity is both past history (the history of culture and ancestry in mathematics, i.e. the Hindu-Arabic numeral system) but also of the way students are racialized, gendered, and classed in a global society (Gutierrez, 2009). For example, in mathematics, do students have the opportunity to explore why particular perspectives are valued and how to find a middle ground between their lived perspectives and the ideas of the dominant mathematics culture? This type of exploration would make mathematics meaningful for ALL students, not just women or underrepresented minorities. It is the type of exploration that allows students to be able to answer the question, “When are we ever going to use this?”.

John Goodlad advocated for candid, authentic discussion about educational issues. His influence on us brings us to this call for action among our higher education counterparts. Just as we have begun to accept that the GRE is not a good metric for whether students will be successful in graduate studies, we need to accept that placement testing and standardized testing are not indicative of students’ abilities in mathematics. We need to have frank discussions on the usefulness of these tools. We need to ask the question which Goodlad charged us to ask, “Is there a better way?” and we need to be open to the answer to that question.

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Choosing to Teach

Young Children:

Compensation and the Intersectionality of Gender, Race and Immigration

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Abstract

At this time of rapid expansion of early childhood educational initiatives throughout the United States, it is imperative that we address the inequity of early childhood teacher's salaries, schedules and benefits within the P-12 educational system. This inequality primarily affects women teachers who make up 97% of preschool teachers, many of whom are immigrants and teachers of color. To achieve equity, it is important for the larger educational community to advocate equipped with a deeper understanding of the early childhood education profession and the work that early childhood teachers do.

It is not unusual to have highly qualified women, many of whom are immigrants and teachers of color, teaching in daycares, Head Starts and other community based organizations (CBOs) with inequitable wages, schedules and benefits when compared to teachers in P through 12 public schools. It is remarkable that addressing this inequity has not been one of urgency among educators and decision makers concerned with equity and social justice. The Center for the Study of Child Care Employment (2018) stated, "The early care and education (ECE) system in the United States is built upon a foundation of structural inequality based on gender, class, and racial inequities that are woven throughout American institutions and culture" (para. 1). The National Association for the Education of Young Children along with other early childhood organizations have addressed this inequity for decades with some successes and many disappointments. This article calls for the larger educational community to address the inequity and suggests that a deeper understanding

of the profession and the unique work of early childhood teachers to assist in tackling this longstanding concern. Although early childhood education includes birth through grade 2, early childhood teachers in this article refers to those teaching within infant, toddler, and three and four-year-old classrooms.

A Glimpse of High Quality Early Childhood Education in Practice

To humanize the inequality, we have chosen to describe a classroom of excellence and the teachers within it, Ms. Erica and Ms. Nicola. Located in a high needs area of East New York Brooklyn, this Head Start classroom is an ideal setting for four-year-old children to engage in effective teaching and learning experiences. It is more than good care or preparation for elementary school success; it is an example of educating the hand, the heart and the mind of the child. The room is light, artful and vibrant. The children spend hours each day constructing knowledge as they choose from developmentally appropriate materials and activities such as building with blocks, cooking in the dramatic play area, working on projects or painting. The teachers carefully observe and record the children's play, paying careful attention to how the environment meets the needs of each child as well as for whole group learning to work in tandem. During choice time as well as teacher directed activities, thought is given to the children's development across the domains; social, physical, language and cognitive. All of the space, floor to ceiling, is filled with sound and movement; teachers and children explore their bodies on the floor as well as reaching high into the air. Deep relationships are evident, among the children, the children and adults, and the children with materials in the room. Parents are involved within the classroom with Ms. Erica and Ms. Nicola respectfully talking with parents about supporting their child's development including health and wellness. It is inspiring to observe Ms. Erica and Ms. Nicola orchestrate the day-- guiding children, having conversations with parents and moving through crises. It is extraordinarily intricate as it requires the constant physical and intellectual engagement of the teachers. Due to the excellence of their work, during a recent observation by a Department of Education (DOE) instructional coach assigned to

UPKs, Ms. Erica and Ms. Nicola were encouraged to apply for open DOE coaching positions. Although flattered, they declined since it would mean leaving the classroom, and they feel their lives are “most impactful” working with young children. They chose this work and “love teaching young children”.

Observing Ms. Erica and Ms. Nicola in the educational setting is to experience professional distinction at the early childhood level. They are totally present; breathing in and out, observing, knowing when to assist and when to wait, allowing for spontaneity and exactness, encouraging concentration and laughter, and radiating joy. To excel as teachers of young children, they show profound understanding of child development, creating environments and working with families. Both teachers came to early childhood education having years of teaching experience in elementary and high school in their home countries, St. Vincent and the Grenadines. As other immigrants educators have done, Ms. Erica and Ms. Nicole relied on guidance from those who came earlier and were told about openings at the Head Start where they now teach. Along with teaching, both obtained a master’s degree in early childhood education at a City University of New York college.

When New York City began providing Universal Pre-Kindergarten (UPK) for all four-year-old children in 2015, the new classrooms were located in public schools or in community-based organizations (CBOs) including daycares, Head Starts and private preschools. Ms. Erica was moved to the new UPK classroom at the Head Start from a non-UPK classroom thus receiving higher pay with shorter hours and no classroom time during summer. To finish supervised student teaching requirements for her master’s degree, Ms. Nicola left her classroom as a head teacher at the center and joined Ms. Erica as her assistant. The additional pay for UPK teachers and assistants in CBOs does not result in equity with public school teachers in the City, although the same curriculum and assessments are used and the teachers are required to have the same New York state teacher certification. For Ms. Nicola, the UPK assistant teacher salary was higher than that of a lead teacher in a non-UPK classroom.

Defining the Inequity

This section defines the inequity between early childhood educators and those who teach older students. It then examines the intersectionality of gender, race and immigration regarding the compensation.

The Inequity as Measured by Social Status

It is helpful to view the inequity through an analysis of the social status of early childhood teachers. Although the standard measures of socioeconomic status (SES), education, salary and status of occupation have been refined in fields such as health to more precisely define inequality, they remain the measures most used (American Psychological Association, n.d.) and are helpful for this study. There is little difference between the amount of education and certification required to teach at different age levels. All levels require a bachelor's or master's degree; however, the content differs. Specifically, early childhood educators are steeped in development across all domains, developmental assessment, environmental design for the active engagement of young children and collaboration with families. Elementary education teachers are steeped in how to effectively provide a rich curriculum and how to measure achievement across the disciplines, while secondary education teachers most often are required to have a major or minor in a discipline and learn teaching pedagogy and assessment within a school of education. All programs generally require a course in the foundations of the field and the development of the child/student being taught, including those with disabilities.

Across the three social status measures the inequity is most evident in salaries and benefits. Early childhood teachers fall far below those who teach elementary and secondary students with similar degrees and experiences. The median annual wage as of May 2018 for teachers according to the US Bureau of Labor Statistics Occupational Outlook Handbooks was \$29,780 for preschool teachers (Preschool Teachers, 2019), \$57,980 for elementary teachers (Kindergarten and Elementary Teachers, 2019) and \$60,320 for those teaching high school (High School Teachers, 2019).

The status of the teaching occupation is more complex in that the adult in an early child classroom may be referred to as a teacher, a child care worker or a provider with the title teacher having a higher status. The early childhood job title is often determined by the location of the classroom. The title worker or provider is used in daycare settings but is not used in preschools or public schools. The age of the young child is not the determining factor since many preschools include infants and toddlers with the adults in the classroom titled teachers.

The Relationship Between the Location of Early Childhood Classrooms and Inequity

As the number of early childhood education initiatives grows in the United States, there is little consensus regarding where these programs should be located and who should oversee them. Placing early childhood education within public school systems would result in increased equity between early childhood teachers and those teaching older students but increase overall educational costs. While politicians, educators and families celebrate the quality of the programs that have been created, conversations around equity for teachers doing the work have been rare, leaving teachers such as Ms. Erica and Ms. Nicola choosing between staying in the Head Start program or moving to a public school to be afforded equity. We now have an opportunity and responsibility to bring the issue of inequity into the national conversation.

The growing early childhood education movement has been accelerated by states proposing and initiating programs focusing on assisting parents in the workforce by making quality care more affordable, enhancing healthy development beginning with prenatal care, and/or closing the elementary school opportunity and achievement gaps by providing prekindergarten to prepare all children for elementary school. The oversight of the initiatives differs according to the primary focus; for example, UPK in New York State has focused on the educational benefits and is located in the Department of Education, while in Washington State the Department of Children, Youth, and Families was developed in 2017 with significantly increased funding to support families with infants, toddlers, and preschoolers (Workman and Novoa, 2018). The differing oversight of early childhood programs makes it

difficult to build a coalition to advocate for compensating early child educators on par with other teachers.

Early childhood education programs are often not located within the public school system due to the financial burden caused by adding additional public school personnel and a lack of space. In school districts, where according to the American Association of School Administrators, salaries and benefits account for 80 to 85% of the entire district budget (American Association of School Administrators, n.d.) the cost to provide equity for early childhood teachers is no small matter. In both small and large communities where school funding is based on property taxes, the additional teacher salaries create further tension in passing school budgets already stretched thin. Hard choices to achieve equity will need to be made. Although there are early childhood programs such as a Head Start, renting or given space within public schools, the teachers are not employees of the school district and therefore do not receive equivalent compensation.

States are making changes such as addressing quality by increasing teacher qualifications but doing less so around increasing compensation. The State Assessments for Early Childhood Workforce Policies (Whitebook, McLean, Austin, & Edwards, 2018) reported that states are making progress in requiring higher teacher qualifications to promote quality with only 18 (35%) states rated having stalled in addressing qualifications. In comparison, 44 states (86%) have stalled in addressing compensation equity for early childhood teachers with certification.

Compensation and the Intersectionality of Women’s Work, Race and Immigrants

Early childhood teachers are overwhelmingly women and are often women of color and immigrants. Although women make up the majority of teachers in early childhood, elementary and secondary education, it is particularly evident in early childhood where 97% of teachers are female (U.S. Department of Education, 2016). Historically, caring for the home and young children has been seen as women’s work and although early childhood teachers are required to have degrees and certifications, teaching young children may still be seen as an extension of what mothers have

done throughout history without compensation. Without government assistance, attaching a financial value to caring for and teaching children outside of the home is primarily decided by what early stage parents are able to pay, without compromising the savings they desire to put aside for their child's future elementary and secondary years as well as college.

Women of color are especially affected by the inequity. Whitebook, McLean, Austin, and Edwards (2018) noted:

Early childhood educators are in economic distress, but this reality falls disproportionately on early educators of color due to the racial inequities that are woven through U.S. culture. Women of color comprise about 40 percent of the ECE workforce with African American early educators earning \$0.78 per hour less than their white counterparts, even after controlling for educational attainment. (p. 6)

Experienced immigrant teachers work in early childhood education more than at other levels. Due to differing certification requirements in the United States and St. Vincent, when immigrating, Ms. Erica and Ms. Nicola found it easier to secure a teaching job in a CBO rather than in the public schools. According to Park, Mc Hugh, Jong, and Batalova (2015), “the foreign-born share of Early Childhood Education and Care (ECEC) workers account for nearly one-fifth of the overall ECEC workforce and are highly over-represented in lower-skilled and lower-paying sectors of the profession such as family-based child-care workers; few hold leadership positions as center directors or work as prekindergarten (pre-K) teachers (para. 2). The gender discrepancy is also evident within the immigrant population, “with 98% of immigrant early childhood teachers being female, compared to 80% in elementary and middle schools and 63% in secondary education” (Furuya, Nooraddini, Wang, & Waslin, 2019, p. 7).

Across the country there is a growing demand for culturally and linguistically diverse early childhood programs. There is diversity among women teaching in early childhood education, “with 40% of the workforce being women of color” (Whitebook, McLean, Austin, & Edwards, 2018, p. 24) and “20% being immigrants”

(Park, Mc Hugh, Jong, & Batalova, 2015, p. 1). With research showing the long-term positive impact on children who have teachers of the same race (Gershenson, Hart, Lindsay, & Papageorge, 2017), it is important to maintain this diverse teaching force. To do so early childhood teachers need to be compensated fairly.

Along with the knowledge they gained while obtaining their degrees and the skills they honed from years of experience in the classroom, immigrant teachers such as Ms. Erica and Ms. Nicola bring to the children and their families a unique cultural perspective. Immigrant teachers do not provide a “cultural time or event” as supplemental activities; rather the rhythm of their work, the songs they sing and stories they tell reflect their culture and are an embedded aspect of their pedagogical presence. Although there is an abundance of materials, books and toys in their classroom which Ms. Nicola calls “niceties”, they bring in found objects, especially from nature to provide “something real, not plastic” which is reminiscent of and a necessity for teaching in Saint Vincent which had a far more limited materials budget.

Although immigrant teachers add to the diversity in the teaching profession, it may not be true that they have experience teaching in diverse settings. When asked what is the primary difference, they found teaching in the United States versus St. Vincent, without hesitancy both Ms. Erica and Ms. Nicole immediately said the diversity compared to the more homogeneous classrooms of their country of birth. When entering the classroom, the diversity may not be readily apparent since all of the children may appear linguistically and racially similar. In programs such as Head Start where families need to qualify financially, the economic status is also known to be similar. The diversity became clear as they began working with the children and their parents. Ms. Erica states, “we have “learned to work with children and parents with different languages and religions, who have different rituals and diverse ways of parenting. In St. Vincent we tend to think more alike and do the same things.”

Immigrants from non-English speaking countries add to the number of bi-lingual teachers needed for the growing number of dual language programs requested by both bilingual and English-speaking parents of young children across the country. As research

continues to show the cognitive and social benefits of children learning two languages (Kuhl, 2011), recruiting and keeping teachers who speak a language other than English are essential. Without bilingual teachers and dual language programs, children with a home language other than English do not use their first language in the classroom and English-speaking children are not afforded the opportunity to learn a second language. Achieving equity in dual language programs has been problematic, because if there is a teacher in the early childhood classroom with a language proficiency other than English, they are more likely to be the assistant teacher (Whitebook, McLean, Austin, & Edwards, 2018). This sends the troubling message that teachers speaking a language other than English are not leaders or decision makers.

Addressing Inequity among Teachers

This section examines the steps that can be taken by the larger educational community to address inequality, the importance of building coalitions to advocate for equity and the success of past large-scale early childhood programs.

Advocating for quality early childhood education

It is important that all educators understand the power of providing quality education to all young children and the affect this will have on the educational system as well as society overall. Research shows positive results realized years and even decades later as seen in the 2014 study of Head Start. Using data from the National Longitudinal Survey of Youth (NLSY), Schanzenbach and Bauer (2016) found, “Head Start improves educational outcomes including increasing the probability that participants graduate from high school, attend college, and receive a post-secondary degree, license, or certification; increased positive parenting practices for each ethnic group and for participants whose mothers did not have a high school degree; and that particularly among African American participants, positive effects on social, emotional, and behavioral development becomes evident in adulthood measures of self-control, self-esteem, and positive parenting practices” (para. 3). It is important to convince politicians and tax payers to make this large investment when children are young even though the

results of the investment may be realized long after the provision of service.

Developing an Inclusive Early Childhood Coalition around Quality Practice

Moving towards equity for all educators requires a deeper understanding of what quality looks like in early childhood classrooms. Many educational organizations and school districts have changed the K indicating kindergarten in K -12 education to P for preschool with the expansion of early childhood education programs. To address the development of young children across all domains and the different structure needed within the early childhood classroom, it is imperative that the letter change also influences how school districts and organizations make educational decisions. With few early childhood educators in administrative positions within the P-12 systems and educational organizations, P-12 is seen and decisions are made through the historic lens of successful schooling rather than child development, the cornerstone of quality early childhood education. A misconception persists that teaching four-year-old children requires less rigorous content or skill sets than utilized in Kindergarten classrooms. Using this push down approach does not take into account how young children think in a qualitatively different fashion. It is important that all educators understand that teaching young children requires a unique set of knowledge and skills based on a deep understanding of the physical, language, cognitive and social development of young children and the ability to set up environments to guide and educate a classroom of children at various levels.

As our knowledge of early childhood development expands through the use of technology and societal influences on development becomes more complex, teaching young children requires even greater knowledge, flexibility and skills. Although much of what we know about early development remains consistent, such as children develop in sequence across domains and the growth and development in one area affects development in others; there is much more to consider. For example, there is greater understanding of the importance of early attachment and of

infant stress levels through the testing of cortisol levels. There is continuing study on the effects of nutrition, sleep and movement on both the body and mind. This deeper understanding requires teachers to create more dynamic environments, work more closely with parents and develop more inclusive curricula addressing all developmental domains.

Early childhood classrooms are different than those of older children. Being responsible for building the foundation for strong healthy bodies, active inquisitive minds and the social skills to make connections with others, teachers build a schedule with an integrated curriculum. Ms. Erica and Ms. Nicola understand that children do not build with blocks with an intention to learn math, instead they guide the children to a deeper understanding of number and balance through the availability of materials and by providing a deeper mathematical vocabulary. The total day is language rich in an effort to reduce the enormous word gap between children entering Kindergarten based on family income. Vocabulary is introduced during choice time and teacher directed activities, through stories, on walks, at meal time and while children are climbing on structures.

There are more adults in the early childhood classroom and smaller group sizes. Young children develop and learn throughout the day, therefore lead teachers and assistants are responsible for providing developmental experiences throughout the entire time the children are present. As children age, the classroom schedule differentiates time for studying the subjects which allows for staffing patterns not required in early childhood education.

Examining Past Large-Scale Programs and Models that Have Guided Them

As early childhood education initiatives develop and expand, they are often described as new and innovative, ignoring the excellent child care offered during World War II, Project Head Start beginning in 1965 and the expansion of daycare in New York City in the 1970s. These models addressed program quality, child development, working with families, teacher training and wage equity. Looking historically is helpful in thinking about our present inequity.

During World War II, with the assistance of Eleanor Roosevelt, the first government sponsored child care center was developed under the Community Facilities Act (Langguth, n.d.). Women were desperately needed in the factories to take the place of male workers who went off to war, but the female absentee rate was high due to the lack of reliable child care. A center providing childcare for the Swan Island shipyard workers near Portland Oregon, is often noted as the “best daycare ever” with much of what we strive for in early childhood education today already being realized including teachers being paid a professional wage. The placement of the facility made the center accessible to mothers on their way to work and was designed in a circular fashion around a playground with covered porches for rainy days. Health and nutrition were addressed, relationships were fostered and the curriculum was developmentally appropriate. “Teachers with specializations in early childhood education were recruited from all around the United States paying a professional teaching wage” (Oregon Historical Society, n.d., para. 7). The founders of the childcare programs knew that if the workers in the factory were paid more than the teachers, the women would leave the daycare centers for higher pay as factory workers. After the war, as soldiers returned and needed work, it became patriotic for women to leave the factories and the daycares were closed.

Later in 1965 as part of the War on Poverty, Lyndon Johnson launched Project Head Start offering free preschool for four-year old children from families with low incomes. Beginning as a summer program, Project Head Start under the U.S. Office of Economic Opportunity was expanded to an academic year program and moved to the Office of Child Development in the now U.S. Department of Health, Education and Welfare. As the summer program became an academic year program, pay and requirements to teach in the program increased. Head Start which provided services to 732,711 children in 2016-2017 (National Head Start Association, n.d.), addressed education, social services, health, nutrition with measures for quality and parent involvement. Today Head Start teachers make far less than elementary school teachers except in the District of Columbia where they are paid on par with public elementary school teachers and in West Virginia and South

Dakota where the discrepancy is less than \$10,000 (Barnett & Friedman-Kraus, 2016).

In the early 1970s New York City had the largest publicly funded child care system in the nation (Black, 2016). The staff was unionized, and salaries were comparable to that offered to elementary teachers in the public school system (Clines, 1969). In 1969, New York City introduced the first for-credit training program to enhance the skills of and opportunities for daycare teachers, making the link between child care quality and the quality of working conditions and wages for teachers (Black, 2016). As New York City faced financial difficulties in the mid 1970s, the City increased the teacher child ratio and questioned teacher qualifications for child care directors and teachers. The gap between wages for early childhood teachers in daycares and teachers in the public schools widened.

Early childhood teachers often are required to have specialized training and continued professional development since many programs where they choose to teach are based on theoretical models calling for different skills and pedagogical practices in the classroom. The models differ but maintain a curriculum focused on developmentally appropriate practices and address all developmental domains. Theoretical models that deeply influence early childhood education programs today are founded on the Maria Montessori program developed in Rome in 1907 and Lucy Sprague Mitchell program developed in New York in 1918 that later became Bank Street. The first Waldorf school began in 1919 in Germany and after World War II a group of women formed Reggio Emilia preschools, the first secular preschools in Italy. Middle class parents are aware of the models and advocate for these programs within their school districts.

Conclusion

States and local communities are expanding early childhood education programs across the United States to address the needs of families with young children and to help close the educational opportunity and achievement gaps for children from families with low incomes. Early childhood educators who teach outside of the public schools continue to be compensated far less than teachers teaching older students. There is strong evidence of the benefits

gained by children attending high quality early childhood programs which are dependent on effective and committed teachers who are primarily women with a disproportionate number in the lowest paying work, immigrants and women of color. Although states have made gains in requiring equal credentialing for early childhood teachers, equitable wages have not been realized. Head Start and subsidized daycare programs in low income communities are particularly vulnerable to losing teachers to the public schools or to other more lucrative professions.

Achieving equity for early childhood teachers will require all educators, decision makers and professional organizations committed to social justice and educational renewal to advocate for high quality early childhood education programs along with equitable salaries and benefits for teachers teaching the youngest children whether in public schools or in community based organizations. Understanding and appreciating the unique field of early childhood education and the different but comparable work teachers of young children do is the first step in advocating for equity. The work of an early childhood teacher requires an understanding of child development and the optimal environments in which children grow and learn, conducting developmental assessments and working with families to support and enhance developmental opportunities across all domains. It is different work than teachers teaching older students do, but not of less importance, and it needs to be compensated equally in order to address the disparity in pay for all women, especially immigrants and women of color.

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Connect, Cultivate, Campaign:

Toward a Social Movement Approach to Educational Change

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Abstract

Recent years have seen a surge of organizing and activism around schooling, and women (educators and parents in particular) have been leaders and supporters of these efforts. Many researchers have argued that social movements are just what is needed to achieve meaningful educational change. In this article, I highlight lessons from the growing literature promoting a social movement approach to educational change. Specifically, I discuss how social movement actors generate power for change by connecting through building networks, communities, and alliances; cultivating visions and ideas for change through shared learning and knowledge construction; and campaigning for change through mobilizing their networks for collective action.

Late in his life, John Goodlad (2015) wrote that “This message cannot be overstressed: *Public schooling is the essential starting point for addressing the well-being of democracy*” (p. 19). At the time of this bold statement, the U.S. was well into the decades-long era of serious challenges to public schooling resulting from the heightened influence of the federal government on one hand and of advocates of market-driven reforms on the other. As power and influence has grown among those distant from schools and their communities (including politicians, testing companies, charter school organizations, and billionaire businessmen), local democratic control over schooling has been seriously compromised. Communities and educators have seen their role in school decision-making shrink as impediments to local control have multiplied, limiting the “civic collaboration around schooling” (Bellamy & Goodlad, 2008, p. 570) promoted by Goodlad and the National Network of Educational Renewal (NNER) (Goodlad, Mantle-Bromley, & Goodlad, 2004).

Yet, these trends have been accompanied by a strong resistance that appears to be growing. After years of troubling reforms sponsored by powerful entities without the input of local stakeholders, we have seen surges of civic engagement around public schooling in the form of social movement activism. Parents, educators, and young people across the country organized the opt-out movement, which led to many thousands of families rejecting standardized testing (Schroeder, Currin, & McCardle, 2018; Wang, 2017). So many students opted out of standardized testing in New York that policy changes (albeit limited ones) soon followed (Wang, 2017). More recently, red state teacher strikes and marches in protest of the underfunding of public schools and the unconscionably low pay to educators resulted in public support and a few tangible victories. Well before these events, teacher activist groups (which have been growing since No Child Left Behind) have organized to resist contemporary policies and practices that harm students and impede quality education (Niesz, 2018; Picower, 2012).

Leading most of these efforts are women—educators and parents fighting to (re)gain a voice in public school decision-making. Women’s leadership in teachers’ unions, in teacher activist and organizing groups, and in parent advocacy networks has positioned them both at the forefront and in the trenches of movements to resist the attacks on public education (Brown & Stern, 2018; Marshall, 2002; Schroeder, Currin, and McCardle, 2018; Trasciatti, 2018). The prominence of women in these movements is not historically novel. Studies of education activism document women’s leadership in movements spanning the history of education (e.g., Crocco, Munro, & Weiler, 1999; Marshall & Anderson, 1999; Munro, 1995). Recent books document the range of ways in which Black women educators engaged in organizing and activism during the Jim Crow era (McCluskey, 2014) and the Civil Rights Movement (Loder-Jackson, 2015). Fighting for justice in education and society, these women founded and led organizations and schools, they spoke out in public meetings and through newspapers, they participated in litigation and other actions, and they generally found ways to inform, influence, and organize people (Loder-Jackson, 2015; McCluskey, 2014). Educators involved in the women’s movement worked to promote

gender equity policy and greater inclusion of girls and women in the curriculum, in school athletics, and in educational leadership, among others (Gaskell, 2008; Marshall 2002). Throughout the women's movement, relationships and networks of women in and across social movement organizations, from women's interest groups that developed organically to large teachers unions, created the context for important change in the field of education (Gaskell, 2008; Marshall, 2002). In these cases and countless others, women have joined together in communities, built shared understandings and knowledge to counter the status quo, and worked vigorously to advance their visions for change.

Social movement activism has not gone unnoticed in the educational change literature. Although gender has not been a primary focus of studies of social movement approaches to educational change, we see women feature prominently in the case studies that inform this literature. Some researchers have mined cases of community organizing for educational change to show the distinctive contributions such efforts can make in schools and communities (e.g., Shirley, 1997, 2002; Warren, 2001). Others have documented how educators have used social movement tactics within education systems to promote significant school change (e.g., Rincón-Gallardo, 2016, 2019; Niesz & Krishnamurthy, 2013). Moreover, education scholars have increasingly advocated social movement approaches to educational change (see Anyon, 2005, 2009; Oakes & Lipton, 2002; Oakes & Rogers, 2006, 2007; Oakes, Rogers, Blasi, & Lipton, 2008; Renée, Welner, & Oakes, 2010; Rincón-Gallardo, 2016, 2019; Rincón-Gallardo & Elmore, 2012; Rogers & Oakes, 2005; Warren, 2014). Many of these scholars have argued that, in efforts for more equitable and just public schooling in particular, the typical technically-oriented approaches are doomed to fail. Thus, they suggest, those of us who wish to support the fight for better and more equitable schooling would do well to model our tactics on social movements (see, e.g., Oakes & Rogers, 2006, 2007; Renée, Welner, & Oakes, 2010; Rincón-Gallardo, 2019; Warren, 2014). Movements, they suggest, have much to teach us about developing the power to directly confront the cultural and political barriers to powerful institutional transformation.

In this article, I explore social movement approaches to

educational change, focusing on how movements generate their power. I argue that, for communities and educators seeking local or broader changes in public schooling, there is a lot to be learned from social movement activism. Successful movements grow their influence by connecting for change through forming networks, by cultivating change through learning and generating shared knowledge, and by campaigning for change through mobilizing people and resources for collective action.

Why Adopt a Social Movement Approach to Educational Change?

Despite powerful examples of education activism through history—many of which feature women at the forefront—there are many obstacles for those educators who would engage social movement tactics to pursue change (Marshall & Anderson, 2008). Historically, educators were not socialized to be activist professionals (Marshall & Anderson, 2008). Given the romanticized ideal “of the selfless educator working for the good of the children,” the public tends to expect teachers to be apolitical (Brickner, 2016, p. 11). Although recent U.S. teacher strikes garnered public support, there were still many who criticized them as unseemly and undignified (Trasciatti, 2018). Views that teachers should be apolitical are related, at least in part, to the feminized nature of the teaching profession. Brown and Stern (2018) found that the view of teachers’ work as women’s work presented challenges to educators’ activism. Indeed, throughout most of the twentieth century, social movement organizing tended to be seen as the domain of men (Stall & Stoecker, 1998; Trasciatti, 2018). This is despite the century’s myriad women-led movements (e.g., Suffrage Movement, Temperance Movement, Women’s Movement, etc.) and the growth of feminist and women-led organizing (Oakes & Rogers, 2006; Stall & Stoecker, 1998; Trasciatti, 2018).

What is important to note for educators unfamiliar with social movement organizing or uncomfortable with the activist label is that social movements offer models and tactics for a range of types of educational change pursued by those with a range of professional identities. Among those who argue for a social movement approach to educational change, there are essentially

two positions. One group of scholars writing about equity- and justice-focused efforts uses social movement theory to argue that successful change must be pursued from *outside* institutions, through coalitions of organizers, community members, and other stakeholders. Educators are important allies in these efforts, but this social movement model for change is essentially community- and organizer-driven (see Anyon, 2005, 2009; Oakes & Lipton, 2002; Oakes & Rogers, 2006, 2007; Oakes, Rogers, Blasi, & Lipton, 2008; Renée, Welner, & Oakes, 2010; Rogers & Oakes, 2005; Warren, 2014). Another position on educational change as social movement was developed through studies of successful educational change pursued *within* education institutions, by educators engaging social movement tactics and methods (see Grossman, 2010; Niesz & Krishnamurthy, 2013; Rincón-Gallardo, 2016, 2019; Rincón-Gallardo & Elmore, 2012). Researchers writing about this approach have used social movement theory to explore how unusually successful educational change efforts reflected features of social movements. They also described how educators behaved as social movement actors, taking on new roles and exploding the norms of the system from the inside.

Despite the different theories of action behind these two positions, there is remarkable agreement on why a social movement model is necessary for the success of efforts for significant educational change. In essence, all of these researchers argue that change in schooling cannot be accomplished through the technical means usually employed in school change efforts. This is because technical approaches cannot overcome the social and cultural norms and the power dynamics that together protect the status quo. Typical school reform efforts are not powerful enough to transform the “cultural logics” (Oakes et al., 2008) or “default culture of schooling” (Rincón-Gallardo, 2016; Rincón-Gallardo & Elmore, 2012), but social movements can be. In Rincón-Gallardo and Elmore’s (2012) words, “Social movements act as forces for social innovation because they operate in fundamentally different ways from public agencies and work against certain fundamental patterns of culture and practice in mainstream, established organizations” (p. 477). They are countercultural (Rincón-Gallardo, 2016) and counterhegemonic (Niesz & Krishnamurthy, 2014).

The field of social movement studies on which these authors draw is massive, with diverse schools of thought and theories of social change. Drawing on the work of Marshall Ganz (2000), Jeannie Oakes and Martin Lipton (2002) presented one remarkably simple framework for the work of social movement organizing: “developing relationships, common understandings, and action. All three activities enable communities to gain and use new resources to effect change” (p. 398; see also Oakes & Rogers, 2006). In what follows, I adopt their framework to discuss how movements generate their power and the implications of this for educational change.

Connecting for Change: Networks and Communities in Movements

People who are organized add numerical, political, and economic power to capacity to resist or to balance resistance.
(Oakes & Lipton, 2002, p. 402)

Social movements are characterized by their network of leaders, organizers, activists, and sympathizers. Drawing together like-minded actors interested in creating change, these networks foster power in several ways:

1. Power in numbers: An organized collective can be heard in ways that a single individual cannot. Collective action has more impact than actions taken by individuals. Collectives can amass more resources for change than individuals can.
2. Power in vision: Social movements generate a vision for the what and the how of creating change through the activity, dialogue, and learning that take place in their communities.
3. Power in structure: A social movement network provides the structure for mobilizing resources and action.
4. Power in relationships: Relationships built in social movement networks help to sustain the commitment to the challenging work of organizing and activism.

Growing the network of people committed to a cause is thus a priority in social movement approaches to educational change.

An important aspect of building communities for change is

developing alliances and extending the network across diverse groups and organizations. Some advocates of a social movement approach to educational change have emphasized the importance of coalition building that connects organizers and activists outside schools with those inside (e.g., Oakes & Rogers, 2006; Renée, Welner, & Oakes, 2010). Studies have highlighted alliances for educational change built between educators and parents, community organizers, social movement organizations, elected officials and other policy actors, and university researchers (see, e.g., Grossman, 2010; Niesz & Krishnamurthy, 2013, 2014; Oakes & Rogers, 2006). Pressure, resources, and visible support from those outside schools can upend business-as-usual in change efforts. This not only builds power in numbers, it may also create a shared vision across roles and institutions. Furthermore, the network can be mobilized for specific collective actions. Not incidentally, the relationships built in such coalitions become social capital, “social ties [that] create norms of solidary and reciprocity among community members” (Oakes & Rogers, 2006, p. 99).

In cases of social movement approaches to educational change *within* education institutions, researchers have pointed to how movement networks transform roles and shift power relationships. Rincón-Gallardo and Elmore (2012), for example, explored a case of movement-like educational change in Mexico that fostered a “fundamental shift in the relationship between policy leaders and educators,” which led to “opportunities to open bargaining arenas to adapt institutional norms, structures, and practices...” (p. 485-486; see also Rincón-Gallardo, 2019). In this case, more “horizontal relationships of mutual influence” (p. 471) emerged that resembled those of social movements to a greater extent than those of typical institutional change initiatives pursued hierarchically. This is important because shared commitment must be authentic, not mandated. In the case in Mexico, the movement grew not through top-down directives but because of “the personal transformation that occurred when teachers experienced powerful learning themselves or when they witnessed visible improvements in the learning and engagement of their students” (Rincón-Gallardo, 2016, p. 423). The shared vision spread like a ‘contagion,’ at the grassroots. The increasing numbers of

committed educators resulted in a network that ultimately mobilized for broader change. At the same time, they continued to learn from one another in the context of their relationships (Rincón-Gallardo, 2016, 2019).

Whether within education institutions or in coalitions that bridge schools and other outside actors, social movement approaches to educational change result in new communities that foster power in numbers, vision, structure, and relationships. In movement networks, significant shifts in roles and relationships have the potential to undercut the cultural norms and power dynamics of institutions. As discussed next, movement networks also generate power by serving as communities for learning and knowledge construction.

Cultivating Change: Learning and Knowledge Construction in Movements

[I]t must be recognised that not only do people learn through their engagement in social movements but that these movements actually make and disseminate new knowledge and understanding through their activity. (Martin, 1999, p. 12)

When it comes to social movements, most of us think of a network of movement actors and supporters, as well as the collective actions taken to promote the cause. Less obvious to outsiders is the learning and knowledge construction that happens within movements. Yet, this work builds the vision central to the work of the movement, as well as the range of ideas that support it. Indeed, Budd Hall (2006) argued that “it is precisely the learning and knowledge generating capacities of social movements” that account for their power (p. 153). By promoting learning and the creation of alternative ways of understanding the world and specific issues, social movements cultivate change. Understanding the importance of this work, how it generates power, can lead to further insights for educational change.

Adult education researchers have built an entire body of literature on learning and knowledge construction in social movements (Niesz et al., 2018). In addition to investigating programs of non-formal education developed within social

movements, these researchers have also developed a robust body of scholarship on informal learning in social movements. Movement actors, they argue, learn through their participation with others in a range of social movement activities, from everyday dialogue to organizing to collective actions.

What is learned through social movement participation ranges widely. My colleagues and I identified five types of knowledge that researchers have discussed in the literature on social movement learning (Niesz et al., 2018; see also, Foley, 1999; Rule, 2011):

1. *Knowledge about issues central to the social movement.* Movements promote existing knowledge and develop their new knowledge related to the issues at the center of their goals. Environmental activists, for example, learn the science of climate change. Educators seeking to promote democracy-oriented school change may engage with research and theories related to democracy and education.
2. *Skills and practices of organization, mobilization, and collective action.* Movement actors must learn how to organize and engage in action to advance their goals. Particular philosophies and preferences guide the types of organizing and actions in which specific movements engage, and these become sources of learning.
3. *The vision of the movement.* The vision of the movement includes the movement's values, its goals, and its image of a better future. Dykstra and Law (1994) explained that this vision allows social movement participants "to construct an alternative map of reality" (p. 123). A vision of classrooms in which children are engaged actively in problem-based learning or of a school that serves as a community center might guide a social movement approach to educational change efforts. These visions are also sources of learning.
4. *Individual and collective identity.* Movement actors learn who they are and who they are becoming through movement participation. Participation in social movement communities contributes to the development of individual and collective identities.
5. *Social critique and agency.* A number of researchers use Paulo Freire's (2000) term, *conscientization*, to refer to the potential of social movement participants to learn to 'read the

world,' analyze and critique the status quo, and develop critical consciousness. For some movement actors, participation in movements also leads to agency, an understanding that, despite limited access to formal sources of power, they can contribute to social change.

The learning of each of these kinds of knowledge contributes to the cultivation of change.

Scholarship on social movement learning also highlights the *generative* nature of movements as learning communities. Knowledge is not only learned but *actively created* in these communities. As such, movement actors work together to create something new in terms of their vision, the ideas that support it, and how to pursue it. Sociologists Ron Eyerman and Andrew Jamison (1991) wrote a book about the intellectual activity of social movements in which they argued that movements provide “the social action from where new knowledge originates” (p. 48). Movement knowledge, both learned and generated, forms the basis of the demands movements make on the powerful.

Interestingly, in some of the scholarship promoting a social movement approach to educational change, learning and knowledge production is not merely a byproduct of the work of organizing and activism but *deliberate* inquiry. Oakes and Rogers (2006), for example, discussed the participatory inquiry that guided struggles for educational justice in California. In one example, a group of 30 students (along with some teachers and researchers) spent three years investigating issues of equity in opportunity and policy at their school in order to increase college access for low-income students of color. In a second example, a group of Los Angeles area teachers engaged in inquiry around issues of equitable schooling that led to an online journal, a public forum for the teachers' inquiry called *Teaching to Change LA*. In both cases, these inquiry projects led to some change, albeit not the institutional changes that were sought. Oakes and Rogers (2006) concluded, “Spreading disruptive knowledge is a necessary but not sufficient condition for the kind of social change needed to accomplish equitable schools” (p. 92).

Ultimately, social movements cultivate change through the learning and knowledge construction that takes place through

shared activity over time, sometimes deliberately through inquiry and often tacitly through engaging with others in organizing and activism. Not only does such learning and knowledge construction lead to the transformation of individual and collective understandings, identities, and commitments, it also builds the vision and practice of the movement. In these ways, learning and knowledge production in social movements contribute to the generative power of collective work for change—its ability to produce innovation and alternatives to the status quo. Yet, in the end, the movement’s success depends upon the extent to which these alternatives can be heard and embraced by broader audiences and inform action. The same is true for educational change.

Campaigning for Change: Collective Action in Social Movements

Organizing groups not only create "disruptive knowledge," but act on it to shift the existing power balance, to persuade through force of argument, and to enhance their opportunities for civic participation. (Oakes et al., 2008, p. 361)

Networks that support learning and the construction of knowledge are not unusual in the field of education. It is Ganz’ (2000) third step, engaging in collective action, that most distinguishes social movements from existing educational change networks. To be heard beyond their social movement networks, organizers and activists know that they must promote their vision to new audiences. Collective actions mobilize people—as well as ideological and material resources—to make public demands of those in power. Oakes et al. (2008) referred to this work as “actions that persuade with the weight of their numbers, their capacity for material damage, and the garnering of sympathy and support by bearing witness” (p. 361).

In today’s political climate in the U.S., the repertoire of social movement actions is certainly familiar: marches, rallies, sit-ins, boycotts, lawsuits, petitions, letter writing and phone call drives, social media campaigns, mass presence at public meetings with elected officials, and other (often creative) protest actions. Some advocates of social movement approaches promote these types of

collective actions, arguing that engaging conflict is necessary for some kinds of educational change (Oakes & Lipton, 2002).

On the other hand, when pursuing educational change within institutions, building consensus is often preferable to engaging conflict. As such, other tactics are needed to grow the movement within the institution. In a study of a radical school reform movement in India, I found that educators in the struggle to transform classroom practice expended tremendous amounts of time and effort to persuade diverse groups of stakeholders to take up their vision of activity-based learning (Niesz & Krishnamurthy, 2013). Although officials within the movement had the power to mandate change (and occasionally used it), they knew that the priority was building the movement through painstaking work of dialogue about learning and the power of student-centered approaches to classroom practice. These strategic ‘dialogue’ campaigns were a form of collective action (Niesz & Krishnamurthy, 2013).

Regardless of a whether conflict-oriented or a consensus-oriented approach to collective action is adopted, social movement actors do important behind-the-scenes work to promote the success of their campaigns. Activists must both frame their message and strategically seize political opportunities (Grossman, 2010; Oakes & Lipton, 2006; Oakes et al., 2008; Rincón-Gallardo & Elmore, 2012). *Social movement framing* and *pursuing political opportunities* are the focus of attention and research in the social movement studies literature. This work offers lessons to educational change agents.

If a primary goal of collective action is “to persuade through force of argument” (Oakes et al., 2008, p. 361), the message and vision of the movement must be framed in ways that are compelling to new audiences. Grossman (2010) described this as “how political actors strategically alter meanings in ways that resonate within a society and its institutions” (p. 662). In his study of an educator movement to exempt students from statewide graduation exams, he found that movement actors constructed their battle through an “equity frame” (p. 676). Portraying their work for exam exemption as a fight for equal education for all students, they were able to persuade policy makers to listen and respond to their demands. As Oakes et al. (2008) explained, framing is about the

development of “mobilizing ideas” that promote “a new conception of an existing social problem that moves it from being seen as regrettable and inevitable to being considered an injustice that can and should be remedied” (p. 15).

Identifying and exploiting political opportunities is equally important in the success of social movements. Political opportunities may include regime changes in government or institutions, allies moving into positions of power, and events that highlight the need for change, among many others (Rincón-Gallardo, 2019). In his study, Grossman (2010) found that movement actors analyzed “the policy-making landscape to look for potential openings to make their case” (p. 681); they identified political opportunities inherent in policy maker dissent around issues of assessment policy. In my research in India (Niesz & Krishnamurthy, 2013, 2014), we found that movement leaders used evidence of state-wide school failure as a political opportunity. State education’s lack of success offered an opportunity to promote a radically different model of classroom practice with little resistance. An example of how identifying political opportunities goes hand-in-hand with framing, the movement leaders then framed their struggle as one for authentic *learning* in schools.

Conclusion

By definition, social movements are potential engines of change, disruptive to interests vested in the status quo and potentially the source of new imaginaries to live by. (Holland et al., 2018, p. 270)

From the abolition and suffrage movements to #metoo and Black Lives Matter, women have sought justice through social movement participation and leadership throughout history. Despite the obstacles and risks, they have connected with each other, cultivated visions, and campaigned for civil and human rights. Women have also been at the forefront of contemporary movements to resist the myriad attacks on American public schooling. As traditional democratic and professional participation in school governance and decision-making has been made

increasingly difficult by powerful interests (often driven by profit or ideology), women's resistance through social movement activity has only grown.

In this essay, I have argued that social movements have much to teach about varied kinds of educational change efforts, from local school renewal to broader movements for justice in education. Drawing on the work of scholars promoting a social movement approach to educational change, I have outlined ways in which social movement organizers and activists generate their power: they connect through the building of networks, relationships, and alliances; they cultivate visions and ideas for change through shared learning and knowledge construction; they campaign for change through mobilizing their networks for collective action. This work is generative, building communities, identities, knowledge, and actions that did not exist before the hard work of social movement organizing. For both local school improvement and broader struggles for educational justice, social movements offer models for creating the power required to achieve meaningful educational change.

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Feminist Epistemology and Epistemological Pluralism: Implications for the Development of Democratic Citizens

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Abstract

In this conceptual essay, I argue that if schools are to serve as moral learning communities within which students are prepared for democratic participation, then educators must recognize epistemological pluralism as a foundational postulate for their curriculum and instruction. Using the theoretical framework of feminist epistemology, I argue that the unique manner in which marginalized students know the world must be recognized and legitimized by educators, else hierarchies of knowledge and privilege will be reinforced through public schooling. Implications for public school classrooms and for teacher education programs are discussed.

For schools to fulfill their public commitment, schools must function as institutions of moral development (Goodlad, Mantle-Bromley, & Goodlad, 2004; Goodlad, Soder, & Sirotnik, 1990), and, it can be argued that this moral development is inseparable from democratic participation. As Thomas (1990) wrote, “Elementary and secondary schools, because they figure so prominently in the tapestry of democratic ideals and possibilities that we have woven as a nation, have a compelling obligation to understand themselves as moral learning communities” (p. 292).

Thus, to facilitate the moral development of all students, schools must be places where multiple voices are recognized and legitimized (Althof & Berkowitz, 2006; Anderson, 1998; Bacia & Ittel, 2017; Schuitema, Radstake, van de Pol, & Veugelers, 2018). If, alternatively, only one way of speaking and knowing are recognized within a given school, democratic participation within the school may be limited; and, in turn, when democratic

participation is limited, certain individuals may become marginalized, and, hence, schools may fall short of their responsibility to cultivate virtuous citizens capable of participating democratically within a pluralistic society.

Recognizing and legitimizing the voices of female students (Caron, 2011; Fine, 2003), female teachers (Blase, 1993; Dillabough, 1999; Klassen & Chiu, 2010), and female educational leaders (Bell & Chase, 1993; Grogan, 2008; Mertz & McNeely, 1998) remains a perennial problem within schools. In this conceptual essay, I argue that one of the reasons why these voices have been marginalized relates to a lack of recognition of feminist epistemology. Specifically, if schools and classrooms validate only one way of knowing and participating in academic discussion, then the democratic participation of female students, female teachers, and female leaders may be limited. Therefore, in this essay I argue that if schools and classroom are to become virtuous spaces of democratic participation (for all members of the school community), then these spaces must recognize and legitimize multiple ways of knowing.

Feminist Epistemology

The theoretical framework of feminist epistemology represents a branch of philosophy that explores the manner in which gender influences the notion of what counts as knowledge and what counts as knowing (Alcoff & Potter, 1993; Harding, 2006). In particular, feminist epistemology calls attention to how dominant conceptions of knowledge and knowing may disadvantage women, including the areas of health and work (Fricker, 2007). When individuals insist that knowledge be regarded as inherently objective, rational, and without bias, they may (perhaps unknowingly) be obfuscating biases that do, in fact, exist and privilege certain segments of society.

Asserting that knowledge is free of bias is, indeed, an act of power that positions one group over another. This is especially prominent in the area of science, which is commonly presumed to be value-free; yet, feminist epistemologists have illuminated how making knowledge claims in the “hard sciences” is still a social and political act. Indeed, it has been shown that making the epistemological claim that science is objective can be used as a tool

to manipulate and oppress marginalized social groups (Bleier, 1984; Lacey, 1999; Schiebinger, 1989; Spanier, 1995).

Likewise, in the field of teacher education, scholars have highlighted how seemingly neutral curricula of learning to teach (such as observing a mentor teacher or reflecting on whether or not learning objectives were met during a given lesson) may, in fact, be legitimizing certain ways of knowing while devaluing other ways of knowing (Britzman, 2003; Fendler, 2003; Segall, 2002). Preservice teachers are instructed to focus on particular dimensions of the classroom (e.g., learning objectives and classroom management) and to ignore other dimensions (e.g., the affect of the classroom). These curricular decisions are far from neutral or objective; rather, they actively prioritize one particular way of being a teacher and one particular way of thinking about teaching. Preservice teachers are explicitly and implicitly told that there is one way to know one's subject and one way to know how to teach that subject (Ball & Forzani, 2009; Grossman et al., 2009; Labaree, 1992; Segall, 2004).

In response to this trend, feminist epistemology highlights the way in which acts of knowledge generation and acts of knowledge acquisition are always situated within particular contexts and always filtered through individual subjectivities. In this way, knowledge can be argued to be concrete and specific rather than abstract and universal. Since it can be presumed that gender is a construct that continually and inescapably mediates interactions and ways of being in the social world (Bem, 1993; Butler, 1990), it can be presumed that females have unique ways of knowing that are rooted in their lived experiences (Applebaum, 2008; Scott, 1991). This is a critical insight, as it points to the fact that there is no one "correct" way of knowing, since, inherently, all ways of knowing are, in part, rooted in subjectivity and political power (Bohman, 2012; Coady, 2010; Fricker, 2007). Thus, when knowledge is presented and discussed within schools, educators should be aware that all knowledge is generated, transmitted and received by individuals with unique lived experiences and situated realities. Educators should presume that there are multiple ways of knowing; and, any claim to the contrary should be treated with skepticism.

Taking the reality of epistemological pluralism seriously is not a luxury. Indeed, when democratic participation is valued and

promoted, epistemological assumptions must be critically examined. Otherwise, hidden assumptions regarding the nature of knowledge and the nature of knowing may motivate educators to silence marginalized voices even in ostensibly democratic classrooms (Dotson, 2011; Salvano-Pardieu, Fontaine, Bouazzaoui, & Florer, 2009; Thornberg, 2006). Yet, incorporating epistemological pluralism into the democratic classroom presents a set of significant challenges.

The Potential Limits of Deliberative Democracy

In their treatise on deliberative democracy, Gutmann and Thompson (2004) made it clear that, by their account, a system of deliberative democracy has the prerogative to impose judgments about the laws it attempts to enact. Gutmann and Thompson argued that the principles of deliberative democracy are rooted in reciprocity – including tolerance, mutual respect, and even favorable attitudes towards opposing viewpoints (p. 79). As such, within a democracy, majority support is neither necessary nor sufficient in order to pass a law; instead, laws must abide by the principles of non-repression and non-discrimination.

If, for example, a law deprives critical resources to a minority group, the law, within the context of a democracy, cannot be regarded as legitimate, regardless of how many citizens of the collective society endorse the given proposal. Similarly, in the context of democratic education, local communities cannot, by virtue of majority consensus, endorse public curricula that violate the principles of non-repression or non-discrimination. For example, a curriculum that teaches racial intolerance would be unacceptable, as would a curriculum containing partisan religious principles.

Gutmann noted the theory of creationism (i.e., the rejection of the scientific theory of evolution) as an example of a worldview that need not – and, indeed, must not – be recognized as legitimate by any official curriculum within a system of democratic education. This is because, according to Gutmann, the credo of creationism is fundamentally indefensible and irreconcilable within the reasoned dialogue that democratic systems of education are expected to cultivate. By treating “every moral opinion as equally worthy encourages children in the false subjectivism that ‘I have my opinion and you have yours and who’s to say who’s

right?’ This moral understanding does not take the demands of democratic justice seriously” (Gutmann, 1999, pp. 55-56).

Gutmann (1999) argued that we, as a democratic society, must be selective about the content that is allowed to enter our public classrooms, since, “we legitimately value education not just for the liberty but also for the virtue that it bestows on children” (p. 36). In other words, educators are expected to place a premium on the enculturation of particular virtues over a pluralism of perspectives. “Democratic education is not neutral among conceptions of the good life, nor does its defense depend on a claim to neutrality” (p. 46). A system of democratic education that aims to prepare students for participation in a democratic society must necessarily aim to predispose children towards ways of life and thinking that are consistent with democratic citizenship.

In response to what Gutmann proposed, and in light of the insights of feminist epistemology, there are many reasons why we might be wary of allowing certain individuals to exercise a “compulsion to rationalize the irrational section of society” (Berlin, 2002, p. 196). Gutmann argued that the role of democratic education is to cultivate a certain type of citizen, one who is able to engage in reasoned deliberation based on the principles of non-discrimination and non-repression. Thus, according to her, it is the role of democratic education to teach young citizens how to engage in this type of rational democracy. This, of course, becomes problematic when we remember that feminist epistemology presumes that the act of insisting that rational deliberation is always neutral and objective may, in fact, be a tool that hegemonic forces utilize to maintain the status quo. When certain discourses are privileged over others and when certain discourses become “inappropriate” to talk about in school, certain (vital) discourses may become marginalized and, hence, excluded from the public sphere. The arbitration as to what counts as a public matter and what counts as a private matter is, indeed, nothing less than a political act (Fraser, 1997).

In fairness, Gutmann (1999) did not advocate for neutrality:

The case for teaching secular but not religious standards of reasoning does not rest on the claim that secular standards are neutral among all religious beliefs. The case rests instead on the claim that secular standards constitute a better basis upon

which to build a common education for citizenship than any set of sectarian religious beliefs – better because secular standards are both a fairer and firmer basis for peacefully reconciling our differences. (p. 103)

This claim, however, fails to address the subversive (and fundamentally non-democratic) exercise of power that occurs when alternative discourses – counter-narratives that develop in reaction to the exclusionary nature of the dominant discourse – are labeled as private, “sectarian” matters.

As an example, Fraser (1997) pointed out that some citizens may object to framing domestic abuse and discriminatory hiring practices as issues that are appropriate for public discourse; yet, these objections clearly benefit certain individuals (e.g., the perpetrators of abuse) at the expense of others (e.g., the abused). Perhaps those issues should be precisely the issues that receive the spotlight in the public sphere; and, perhaps those issues should be precisely the issues that are discussed in public school classrooms. If issues that are important to women are to be deliberated within our democracy, then these issues must be recognized, first and foremost, as matters of public import (even when others may object that these issues are only matters for private or domestic deliberation).

Incorporating Epistemological Pluralism Within the Democratic Classroom

Without question, one of the challenges that all educators face involves deciding which topics of discussion are appropriate for classroom discussion (as well as deciding how such topics should be discussed). According to Hess (2009), in order for students to learn how to democratically deliberate, students must, above all, have the opportunity to talk about controversial issues:

When schools fail to teach young people how to engage with controversial political issues, or worse, suppress, ignore, or deny the important role of controversial issues in the curriculum, they send a host of dangerous and wrongheaded messages...[including] that people in the United States and the larger world fundamentally agree on the nature of the public good and how it can be fostered. (pp. 5-6)

An approach to education that does not embrace controversy in the classroom, Hess argued, enables students only to reproduce society as defined by others and prevents individuals from working together democratically to transform the society: “controversies about the nature of the public good and how to achieve it, along with how to mediate among competing democratic values, are intrinsic parts of democracy. If there is no controversy, there is no democracy” (p. 162). Indeed, although topics such as gender harassment and the gender pay gap may be contentious, these topics of gender equity are precisely the topics about which students must learn to deliberate since they are critical to the nature of our democracy. The fact that these issues are, at times, sensitive and contentious subjects only underscores how they are, indeed, topics that are vital for our democratic society to address without hesitation.

Even if an educator wants students to discuss controversial topics, the challenge lies in establishing the classroom discourse such that it allows for epistemological pluralism. Which voices should be heard? How can the educator determine whether or not a certain voice is being repressive? “This is what makes the teaching of controversial issues so controversial” (Hess, 2009, p. 114).

Kunzman (2006) offered a solution by suggesting that educators and students value a “respect for particularity – for what people count as most significant about themselves – [which] suggests the need for seeing others in part as they see themselves” (p. 38). Arguing from this model, the skills required for deliberation within a democratic society can only be cultivated through an exploration of contrasting and even controversial ethical frameworks. Kunzman bemoaned the fact that “public schools...frequently deny or ignore these textures of students’ lives, thereby denying students the crucial learning opportunity to connect their necessarily limited experiences to broader ethical ideas and social concerns” (p. 66). Like Hess, Kunzman suggested that students deliberate about controversial issues precisely because they are controversial. Additionally, the frameworks of thinking and knowing that are utilized during these deliberations may, themselves, be controversial. For example, some students may choose to label feminist epistemology as “irrational.” The educator must be aware that such labeling (i.e., “irrational,”

“illogical,” “emotional”) may represent an attempt to minimize and marginalize the particular epistemology being utilized within the discussion. When the educator allows (and encourages) epistemological pluralism to flourish in the classroom (admittedly a nontrivial and ambitious pedagogical task), educators provide students with the opportunity to prepare for authentic democratic participation within the larger society.

Kunzman (2006) continued the argument in this way:

As students explore the way a particular religion envisions strict gender roles...[students] should strive to understand and appreciate what value those boundaries hold in that religion and its community of adherents...The goal here is not to change students' beliefs but to widen their appreciation for ways of life different than their own. (p. 61)

In other words, genuine democratic citizenship requires the ability to acknowledge and successfully navigate the boundary between the public and the private spheres of life (while permitting the existence of both). Religious, ethical, and political frameworks have important roles in public spaces, and, in this way, adherents to a particular set of values might serve as particularly powerful models of civic virtue when they demonstrate that they are able to live in “multiple worlds of meaning” (Kunzman, 2006, p. 111). Such individuals would be able to adhere to their worldviews while simultaneously discovering, acknowledging, and legitimizing the worldviews of others. Students who are able to engage in deliberative discourse will learn how to confirm their own identities while simultaneously recognizing their obligations to the greater public sphere.

It is important to note that Kunzman was not suggesting that citizens demarcate their public and private lives and commitments; rather, Kunzman argued that the private plays a role in the public, and vice versa. Hence, democratic citizens must be willing to engage in deliberative discourse around private matters, i.e., matters that citizens find important. No citizen in a democratic society has the right to marginalize a given topic from the public sphere. Indeed, perhaps one of the reasons that the wellbeing of female students, female teachers, and female educational leaders suffers all too often is because the concerns of these students,

teachers, and leaders are relegated as private matters unimportant and inappropriate for public discussion. Hence, some concerns are never addressed and some voices are never heard. Recognizing that private life plays a role in the public sphere – one of the central tenets of feminism and feminist epistemology (Butler, 1990; Fraser, 1997; Harding, 2006) – may be critical to correcting this trend in education.

When public and private ways of knowing in the classroom become acceptable, schools can become places where students are prepared for the reality of epistemological pluralism; inversely, if multiple worlds of meaning are not invited into the public classroom – i.e., if the reality of epistemological pluralism is ignored – then students may remain convinced that there is only one legitimate way of knowing.

Conclusion

My argument in this conceptual essay has been that educators who envision schools as moral learning communities must begin with epistemological pluralism as a foundational postulate for all of the curriculum and instruction that takes place within those schools. Without acknowledging that there are multiple ways of knowing the world, hierarchies of inequality will only be reinforced by the education that students receive. This is true for all marginalized groups, but it is especially true in the context of feminism and feminist epistemology. Unless life experience, affect, social reality, and political power are incorporated into the epistemologies that are promoted within public spaces, female students, female teachers, and female educational leaders may continue to feel marginalized given that their way of knowing the world is not being recognized, and, in some cases, actively being delegitimized (Greene, 1993).

Although this essay has focused on democratic participation in the public school classroom, there are implications for the teacher education classroom as well. Specifically, one might choose to imagine teacher education as a democratic space where multiple ways of knowing are encouraged. Current discourses, however, seem to militate against this possibility. Rather than encouraging preservice teachers to question, criticize, and/or transform what it means to be a teacher, preservice teachers are explicitly encouraged to conform to the one professional way of being a

teacher (Ball & Forzani, 2009). Some scholars of teacher education are adamant that there exists a definitive set of codified knowledge required for teaching and that preservice teachers must acquire this knowledge during their teacher preparation in order for these novice teachers to be successful (Stürmer, Könings, & Seidel, 2012). Early-career teachers may feel an intense pressure to perform a specific role (Colley, James, & Diment, 2007; Jephcote & Salisbury, 2009) and may be hesitant to articulate the reality of their emotional labor (Chen & Kristjansson, 2011; Zembylas & McGlynn, 2012). If teacher educators entertain the theoretical claims of feminist epistemology, teacher educators may begin to revise their curriculum and instruction such that it recognizes and legitimizes alternative ways of thinking about and knowing about teaching. In turn, this would, potentially, cultivate a generation of early-career teachers that has an appreciation for the role of epistemological pluralism within the context of a democratic society.

A democracy is expected to take the voice of each of its citizens seriously when the collective group engages in deliberative decision-making. A moral and democratic system of education that aims to prepare students and teachers for democratic participation should encourage the incorporation of all worldviews and all voices. Preparing students for democracy entails equipping them with opportunities to engage critically with a variety of different – and potentially controversial – conceptions of knowledge. Teaching students to ignore epistemologies that do not align with their own is inimical to the aims of democratic education. Creating classrooms where students and teachers learn to recognize and legitimize different ways of knowing the world will further the role that schools play in developing democratic citizens.

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