



CONFERENCE PRECEDINGS

**Urban Education Collaborative
University of North Carolina Charlotte
Cancun, Mexico, 2022**

Editors

Tierra Parsons, Co-Editor

Natasha Lipscomb, Co-Editor

Brandon Johnson, Co-Editor

Stephen D. Hancock, Editor

Peer Review Members

Courtney Burns

Jackie Hoskins

Stephanie Laica

Marquis Mason

Justin Phillips

**Urban Education Collaborative
University of North Carolina Charlotte
Cancun, Mexico, 2022**

Table of Contents

Authors	Article Title	Pages
Hunter, A. & Sewell, C.	This Ain't Wakanda: How Black Youth Leverage Our Technological Expertise to Cultivate Joy	4-15
Hatch, C.	Raising Black Boy Joy: Will Diverse Books Increase Black Parents Trust in Educators of Elementary Aged Black Boys?	16-46
Cogburn, B & Galloway, S.	Cultural Capital: A Contributing Factor in the Success of High Achieving, Low Income Engineering Students	47-68
Madhani, N.	Teacher Diversity for Equitable Outcomes: Promising Strategies for Recruiting and Retaining Black Educators	69-95
Coffey, C., Smith, J., & Woodley, K.	Comparison of Three Title 1 Schools in Urban Intensive and Urban Emergent Settings	96-110
Woodley, K.	Comparative Analysis: Defining Urban Education, Funding Inequities, and Solutions	111-122
Pass, M.B., & Bullock, S.K.	CUREs in Biological Sciences: A Model for Increasing Underrepresented Students' Access to Undergraduate Research Experiences	123-136
Randolph, T.S.	Hip Hop Diagnosis: Exploring Lyrics and Traumatic Experiences of First-Generation College Students	137-147

**This Ain't Wakanda: How Black Youth Leverage Our Technological Expertise to
Cultivate Joy**

Alexis Hunter, University of Colorado-Boulder

Caleb Sewell, University of Missouri

Abstract

This paper engages in a content analysis of our own tweets as we reflect on our experiences as Black undergraduate student-leaders at the University of Missouri-Columbia to not only explore the ways our mental health and advocacy was affected by the constant anti-Blackness we endured on campus and online, but also to honor how we leveraged our technological expertise to create joy for ourselves and our community while living in an environment determined to destroy it. Our autoethnographic reflection honors how we created a Black fugitive digital space where joy and healing was centered.

Keywords: Black youth, technology, joy

This Ain't Wakanda: How Black Youth Leverage Our Technological Expertise to Cultivate Joy

In 2018, when Marvel's *Black Panther* premiered at movie theaters across the globe, people got to see what a Black fugitive space looks like through Wakanda - a futuristic borderlands society brimming with technological genius and unapologetic commitments to Black liberation. At the same time, White supremacy was still impeding on Black liberation globally. At historically white institutions (HWI), Black students don't often have access to a physical "Wakanda," but we are still able to use technological advancements, such as social media, to resist White supremacy, support one another, and ultimately create joy. Black students at the University of Missouri-Columbia have a long history of cultivating digital Wakanda's - or loving and essential counterspaces to heal and advocate while attending an institution that is racist and anti-Black. #BlackAtMizzou was a movement during the summer of the COVID-19 pandemic and the 2020 global movement for Black livelihood to demand Mizzou make institutional changes to support our needs. Our advocacy brought us joy as we deepened our sense of community together, rooted in our desire for liberation, and was crucial to our livelihood because it created space for us to "talk back" and challenge these dangerous systems. We recognized that healing and advocacy work must occur in synchrony, so we leveraged our Black Mizzou community to collectively laugh, process, and engage in digital healing rituals that ultimately saved our lives.

In this paper, we reflect on our experiences as Black undergraduate student-leaders at a HWI to not only explore the ways our mental health and advocacy was affected by the constant anti-Blackness we endured on campus and online, but also to honor how we leveraged our technological expertise to create joy for ourselves and our community while living in an

environment determined to destroy it. We argue that Black youth are surviving these oppressive systems by embodying old and new traditions of Black fugitivity and transformational resistance. Black fugitivity is nuanced because of how it showcases how folks work to escape to a “freer” space while also exposing how white supremacy operates to keep Black folks restrained (Sojoyner, 2017).

In this autoethnographic study we draw upon Tanksley’s (2022b) conceptualization of critical race technology theory (CRTT) in education to name how the pervasiveness of race and racism (Bell, 1992) manifests online. Furthermore, we draw upon healing justice frameworks to analyze how we used social media to challenge dominant perspectives around mental wellness that are rooted in individualistic and pharmaceutical approaches (Greene et al., 2021) because we knew we needed to create collective healing and joyful online structures to counter the unceasing racial trauma we were enduring. Our research addresses the following guiding critical co-constructed autoethnographic question: How did we foster fugitive spaces that centered joy, life, and healing in the midst of oppressive, anti-Black collegiate environments? To answer this question, we engage in a content analysis of 8 of our own tweets between 2020-2021 while attending Mizzou.

Literature Review and Theoretical Perspective

As social media continues to become a primary medium to share widely the way police brutality and societal injustices harm Black people, Black youths’ social media usage continues to increase. About 85% of Black teens have a cellphone making them the most likely of any group of teens to have one (Lenhart, 2015). Unfortunately, it also means that Black youth have constant access to Black trauma and are seeing these tragedies on apps that they utilize as they are “likely to encounter social media content that is distressing,

disturbing or emotionally draining, regardless of whether or not that content was shared with the intent to harm, to entertain, to educate or to organize” (Tanksley & Hunter, forthcoming). It is also reported that approximately 60% of Black youth’s social media is about societal injustices (Pew Research Center, 2017).

In order to analyze the everydayness of digital oppression young Black activists encounter online and highlight the strategies we engage in to heal in community despite the ways anti-Blackness works to harm us based on our intersectional identities, we draw upon the following theoretical frameworks: critical race technology theory (CRTT) in education (Tanksley, 2022b), healing justice (Ginwright, 2015; Greene, et. al., 2021), and intersectionality (Crenshaw, 1990). As a social justice framework, critical race theory (CRT) actively works to deconstruct the racist and untrue ideology of colorblindness by honestly and explicitly examining the pervasiveness of race and how it functions in our society. The five tenets of critical race theory (CRT) in education illuminate how Black youth are experiencing and resisting White supremacy in the physical world (Lynn and Dixson, 2013). However, CRT in education is not expansive enough to explore racism's permanence online. This extension is necessary to name the ways information technologies are inaccurately simplified as a racially neutral space while white supremacy digitalizes to harm Students of Color (Noble, 2012, 2014, 2016, 2018a, 2018b; Tanksley, 2016, 2019, 2022a, 2022b, forthcoming). Thus, CRTT in education builds upon foundational CRT concepts while also extending to articulate how Students of Color are experiencing and coping with racism in digital spaces. We draw upon the following prominent tenets of CRTT to situate our work and examine our experiences online: 1) the intercentricity of socio-technical racism; 2) challenge to dominant ideology; 3) commitment to social justice; 4) the centrality of experiential knowledge; 5) and the

interdisciplinary perspective (Bell, 1992; Solórzano & Yosso, 2000; Perez Huber, 2009; Perez Huber & Solórzano, 2015; Tanksley, 2019, 2022b).

CRTT in conversation with healing justice frameworks help analyze the mental health impacts of the rampantness of anti-Blackness online. Healing justice also centers ancestral healing approaches Black youth use to survive and rejects white supremacist approaches to mental health that conceptualize wellness as an individualized, temporary endeavor (Kindred Southern Healing Justice Collective, 2021) through the following guiding frameworks: 1) restoration, 2) reclamation, and 3) reclamation (Ginwright, 2015a).

Furthermore, we draw upon Crenshaw's (1990) theorizing of intersectionality as a tool to help us explore the nuances of how our lived experiences on(off)line are impacted by our multiple identities simultaneously. She defines intersectionality as an “analytic sensibility, a way of thinking about identity and its relationship to power” (Crenshaw, 2015) that was conceptualized as she thought about Black women's multifaceted experiences. We name our gendered experiences while advocating at Mizzou to exploit the ways anti-Black racism adapts and works to create intercommunal harm and recognize how white supremacy's craftiness aims to suppress both of us. As friends and scholars, we reject the ways white supremacy works to divide. We noticed how our intersectional identities created unique experiences for us on(off)line and acknowledged these tensions to exploit how anti-Blackness functions.

Methods/Methodology

Guided by the theoretical frameworks of critical race technology theory, healing justice, and intersectionality, we sought out methods that would uplift and honor our lived experiences. Therefore, we use critical co-constructed autoethnography as our data collection

tool to examine how we used Twitter to work towards collective healing and advocacy as Black students at Mizzou through a reflective content analysis of our own tweets. Critical co-constructed autoethnography is rooted in critical theory, critical pedagogy, and critical race theory and as a practice and method creates “opportunities for solidarity among marginalized groups as well as across difference, inspiring those in spaces of privilege to be allies in social justice work” (Cann & DeMeulenaere, 2012, pg. 147). We situate our work in this methodology so that we can reflect, process, and heal together, and intentionally create joy for ourselves through collaborating on this study in community with one another. By leveraging content analysis in our study, we are able to name the injustices we experienced at Mizzou while also showcasing how we resisted by healing in community. We engaged in data saturation and coded our data around three main themes.

Results

Three main findings emerged from our content analysis on how we leveraged Twitter to advocate and heal: 1) the importance of being vulnerable and honest about the racial battle fatigue we experience; 2) digital organizing as a tool to hold institutions accountable; 3) Black youth show love online through digital micro-affirmations.

The importance of being vulnerable and honest about the racial battle fatigue we experience

During our time at Mizzou, we knew Black folks on our campus and community were constantly grieving and struggling to process. These two tweets highlight the racial battle fatigue we were experiencing. We chose to be vulnerable about our experiences and although it was uncomfortable it brought us closer together as we were able to have deeply honest conversations about our wellness. This was a difficult first step, but a necessary one because our honesty helped us build community and think about what we could do to further support

each other. Restoration took place as we resisted the urge to “hold it down” and decided to “let go” and be transparent about our experiences and encourage others to “let go” with us (Greene, et. al., 2021).

Digital organizing as a tool to hold institutions accountable

As we continued to “let go” together so that we could heal, we also joined Black Mizzou students in tweeting about Mizzou. Our institution constantly held performative meetings and claimed to listen to our concerns, but we never felt heard or saw any change that positively impacted our experiences. The nationally trending hashtag #BlackAtMizzou was created led by a fellow undergraduate student, AJ Foster in the Summer of 2020 so that we all had a central space to virtually demonstrate and share experiences of “injustice, racism, and prejudice at MU” (Cowden, 2020; Steidley, 2020). This was another opportunity to heal together as we shared our stories and demanded that Mizzou make transformative changes and engage in healing justice by resisting “hegemonic notions of justice” (Ginwright, 2015a).

Black youth show love online through digital micro-affirmations

We wanted to find ways to show love online to each other as well to counter the racist and negative trending stereotypes and traumatic content on our feeds. Our activism also looks like taking a moment to pause and uplift each other. These digital micro-affirmations were often pleasant, unplanned tweets where we would publicly show love to each other. Based on our intersectional experiences, how we showed love looked different. She tweeted about being thrilled about having class with him to not only affirm his racial identity, but his gender as well as they were the only Black students in the course and the education class was majority women. He shouted out Black women throughout the summer of 2020 to highlight how Black women always show up in the movement, but unfortunately their stories often go unheard. He

wanted to do this to support the demands for justice for Breonna Taylor and honor the Black women in his life. The healing justice framework reclamation is present as he highlighted Black women and centered them in ways dominant society does not.

Significance

Current scholarship about how healing justice frameworks are leveraged primarily focus on face-to-face contexts (Chevez-Diaz & Lee, 2015; Ginwright, 2015a; Greene et. al., 2021; Juárez Mendoza, 2020). While healing justice in digital spaces is undertheorized, it is becoming an increasingly popular and accessible tool and survival tactic for Black youth. The fugitive space we created on Twitter kept our spirits lifted while attending an institution that continuously ignored our needs. Ultimately, our unwavering commitment to the abolishment of White supremacy, our love for each other, and for our people, sustained us as we craftily produced digital counterspaces where joy was cultivated. This work can help inform future understandings of how Black youth use technology and inform how to create social media platforms designed for and by Black youth so that they can engage in healing without the binds of white supremacy (Tanksley, 2019).

Figures for the Results

The importance of being vulnerable and honest about the racial battle fatigue we experience

Digital organizing as a tool to hold institutions accountable

Black youth show love online through digital micro-affirmations

It's disgusting how people/businesses care more about productivity and monetary gain than Black lives. We are somehow expected to show up to our job, school, etc. and perform at the highest level as we grapple with indescribable pain and injustice that impact our lives everyday.

1:26 PM · 8/27/20 · Twitter for iPhone

View Tweet activity

1 Retweet 27 Likes

I'm tired. I'm tired of having to show up to class, meetings, and work like everything is normal. I'm tired of being in a constant state of grief with no time to cope or rest, knowing that we could be next.

There's no justice in a society that renders Black bodies as nobody.

11:33 AM · 4/13/21 · Twitter for iPhone

72 Retweets 1 Quote Tweet 339 Likes

Being the only black person in my classes and being expected to speak on anything that has to do with diversity.

[#blackatmizzou](#)

6:16 PM · 6/1/20 · Twitter for iPhone

View Tweet activity

116 Retweets 6 Quote Tweets 650 Likes

Freshman year a classmate told me that "I'm different than most black girls" and when I asked to explain what she meant by that she started crying and I was told I escalated a situation unnecessarily and that it was a compliment. :// [#blackatmizzou](#)

6:21 PM · 6/1/20 · Twitter for iPhone

View Tweet activity

170 Retweets 7 Quote Tweets 973 Likes

Telling my white professor, as the only Black person in this class, there are inclusion & diversity issues in this course and in the J-school, and her responding with, "That's no problem. I had one Black kid in my class last year and he did fine."

[#BlackAtMizzou](#)

11:20 PM · 6/1/20 · Twitter for iPhone

43 Retweets 3 Quote Tweets 365 Likes

having class with [redacted] is such a blessing!! :))

6:56 PM · 8/25/20 · Twitter for iPhone

View Tweet activity

1 Retweet 1 Quote Tweet 25 Likes

Have you told a Black woman you appreciate her today?

10:31 AM · 6/16/20 · Twitter for iPhone

32 Retweets 4 Quote Tweets 158 Likes

[redacted] I think one of my favorite parts about working with you this past year, is seeing how phenomenal you are, how caring you are, but then in turn seeing others begin to realize it as well. You're an incredible leader, scholar, educator, and person. I appreciate you.

11:47 AM · 7/2/20 · Twitter for iPhone

3 Retweets 1 Quote Tweet 6 Likes

References

- Anderson, M., & Hitlin, P. (2016). "Social media conversations about race: How social media users see, share and discuss race and the rise of hashtags like #Blacklivesmatter." edited by Pew Research Center, 35.
- Bell, D. (1992). *Faces at the bottom of the well: The permanence of racism*. New York, NY: Basic Books.
- Cannon, K. G. (1995). Katie's canon: In womanism and the soul of the Black community. *The emergence of the black female consciousness*. (p. 47-56). essay, Fortress Press.
- Chavez-Diaz, M., & Lee, N. (2015). A conceptual mapping of healing centered youth organizing: Building a case for healing justice. *Urban Peace Movement*.
- Cowden, T. A. (2020). *#BlackAtMizzou tells MU experiences of racism. A tweet at a time*. Columbia Missourian. https://www.columbiamissourian.com/news/higher_education/
- Crenshaw, K. (1990). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stan. L. Rev.*, 43, 1241.
- Crenshaw, K. (2015). Why intersectionality can't wait. *The Washington Post*, 24(9), 2015.
- Ginwright, S. (2015a). *Hope and healing in urban education* (0 ed.). Routledge.
<https://doi.org/10.4324/9781315757025>
- Ginwright, S. A. (2015b). Radically healing Black lives: A love note to justice: Radically healing Black Lives. *New Directions for Student Leadership*, 2015(148), 33–44.
<https://doi.org/10.1002/yd.20151>
- Greene, A. C., Ortega-Williams, A., Page, C., & Davis General, A. A. (2021). Sacred conversations: Sharing journeys of healing justice with the field of critical youth mental health. In J. N. Lester & M. O'Reilly (Eds.), *The Palgrave Encyclopedia of*

Critical Perspectives on Mental Health (pp. 1–15). Springer International Publishing.

https://doi.org/10.1007/978-3-030-12852-4_84-1

Kindred Southern Healing Justice Collective. (2021). *Our history*.

<http://kindredsouthernhjcollective.org/our-history/>

Lynn, M., & Dixon, A. D. (2013). *Handbook of critical race theory in education*.

Juárez Mendoza, A. N. (2020). Beautiful resistance: Testimonio art, youth organizing, and collective desahogo. *Journal of Curriculum and Pedagogy*, 17(3), 288-294. Routledge.

Noble, S. U. (2012). *Searching for Black girls: Old traditions in new media* (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Noble, S. U. (2014). Teaching Trayvon: Race, media, and the politics of spectacle. *The Black Scholar*, 44(1), 12-29.

Noble, S. U. (2016). A future for intersectional black feminist technology studies. *Scholar & Feminist Online*, 13(3), 1-8.

Noble, S. U. (2018a). Critical surveillance literacy in social media: Interrogating Black death and dying online. *Black Camera*, 9(2), 147-160.

Noble, S. U. (2018b). *Algorithms of oppression: How search engines reinforce racism*. NYU

Pew Research Center (2017). "Social media use by race."

<https://www.pewinternet.org/chart/social-media-use-by-race/>

Sojoyner, D. M. (2017). Another life is possible: Black fugitivity and enclosed places.

Cultural Anthropology, 32(4), 514–536. <https://doi.org/10.14506/ca32.4.04>

Steidley, C. (2020). #BlackAtMizzou. *The Kirkwood Call*.

<https://www.thekirkwoodcall.com/opinion/2020/08/25/blackatmizzou/>

- Tanksley, T. (2016). "Race, education, and resistance: Black girls in popular Instagram memes." Chap. 14 *In Intersectional Internet: Race, Sex, Class and Culture Online*, edited by Safiya Noble and Brendesha Tynes, 243-59. New York, NY: Peter Lang.
- Tanksley, T. (2019) *Race, education and #BlackLivesMatter: How social media activism shapes the educational experiences of Black college-age women*. Doctoral dissertation, UCLA. <https://escholarship.org/uc/item/5br7z2n6>
- Tanksley, T. (2020) Texting, tweeting, and talking back to power: How Black girls leverage social media as a platform for civic engagement. In G. Logan & K. Mackey (Eds.), *Black Girls Civics: Expanding and Navigating the Boundaries of Civic Engagement* (pp. 176-189).
- Tanksley, T. (2022a) "Race, education & #BlackLivesMatter: How digital resistance shapes the educational experiences of Black undergraduate women." *Urban Education Journal*.
- Tanksley, T (2022b) "Tech, trauma and transformational resistance: Using critical race technology theory to examine algorithmic oppression in computer science" Presented at the American Educational Research Association (AERA) Conference.
- Tanksley, T. (forthcoming) "Towards a critical race techno-literacy: How Black youth "talk back" to algorithmic bias and platformed racism." In Eds. Antero Garcia & P. Nichols, *Literacies in the Platform Society: Histories, Pedagogies, Possibilities*. Routledge.
- Tanksley, T., & Hunter, A.E. (Forthcoming). Black youth, digital activism, and racial battle fatigue: How young Black activists enact hope, humor, and healing online. Jerusha O. Conner (Ed.), *Handbook of Youth Activism*. Edgar Elgar Publishing Ltd.

**Raising Black Boy Joy: Will Diverse Books Increase Black Parents Trust in Educators of
Elementary Aged Black Boys?**

Charlitta Hatch

University of North Carolina, Charlotte

Abstract

The purpose of this research is to provide an innovative approach to increasing trust among Black parents and educators of elementary aged Black boys. Representation matters at home and at school. The images that students are exposed to create the narrative of who children are and can be. Black parents know the risks of labels being placed on their Black sons and the impact of the school-to-prison pipeline. This causes Black parents to have a lack of trust in the educational system regarding their sons. Can an increase of diverse books and classroom materials help Black parents trust educators more?

Keywords: Black boys, literature, elementary

Raising Black Boy Joy: Will Diverse Books Increase Black Parents Trust in Educators of Elementary Aged Black Boys?

When my son arrived, I established a goal to read two books a day with him. Together, we read a variety of books featuring animals, shapes, children, and letters. I enjoyed picture books where I was able to make up my own bedtime story. During those moments, I would usually make him the lead character and use his favorite toys or foods all throughout the story. A few months into our reading time, I began to take inventory of the children's books within our home library. I became intrigued by the lack of diversity in the children's books within our home, and specifically the lack of every day stories featuring young Black boys as the protagonist.

I started to get more specific on the type of book that I was looking for – featuring a young Black boy. Many people love the children's book *I Love You Forever* by Robert Munsch. It is a story of a mother who loves her son and follows their journey from the son being raised by his mother, until the son ends up being the caregiver for his mother until she dies. I loved this story and the bond that it represents between a mother and her son. I felt confident that I would be able to find this every-day story told with mothers and sons from different cultural backgrounds. I decided to look on-line to see if I could find a few versions of this book and surprisingly, I could not find it. Instead, I found that there are more books with animals and trucks as the protagonist, than there are about people of Color.

I immediately leveraged my experience as a consultant, focused on problem-solving through sustainable solutions, and my passion as a Black mother, to author children's books with Black boys as the leading protagonist. My experience as a two-time children's book author allows me to authentically saturate the print media industry, as well as social media and

television media with positive images of Black boys. I am also able to foster courageous conversations about the role children's books in our homes and schools play in changing the negative narrative of Black boys in America to a positive one.

My entire life I have been exposed to the positive images of Black boys through my own personal encounters. Alternatively, I have watched the media publish demonizing images and stereotypes of Black boys that did not match my everyday experience. As a parent, I am passionate about marrying the media images of Black boys with the actual joy and experience that exists within my everyday life. I believe that once the two images match, society will begin to see Black boys as humans and not "things" such as a thug or athlete. The labels that are put on Black boys allows society to detach itself from the idea that Black boys are indeed humans that are loved by their mothers and bring joy to those around them. I began to reflect further on the images that dominate the various forms of media, specifically children's books. Through my reflection, I identified my research question: Will diverse books and classroom materials increase the trust of Black parents of educators of Black elementary aged boys? This research will provide critical thought leadership on the importance of representation in children's books to Black parents in classroom settings.

Literature Review

The Benefits of Reading Interesting and Relatable Content

Reading is fundamental and a critical skill that is needed as children journey through life. Developing the interest in reading can happen in a variety of settings including home and school. Research conducted by Rahmawati et al. (2021) shows there are eight reasons why children should develop a fondness in reading. These reasons include: 1) can make children read well, 2) can have a high linguistic understanding such as speaking, writing, and understanding ideas well,

3) can excel in every field, 4) can overcome insecurity about academic abilities, 5) can provide a variety of perspectives, 6) can help children have affection, 7) can expose children to a world filled with possibilities, and 8) can develop a creative mindset and gain happiness in life (Rahmawati et al., 2021, p. 114). These reasons emphasize the importance of fostering the love of reading in children and further highlight the benefits of reading beyond the school walls. Akanda et al. (2013) state that “Increasing students’ fondness for reading is essential to building their knowledge and turning them into lifelong students” (p. 10). Fostering a love of learning is necessary for children to become adaptable adults.

There are four components to measure a student’s interest in reading. The four components are awareness, attention, frequency, and pleasure. Each of the components can be influenced by internal and external factors (Harris & Sipay, 1985; Sandjaja, 2001). One of the primary external influences that impacts a student’s interest in reading is reading selection, which can be addressed by providing interesting content (Akanda et al., 2013; Sandjaja, 2001; Tarigan, 2008). When trying to gauge whether a child is relating to a book character, or understanding the underlying lesson within a book, it is worth paying close attention to what they spontaneously say during the reading as well as what they remember afterwards (Kruse et al., 2021). This can be assessed by watching for signs like whether the child points out the illustrations, notices similarities or differences, or tries to guess what is happening next.

Interesting content for many readers could also be relatable content. Relatable content is content where one can see themselves or others through the characters in the story. When we can relate to the content, we become much more interested in the journey that the characters will take (Souto-Manning, 2009). The journeys the characters take can also shape the journey we believe that we can take. A review of existing research reveals considerable evidence that children’s

literature can serve as a useful resource for supporting principles of diversity (Souto-Manning, 2009). Providing diverse and relatable reading content for children can reinforce positive self-images, principles of diversity, and introduce children to others who are different. To further explore relatable content in children's books, we must examine how the content is typically published. According to the Cooperative Children's Book Center, 50% of children's books depicted White characters, 27% depicted Animals/Others, 10% depicted Black characters, 7% Asian Pacific Islander/Asian American, 5% Latinx, and 1% American Indians/First Nations (Huck & Dahlen, 2019). Nearly 80% of children's book content depicted White characters or animals and objects in the children's book stories. In addition to children being exposed to children's books at home, they are also exposed in a variety of different early childhood education facilities.

Books are one of the tools that help children develop an awareness and recognition of diversity early in life. Bar-Haim et al. (2006) found in a study of thirty-six infants, that children develop a bias towards their own race as early as three to six months of age. A study by Larsen et al. (2018) found that preschool-aged children were better able to understand the moral of a story and apply it to real-life situations when the story was presented with human characters rather than anthropomorphized animal characters. In their conclusion, the authors suggested that these children may have related more to human characters than to animal characters, and that this relatability may have made it easier for them to transfer what they learned from the book with human characters to real-life situations (Kruse et al., 2021). The publishing industry should take more ownership in the content that is published to ensure that the images and materials that are in children's homes and schools reflect the diverse make-up and inclusive world we want to continue to build.

Studies such as those conducted by Larsen et al. (2018) and Kucirkova et al. (2014a, b) shed light on the impact that a single storybook reading can have on a young child. For example, following their retellings, some participants would make comments such as, “I have a frisbee at home,” connecting the story to their own lives through the presence of a particular object without ever mentioning the characters within the story. It is important to have diverse authors and illustrators a part of the diverse storytelling so that the story is authentic. Children connect with different components of the children’s books beyond the character’s name and race. To increase interest and ensure the content is relatable, representation at the writing and drawing tables is key.

The images that we take in early as a young child can shape conscious and unconscious bias. Adam et al. (2020) states “Continual exposure to such literature can cumulatively impact children’s long-term attitudes and perceptions of diversity and well-being.” (p.13, 17-20) Children spend most of their time in the classroom, yet many classrooms do not have images that reflect their diverse students. Evidence suggests that many educators hold limited understandings and beliefs about diversity which can contribute to inequitable provision and use of diverse books and to inequitable outcomes of book sharing for many children (Souto-Manning et al., 2009). Additional evidence suggests that educators are often hesitant to discuss issues relating to equality, power, values, and attitudes because they lack confidence and knowledge which is compounded by a lack of resources (Boutte et al., 2011). Others suggest that educators may avoid talking about race and racial issues, believing that children are too young for such discussions, or such a discussion might be considered racist in itself (Beneke & Cheatham, 2019). The reoccurring theme is that there is a lack of training, confidence, and awareness for

educators. The evidence clearly states the need for representation in classrooms and the impact on students.

There is some evidence that some educators working in diverse settings and having a high level of cultural competence can still use books to teach in a culturally responsive way even when those books do not reflect diversity (Mendoza, 2001). Ultimately, this suggests that interactions between pedagogical practices, children's literature, and children's learning will depend, in part, upon educators' professional knowledge, their training, confidence, skills, and judgements and the quality and relevance of the literature they share with children. Despite this, there is a gap in the evidence on how educators' understandings of diversity impact on their pedagogy and practice (Buchori, 2015).

Applying Culturally Relevant and Responsive Pedagogy to Children's Literature

Providing interesting and relatable content for students requires culturally relevant and responsive pedagogy to be leveraged when choosing content. Embracing these methodologies consistently allows for students to be at the center of the instruction and for them to learn in a way that is meaningful to them. Educators can determine if Culturally Relevant Pedagogy (CRP) is being applied based on three tenets: "(a) Students must experience academic success; (b) develop and/or maintain cultural competence; and (c) develop a critical consciousness through which they challenge the status quo of the current social order" (Ladson-Billings, 1995a, p. 160). CRP requires that the students are thriving and curious throughout the learning journey.

In addition to being culturally relevant, educators must be culturally responsive as well. Being culturally responsive means "using cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for [students]" (Gay, 2000, p. 29). Being responsive means that as

society and community trends and needs evolve, the educator applies that to the classroom. For example, an educator could be providing culturally relevant literature in the classroom for the students; but if there is an election, an officer-involved shooting, or a major achievement in the diverse community and the educator does not incorporate that in the lesson, then they are not being responsive and could lose credibility with the students.

It is important that educators leverage culturally responsive and relevant pedagogy when instructing students. The combination of culturally responsive and culturally relevant approaches being applied in the classroom is often referred to as culturally informed literacy instruction. Fairbanks et al. (2009) described approaches that increased student talk as culturally informed because such approaches “make a space for students to bring their own language and cultural knowledge to the meaning-making process” (p. 595). They grouped culturally informed literacy instruction into three categories: (a) changing classroom participation structures, (b) cultural modeling, and (c) creating hybrid spaces (Fairbanks et al., 2009, pp. 595-597). As educators seek to continue to shape the curriculum to be culturally relevant and responsive the approach to instruction must reflect that starting with the books and materials that students have for their lessons

Summary

When educators use CRP through literature, they actively involve children in engaging with diverse literature and exploring meaning, viewpoints, ideas, and responses to books that reflect their own worlds and, importantly, the world of those different to themselves (Colby & Lyon, 2004). This is something that parents can do to reinforce a positive self-identity for Black boys. Evidence suggests that exploring race and culture, including through literature and literature discussion, can contribute to children’s worldviews and the development of their sense

of identity and well-being. Changing the narrative of Black boys using children's books can start with one book and be built from there. Teachers and students need access to more inclusive and authentic children's books. Children will be able to see themselves and identify similarities and differences. By learning and connecting with the diverse characters in the children's books, children will be able to see everyday stories of people who might look different from them. Celebrating those differences can help children at an early age find common ground beyond the stereotypes that are constantly flooding various forms of media. There were insufficient number of studies that showed how diverse children's books impact children from a Black parents' perspective. Further, there was an insufficient number of studies that talked about Black parents' views without a disadvantaged and impoverished lens. There is a need for more research that shows these perspectives and outcomes from studies. This is what isn't yet addressed, so I am about to address it right now.

Methods

Introduction

There is a need to increase the trust between Black parents of Black boys in elementary schools and their teachers. This research is focused on determining if Black parents saw diverse books in their Black son's classroom that would increase the trust the parent may have of the teacher. To answer the research question, the researcher focused on gathering three sources of data to triangulate to include a mixed-method survey, formal interviews, and focus groups. The results of this data provided a narrative inquiry that would help to shape the innovative approach and recommendation.

Participants

Middle class Black parents of elementary aged Black boys are underrepresented in research. This researcher intentionally reached out to Black organizations that are associated with upward mobile Black families like Black Greek Letter Organizations, Historically Black College and University Alumni Associations, and Jack and Jill of America, Inc. The researcher encouraged initial participants to share within their networks to help gain a broader reach. Fifty-two parents with similar educational and socioeconomic backgrounds participated in the study. Thirty-eight parents responded to the ten-question mixed-method survey, two parents participated in a one-on-one formal interview, and twelve parents participated in a focus group that was conducted over three nights. Each of the Black parents are raising Black sons in an elementary school. The participants self-identified Black, parents of Black sons, middle-class and above, and with at least two active parents or caregivers. Parents who also identified as educators were asked to participate in a one-on-one interview (see Appendix A).

Materials

The researcher procured a paid Zoom account to conduct the focus group and one-on-one interview sessions. The paid account for Zoom allows for the researcher to record the sessions and to conduct the sessions longer than forty minutes. The researcher also used a paid Academic Facilitator to take notes on the nonverbal reactions and other key observations of the participants. The researcher used a free Sign-up genius account to register the participants and allow them to select the date and time that would be most convenient for them to participate in the focus group and the one-on-one interview. The focus group was allotted for a 90-minute session and the interview was allotted a 60-minute session.

The response sheet consisted of ten questions that each participant received after the focus group discussion was conducted. Each participant received an identical electronic response sheet to record their interactions and feedback. The response sheet included questions regarding their role in the life of their Black son, the types of books their son liked to read, and the recommendations they provide their son's teacher on books to have in the classroom. The researcher asked participants to provide an action they would want their son's teacher to take and one thing they wish their son's teacher knew about their son as a Black parent (see Appendix B).

Procedures

The focus group discussion happened with no more than seven participants in any one session over Zoom. The focus group was intentionally scheduled at three different times for the participants to choose the time best for their schedule so that they could be reasonably distraction free. For each session, participants consented to the Zoom call being recorded and participating in the study and received instructions orally and in writing. The researcher provided written and oral instructions for the participants to introduce themselves and include consistent demographic information. Each participant was given 60 seconds to complete the introduction and a timer was used to keep the conversation on track. The researcher then shared the remaining questions on the screen and went through each question before the focus group conversations began. This was a critical step to make sure all participants were aligned on terms and had time to begin processing their response. At the conclusion of the focus group, all participants were given three minutes to complete the electronic response sheet that was posted using the chat function in Zoom to support the conversation in the focus group. After completing their response sheet, the participants had the opportunity to ask any questions they had about the research. In addition to the focus group, parent participants who identified as educators participated in a 60-minute one-

on-one interview, regarding their role as a parent educator and how that shapes the way they parent at home and educate at school. The researcher asked the participants eleven questions that included if they supplemented curriculum and employed intentional strategies for their students based on their experiences as a Black parent of Black son.

Design and Analyses

The data was collected in three focus group settings, three one-on-one interviews, and a response sheet. The researcher viewed the data as a narrative inquiry. The researcher and observer coded for ideas, patterns, themes, and frequently used words or phrases as a leading indicator of important themes. The researcher refined the list by eliminating and combining outliers or things that are duplicative. The nominal data included gender, type of school their son attended, and profession. The items were analyzed both independently and dependently.

Results

Data was collected from three different sources using qualitative and quantitative methodologies. The sources used were surveys, focus groups, and interviews. The results section will provide insight into what would increase the trust of Black parents of Black boys in elementary school. Results are also divided into subcategories to represent the different information collected to support the innovation.

Survey Data. This data subgroup includes the survey responses scored using mixed method responses in the questions so the researcher could synthesize the responses. In the survey questions one, two, four, five, six, and seven are quantifiable questions. The results are in Appendix C.

Formal interview questions. The researcher had an extended conversation with two participants that were educators and parents of Black sons in elementary school. The participants were also included in the survey and focus groups. The results are in Appendix D.

Focus Groups. The researcher conducted three focus groups with twelve participants (nine females and three males) that were Black parents of Black sons in elementary school. There were four major themes that emerged throughout the focus groups. The themes include increase Black male elementary educators, provide experiential learning opportunities, increase, and improve parent and teacher communication, and expand the diverse books used in the classroom.

Increase Black male elementary educators. Many Black parents of Black sons stated that they want to see Black male elementary educators in grade-level positions. Black parents felt that even if their Black son was not in the class of the Black male educator, just the fact that he was a part of the grade level team would increase their trust in their son's classroom teacher. Black parents reflected on what roles they saw Black males in growing up through their own education to the present with their own son. Many of the roles include the School Resource Office, PE teachers, janitor, or behavior specialist. Many commented that they did not see a grade level or subject matter Black male educator until high school. The conversation continued around Black males not seen as nurturers, but enforcers or a threat and that is why they are not encouraged to go into elementary grade level roles.

Every participant in the focus group was in a two-parent home. It is important to note that the need for Black male educators was not because there was a lack in Black men in their Black son's life. The conversation was about making sure that their Black son would be represented in grade level meetings, plannings, etc. so that their Black son would be centered in conversations

related to education. Black parents trust that if a Black man is at the table and their Black son is being singled out unfairly, then the Black male educator would help to redirect or provide insight to either the parent or his peer teachers.

Provide experiential learning opportunities. Black parents of Black sons unanimously agreed that they wanted their Black sons in an environment that provided the opportunity for their sons to have hands-on and real-world situations to connect their studies. Each parent spoke about the need for movement and ways their Black sons learned beyond the text. In addition to hands-on learning in the classroom, there was a strong desire to go outside of the classroom and into the broader community to connect the lessons and expose Black boys to ways in which learning can be fun. There was also an aha moment around how there are select schools that seem to provide a movement based, hands-on learning approach. This moment also brought to light that the majority of the Black parents in the focus group did not have their Black sons in their assigned neighborhood schools as they saw the lack of movement as a deterrent. Additionally, they highlighted that they did not think their Black sons would thrive in the current way they saw their neighborhood school operate.

Increase and improve parent teacher communication. Black parents of Black sons want to have proactive communication with their son's teacher. Many parents felt that their communication with the teacher was initiated by them and reactive to a situation that occurred. For example, several parents noted that their child would come home from school and tell them something and the parent would have to reach out to the teacher to understand what happened and come up with a path forward. The parents wondered what would happen if the child had not come home and shared and wondered what might be happening in the classroom that is inappropriate toward their child that child may not understand. Parents yearned for more

communication that was positive and an opportunity for parents and teachers to partner together to course correct situations. Parents also wanted to talk about their desire for more diverse teachings and readings throughout the year but did not always feel safe and equipped enough to have the conversation. Parents did not know where to start and were not sure if they should have meetings at the beginning of the year with their son's teacher or wait until parent and teacher conferences.

Expand the diverse books in the classroom. The participants shared the types of books that their sons like to read. They all agreed that if the book was on a topic that their son was interested in that they saw their son enjoying reading. Many of them said their son was able to read any book they wanted at school with the only rule being that they read every day. Parents also said that their students complained about not being able to find the books they want in their classroom or the school library. One parent shared that they only like reading at home and not at school because they could not find the books that they were interested in at school. Parents wanted the teachers to choose books that reflect the interest of their sons during story time, lessons references, and for the books to be made available during independent reading. Parents suggested that the teachers help the students find books that they are interested in to increase engagement and reach out to parents on a defined cadence to keep the books of interest included in the classroom rotation. Parents were open to providing recommendations, helping to donate books, and supporting in the lessons, but were rarely asked and were unsure if the teacher would be receptive. Parents are interested in how to help without also doing the teacher's job and reinventing the wheel every year and across each individual school.

Discussions and Implications

Implications

Nearly a decade has passed since the murder of Trayvon Martin, a twelve-year-old boy who was murdered at the hands of police for walking in his neighborhood. Since then, the cry for Black boys to be humanized in the eyes of the media, the law, and educators has been on an uprise. Recently, the Black Lives Matter movement hit a peak in the summer of 2020 as a response to the murder of George Floyd that went viral at the hands of social media and smart phones. For centuries, Black parents have had a heightened sense of awareness to protect their Black sons from the various systems. Yet in 2022, that protectiveness from Black parents still exists and is felt where young Black boys spend most of their time, which is at school.

The purpose of this study was to hear directly from Black parents of Black elementary aged boys what would increase their trust in their son's teacher. This research is being conducted less than two years after the of Black Lives Matter and the impact of the various forms of media in the way people including educators see Black boys. This study seeks to understand if diverse books and classroom materials in the classroom could make a difference in the trust of Black parents. As a result of the research, the majority of parents said yes, their trust would increase, but that is not enough. Over the course of the conversation, the word "safety" was used interchangeably with trust. Black parents have a distrust with their Black elementary aged sons in the educational system because they do not feel their sons are safe. Participants were asked to elaborate on what safe meant and some of the descriptors included "protecting joy and innocence" "not being over disciplined" and "age-appropriate expectations regardless of race." Learning this while increasing representation in the form of books would be a step for Black parents to trust the consciousness of the teacher, that representation in a variety of forms would

be needed to make Black parents trust that their Black sons are safe. This would need to include Black male educators in leadership roles within the elementary school and primary teaching roles at every grade level.

Limitations

The participants in this study were Black middle-class parents. Previous research centers on Black boys from a socioeconomic disadvantage limiting the number of existing studies the researcher could leverage. The researcher wanted to interview Black elementary male educators that had a Black elementary aged son. After reaching out to ten principals the researcher was not able to identify one Black male educator to interview. The Black elementary educator and parent perspective would have enhanced the study.

Conclusion

Black parents of Black elementary aged boys recognize that there is a lack of trust between the parents and teachers of the Black elementary aged boys. There are many steps that need to be taken to increase trust, but an actionable first is to increase the amount of diverse books and classroom materials in the class. To make it easier for parents and educators, the researcher will create a platform by grade-level for educators to order diverse books, classroom materials, and corresponding lesson plans for their students. This will act as a toolkit for educators to use throughout the year and will be vetted and endorsed by Black parents. Additionally, this platform will have a parent page that will provide parents templates to initiate conversations if their son's teacher has not diversified the classroom enough. The templates could include introductory letters to teachers, suggestions on favorite books, and providing them the information to find this platform. The consolidated platform will be mutually beneficial for the parents and the educators. The Black parents are finding themselves creating supplemental

coursework to provide their Black son's teachers. The Black parents in the study want to have the ability to influence and shape their Black son's classroom experience but could benefit from not having to reinvent the wheel when other Black parents are creating and looking for the same type of information. The educators may have a willingness to diversify their classroom books and materials but may not know how to do it. This is where an increased partnership and communication between the parents and teachers will increase trust and have a life-long impact on the Black boy in the classroom.

References

- Akanda, A. K. M. E. A., Hoq, K. M. G., & Hasan, N. (2013). Reading habit of students in social sciences and arts: A case study of Rajshahi University. *Chinese Librarianship: An International Electronic Journal*, 35(1), 60-71.
<http://whiteclouds.com/iclc/cliej/cl35AHH.pdf>
- Bar-Haim, Y., Ziv, T.; Lamy, D., & Hodes, R.M. (2006). Nature and nurture in own-race face processing. *Psychological Science*, 17(2), 159–163.
- Adam, H., & Barratt-Pugh, C. (2020). The Challenge of monoculturalism: What books are educators sharing with children and what messages do they send? *The Australian Educational Researcher*, 47, 815–836.
- Beneke, M.R. & Cheatham, G.A. (2019). Race talk in preschool classrooms: Academic readiness and participation during shared-book reading. *Journal of Early Childhood Literacy*, 19, 107–133.
- Boutte, G.S., Lopez-Robertson, J. & Powers-Costello, E. (2011). Moving beyond colorblindness in early childhood classrooms. *Early Childhood Education Journal*, 39, 335–342.
- Buchori, S., & Dobinson, T. (2015). Diversity in teaching and learning: Practitioners' perspectives in a multicultural early childhood setting in Australia. *Australasian Journal of Early Childhood*, 40, 71-79.
- Colby, S.A. & Lyon, A.F. (2004) Heightening awareness about the importance of using Multicultural literature. *Multicultural Education*. 11(3), 24-28.
- Fairbanks, C. M., Cooper, J. E., Masterson, L.& Webb, S. (2009). Culturally relevant pedagogy and reading comprehension. In Israel, S. E., Duffy, G. G. (Eds.), *Handbook of research on reading comprehension* (pp. 587–606). Routledge.

- Gay, G. (2000). *Culturally responsive teaching: Theory, practice and research*. Teachers College Press.
- Harris, J. D., & Sipay, R. E. (1985). *How to increase reading ability*. New York: Longman.
- Kruse, E., Faller, I. & Read, K. (2021). Can reading personalized storybooks to children increase their prosocial behavior? *Early Childhood Education Journal*, 49, 273–282.
<https://doi.org/10.1007/s10643-020-01069-x>
- Kucirkova, N., Messer, D., & Sheehy, K. (2014a). Reading personalized books with preschool children enhances their word acquisition. *First Language*, 34(3), 227–243.
<https://doi.org/10.1177/0142723714534221>.
- Ladson-Billings, G. (1995a). But that’s just good teaching! The case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159–165.
- Larsen, N. E., Lee, K., & Ganea, P. A. (2018). Do storybooks with anthropomorphized animal characters promote prosocial behaviors in young children? *Developmental Science*, 21(3), 1–9. <https://doi.org/10.1111/desc.12590>
- Mendoza, J., & Reese, D. (2001). Examining multicultural picture books for the early childhood classroom: Possibilities and pitfalls/Unainspeccion de libros ilustrados multiculturales para los programas de la ninez temprana: Posibilidades y peligros. *Early Childhood Research & Practice*, 3, 155-169.
- Rahmawati, C., Suhardi, & Mustadi, A. (2021). The importance of sociocultural-based reflective picture storybook media to increase reading interest and social skills of elementary school students. *Acta Educationis Generalis*, 11(1) 111-120.
<https://doi.org/10.2478/atd-2021-0008>

Souto-Manning, M. (2009). Negotiating culturally responsive pedagogy through multicultural children's literature: Towards critical democratic literacy practices in a first-grade classroom. *Journal of Early Childhood Literacy*, 9, 50–74.

Tarigan, H. G. (2008). *Membaca: Sebagai suatu keterampilan berbahasa*. Bandung: Angkasa.

Appendix A

Invitation to Participate in the Focus Group

Some of you may know that I am in my final semester of graduate school. As a part of my graduation, I am conducting an action research project focused on Black boys and their parents. I would like to invite you to take part in a focus group that will allow for Black parents of elementary-aged Black boys to share what would increase their trust for their son's teacher. This will be conducted over [Zoom](#). The focus group should last no longer than one and a half hours. There is no preparation needed to attend.

If you identify as Black and a parent/caregiver of a Black son and would like to take part in the focus group, please let us know by registering [here](#). Please also share with anyone in your network that you know is raising a Black son. I am looking for a diverse group of mothers, fathers, grandmothers, etc.

Thank you in advance,

Charlitta

Appendix B

* 1. Are you a parent of a Black son in elementary school?

Yes - Mother

Press **F11** to exit full screen

Yes - Father

Yes - Primary Caregiver (That does not identify as a mother or father)

No

* 2. Do you read books at home with your son?

Yes

No

* 3. What type of books does your son like to read? (Free text response)

* 4. Do you read the types of books at home that your son likes?

Yes

* 4. Do you read the types of books at home that your son likes?

Yes

Press **F11** to exit full screen

No

* 5. Does your son's teacher read those books at school?

Yes

No

* 6. How open is your son's teacher to receiving book recommendations from you?

1 - Not open at all to recommendations from me

2 - Open to receive recommendations from me during Black History Month

3 - Neutral - I have not provided recommendations and I have not been asked for recommendations

4 - Open to receive recommendations from me throughout the school year

5 - Proactively reaches out to me for recommendations

Appendix C

Q1. Are you a parent of a Black son in elementary school?

Answer Choices	Responses	
Yes - Mother	81.58%	31
Yes – Father	10.53%	4
Yes - Primary Caregiver (That does not identify as a mother or father)	5.26%	2
No	2.63%	1

Q2. Do you read books at home with your son?

Answer Choices	Responses	
Yes	94.74%	36
No	5.26%	2

Q4. Do you read the types of books at home that your son likes?

Answer Choices	Responses	
Yes	89.47%	34
No	10.53%	4

Q5. Does your son's teacher read those books at school?

Answer Choices	Responses	
Yes	55.26%	21
No	44.74%	17

Q8. Do you feel more trust when a teacher has Black books and/or classroom materials in your son's classroom? (If yes, please provide details).

Respondents	Responses
1	Yes. It gives me hope that the teacher will take the time to get to know my son on an individual basis.
2	Yes
3	Yes because to me that is telling me they are trying to diversify their classroom and acknowledge our culture
4	Yes
5	Yes. It's beneficial for black boys to be able to see characters in books that make them feel inclusive.
6	I feel he's getting knowledge about his heritage
7	Yes, it signals that the teacher is open to inclusion and belonging
8	Yes because they know the perspective.
9	Yes because it displays a cultural competence that is important to me
10	Yes bc black lives matter
11	Yes. I would also feel more trust hearing and/or witnessing Black books and classroom materials also being implemented/connected to lessons. I feel that it will allow my son to feel more connected and open to comprehending what he reads or does in class as well as being willing to have open discussions with his peers and teachers.
12	Yes; this to me shows there is intention to be inclusive of a diverse student body.
13	Maybe not more trust, but certainly more appreciation for diversity.
14	Yes, I want my son to see himself at school
15	Yes! I think it is important to have diversity in all areas of our lives. Seeing people who look like him in his classroom, as a teacher, a doctor, etc is important to us.
16	Yes, provides a way for my son to self identify
17	Yes
18	Yes. It shows intentionality
19	Yes
20	Yes because I know he will be engaged.
21	I trust the teacher is open to cultural diversity on various levels when there is diverse books in the classroom. I went to read in the classroom at the beginning of March, I was provided 4 books to choose and one was on Duke Ellington. Later this month there was a discipline issue with my son and a white boy and I was more trusting.
22	I would because he is seeing books that look like him
23	I would. I have no clue what books are in my son's classroom.
24	Yes, inclusiveness
25	No
26	Yes, I at least know she's attempting to show diversity and provide books that represent my son.
27	Yes. I always believed that a teacher should always provide a diverse collection of books in the classroom.
28	Yes. I believe this helps cultivate a sense of self pride with book that have positive black boy protagonist.
29	I don't know what she has in there really so not sure i could say either way.
30	Yes.
31	I don't see color.
32	Yes, it makes me feel like the teacher has at least tried to understand our point of view based on life experience.
33	Never thought about it!
34	I had lots of insight into my son's preschool but he entered a new school for first grade and COVID-19 has limited my classroom interaction. His preschool had lots of Black books, and that let me know his educators understood representation and inclusion.
35	Yes
36	Yes I feel the school is being inclusive and teaching the students that books that include black characters should be of interest just as a character that is white.
37	No basis to provide a response
38	Yes, because it makes me feel the teacher will also be providing more relevant classroom material.

Q9. What is one action that your son’s teacher could take within their classroom to continue to build your trust?

Respondents	Responses
1	Continue to be proactive in the learning and telling us ways our sons can be better.
2	Communicate regularly with me
3	A continuous line of communication
4	More communication
5	Overall better communication.
6	More black books
7	Communication
8	Bring on the diverse materials to their curriculum.
9	Work to diversify their curriculum across cultures and abilities
10	Talking more about equality
11	Being open to recommendations by not only the parents but students. as well. Constant communication; not just each quarter with progress reports or during scheduled 1:1 conferences, but throughout the school year.
13	Learning what interests and motivates my son.
14	Have more Curriculum that directly addresses race.
15	His teacher is amazing, just continuing to show interest in him and support for him. Great dialogue around child’s performance and create assignments that connect stories to personal experiences for the child
17	Openly recognize he is different in a positive way.
18	Attempt to develop connection
19	Have students bring in their favorite books
20	More direct communication on his performance in the classroom
21	Present the students with more content from black point of authorities on the topic and directly point it out.
22	Show pictures of what they read I would like to know how much reading he is doing in class and how he is progressing before report cards. My son
23	is “on track” with reading but what does that mean.
24	Better communication
25	Continue loving my child
26	Teach about more Black Americans than the usual people. Ask for different books and movies.
27	Provide a variety of diverse books in the classroom.
28	Develop lessons of Afrocentrism within traditional subjects
29	Try to understand the impact representation has on children of color
30	She had it. Amazing Black woman.
31	Respect my child
32	Consistent encouragement
33	Share what type of books she reads to the kids!
34	She could formally ask for recommendations or assign weeks for students to bring in books they like.
35	Share more of books that they are reading Periodic communication or newsletters about what is being taught especially during black history month. I have no idea and often times since my son is in kindergarten he doesn’t mention it unless something jogs his memory. Ex. In music he learned about Ella Fitzgerald we happen to hear a song on the radio that sounded similar to hers he
36	think begins to share what he has learned.
37	Reflect an understanding and shift in approach to support my son’s advanced cognition.
38	Provide curriculum that closely aligns with the students/students’ identity/culture.

Q10. What is one thing that you would want your son's teacher to know as a parent of a Black son?

Respondents	Responses
1	That I want my son to know he is in a safe space with a teacher that will make him feel confident about himself and his blackness.
2	He is a good kid. I feel the need to highlight this fact because I don't want my son to be stereotyped or treated unfairly.
3	That my son road will not be a easy journey but she will be there to help navigate for him and other black and brown little boys. She will also need to bring awareness to the injustice that they face
4	Boys and girls bring different gifts and energies. I worry that my son will be labeled or not allowed to flourish unless he conforms to behave in certain ways. As the mom of a daughter, I love how schools have tried to empower girls. But it does not have to be and should not be at the expense of boys. I worry that black boys are getting the subliminal message that they are not enough unless they can sit quietly and be "low-profile." My son is rambunctious and curious and high-energy and I don't think that is embraced at school.
5	My son's teacher is black and also has a black son.
6	Keep giving him knowledge of his ancestors
7	He is curious and smart just like any other student
8	How difficult society interactions with my Black boy Are.
9	It is incredibly hard to parent a black boy in a society that does not love them.
10	Education matters for these boys.
11	Listen. Be more open to building a relationship by listening to the thoughts of what books and/or topics interest my black son.
12	Simply put, I just want my sons to have a great school experience and continue to love school.
13	That he is capable and deserves access to every resource and opportunity to succeed.
14	Prepare white children to be less racist, so I don't have to do extra work to prepare them for racist white children.
15	That one moment can change his life forever! Teachers have such a big influence over our children's lives. The good ones will remain in the hearts forever while the bad ones could impact them so negatively that they don't recover from that experience.
16	Children have different interest. Basing curriculum off the white experience may create division in the way a child views themselves in terms of the curriculum. Don't take the ability to not relate as disinterest.
17	Find ways to make the material relate to every student.
18	He needs love, his confidence and strength built.
19	I'm watching you.. we have options
20	Representation matters
21	His experience in this world will be different than most of his classmates, so building his confidence in himself and his capabilities is extremely important.
22	We are proud Black Americans and our so should see the efforts of other proud Black Americans and their contributions to our world.
23	The older he gets he may be viewed differently and have more struggles then others of different cultures
24	That he wants to learn to read even if he doesn't seem interested or seems distracted at times.
25	That his parents are serious about his education
26	His experiences are different and may not be able to relate to certain books or discussions
27	That people are always thinking that he is "less than". That he's stereotyped just because of his skin color. So he's going to "extra" because we tell him how "extraordinary" he is and if she sees any of that dwindling, we need to be contacted to provide more support.
28	Listen to the ideas and feelings of her students when it comes to the kinds of books they are interested in reading.
29	Black boy behaviors could be masking a deeper issue/concern than of just insubordination.
30	That I love my son like others do and I try to teach him to be respectful and kind just as white mothers are perceived to do with their kids.
31	He is more active than most kids.
32	I too, sing America!
33	He will be ignored and judged enough in the world. Please don't make him experience that in a classroom that should be a safe place.
34	We all have a story in our stories are all different!
35	As he grows, even his everyday moves are life or death. It's a delicate balance to teaching that while having balanced disciplinary policies.
36	It important to give praise
37	Understanding that culture is more than just a something that should be done during "culture day". I often send notes to school requesting specific things ie homework during a missed day due to an illness. I do not get a reply back or homework sent.
38	They deserve to be positively regarded for their intelligence.
	We need to work together to encourage reading, foster a love of learning & provide a path to educational success.

Appendix D

1. Introduction and Demographics

- a. AH –Married with 3 children – 18 (girl), 14 (girl), and 6 (boy) – began teaching when first child was 3 weeks old as the research at that time showed that if first year teachers started after the school year started, they would not be successful in their teaching career. K-1 Public school educator, administrator in diverse magnet public schools, Literacy Facilitator in Title 1 Public school, Elementary school IB Principal
- b. RP – Married with one ten-year-old, 5th grade son. I was teaching a decade before I had my son and have spent my career at Title 1 Elementary schools.

2. How long have you been an educator?

- a. AH - 18 years
- b. RP - 21 years

3. How long have you been a parent?

- a. AH - 18years
- b. RP - 11 years

4. How do you feel being an educator helps you to raise your Black son?

- a. AH - My greatest gift has been having children. I have always gone into the classroom with the heart of a parent. Responding to parents and students as if this were my son. Being an educator has instilled in me the importance of building up your child. Children pick up on differences in the classroom and it's important how you have those conversations. It's also important to learn what motivates your child since every child is different.
- b. RP -I was an educator for 10 years and I believe that has helped me to have more patience with my son. I have also been able to see things through the eyes of a child. I am constantly wondering what children are thinking and can take that approach with my son to show I am interested in him.

5. How do you feel being an educator hinders you when raising your Black son?

- a. AH – As an educator, there are some things I feel I cannot address as a parent particularly because my last 2 children are or have attended my schools. I have to take a step back and allow my husband to address things. I have extended more grace to teachers because I know what it feels like being an educator and assume positive intent. I have been mindful to take the educator lens off as a parent sometimes when responding to my children.
- b. RP – As an educator it has been hard to allow my child to experience things on his own without stepping in on everything. I am constantly wondering what he is

learning and if he is progressing as he should based on the standards that I know all too well.

6. As a parent, do you feel that it's hard for you to trust the school system because of your career in education?
 - a. AH – That's a hard question. I believe it's hard for me not because of the teachers themselves, but because of the way the system is designed. The system is not designed for our Black children especially our sons to thrive. From the curriculum, testing, and discipline methods it was built from a method of exclusion and not inclusion. So, I am always watching for that. Additionally, I give a lot of grace to the system and educators because I know how hard it is to do the work that we do.
 - b. RP – Yes. I see that just like in the world there are people who mean well and some that do not. I wish school did more to build relationships with parents and the broader community. I think students would excel academically if schools would help establish a village.

7. As an educator, do you feel that you supplement the curriculum to meet your diverse students need because of your role as a parent?
 - a. AH – Yes. I am always looking for ways to expand the curriculum to be more inclusive. Having my children at the school has allowed me to be able to say to other parents that I am making this decision not only as a Principal, but also a parent. I encourage my teachers to include different types of media, special guests, ensure their classroom books and materials reflect the world and not just the make-up of the students. I definitely put a huge emphasis on culturally relevant teaching and culturally responsive practices (Ron Clark Academy, Book Studies, Lewis Consultants). We have invested a significant amount of funding to this work over my tenure as a Principal.
 - b. RP – Absolutely. I have predominantly Black students in a Title 1 school. I view the curriculum as a guide and try to incorporate real life experiences so the students can relate. Some examples might be using the types of food they eat or asking the students what they know so I can build off that. This allows me to bring in cultural experiences and then affirm them and their experiences as well.

8. What intentional strategies do you employ as it relates to curriculum and classroom materials that you feel should be universal to all educators?
 - a. AH – I definitely put a huge emphasis on culturally relevant teaching and culturally responsive practices, relationship building, restorative practices, diverse textbooks and literature.
 - b. RP – I am very intentional about the books we read and how my classroom is set-up. As my students are mostly Black, I am always seeking out diverse books, posters with Black children, and different types of music. Representation matters.

9. What type of support do you feel educators need from parents regarding classroom books and engagement of Black boys?
- a. AH – I would say parent support in having an open mind to literature of students and supporting classroom libraries with donations is a support as well. The parent-teacher connection is key in understanding student’s motivation and interests to keep students engaged.
 - b. RP – Parents should advocate for their son’s interest. Create a dialogue with the teacher and offer suggestions on the types of books that your son would be interested in reading.
10. What advice do you have for educators of Black boys regarding classroom books and materials?
- a. AH – There shouldn’t be a situation where a child feels foreign. All students deserve to see themselves in the classroom with other students, books, and materials. Everyone tends to gravitate to who we are and what we look like. The same way we find comfort in those circles, our children do as well. Culturally relevant teaching and culturally responsive practices are key as well as representation in literature. Encourage the work and make it intentional and not forced.
 - b. RP – Get to know your students and be proactive with establishing a positive relationship with your parents especially your Black parents of Black sons. Understand their interests and do whatever you can to keep it. Think outside the box and bring in the outside world to make it real.
11. Do you see an increase of engagement defined as participation and increased scores when Black boys read books that have other Black boys in them?
- a. AH – Yes, I have gone out of my way to bring in Black authors to our school. Bringing in those authors has impacted engagement in a variety of ways. The boys start to ask questions and see themselves as writers. When they see the boys in the story they automatically ask if the story is about them. They are immersed in the stories because it feels more relatable. The correlation to actual test scores are research that I am not aware of. However, the connection of representation is always powerful.
 - b. RP – Recently, I read the book *I Promise* by LeBron James. My Black boys enjoyed the book so much. They were shouting out things in the story that looked like things they had at home. They talked about LeBron James as if they knew him. They asked the most questions about what it meant and wanted me to read the book every day for weeks because it meant so much for them to hear that story by such a famous Black man that made sure the illustrations looked like other young Black boys.

**Cultural Capital: A Contributing Factor in the Success of High Achieving,
Low Income Engineering Students**

Bethani Cogburn, Stephanie Galloway

University of North Carolina, Charlotte

Abstract

Due to the continued lack of diversity in engineering and the limited research on socioeconomic status, the objective of this project was to understand how high-achieving, low-income engineering students utilized cultural capital to carve successful academic pathways. This study used a qualitative inductive approach to address the research question: *how did high-achieving low-income engineering students use cultural capital to succeed academically during COVID-19?* Results showed that participants utilized social, navigational, and aspirational capital to succeed during the pandemic. The results expand understanding of this sample of students and their resolve to succeed academically using cultural capital.

Keywords: cultural capital, engineering, low-income

Cultural Capital: A Contributing Factor in the Success of High Achieving, Low Income Engineering Students

One of the most significant concerns in the field of engineering is the lack of diversity. In the last six decades, a considerable body of research has drawn attention to the disparate number of professionals and students who represent historically underrepresented racial, ethnic and gender groups. In 2021, Georgetown University Center on Education and Workforce reported that 81% of the engineering workforce was White or Asian, 3% were Black or Latino women, and 84% were men (Carnevale et al.). During the decade between 2009-2019, the number of engineering degrees awarded to Latinx folks increased by 13% and by 3% for African American folks. However, both groups are underrepresented in the engineering workforce (Carnevale et al., 2021; National Science Board, 2022). Though the number of women engineers has increased from 5.8% to 14% over the last twenty years, the fact remains that the number of women engineers is drastically lower than their male counterparts (American Society of Mechanical Engineers, 2012).

Diversifying the future engineering workforce is critical for the future growth of the nation. In 2015, The President's Council of Advisors in Science and Technology (PCAST) called the lack of diversity across all STEM fields a national imperative given the exigent role of science and technology in the nation's economic stability, national security, and global influence (Chen, 2013). As the current workforce approaches retirement age, the need to fill open positions will be even greater. Moreover, census projections indicate significant growth among racial and ethnic minorities populations which will create another potential pool of future engineers (US Census Bureau, 2021). Arguments that support diversity in engineering have been focused on race, ethnicity, and gender. However, much less is known about socioeconomic diversity in

engineering. Hence, the emphasis of this study will be high achieving, low-income engineering students.

Literature Review

Low-Income College Students

Recent data show that a mere 8.1% of students enrolled in undergraduate engineering programs come from low-income families (NCES, 2016; Major et. al, 2018). Furthermore, students from low-income backgrounds have higher attrition rates than their White and Asian counterparts in STEM programs (Chen, 2013; Griffith, 2010; Hoxby & Avery, 2012). The relative absence of low-income students enrolled in engineering programs has systemic effects. Since engineering degrees typically lead to higher salaries, the underrepresentation of low-income students impedes future earning potential that engineering degrees offer, thereby perpetuating income inequality for decades to come (Major et. al, 2018; Wait & McDonald, 2019). Scholars from multiple disciplines agree that the shortage of women, Latinx, and African Americans in engineering is an irrefutable crisis in academia.

While they may often face additional barriers to successfully accessing meaningful college pathways, low-income college students can be determined and resilient in creating success for themselves. Low-income college students experience increased self-worth and success when they engage with pre-college mentors (Hurd et al., 2018), college faculty, and peers (Holcombe & Kezar, 2020). Regularly scheduled meetings with mentors, faculty, and peers can help these students to build deeper relationships that support their successful navigation of college (Spindel Bassett, 2021). The cultural capital that these students build can lead to increased ability to successfully navigate engineering pathways (Ruiz Alvarado et al., 2020).

However, low-income college students often struggle to ask for help due to perceived negative reactions and internalized views of help (Spindel Bassett, 2021). Low-income college students are more likely to experience impostor syndrome and decreased self-worth when engaged in cross-socioeconomic friendships (Jury et al., 2019; MacInnis et al., 2019). Underrepresented college students need intentional social and structural support systems to increase success in academic pathways (Ong et al., 2020). Thus, institutions that utilize knowledge of the community cultural wealth framework (Samuelson & Litzler, 2016) to construct programs may be able to increase the navigational capital and overall success in engineering pathways for diverse low-income students (Kezar et al., 2020; Ruiz Alvarado et al., 2020).

High-Achieving, Low-Income College Students

Most of the current literature on the experiences and needs of low-income college students has not specifically focused on high-achieving, low-income students, though they were inadvertently included (Ruiz Alvarado et al., 2020; Wilson, 2016). This group of students tend to graduate at lower rates and attend less selective colleges, while also being more likely to experience shame, lack of academic and social integration, and financial stress (Ruiz Alvarado et al., 2020; Wilson, 2016). In a more recent study on high-achieving, low-income college freshmen, students perceived a lack of social fit, uncaring professors, and a lack of support (Wilson, 2019). In other words, these students are experiencing challenges in building cultural capital in college, which has an impact on their ability to successfully matriculate into and navigate through engineering academic pathways (Ruiz Alvarado et al., 2020).

While students in one study named study habits, self-esteem, finances, and the above factors as challenges to their education, they also described a determined resolve to complete

their goals (Wilson, 2019). However, the researcher noted that these challenges in attending college also led to decreased confidence and increased uncertainty about college. Another researcher concluded that high-achieving, low-income college students were successful and resilient in college when they had the support of family, mentors, and teachers (Hebert, 2018). In other words, high-achieving, low-income college students are successful when they have the opportunity to utilize cultural capital to navigate college matriculation (Samuelson & Litzler, 2016).

Theoretical Framework

In this study, we sought to understand how high achieving, low-income students utilized community cultural capital to successfully access academic pathways to engineering majors during the COVID-19 global pandemic. The theoretical framework of community cultural wealth (Ruiz Alvarado et al., 2020; Samuelson & Litzler, 2016) informed the research design and thematic analysis of the data. This framework takes an asset-based understanding of marginalized groups and looks to understand the systemic barriers to their success, rather than perceived deficits. Specifically, six types of capital can build on each other to pave the way for success for many marginalized populations, though this theory was initially based on communities of color (Yosso, 2005). Aspirational, navigational, social, linguistic, familial, and resistant capital are not considered to be mutually exclusive and help researchers to understand how some students from marginalized backgrounds have overcome systemic barriers to their success.

Previous studies utilizing this framework have identified the need for navigational capital, or the ability to maneuver social institutions, among marginalized populations (Mobley & Brawner, 2019; Ruiz Alvarado et al., 2020). However, the studies that we located were

focused on using this framework to understand the experiences of Black and Hispanic students. Because low-income college students have faced their own challenges to economic mobility and success historically, we believe that the community cultural wealth framework (Yosso, 2005) can aid us in building an understanding of this population's strengths and resources. For instance, low-income college students may not already be equipped with navigational capital typically given by parents but can gain this support from other natural mentors, or nonparental adult mentors that exist in a student's pre-college social networks (Hurd et al., 2018). Thus, our seminar design has the potential to increase cultural wealth for low-income college students through peer group support, professional networking, and intentional mentoring.

Methods

In this qualitative study, we chose to take a basic inductive approach (Thomas, 2006) to allow the voices of students to surface through the data. We did not form hypotheses prior to conducting the research. Taking an exploratory perspective, we developed meaning and themes based on the data itself, as the analysis developed. The codes produced in this research deepen our understanding of the values expressed by students when discussing the cultural capital, they utilized to successfully access and matriculate into engineering pathways.

Study Site & Participants

This study took place at a medium-sized southeastern university in the United States. In 2018, funding from the National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Math (S-STEM) Program led to the development of a scholarship program for high-achieving, low-income students admitted to any of the five engineering programs offered. The S-STEM program was created to increase the number of under-represented students in STEM (NSB, 2022). Our S-STEM scholarship program provides a wrap-

around cohort experience that includes student support, mentoring, specialized advising, and \$40,000 of individual scholarship funding for four years. A purposeful sample of fifteen undergraduate engineering students who were recipients of the S-STEM scholarship program, and thus, participants in the S-STEM seminar were the focus of this study. The sample included five women and ten men who were undergraduate students in civil engineering, computer engineering, electrical engineering, electrical engineering technology, mechanical engineering, and mechanical engineering technology. Participant demographics are shown in table 1.

Table 1.
Demographics of focus group participants

Major	Race	Gender
Civil Engineering	Hispanic/Black/White	M
Civil Engineering	White	F
Civil Engineering	White	M
Computer Engineering	Not disclosed	F
Electrical Engineering	Black	F
Electrical Engineering	Not disclosed	M
Electrical Engineering	Not disclosed	M
Electrical Engineering	Not disclosed	M
Electrical Engineering Technology	Black	F
Mechanical Engineering	Hispanic & White	M
Mechanical Engineering	White	M
Mechanical Engineering	Black	M
Mechanical Engineering	White	M
Mechanical Engineering Technology	Hispanic	M
University College	Black	F

In the first year of the S-STEM program, the scholars participated in a weekly seminar, led by the graduate research assistant, an advanced doctoral student in the college of education. While the seminar experience was patterned after other successful S-STEM programs at Appalachian State University (Tashakkori et al., 2018) and University of Wisconsin at Milwaukee (Reisel et al., 2012), we modified our offerings based on scholar feedback. Tailored to the developmental needs of traditional college students, our programming is designed to create a cohort experience, develop the scholars' independent problem-solving skills, and build their confidence as future engineers.

Data Collection

Given the small sample size, we conducted three, online focus groups. Focus groups are used widely in qualitative research and are beneficial for cultivating participant interactions and free expression of multiple perspectives (Henneck et al., 2019; Jenkinson et al., 2019; Mertens, 2020). Being synergistic in nature, focus groups can create a safe environment for participants and the focus group moderator to engage with one another. Using focus groups as an evaluative tool, we also collected ideas to improve the mentoring component of the scholarship program. A graduate research assistant conducted three, 1.5-hour focus group sessions during the Fall 2020 semester using Zoom for video and audio recording. There were five participants in each focus group. After each focus group, the audio was transcribed using an external transcription service.

Analysis

To understand our data, we used a two-phase approach for data analysis. In phase one, all focus group transcripts were reviewed for accuracy of transcription. Then, using methods coined by Strauss and Corbin (1990), we read all transcripts line by line, studying fragments of the data and labeling them with open codes. During the second phase, we developed axial codes from the

open codes. Continual contrasting and comparison of open codes led to the development of analytical themes, sub-themes, and conceptual linkages between the participants' responses (Thomas, 2006). Memos were also created to summarize themes and to identify analytical connections throughout the data. Since the analytical process is iterative (Charmaz, 2014) open codes, axial codes, and themes were refined and reconceptualized at multiple stages of the analytic process. Throughout the coding process, memos were created for reflections and thoughts about the focus group interviews.

Trustworthiness

Several steps were taken to ensure rigor and the trustworthiness of our study. We used the tenets of credibility espoused by Lincoln and Guba (1989). Member checking between the research team occurred by sharing the open and axial codes with the entire team. This step allowed for discussion of the coding and thematic analysis. Furthermore, memos and spreadsheets were created by the two main researchers to create a trail for the processes that we used and to ensure that, if necessary, our study could be replicated by other qualitative researchers.

Reflexivity

As researchers, it is important to practice reflexivity in identifying, announcing, and bracketing our biases and assumptions about the nature of our research, including our positionalities and relationship to the data and study participants (Smith & Luke, 2021). As a doctoral research assistant, I have a strong belief in education and social justice, a strong passion for supporting low-income college students and other underrepresented groups, and a personal understanding of the significance of building cultural wealth in the successful navigation of higher education. I bracketed my biases through ongoing conversations with other members of

the research team and through the creation of memos during the research process. It is important to note that I am not the same doctoral research assistant mentioned in the study design and seminar facilitation section.

Findings

Our findings indicate three overall themes, with sub-themes: (a) social capital (mentoring & peer support), (b) navigational capital (mentoring & resourcefulness), and aspirational capital (problem-solving abilities) were forms of cultural capital utilized by low-income engineering students to successfully navigate undergraduate engineering pathways during COVID-19. Our sub-themes were fitted into the community cultural wealth framework (Yosso, 2005) to conceptualize the various forms of capital that participants were utilizing to matriculate through their engineering journeys. In the following sections, we will discuss each theme and utilize participant quotes to illustrate salience and offer detailed meaning of the themes.

Social Capital (Mentoring & Peer Support)

Our first emergent theme, social capital, further validates the importance of building relationships that are resources in a student's success, as previously conceptualized by the community cultural wealth framework (Yosso, 2005). Social capital describes the people and community resources that students may use as a support in accessing or succeeding in an institution or academic pathway (Samuelson & Litzler, 2016). This can range from community organizations that support students in preparing their financial aid applications to social contacts that students are able to access for homework help. Our participants described utilizing various mentoring sources available to them to overcome challenges and depending on peer support to make it through difficult moments. The participants seemed to particularly benefit from and

value connections with mentors or peers that had shared experiences, such as navigating higher education as a Black engineer.

One participant asserted the importance of connecting with their peers whether that be for building their own social skills, working with teams in class, or creating networks for future resourcing. When asked what skills they needed to access the engineering pathway, they stated,

“Um, social skills or teamwork. Uh, that's obviously important in almost anything these days. Um, those two are the main ones and those are the ones I definitely practice the most in high school. Aside from that, um, going, going back to social skills, just the ability to [inaudible] that characteristic would be, but just being able to make connections easily is a very important thing. And it goes to networking of course, but just being able to be a people's person.”

Another participant described how meaningful it was for them to connect with other persons with shared identities, noting a felt sense of support and collective success. When asked about how they were succeeding so far in their academic program, this participant stated,

“So that's what I like about meeting other black engineers. It's like, we're all if you're succeeding, I'm succeeding. I'm like we studied for a test together. I had never done something like an actual study session that I felt was actually helpful. That was the first time. Um, you know, if we have questions on homework, we can, we can ask each other that type of stuff.”

This quote highlights the importance of not only building powerful social capital networks that offer resources for academic success, but also of connecting with others who share intersectional cultural identities and experiences.

Navigational Capital (Mentoring & Resourcefulness)

Our second finding, navigational capital, illustrates the need for low-income students to learn how to navigate complex administrative systems and locate faculty, staff, and institutional resources that can assist them in doing such. Our participants discussed pre-college opportunities that they had which afforded them early access to and knowledge of engineering pathways. This type of access and early exposure to engineering can give them an advantage when they matriculate into their engineering department. Specifically, professional interactions, or mentoring, and a student's resourcefulness, can have a meaningful impact on their academic performance and overall college experience.

When asked about the experiences that shaped their expectations about majoring in engineering, participants described developing an awareness of what it meant to become a professional engineer through interactions with industry professionals. Some participants recalled a wealth of experiences while others noted the lack of experiences with engineering prior to college. However, those that described a lack of experiences typically also gave examples of brief informal encounters that were meaningful as well. For instance, one participant noted:

“Uh, prior to UNC Charlotte, it would probably be, um, meeting other professional engineers through robotics, uh, I had met a couple of them. I remember I met a software engineer who is going to mentor the team, but due to COVID, uh, things got a little shaky there, so I never really got to work a lot with them, but I did get to meet him. He sent me a little bit of his, um, coding. Um, that's pretty much about it. I didn't really talk to a lot of engineers prior to UNC Charlotte.”

Of course, this participant has illustrated the extra challenges that our scholars experienced during the COVID-19 global pandemic. During this time, most interactions were held online, leading to feelings of burn out around online meetings which also represented an extra barrier to building navigational capital.

Pre-college experiences were particularly powerful for our group of participants, though the results around college experiences could certainly be impacted by the challenges of the pandemic and strictly online communications. One participant listed several opportunities that they had to engage in STEM prior to college. They stated,

“Uh competitive, uh, interaction I've had through STEM. Um, yes. Uh, so it's, since, uh, in, um, elementary school, I've, uh, always had the interactions before working with, uh, like things that are related to STEM, like producing projects that are, uh, related to, um, building circuits and building robots and, uh, data, uh, that was, uh, greatly improve the, in my high school years when, uh, during the sophomore year I, uh, started, I joined the tech cop and, uh, started, uh, the robotics team with a couple of my friends. And we got together and built a robot and found out about this competition, uh, was the students, uh, technologies, uh, associated and, uh, using, uh, vex, robotics parts. Uh, we built robots and, uh, based on the criteria of the competition, we bent and competed with them every year until long, uh, senior years. And, uh, that was the first real, like real world, uh, especially.”

This participant specifically described their pre-college experiences as real-world interactions, indicating their value to the student and the student's belief in the importance of early application experiences with STEM.

Aspirational Capital (Problem-Solving Abilities)

Our third theme, aspirational capital, illustrates the perception of our students that intrinsic motivation and self-reflection are necessary to tackle the curriculum and progress in the college of engineering. This is explained by the notion of aspiration capital within the community cultural wealth framework. Aspirational capital describes a person's inner characteristics, specifically their dreams for the future, as a powerful resource for perseverance despite real systemic barriers (Yosso, 2005). Within this theme, there was a sense of academic self-efficacy or a sense of confidence in one's own ability to succeed in engineering (Bandura, 1997; Schunk, 1991). Specifically, participants described problem-solving abilities as an important aspect of success in engineering. Problem solving abilities was referenced by the participants consistently when asked about how they had been successful or overcome challenges to their success in college so far. We conceptualized this as aspirational capital due to the connection students made between what it means to be an engineer, their personal strengths, and their aspirations as future engineers.

Starting with their identity as an engineer, one participant described personal qualities they felt they embodied. This participant stated,

“So, as an engineer, I feel like my problem-solving abilities and my resourcefulness with what I have around me is probably my biggest advantage. Um, when it comes to like, if I get myself into a situation or if I, if I'm working on something, I can't figure it out. So, a lot of times, you know, I'm, I'm one of the first ones on the team or whatever is to look around and be like, hey, can you hand me that I can, I can do something with it.”

While this participant specifically mentions problem solving and resourcefulness, we observed that they were also describing being a team player, taking initiative, and perseverance. These

were all qualities that they used to solve any problem that arose, because they believed in themselves and their career aspirations as an engineer.

In fact, another participant described the experience of navigating a system, asserting that the only option is to persevere, solve any issues that arise, and simply, get things done. This participant seems to illustrate the disempowered experience of navigating large institutional systems, while at the same time using the power of mindset to overcome challenges. They stated, “Sometimes I just, it's a system and it's just, no emotions got, gotta do it. Just keep on pushing and eventually it'll get easier.” With this simple quote, we can understand both the perceived culture of engineering and education, as well as a personal narrative around what it takes to succeed in that culture. Meanwhile, another student talked about the culture of engineering through the particular skills needed for successful engineers. The participant states, “And to me, it's, it comes to me just so I think, um, that those are pretty good skills for engineering. I'm good at problem solving. I love to solve problems, whatever the issue is. I love solving it.” While this quote indicates the relative confidence of this participant in engineering, it can also highlight a space where students might not see themselves as engineers. In other words, if students do not see themselves as adequate problem solvers, they may not be able to see themselves as future engineers.

Our overall findings for this study indicate that high-achieving, low-income college students in engineering utilize multiple forms of cultural capital to be successful in accessing the necessary resources to support their engineering pathways. Specifically, we found that students used forms of social capital, navigational capital, and aspirational capital to access and succeed in engineering. All this cultural capital accumulates to create cultural wealth for students which may help them to overcome systemic barriers to their success.

Significance

In this study, we aimed to gain a better understanding of the types of cultural capital that high-achieving, low-income students utilized to excel as engineering majors, despite the significant shift in teaching, learning, and institutional culture caused by the COVID-19 global pandemic. Our research findings could provide significant implications for the recruitment and retention of low-income college students, as well as for innovation in engineering education. Better understanding the experiences of low-income students in engineering may lead to the development of approaches that increase cultural capital for this group of students, allowing them the opportunity to overcome institutional obstacles and academic rigor of the engineering curriculum. Ultimately, a clearer understanding of the barriers that low-income college students face, and expansion of appropriate support programs could lead to increased diversity in engineering, increased economic mobility for underrepresented engineering students, and increased innovation in the field of engineering. Increasing diversity and innovation within engineering also supports the United States' need to maintain its position as a global leader in scientific and technological advancements. Our study adds to the growing body of literature on the needs of this group as they pursue their academic and professional goals to become future engineers.

References

- American Society of Mechanical Engineers. (2012). Engineering still needs more women, <https://www.asme.org/topics-resources/content/engineering-still-needs-more-women>
- Atwood, S. A., & Pretz, J. E. (2016). Creativity as a factor in persistence and academic achievement of engineering undergraduates. *Journal of Engineering Education*, 105(4), 540–559. <https://doi.org/10.1002/jee.20130>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Carnevale, A. P., Smith, N., & Quinn, M. C. (2021). Mission not accomplished: Unequal opportunities and outcomes for Black and Latinx engineers, *Georgetown University Center on Education and the Workforce*. <https://cew.georgetown.edu/cew-reports/engineering/>
- Charmaz, K. (2014). Grounded theory in global perspective: Reviews by international researchers. *Qualitative Inquiry*, 20(9), 1074–1084. <https://doi.org/10.1177/1077800414545235>
- Chen, X. (2013). STEM attrition: College students' paths into and out of STEM fields, *National Center for Education Statistics, Institute of Education Sciences*, <https://nces.ed.gov/pubs2014/2014001rev.pdf>
- Griffith, A. (2010). Persistence of women and minorities in STEM field majors: Is it the school that matters? *Economics of Education Review*, 29(1), 911-922. <https://doi.org/10.1016/j.econedurev.2010.06.010>

- Hebert, T. P. (2018). An examination of high-achieving first-generation college students from low-income backgrounds, *Gifted Child Quarterly*, 62(1), 96-110.
<https://doi.org/10.1177/0016986217738051>.
- Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research, *Qualitative Health Research*, 29(10), 1483–1496.
<https://doi.org/10.1177/1049732318821692>
- Holcombe, E. & Kezar, A. (2020). Ensuring success among first-generation, low-income, and underserved minority students: Developing a unified community of support, *American Behavioral Scientist*, 64(3), 349-369. <https://doi.org/10.1177/0002764219869413>
- Hoxby, C. M., & Avery, C. (2012). The missing "one-offs": The hidden supply of high-achieving, low-income students, *National Bureau of Economic Research*, 18586.
<https://doi.org/10.3386/w18586>
- Hurd, N. M., Albright, J., Wittrup, A., Negrete, A., & Billingsley, J. (2018). Appraisal support from natural mentors, self-worth, and psychological distress: Examining experiences of under-represented students transitioning through college, *Journal of Youth & Adolescence*, 47(1), 1100-1112. <https://doi.org/10.1007/s10964-017-0798-x>
- Jenkinson, H., Leahy, P., Scanlon, M., Powell, F., & Byrne, O. (2019). The value of groupwork knowledge and skills in focus group research: A focus group approach with marginalized teens regarding access to third-level education. *International Journal of Qualitative Methods*, 18(1), <https://doi.org/10.1177/160940691988185>
- Jury, M., Aelenei, C., Chen, C., Darnon, C., & Elliot, A. (2019). Examining the role of perceived prestige in the link between students' subjective socioeconomic status and

sense of belonging, *Group Processes and Intergroup Relations*, 22(3), 356-370.

<https://doi.org/10.1177/1368430219827361>

Kezar, A., Hypolite, L., & Kitchen, J. A. (2020). Career self-efficacy: A mixed-methods study of an underexplored research area for first-generation, low-income, and underrepresented college students in a comprehensive college transition program, *American Behavioral Scientist*, 64(3), 298-324. <https://doi.org/10.1177/0002764219869409>

Lincoln, Y. S., & Guba, E. G. (1989). Let whoever is without dogma cast the first stone.

Educational Researcher, 18(2), 22–22. <https://doi.org/10.2307/1175253>

MacInnis, C. C., Nguyen, P., Buliga, E., & Boyce, M. A. (2019). Cross-socioeconomic class friendships can exacerbate imposturous feelings among lower-socioeconomic students, *International Research*, 60(5), 595-611. <https://doi.org/10.1353/csd.2019.0056>

Major, C. & Godwin, A. & Sonnert, G. (2018). STEM experiences of engineering students from low-income neighborhoods. *American Society for Engineering Education*, 1-17.

Mertens, D. S. (2020). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (5th ed.). Sage Publications, Inc.

Mobley, C., & Brawner, C. E. (2019). “Life prepared me well for succeeding”: The enactment of community cultural wealth, experiential capital, and transfer student capital by first-generation engineering transfer students, *Community College Journal of Research and Practice*, 43(5), 353–369. <https://doi.org/10.1080/10668926.2018.1484823>

National Center for Educational Statistics. (2015). Digest of education statistics, *Institute of Education Sciences*. https://nces.ed.gov/programs/digest/2015menu_tables.asp

National Science Board. (2022). Science and engineering indicators 2022: The state of U.S. science and engineering, *National Science Foundation*.

<https://nces.nsf.gov/pubs/nsb20221>

Ong, M., Jaumot-Pascual, N., & Ko, L. T. (2020). Research literature on women of color in undergraduate engineering education: A systematic thematic synthesis, *Journal of Engineering Education*, 109(1), 581-615. <https://doi.org/10.1002/jee.20345>

Reisel, J. R., Jablonski, M., Hosseini, H., & Munson, E. (2012). Assessment of factors impacting success for incoming college engineering students in a summer bridge program. *International Journal of Mathematical Education in Science and Technology*, 43(4), 421–433. <https://doi.org/10.1080/0020739X.2011.618560>

Ruiz Alvarado, A., Stewart-Ambo, T., & Hurtado, S. (2020). High school and college choice factors associated with high-achieving low-income students' college degree completion. *MDPI AG*. <https://doi.org/10.3390/educsci10060153>

Samuelson, C. C., & Litzler, E. (2016). Community cultural wealth: An assets-based approach to persistence of engineering students of color. *Journal of Engineering Education*, 105(1), 93–117. <https://doi.org/10.1002/jee.20110>

Schunk, D. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26(3), 207–231. https://doi.org/10.1207/s15326985ep2603&4_2

Smith, E. B., & Luke, M. M. (2021). A call for radical reflexivity in counseling qualitative research. *Counselor Education and Supervision*, 60(1), 164-172.

<https://doi.org/10.1002/ceas.12201>

- Spindel Bassett, B. (2021). Big enough to bother them? When low-income, first-generation students seek help from support programs, *Journal of College Student Development*, 62(1), 19-36. <https://doi.org/10.1353/csd.2021.0002>
- Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications, Inc.
- Tashakkori, R., Norris, C., Searcy, M. E., Klima, V., & Wilkes, J. T. (2018). Board 145: High-achievers scholarship program in computer science and mathematics. *Association for Engineering Education - Engineering Library Division Papers*.
<https://doi.org/10.18260/1-2--29946>
- Thomas, D.R. (2006), A general inductive approach for analysing qualitative evaluation data, *American Journal of Evaluation*, 27(2), 237-246.
<https://doi.org/10.1177/1098214005283748>
- US Census Bureau. (2021). New vintage 2021 population estimates available for the nation, states and Puerto Rico. <https://www.census.gov/newsroom/press-releases/2021/2021-population-estimates.html>
- Wait, A., & McDonald, K. (2019). Exploring challenges and solutions facing STEM careers in the 21st Century: A human resource development perspective. *Advances in Developing Human Resources*, 21(1), 3-15. <https://doi.org/10.1177/1523422318814482>
- Wilson, S. (2016). Lack of persistence in college and the high-achieving, low-income student: A review of the literature, *Community College Enterprise*, 22(2), 42-51.
<http://www.schoolcraft.edu/ccE>

Wilson, S. D. (2019). The unmet psychosocial developmental needs of the high-achieving, low-income student, *Community College Enterprise*, 1(1), 39-63.

<https://home.schoolcraft.edu/cce/search-archives/409>

Teacher Diversity for Equitable Outcomes: Promising Strategies for Recruiting and Retaining Black Educators

Naureen Madhani

Center for Public Research & Leadership, Columbia University

Abstract

This paper outlines promising recruitment and retention strategies for Black educators, based on a formative evaluation of the strategies implemented by eight teacher residency programs nationwide, over a two-year period. We discuss policy and practice implications, including the importance of financial support, the role played by culturally responsive practices in teacher preparation and the need to partner with schools and communities to support retention efforts.

Keywords: recruitment and retention of Black teachers; culturally responsive education, teacher residencies

Teacher Diversity for Equitable Outcomes: Promising Strategies for Recruiting and Retaining Black Educators

While the number of teachers is growing nationally, the rates of annual departures remain high in elementary and secondary teaching with higher departure rates among teachers of color than White teachers. And because Black teachers are “two to three times more likely to work in high- poverty, high minority, urban, and rural public schools,” (Ingersoll et al. 2021, p. 22) those schools experience the highest rates of teacher turnover. In their analysis of the composition of the teaching workforce over the last ten years, Ingersoll et al. (2021) demonstrate that the teaching workforce has become ‘greener’ with a larger proportion of beginning teachers than experienced teachers. This trend has implications for student outcomes because teacher quality matters: students taught by teachers with more years of experience, greater subject matter expertise, and higher levels of education are more likely to perform better and obtain a bachelor’s degree (Lee, 2018). Greater teacher effectiveness improves student performance for all students with lower achieving students being the first to benefit (Sanders & Rivers, 1996; TNTP, 2018;). Black teachers, in particular, are a key driver of more equitable outcomes for Black students (Ingersoll, 2001; Papay et al., 2012; Schaeffer, 2021).

A study of Black high schoolers’ perceptions of their STEM teachers found that shared racial identity with teachers motivated Black students to pursue a STEM career (Lee et al., 2022). Moreover, having a Black teacher can improve math and reading levels (Dee, 2004). Indeed, Black students who have just one Black teacher during elementary school are more likely to graduate from high school and consider going to college (Gershenson, S., Hart, C., Hyman, J., Lindsay, C., Papageorge, N., 2018).

The positive impact of Black teachers on Black students can be explained by a number of factors, including a shared cultural understanding (Mitchell, 1998), higher expectations that Black teachers maintain for Black students (Gershenson et al., 2021), and culturally affirming pedagogical strategies, which Black teachers are more likely to use in the classroom (Bristol & Martin-Fernandez, 2019). Yet, the teaching workforce is overwhelmingly White, and most Black students rarely encounter a Black teacher. In 2017-2018, just 7% of public-school teachers were Black and non-Hispanic, while 79% of public-school teachers were White (National Center for Education Statistics, 2022). There are several reasons for the low share of Black teachers in the workforce. These include, for example, lower high school graduation rates for Black students due to early opportunity gaps and resulting lower college enrollment and graduation rates (Carver-Thomas, 2018). Once they enter the profession, Black teachers in particular, often face hostile school environments and unsupportive work conditions, leading to high turnover once they enter the profession (Grooms et al., 2021).

To address the shortage of Black teachers, the National Center for Teacher Residencies (NCTR) launched its Black Educators Initiative (BEI) in 2019. The BEI aims to improve outcomes for Black students in particular, and for all students generally, by increasing access to effective Black teachers. Through BEI funding, NCTR invested in teacher residency programs that are committed to diversifying the teacher workforce through new and innovative strategies for the recruitment, preparation, and retention of Black educators. Through BEI, NCTR provides grants and support to teacher residencies that dedicate the funds to recruiting, preparing, and retaining Black educators.

Purpose

The goal of this mixed-methods, exploratory study was to identify promising strategies for recruiting and retaining Black educators. The study focused on the original eight teacher

residencies that participated in BEI in 2019 and the results they achieved in the first two years of the program: School Years 2019—2020 (SY2020) and 2020—2021 (SY2021). The study is designed to answer the following primary research question and sub-questions:

1. What are promising strategies for recruiting, supporting, and retaining Black educators?
 - a. In what years, why, and how do BEI programs successfully meet their Black educator recruitment targets?
 - b. In what years, why, and how are BEI programs more successful in recruiting Black educators to teacher residency programs compared with other residency programs in our network?
 - c. What are the racialized experiences of Black educators in the BEI initiative?
 - d. In what years, why, and how do programs participating in the BEI initiative improve graduation rates for Black residents?
 - e. In what years, why, and how do programs participating in the BEI initiative increase hiring rates of Black educators in partner districts and Title I schools?
 - f. What programmatic interventions applied in the BEI programs are most predictive of the perceived effectiveness of Black educators?
 - g. What, if any, combinations of interventions are most effective at helping Black educators enter and stay in the profession?

Research Methodology

The study focused on the eight teacher residency programs below and compared their recruitment and graduation numbers to other residency programs in NCTR's network.

Name of residency*	Region	Duration of residency program	Number of residents in SY 2021
Asbury	West	One-year Masters	19
Bayonne	Midwest	Two-year Masters	54
Caldwell	Northeast	Two-year Masters	9
Danbury	Southeast	Two-year Masters	21
Englewood	Southeast	One-year teacher license	18
Franklin	Northeast	Two-year Masters	4**
Glassboro	Southeast	15-month Masters	38
Haddonfield	Midwest	15-month Masters	15

*Pseudonyms have been used in place of residency names in order to protect the identity of the residencies and their participants.

**Franklin did not have a residency program in SY2021, so this number is from SY2020

Using a concurrent triangulation, mixed-methods design, the research team analyzed 79 individual and group interviews with teacher residents, mentors, graduates, principals, and administrators across the eight teacher residencies across the country. In addition, the team analyzed quantitative data on budgets, enrollment and retention and stakeholder surveys measuring participant experience and satisfaction using regression and difference-in-mean testing to examine differences between approaches and changes over time.

Findings

Recruitment

Enrollment Targets vs. Goals

The BEI program launched in September 2019, five months before COVID-19 closed schools across the United States, so it is not surprising that residencies had difficulty meeting their enrollment targets. In SY 2021, four of the eight residencies were able to meet their targets, either because they set more attainable goals or because they employed strategies that enabled them to recruit more Black residents than in the previous year. BEI programs consistently recruit larger numbers and proportion of Black residents compared with other residencies in the NCTR network. For example, in Danbury, COVID-19 gave the residency an opportunity to focus recruitment efforts more locally by placing historically black colleges and universities (HBCUs) at the center of their recruitment efforts. This strategy, combined with the financial incentives offered by the BEI initiative, likely helped programs to meet their enrollment targets in SY2021.

We also compared the percentage of Black residents in BEI programs versus non-BEI programs, from SY2021 to SY2022. BEI programs are consistently successful at attracting both larger numbers and proportions of Black residents. The raw number comparison is significant when compared with all other residencies, while the proportion of residents who are Black comparison is statistically significant only when compared with programs that did not later adopt BEI. The original eight BEI programs on average had 16 percentage point higher proportions of residents who are Black, on top of a baseline of 21 percent.

Next, we explored associations between BEI's financial strategies and the number and proportion of Black residents. We looked specifically at whether increasing stipends was associated with a larger proportion of Black residents. Across the whole NCTR network, that relationship is positive and statistically significant at the 0.05 alpha level. When we narrow our focus to the original eight BEI programs, the relationship is no longer statistically significant

due to the small sample, but the finding is still substantively important: Each \$10,000 increment in stipend amount is associated with a four percentage-point increase in the proportion of residents who are Black.

Having professional recruitment staff is also positively associated with a program's receiving more Black applicants. All other strategies are positively, but modestly, associated with meeting Black enrollment and graduation targets. These include emergency funds for Black residents; training costs and additional stipends for Black mentors; test preparation support for Black residents; and a summer program to recruit Black teachers.

Promising recruitment strategies addressed potential barriers, including the following:

1. Identifying and partnering with organizations with high potential, diverse membership;
2. Providing and emphasizing the financial benefits of enrolling in the program;
3. Using high-touch, responsive practices such as following up with potential applicants individually.

Black residents were drawn to residencies with a clear anti-racist or social justice orientation. Residencies that succeeded in attracting Black residents by promoting these orientations did so not only on their websites and in their recruitment materials, but also through conversations with prospective residents, so that they could trust that the residency really “cared about moving forward” on social justice issues, rather than just “the performance of moving forward” (Delilah, Resident). Bianca, another resident, notes how this consistency helped build trust in the program's approach:

I browsed around the school's website and researched the school a bit. And that was the thing that kept popping up – anti-racism, anti-racism – and I was like, ‘Oh, wow, this school seriously seems to care about supporting students and teachers of color.’

So, I was really interested in that. (Bianca, Resident)

Retention

To explore whether BEI residencies were successful in improving graduation and hiring rates for Black educators, we first conducted a descriptive examination of variability in graduation rates among programs and over time. We then compared graduation rates before and after BEI for the original eight BEI programs; we were unable to examine pre- and post-BEI graduation rates by race because graduation rates were only disaggregated by race from 2020 onward, coinciding with the post-BEI period. We were, however, able to examine changes over time in graduation rates for Black residents within BEI programs, as well as factors that may explain those changes, such as differences in budgetary allocations and other program strategies.

Because graduation was not disaggregated by race before the start of BEI in 2020, we cannot determine if the introduction of BEI is associated with an increase in Black graduates or graduates of color. However, we do know that the introduction of BEI is associated with an increase in the number of graduates overall. BEI residencies already had on average, 37 more graduates than non-BEI residencies. After the BEI was introduced, this number increased on average by about 21 Black graduates. This finding is not statistically significant but has a p-value of 0.13. Considering the small sample, that relationship may be worth further investigation. We also investigated what program features may explain differences among programs and over time in the graduation rate for Black residents.

Because hiring data was not disaggregated by race before the commencement of BEI in 2020, we can only test whether the overall number of graduates hired in partner districts and Title I schools changed in the original eight BEI programs. An average of 14 additional

graduates of BEI residencies were hired in Title I schools, and 24 additional graduates were hired in partner districts after BEI was implemented.

Financial support

In our interviews, we heard how important financial supports were to participants' retention in the program. Residents focused on the stipends, noting that while these were essential to entry to the program, they were not enough to live on. BEI administrators highlighted emergency funds as a means to supplement the stipend. And both residents and administrators noted that money and support for licensing enabled residents to obtain their licenses:

We use BEI funding to pay for black residents testing fees and supports – tutoring, retakes, practice exams. The other biggest piece is our resident emergency fund....

Every black resident can access the emergency fund. Anywhere in America a 23,000 salary is living in poverty. We can ensure that basic needs are met. (Linda, BEI Administrator)

Administrators shared many examples of the ways in which emergency funds made the difference between “staying in the program or quitting” (Rizwana, BEI Administrator).

Residents used the funds for paying rent, a utility bill, or an unexpected expense such as a car being towed:

I cannot say enough about how amazing those emergency funds are and what 250 dollars can do for someone who is on the verge of having their lights cut off. That money saves them from mental stress and trauma. (Robert, BEI Administrator)

And while residents appreciated that there was a stipend, they noted that it was not enough to

live on. It is also not available to the residents throughout the program. Once a resident enrolls in the residency program, the stipend is only applicable during the semester, even if there is an initial orientation in the summer. After completing the program, teaching jobs are not available during the summer. In committing to the program therefore, residents are foregoing two summers' income from teaching. While financial support is crucial for entering and staying in the profession, a number of factors create an enabling environment for the retention of Black teachers, including teacher preparation and support from mentors (Carver-Thomas et al. 2017; Grooms et al., 2021; Ingersoll et al., 2014).

Preparation

From survey data, we learned that residents' assessments of their preparation to teach are lower for Black residents than all other residents; they are slightly lower for BEI programs than for the rest of the network. In contrast, graduates' assessments of their preparation to be effective teachers is trending upward. For all residencies, Black graduates' assessments of their preparation to be effective teachers is increasing so much more rapidly that they now outpace other groups of graduates. There were no large differences between principals' assessments of preparation between BEI and non-BEI residencies. From survey data, we learned that BEI residents felt that their program coursework was relevant to their school context and classroom, and that the program offered a good balance of theoretical and practical strategies to strengthen their effectiveness in the classroom.

There could be three reasons why residents have low assessments of their preparation to teach. First, residents highlighted the mismatch between the values of social justice of the residency and the climate of the schools where the residents would work. Second, they spoke about the mismatch between coursework, which tends to be traditional, and residency

climates, which were more oriented to social justice. Third, all residencies were not able to integrate a social justice lens throughout the program, for example preparing residents to act as advocates for themselves and for their students. Residents, therefore, may have felt unprepared to teach high- need students in their district.

The quality of mentors is another important factor in graduates' preparation to teach. On the stakeholder survey, residents were asked if their current or most recent classroom mentor provided them with feedback in a way that valued and affirmed their full identity. Black residents report higher average results than non-Black residents for this question and the difference was statistically significant (mean for Black residents=4.49 out of 5, mean for all other residents=4.40 out of 5, difference=0.09, p-value=0.05). This difference (Black residents reporting more positive survey results than average) was larger for BEI residencies than other residencies although not statistically significant.

The residents told us why this was the case. Residencies are intentional in providing mentoring support and most are able to attract high-quality mentors by offering additional compensation and professional development:

I was not going through this journey by myself. I was able to ask questions, I was able to watch them as they worked. They were able to support me ... It set me up for success. (Sara, Graduate)

Four of the eight BEI residencies were intentional about mentor recruitment and worked closely with their schools and districts to find effective teachers to work with BEI residents as their mentors. We did not see a distinct pattern in the interview data that might tell us whether a racial match was essential to the mentor-resident relationship. In some cases, residents had a meaningful relationship with their mentor regardless of their race. In others, residents noted

how meaningful it was to have a Black teacher. Residents who were matched with Black mentors talked about feeling “empowered”:

I feel like it helped to see someone who looked like me in a sense, but also someone who was mentoring me. Like I could see myself as being a first-grade teacher and knowing like, okay someone else who is actually a good teacher, knows what she’s doing, is organized, is able to advocate for the Black students in her classroom. So, I think it was very empowering. (Max, Resident) Alimatu, one of the graduates interviewed, talked about the “power dynamic” she faced in having a White mentor in a school where she was the only Black teacher, and this might be a topic for further exploration:

My mentor was White, but obviously she knows the program that she signed up for. But that power dynamic that you have with a White mentor being a Black resident in a school populated with just White teachers, servicing students who are not just Black, but Brown, White, you know, like different colors. (Alimatu, Graduate).

While some residencies would love to provide a racial match for their mentors, they note that there is a lack of experienced Black teachers in the school systems:

They do not typically identify teachers of color [as mentors]. We have had historically white teachers as mentors. It should be a leadership development pathway for mentors. I would like us to be more adamant about making sure our mentors reflect our resident pool. (Matteo, BEI Administrator)

Residency Climate vs. School Climate

Residents found that residency climates were affirming, but they were frustrated by the school climates they experienced during clinical preparation. The BEI residency programs can

mostly be characterized as having positive, healthy climates. The most consistent indicator of climate among residency program participants, graduates, mentors, and administrators was the level of support and sense of community that the programs offered. In residency programs based on a cohort model, residents frequently named the community as a positive factor in their feelings of support. While the residency curriculum emphasized cultural responsiveness, the school curricula and environment did not always reflect that climate, and residents were left feeling frustrated. Residents noted a lack of diversity in leadership in both their residency programs and their schools, and respondents commented that this leadership feature played a substantive role in school or residency climate.

When designed to meet the needs of Black residents, affinity groups provide a space for residents to reflect on and grapple with their experiences in the program, including the often hostile climates they faced in their schools. When the affinity groups were less successful, residents noted that there weren't enough Black educators to support the groups, or that they were being asked to participate in an affinity group as an add-on activity with a full workload.

To explore whether residents felt safe and valued during their residency experience, we were able to analyze questions from the stakeholder surveys related to assessment of residents' performance and the approachability of their school leader, coursework instructors and residency staff. We found that Black residents had higher average scores on the questions related to assessment and school leadership and slightly lower averages for the question about approachability of instructors. None of these differences were statistically significant.

Residents highlighted the following features that created a positive residency climate:

1. There was diversity in the composition of staff, faculty and other residents.
2. Conversations around race and identity were centered in the coursework and throughout the BEI program. There was a sense of belonging to a community, often

in a cohort setting.

3. Leaders were viewed as supportive and approachable.
4. Residents felt emotionally safe even in difficult conversations about equity and race.
5. Residents felt supported throughout the program, including in job placement at the end of it.

Scholarly significance of the work

Ultimately, these findings can support not only teacher residencies but the larger teacher preparation field more broadly to recruit, prepare, and place Black educators in teaching positions in school districts. These findings indicate that an investment like the Black Educators Initiative (BEI) has a significant impact on the effective recruitment, preparation, and hiring of Black educators trained in a teacher residency program. The impact of same-race teachers are well documented, and Black teachers offer myriad benefits to Black students, including increased achievement, reduced disciplinary actions, increase in graduation rates, greater likelihood to be recommended to gifted programs, and increased college enrollment. Therefore, the successful strategies implemented by BEI programs, as evidenced by this research, can help to diversify the teaching field, and better meet the needs of Black students.

In particular, money matters. Financial support was shown to be a prerequisite for attracting Black candidates into the field, and continued financial support, such as emergency funds, are found to be critical to helping Black residents to graduate and be hired into high-needs schools. Teacher residencies and the teacher preparation field writ large can consider a variety of financial incentives, such as tuition waivers, living wage stipends, emergency funds, testing fee waivers, to attract and keep Black educators in the teacher profession. Stipends and tuition reduction were found to be necessary but not sufficient to both the recruitment and

retention of Black graduates. Program administrators cited emergency funds to be critical to ensuring the retention of residents, highlighting the necessity of stipends. Therefore, policymakers and school district leaders should consider more expansive financial incentives, such as increased stipends that provide a living wage, tuition forgiveness, or increased salary opportunities or hiring bonuses for Black educators—all of which promote the recruitment and retention of Black teachers.

Furthermore, mentors were found to value and affirm Black residents and were viewed as a critical support system to ensure these candidates were well prepared and graduated the program. Mentor teachers have been found in other literature to effectively prepare teacher candidates more broadly, and the findings here suggest that intentional mentor selection and matching can confer benefits to Black teacher candidates. Both teacher residencies and other teacher preparation programs can consider ways to intentionally support Black teacher candidates through the mentor-candidate relationship.

Finally, teacher residents experienced a mismatch between a supportive and inclusive residency environment and the school where they ultimately were hired as a teacher of record. Teacher preparation programs that prepare candidates through a clinically-based model should carefully recruit and select training sites that can value and affirm Black teacher candidates and ensure an optimal learning environment for these candidates where they could, for example, make mistakes, develop culturally and linguistically sustaining pedagogical skills, and build professional networks with other teachers and staff. School district leaders, principals, and policymakers should also consider how to improve school culture and climate to be more affirming for Black teacher candidates. Much research has focused on the often hostile or unsupportive school environments which cause Black educators to leave the profession,

particularly Black male teachers and leaders can provide training, support, and incentives to improve these working conditions to ensure the retention of Black educators.

These findings conclusively demonstrate that supporting Black educators through a significant investment is effective to recruit, prepare, and place these teachers in high-needs schools. The strategies utilized by BEI programs, such as high-touch responsive recruitment efforts, providing emergency funds, and hiring professional recruiters, can be implemented across teacher preparation programs to increase the number of Black educators in the profession and are not limited to teacher residencies. Thus, BEI offers a roadmap to successfully attract and retain Black educators who are prepared to better support Black students.

Conclusion

The dual nature of this mixed-methods study has generated several hypotheses that could be further studied using complementary methods. For instance, the preliminary quantitative evaluation indicates several promising strategies for recruitment and retention, such as stipends and paid recruitment professionals. Taking a deeper dive with case studies focused on the specific strategies related to recruitment and retention based on the context of each residency could yield further insights. Similarly, the qualitative analysis has revealed several promising strategies that interviewees found worthwhile, including for example high-touch, responsive recruitment practices, support for mentors and the centering of race and identity into the coursework and support provided by the residency program. Further quantitative research could determine the prevalence and effectiveness of these strategies.

References

- Allegretto, S., & Mishel, L. (2019). *The teacher weekly wage penalty hit 21.4 percent in 2018, a record high*. Economic Policy Institute & Center on Wage & Employment Demographics. <https://files.epi.org/pdf/165729.pdf>
- Amos, Yukari Takimoto. (2020). “Are you gonna take my job away?”: Latina bilingual education teachers' relationships with white colleagues in a White racial frame. *Urban Education*, 55(4) 640–666.
- Bland, P., Church, E., & Luo, M. (2014). Strategies for attracting and retaining teachers, *Administrative Issues Journal*, 4(1), 1-11. <https://dc.swosu.edu/cgi/viewcontent.cgi?article=1086&context=aij>
- Boston Plan for Excellence (2022). Boston teacher residency impact data: Boston Plan for Excellence. <https://www.bpe.org/statistics/>
- Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Educational Evaluation and Policy Analysis*, 31(4), 416– 440.
- Bristol, T. J., & Martin-Fernandez, J. (2019). The added value of Latinx and Black teachers for Latinx and Black students: Implications for policy. *Policy Insights from the Behavioral and Brain Sciences*, 6(2), 147–153. <http://dx.doi.org/10.1177/2372732219862573>
- Bristol, T.J., & Shirrell, M. (2018). Who is here to help me? The work-related social networks of staff of color in two mid-sized districts. *American Educational Research Journal*, 56, 869-898.
- Bristol, T.J., Wallace, D.J., Manchanda, S. & Rodriguez, A. (2020). Supporting Black male preservice teachers: Evidence from an alternative teacher certification program. *Peabody Journal of Education*, 95(5), 484-497,

<https://doi.org/10.1080/0161956X.2020.1828690>

Camera, L. (2022, March 2). *The new federal data shows pandemic's effect on teaching profession*. U.S. News. <https://www.usnews.com/news/education-news/articles/2022-03-02/new-federal-data-shows-pandemics-effects-on-teaching-profession>

Campoli, A. K. (2017). Supportive principals and black teacher turnover: ESSA as an opportunity to improve retention. *Journal of School Leadership*, 27(5), 675-700.
<https://doi.org/10.1177/105268461702700504>

Carroll, T.G. (2007). *Policy brief: The high cost of teacher turnover*. National Commission on Teaching and America's Future.
<https://nctaf.org/wpcontent/uploads/NCTAFCostofTeacherTurnoverpolicybrief.pdf>

Carver-Thomas, D., (2018). *Diversifying the teaching profession: How to recruit and retain teachers of color*. Learning Policy Institute.
<https://learningpolicyinstitute.org/product/diversifying-teaching-profession-report>

Carver-Thomas, D., & Darling-Hammond, L. (2017). *Why Black women teachers leave and what can be done about it*. In A. Farinde-Wu, A. Allen-Handy, & C.W. Lewis (Eds.), *Black female teachers: Diversifying the United States' teacher workforce* (pp. 59–184). https://learningpolicyinstitute.org/sites/default/files/product-files/Why_Black_Women_Teachers_Leave_CHAPTER.pdf

Chang, Sophia. (2021, November 19). City faces largest-ever lawsuit payout to NYC teachers affected by "discriminatory" certification tests. The Gothamist.
<https://gothamist.com/news/city-pay-largest-ever-settlement-nyc-teachers-affected-discriminatory-certification-tests>

Chu, Y. & Wang, W. (2022). The Urban teacher residency model to prepare teachers: A review of

- the literature. *Urban Education*, 1-13. <https://doi.org/10.1177/00420859221102976>
- Coffman, A.N. (2014). *Teacher Residencies: Redefining preparation through partnerships*. National Education Association. <https://www.nea.org/sites/default/files/2020-07/Teacher-Residencies-2014.pdf>
- Cohen, J., McCabe, E.M., Michello, N.M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, 111(1), 180–213. <https://doi.org/10.1177/016146810911100108>
- Cresswell, J.W., Plano, C.V.L, Gutmann, M.L., & Hanson, W.E. (2003). *Advanced mixed methods research designs*. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research*, 209-240.
- D'amico, D., Pawlewicz, R.J., Earley, P.M., & McGeehan A.P., (2017). Where are all the Black teachers? Discrimination in the teacher labor market. *Harvard Educational Review*, 97(1), 26–49. <https://doi.org/10.17763/1943-5045-87.1.26>
- Darling-Hammond, L. (2012). *Powerful teacher education: Lessons from exemplary programs*. Hoboken: John Wiley & Sons.
- Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of Teacher Education*, 61(1-2), 35–47. <https://doi.org/10.1177/0022487109348024>
- Darling-Hammond, L. (2012). *Powerful teacher education: Lessons from exemplary programs*. John Wiley & Sons.
- Darling-Hammond, L. (2000). How teacher education matters. *Journal of Teacher Education*, 51(3), 166–173. <https://doi.org/10.1177/0022487100051003002>
- DeAngelo, L., Franke, R., Hurtado, S. Pryor, J.H., & Tran, S. (2011). *Completing college: assessing graduation rates at four-year institutions*. Higher Education Research Institute,

UCLA. <https://heri.ucla.edu/DARCU/CompletingCollege2011.pdf>

Dee, T.S. (2004). Teachers, race, and student achievement in a randomized experiment. *The Review of Economics and Statistics*. 86(1) 195–210.

<https://doi.org/10.1162/003465304323023750>

Downey, D. B., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. *Sociology of Education*, 77(4), 267-282.

<https://doi.org/10.1177/003804070407700401>

Farinde-Wu, A., Griffen, A.J., & Young, J.L. (2019). Black female teachers on teacher Preparation and Retention. *Penn GSE Perspectives on Urban Education*, 16(1), 1–16.

<https://urbanedjournal.gse.upenn.edu/archive/volume-16-issue-1-spring-2019/black-female-teachers-teacher-preparation-and-retention>

Fiddiman, B., Campbell, C., Partelow, L. (2019, July 19). *Student debt: An overlooked barrier to increasing teacher diversity*. Washington: Center for American Progress.

https://americanprogress.org/wp-content/uploads/2019/07/Teachers-of-Color-Debt-Burden--1.pdf?_ga=2.153391352.1130413385.1653596165-35605132.1646838282

Flannery, M.E. (2021). *Retired teachers still struggling with student debt*. National Education Association, [https://www.nea.org/advocating-for-change/new-from-nea/retired-](https://www.nea.org/advocating-for-change/new-from-nea/retired-teachers-still-struggling-student-debt)

[teachers-still-struggling-student-debt](https://www.nea.org/advocating-for-change/new-from-nea/retired-teachers-still-struggling-student-debt)

Gais, T., Blackstrom, B., Malatras, J., Park, Y.J., (2018). *The state of the New York teacher workforce*. Rockefeller Institute of Government.

<https://files.eric.ed.gov/fulltext/ED605617.pdf>

Garza, R., & Harter, R. A. (2014). Perspectives from pre-service mathematics and science teachers in an urban residency program: Characteristics of effective mentors. *Education and Urban*

Society, 48(4), 403–420. <https://doi.org/10.1177/0013124514533989>

Gershenson, S., Hart, C. M. D., Lindsay, C.A., & Papageorge, N.W. (2021). *The long-run impacts of same-race teachers*, Working Paper 25254. National Bureau of Economic Research.

<http://www.nber.org/papers/w25254>

Gershenson, S., & Holt, S. B. (2015). The impact of teacher demographic representation on student attendance and suspensions. IZA Discussion Paper. 9554.

<http://dx.doi.org/10.2139/ssrn.2708367>

Gershenson, S., Holt, S. B., & Papageorge, N. W. (2016). Who believes in me? The effect of student–teacher demographic match on teacher expectations. *Economics of Education Review*, 52, 209–224. <https://doi.org/10.1016/j.econedurev.2016.03.002>

Graham, A., & Erwin, K. D. (2011). “I don’t think Black men teach because of how they get treated as students”: High-achieving African American boys’ perceptions of teaching as a career option. *The Journal of Negro Education*, 80(3), 398–416.

<http://www.jstor.org/stable/41341142>

Griffin, A., & Tackie, H. (2017). Through our eyes: Perspectives from Black teachers.

Phi Delta Kappan, 98(5) 36–40. <https://doi.org/10.1177/0031721717690363>

Grooms, A., Mahatmya, D. & Johnson, E. (2021). The retention of educators of color amidst institutionalized racism. *Educational Policy*, 35(2), 180-212.

<https://doi.org/10.1177/0895904820986765>

Guha, R., Hyler, M. E., Darling-Hammond, L. (2017). The teacher residency: A practical path to recruitment and retention. *American Educator*, 41(1) 31–34.

<https://learningpolicyinstitute.org/product/teacher-residency>

Hammerness, Williamson, P., & Kosnick, C. (2016). Introduction to the special issue on urban

- teacher residencies: The trouble with “generic” teacher education. *Urban Education* (Beverly Hills, Calif.), 51(10), 1155–1169. <https://doi.org/10.1177/0042085915618723>
- Hoffman, J. V., Wetzel, M. M., Maloch, B., Greeter, E., Taylor, L., DeJulio, S., Vlach, S. K. (2015). What can we learn from studying the coaching interactions between cooperating teachers and preservice teachers? A literature review. *Teaching and Teacher Education*, 52, 99–112. <https://doi.org/10.1016/j.tate.2015.09.004>
- Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3) 499-534. <https://doi.org/10.3102/00028312038003499>
- Ingersoll, R. M., Merrill, L., & May, H. (2014). What are the effects of teacher education and preparation on beginning teacher attrition? Philadelphia, PA: University of Pennsylvania, Consortium for Policy Research in Education. https://www.cpre.org/sites/default/files/researchreport/2018_prepeffects2014.pdf
- Ingersoll, R., & May, H. (2011). *Recruitment, retention and the minority teacher shortage. consortium for policy research in education.* https://repository.upenn.edu/gse_pubs/226
- Ingersoll, R., Merril, E. & May, H. (2014). *What are the effects of teacher education and preparation on beginning teacher attrition? Research Report (#RR-82).* Philadelphia: Consortium for Policy Research in Education, University of Pennsylvania. https://www.cpre.org/sites/default/files/researchreport/2018_prepeffects2014.pdf
- Ingersoll, R., Merrill, E., Stuckey, D., Collins, G., & Harrison, B. (2021). The demographic transformation of the teaching force in the United States. *Education Science*, 11(5), 234. <https://doi.org/10.3390/educsci11050234>
- Ingersoll, R.M., Merrill, E., Stuckey, D., & Collins, G. (2018, October). *Seven trends: The*

transformation of the teaching force (Updated). CPRE Research Reports.

https://repository.upenn.edu/cpre_researchreports/108

Irwin, V. et al., (2021). *Report on the condition of education 2021 (NCES 2021-144)*.

U.S. Department of Education. National Center for Education Statistics.

<https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021144>

Jones, R., Holton, W., & Joseph, M. (2019). Call me MISTER: A Black male grow your own program. *Teacher Education Quarterly*, 46(1), 55–68.

<https://www.jstor.org/stable/26558182>

Lee, A., Henderson, Dawn, X., Corneille, M., Morton, T., Prince, K., Burnet, S., & Roberson, T.

(2022). Lifting Black student voices to identify teaching practices that discourage and encourage STEM engagement: Why #Black teachers matter. *Urban Education*, *Online First*, 1–33.

<https://doi.org/10.1177/00420859211073898>

Lee, S. W. (2018). Pulling back the curtain: Revealing the cumulative importance of high-

performing, highly qualified teachers on students' educational outcome. *Educational Evaluation and Policy Analysis*, 40(3), 359–381.

<https://doi.org/10.3102/0162373718769379>

Madkins, T. C. (2011). The Black teacher shortage: A literature review of historical and contemporary trends. *The Journal of Negro Education*, 80(3), 417–427.

<http://www.jstor.org/stable/41341143>

Matsko, K.K., Ronfeldt, M., Nolan, H.G. (2022). How different are they? Comparing teacher preparation offered by traditional, alternative, and residency pathways. *Journal of Teacher Education*, 73(3).

<https://doi.org/10.1177/00224871211015976>

Miller, B. (2017, October 16). *New federal data show a student loan crisis for African*

American borrowers. Center for American Progress.

<https://www.americanprogress.org/issues/education-postsecondary/news/2017/10/16/440711/new-federal-data-show-student-loan-crisis-african-american-borrowers/>

Mitchell, A. (1998). African American teachers: Unique roles and universal lessons.

Education and Urban Society, 31(1), 104–122.

<https://doi.org/10.1177/0013124598031001008>

Mosley, M. (2018). The Black teacher project: How racial affinity professional

development sustains Black teachers. *Urban Review*, 50, 267-283.

<https://doi.org/10.1007/s11256-018-0450-4>

NAEP. (2015). *Mathematics and reading assessments*. The Nation's Report Card.

https://www.nationsreportcard.gov/reading_math_2015/#?grade=4

National Center for Education Statistics. (2022). *Characteristics of Public School*

Teachers. Condition of Education. U.S. Department of Education, Institute of

Education Sciences. <https://nces.ed.gov/programs/coe/indicator/clr>.

Osler, J. (2016). *Beyond brochures: Practicing "Soul Care" in the recruitment of teachers of*

color. San Francisco: San Francisco Teacher Residency. [http://www.westonefnd.org/wp-](http://www.westonefnd.org/wp-content/uploads/2016/12/SFTR-SoulCare-Final1.pdf)

[content/uploads/2016/12/SFTR-SoulCare-Final1.pdf](http://www.westonefnd.org/wp-content/uploads/2016/12/SFTR-SoulCare-Final1.pdf)

Papay J. P., West, M.R., Fullerton, J. B., & Kane, T.J. (2012). Does an urban teacher residency

increase student achievement? Early evidence from Boston. *Educational Evaluation*

and Policy Analysis, 34(4), 413–434. <https://doi.org/10.3102/0162373712454328>

Partelow, L., Spong, A., Brown, C., & Johnson, S. (2017, September 14). *America needs more*

teachers of color and a more selective teaching profession. from

<https://www.americanprogress.org/issues/education-k-12/reports/2017/09/14/437667/america-needs-teachers-color-selective-teaching-profession/>

- Rockman, S., Sloan, K., Allen, A., Blazeovski, J. & Carson, F. (2018). *New visions for public schools – Hunter College urban teacher residency project. A different, more durable model*. http://rockman.com/docs/downloads/TQPXCombinedReport_10.23.18-1.pdf
- Roegman, R., Pratt, S., Goodwin, A. L., & Akin, S. (2017). Curriculum, social justice, and inquiry in the field: Investigating retention in an urban teacher residency. *Action in Teacher Education*, 39(4), 432–452. <https://doi.org/10.1080/01626620.2017.1300956>
- Ronfeldt, M., (2021). *Links among teacher preparation, retention, and teaching effectiveness*. National Academy of Education. <https://3e0hjncy0c1gzjht1dopq44b-wpengine.netdna-ssl.com/wp-content/uploads/2021/09/NAEd-EITPP-Paper-Ronfeldt.pdf>
- Ronfeldt, M., & Campbell, S. L. (2016). Evaluating teacher preparation using graduates' observational ratings. *Educational Evaluation and Policy Analysis*, 38(4), 603–625. <https://doi.org/10.3102/0162373716649690>
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1),4–36. <https://doi.org/10.3102/0002831212463813>
- Saldana, J. (2016). *The coding manual for qualitative researchers*. London: Sage.
- Samuels-Watkins, A. (2019). Black certified educators' lived experiences seeking employment in Connecticut's public education system. [Unpublished doctoral dissertation]. University of New England.

- Sanders, W.L., & Rivers, J.C. (1996). *Cumulative and residual effects of teachers on future student academic achievement*. University of Tennessee Value-Added Research & Assessment Center.
- Schaeffer, K. (2021, December 10). *America's public-school teachers are far less racially and ethnically diverse than their students*. Pew Research. <https://www.pewresearch.org/fact-tank/2021/12/10/americas-public-school-teachers-are-far-less-racially-and-ethnically-diverse-than-their-students/>
- Scott, L., & Alexander, Q. (2019). Strategies for recruiting and retaining Black male special education teachers. *Remedial and Special Education, 40*, 230–247.
<https://doi.org/10.1177/0741932517732636>
- Silva, T. (2014). *Teaching residency programs: A multisite look at a new model to prepare teachers for high-need schools*. National Center for Education Evaluation and Regional Assistance.
- Simon, N. S., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record, 117*(030308), 1–36.

- Smith, T. (2021, September 27). *Racial wealth gaps in teaching won't close without bold economic policies*. Prism Reports. <https://prismreports.org/2021/09/27/racial-wealth-gaps-in-teaching-wont-close-without-bold-economic-policies/>
- TNTP: The New Teacher Project. (2018). *The opportunity myth*.
https://tntp.org/assets/documents/TNTP_The-Opportunity-Myth_Web.pdf
- U.S. Department of Education. (2022, April 30). *Teacher shortage areas*.
<https://tsa.ed.gov/#/reports>
- U.S. Department of Education. (2021a). *2021 Title II Report National Teacher Preparation Data*. <https://title2.ed.gov/Public/Home.aspx>
- U.S. Department of Education. (2021b). *Education in a pandemic: The disparate impacts of COVID-19 on America's students*. Office for Civil Rights.
<https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.pdf>
- Wallace, D., & Gagen, M. (2019). African American males' decisions to teach: Barriers, motivations, and supports necessary for completing a teacher preparation program. *Education and Urban Society*, 52(3), 415–432.
<https://doi.org/10.1177/0013124519846294>
- Zeichner, K. M. (1993). Traditions of practice in U.S. preservice teacher education programs. *Teaching and Teacher Education*, 9(1), 1–13.

Comparison of Three Title 1 Schools in Urban Intensive and Urban Emergent Settings

Catherine Coffey, Jason Smith, Kara Woodley

Texas A & M University

Abstract

Since the early 2000s, suburban families have migrated in ever greater numbers to urban areas creating a myriad of ripple effects to those already living in those same urban areas.

Gentrification has exacerbated the already fragile social, economic, and educational situation common throughout large U.S. cities (Florida, 2017). Skyboxification is also occurring as enclaves of affluent, mostly White, people group together while alienating those from lower socioeconomics means (Sandel, 2013). These social fissures create pockets of communities where Title 1 schools abound, further perpetuating the inequalities overtaking urban communities throughout the nation.

Keywords: skyboxification, Title 1 Schools, urban high schools

Comparison of Three Title 1 Schools in Urban Intensive and Urban Emergent Settings

Since the early 2000s, suburban families have continued to migrate in ever greater numbers to more urban areas creating a myriad of ripple effects to those already living in those same urban areas. Phenomena, such as gentrification, have exacerbated the already fragile social, economic, and educational situation common throughout large U.S. cities (Florida, 2017). Furthermore, within these metropolitan areas, another issue has evolved: skyboxification. This term refers to enclaves of affluent, mostly White, people grouping together while alienating those from lower socio economics means. (Sandel, 2013). These social fissures create pockets of communities where Title 1 schools abound, further perpetuating the inequalities overtaking urban communities throughout the nation. In general, these schools, in predominantly poorer areas, perform lower on standardized tests than non-urban schools; however, there are outliers which contradict this common misconception. In his book *The New Urban Crisis*, Richard Florida (2017) explains that as poverty rates rise in the suburbs, Title 1 schools are no longer limited to urban areas. Therefore, there is more to discover about the changing dynamics of Title 1 schools inside and outside urban areas.

Research Purpose and Questions

To better understand the reality of the situation, we identified three Title 1 high schools in Texas and studied census data, zoning maps, school accountability reports, and student and faculty demographics in order to help us compare the situation of Title 1 schools in larger metropolitan areas with traditionally suburban areas. By using this information, we seek to formulate community action plans that will have a transformative impact on each high school as the anchor in their community. The stakeholders connected to this research are each school's community members at large, teachers, school staff, community business owners, students, and

families. An important piece of our research study is the explanation of the components and purpose of the A-F accountability ratings for schools in Texas. Our investigative purpose is to discern whether or not there are any significant differences between Title 1 high schools located in the suburbs and Title 1 high schools located in urban areas. We explore this topic and seek answers to the following research questions:

1) How do the A-F accountability rating components for Title I high schools in a suburban area in central Texas differ from the A-F accountability rating components for Title I high schools in urban areas of Houston and Austin?

2) Do teacher demographics and years of experience differ in the Title I high schools located in suburbs as compared to the Title 1 high schools in urban areas?

3) Do the dropout and college, career, and military readiness (CCMR) rates differ in Title 1 schools located in suburbs compared to those in urban areas?

Results and Discussion

Zoning and Skyboxification

This research study purposefully focused on Title I schools in three different cities of Texas: Bryan/College Station, Austin, and Houston. The selection of these cities, and specifically High School 1, High School 2 and High School 3, lies in the desire to try and correlate their school ratings with zoning data provided by the program Census Block Group Map used by the Texas Education Agency (TEA). Each of the high schools serves a student population where the majority of students identify as Hispanic. Using the data from Census Block Group Map with the theory of skyboxification as a guide, several interesting data were discovered. Overall, two of the three schools have much smaller populations within their block than neighboring zones. Additionally, the only school to have a greater number of Hispanic

people compared with White was found in High School 3s, which also counted a higher number of renters (616) than homeowners (92) (Census Block Group Map, 2021). The data, when considered with the other two schools, create interest in that this high school received the lowest score of the three selected schools in this study, a 77 (C) (Texas Education Agency, n.d.). In comparison, both High School 1 and High School 2 received higher scores, 78 and 86 respectively, each reporting a higher White population than Hispanic as well as larger numbers of homeowners compared to renters.

The experience of isolation among these schools and adjoining zones becomes even more exacerbated when the infrastructural components are considered. Each of the districts share the characteristic of being physically separated from at least one of the neighboring zones by highways, waterways or another type of geography or infrastructure. The result of these elements only sustain the pre-existing racial and class barriers created by society. Using theories from Florida (2017) about patchwork cities and the phenomenon of skyboxification coined by Sandel (2013), a picture begins to emerge of how zoning plays a major role in affecting the outcome of a school's evaluation by the Texas Education Agency. This situation harkens to the works of Robert Ezra Parks, Ernest W. Burgess and Roderick D. McKenzie, their thoughts on how cities are products of human nature, like "little worlds which touch but do not interpenetrate," (Florida, 2017, p. 125-26). The three schools chosen for this study reflect this thinking and demonstrate how far-reaching the classification of people by their income and class exacerbates the already existing systematic income inequality, social discrimination, and racism prevalent in education and the American society as a whole.

Texas Accountability Ratings

In 2019, the 85th Texas legislature passed House Bill 22 to establish how schools in Texas would be held accountable for student learning. This accountability measure, commonly called A-F accountability measures three domains: closing the gaps, school progress, and student achievement (Texas Education Agency, n.d.). Each school district will receive an A, B, C, D, or F rating based on performance in each of the three domains, and then also receive one collective performance rating. Similarly, schools within each district will also receive an overall performance rating of A, B, C, D, or F rating and a rating based on performance in each domain. This new accountability process in Texas was developed to improve the understanding of the school accountability system by stakeholders such as parents/guardians, community members, and school staff.

For schools, an overall accountability rating is based on the better performance of achievement or progress in student achievement and student progress, which accounts for 70% of the school's rating. Student achievement is weighted 100% on STAAR achievement for elementary schools. For high schools, student achievement is calculated by 40% STAAR achievement, 40% college, career, and military readiness, and 20% graduation rate. Student progress is determined in two parts: academic growth and relative performance. Academic growth is based on a student's STAAR scores from year to year and relative performance is based on the performance of that school based on schools with a similar socioeconomic status.

The remaining 30% of a school's accountability rating is based on closing the gaps. Closing the gaps looks at student groups such as former special education, current special education, economically disadvantaged, race, ethnicity, continuous enrollment vs. mobility, and English language learners. In elementary schools, this domain is broken down into four parts

with weighted percentages: academic achievement, academic growth status, English language proficiency, and student achievement domain score. In high school (9th-12th grades), there are also four parts with weighted percentages: academic achievement, federal graduation status, English language proficiency, and college, career, and military readiness score.

The district accountability process is similar to the school's accountability process, but on a larger scale and it contextualizes all schools within a school district. The highest score a school or district can receive overall and on each component is A and the lowest score is F. Schools or districts receiving an A, B, or C are considered to be meeting some or all standards as a whole but may need some support to continue their efforts and resolve deficiencies. Schools or districts that receive a D or F will be flagged for needing significant support from the district and state level education agencies to make changes that will increase student achievement.

In this collaborative study, we researched and compared the accountability ratings for two urban high schools in Texas: High School 2 in Austin, TX and High School 3 in Houston, TX with one suburban high school: High School 1 in Bryan/College Station, Texas. Milner (2012) framework classified urban education within a framework that defined schools/districts as urban intensive, urban emergent, or urban characteristic. He noted that urban intensive schools were in large cities with over 1 million people. High School 3 in Houston, TX would be classified as urban intensive according to Milner (2012) with the Houston metro population being over 7 million people. High School 2 in Austin, TX would also be classified as urban intensive, given that the population of the Austin metro area is over 2.1 million people. High School 1 in a metro area in central Texas would be classified as urban characteristic within Milner's (2012) framework, due to the population density and characteristics of the school and city. The 2019 population of the metro area in central Texas was just over 84,000 people.

Comparison of Schools

The following tables present the accountability ratings for each school along with student and teacher demographic data. The 2018-2019 data were collected as that was the last time the state performed accountability ratings due to the COVID-19 pandemic.

Table 1.

2018-2019 Student Population Demographics

	High School 1	High School 2	High School 3
Accountability Rating	C	B	C
Number of Students	2,374	1,461	1,685
Economically Disadvantaged	65.2%	67%	93%
Ethnicity			
African American	18.2%	7.3%	9%
Hispanic	53.4%	72.1%	90%
White	26.1%	16.7%	0.9%
Asian	0.6%	1.2%	0.1%
American Indian	0.1%	0.1%	0.2%
Pacific Islander	0.2%	0.1%	0%
Two or More Races	1.4%	2.6%	0.3%
Annual Dropout Rate	1.5%	0.3%	3.9%
College/Career/Military Ready	55.6%	75.3%	58.5%

Table 2.
2018-2019 Teacher Population Demographics

	High School 1	High School 2	High School 3
Number of Teachers	166	104	98
Experience			
Beginning	11.9%	10.6%	7.2%
1-5 years	28.6%	34.5%	28.8%
6-10 years	11.6%	19.2%	12.3%
11-20 years	26.6%	21.5%	33.3%
More than 20 years	21.3%	14.4%	18.4%
Ethnicity			
African American	7.4%	4.8%	26.6%
Hispanic	11.8%	25.2%	27.4%
White	77%	65.2%	30.7%
American Indian	0%	0%	1%
Asian	2.1%	2.9%	12.3%
Pacific Islander	0%	0%	0%
Two or More Races	1.6%	1.9%	2%
Highest Degree Held			
None	3.8%	6%	4.1%
Bachelors	65.7%	82%	63.7%
Masters	29.2%	16.2%	30.2%
Doctorate	1.2%	0%	2%

Per Table 1, each of these campuses either received a B or C overall rating for accountability. Interestingly, High School 1 has the largest school population of the three schools we are comparing but is located in the city with the smallest population. We consider High School 1 to be in a suburban (or urban characteristic) area for the purposes of comparison, even though the larger metro area in central Texas is beginning to operate as a larger urban emergent setting with context to population density, traffic, and urbanization. In the 2018-2019 accountability rating system, High School 1 received a C in student achievement, a B in school progress, and C in closing the gaps.

In comparison to High School 1, the other two schools in our study had similar population sizes. High School 2 had a student population of 1,461 in 2018-2019 and received a B overall rating with scoring a B for all three measured areas: student achievement, B in school progress, and a B in closing the gaps. High School 3 in Houston, TX, the largest urban area in our study, had a student population of 1,685 and received a C overall accountability rating. The C rating was given as the breakdown included a C for student achievement, a B for school progress, and a C for closing the gaps.

In analyzing these ratings, it is interesting that the school in the mid-sized urban metro of Austin had the highest rating of the three urban schools we researched. They also had the lowest annual dropout rate (0.3%) and the highest college, career, military readiness (CCMR) rate of the three schools. Both High School 1 and High School 3 had similar CCMR rates, but High School 3 had the highest overall dropout rate of 3.9% of these three urban schools. When comparing the teacher populations at all three high schools, there were two major differences. High School 1 has an overwhelmingly White teacher population (77%) compared to 65.2% at High School 2 and 30.7% at High School 3. High School 3 had the most diverse and more evenly dispersed

teacher population by ethnicity. The second difference is the amount of teachers who hold master's degrees. High School 1 and High School 3 were similar with 29.2% and 30.2% respectively, but High School 2 lagged behind with only 16.2% of teachers holding a master's degree. We speculate the difference could be due to a higher number of faculty that come from trade industries to teach courses that are part of the early college curriculum.

Potential Solutions

The analysis of our data with these three high schools helped us pose a question about the programming that is happening at High School 2 in Austin that promotes the highest graduation and college, career, and military readiness (CCMR) percentages while also having the lowest dropout rates of these three high schools. All three high schools in our study have Career and Technical Education (CTE) programming that gives opportunities for students to train in vocational and technical trades and potentially obtain a technical certificate or good paying job at the end of the program. We posit that the quality of the CTE programming and the AVID¹ programming at High School 2 available to students looking for a post-secondary vocational or career certification track allows students to find their niche to pursue their goals within the urban setting of Austin. Cass (2018) notes "CTE, along with programs like apprenticeships aim to smooth the transition for young people into good jobs that do not require college degrees" (p. 10). Perhaps it is the CTE programming that is the draw for students at High School 2 to stay in school and complete programming and certificates that will prepare them for post-secondary success.

In comparison, High School 3 in Houston is a magnet school for maritime studies and has available CTE options, but this school has the lowest CCMR rate and the highest dropout

¹ AVID - Advancement Via Individual Determination programming has the mission to close opportunity gaps in K-12 schools nationwide.

rate of the three urban high schools in our study. High School 1 in Bryan/College Station, TX has similar CTE programming available to students as the other two high schools in our study but has the lowest CCMR rate of the three schools in our study while having the second highest dropout rate of the three schools in our study. Bateman et al. (2019) shares data from a Brookings research study that 18-24 years old's who are not in school and have no college degree make up 7.1 million people of the U.S. population. Only 54% of low-wage earners in this cluster have a high school diploma. When students drop out or do not graduate with college, career, and military readiness skills, they are less likely to earn a livable wage. The data leads us to the conclusion that one probable solution for improving the graduation, CCMR, and dropout rates for High School 3 and High School 1 would be to model their CTE and vocational programming after what High School 2 has available to their students. Students who have highly interesting and readily available vocational and technical programming to meet their postsecondary goals and interests are more likely to stay in school and complete the needed courses to be eligible for a trade or career that results in earning a livable wage upon exiting high school.

As Warren (2005) showed, one of the most important ways schools can build social capital within the community lies in greater parental involvement and buy-in. All parents, despite their background or socioeconomic status, want to be heard by their children's schools. When they don't feel they have a voice, they do not participate or feel they are appreciated by the teachers, administrators, and other local and district officials (Subban, 2007). As with other improvements via their programs, High School 2 also provides a great example of how a school, like those in Warren's (2005) article, can build social capital and, therefore, strong community relationships. In many ways, High School 2 mirrors several of the aspects Warren (2005)

detailed of successful schools. The school has established six “Signature Programs” all of which are designed to make connections between school stakeholders, students, and parents. Two of these programs focus on social and emotional learning and Advancement Via Individual Determination (AVID). AVID, a program designed to reach students at the elementary and high school levels, teaches students to learn and grow good habits while challenging themselves inside and outside of school (Austin ISD, 2021). Additionally, High School 2 focuses on supporting their relationships with parents and students outside of school by offering after-school meals, establishing, and maintaining community partnerships, and a mental health center based in the school itself. All of these programs echo some of the very same opportunities Warren (2005) discussed at Camino Nuevo Charter School and Quitman Street Community School.

High School 2’s demographics reflect the same seen in High School 1 and High School 3 yet neither school can profess the same level of community partnership nor parental involvement. Therefore, we recommend that High School 1 and High School 3 study the model set forth by High School 2. High School 1 has no published information regarding parental involvement or initiatives to create community partnerships. In contrast, High School 3 does promote programs for family connection programs; however, none of these programs show the same level of success as those at High School 2. Considering this, they could learn from High School 2 about better ways of reaching community members and fostering more involvement and investment in the students attending the school. By connecting with parents and community partners, these schools would be able to create more robust and sustaining relationships where all stakeholders inside and outside the school would benefit, resulting in a higher school rating and student success rate.

Conclusion

While there were a few notable differences in the data, due to the limited time and scope of the investigation, it was challenging to draw definitive conclusions. High School 1 is a classic example of an urban emergent campus. Out of the three schools, it had the most diverse student population, least diverse teacher population, and lowest CCMR percentage, scoring close to High School 3 which has a greater percentage of economically disadvantaged and Hispanic population. Both schools seem to be struggling to meet the needs of their learners based on the accountability ratings and CCMR percentages. Expanding CTE programs and improving parent and community partnerships are two ways this can be addressed. High School 2 proves to be a good model for other schools in both of those areas. As the term urban broadens to describe schools with most students of color, low socioeconomic status, high numbers of English learners, and low performance, regardless of geographical location (Milner, 2012; Welsh & Swain, 2020), it is imperative that future research takes a deeper, more exhaustive approach in discerning the factors that make certain Title 1 schools more successful than others.

References

Austin ISD. (n.d.). *Crockett early college high school*.

<https://www.austinisd.org/schools/crockett>.

AVID®. (n.d.). *Avid® / closing the opportunity gap in education*. <https://www.avid.org/>.

Cass, O. (2018, July 31). *How the other half learns: Reorienting an education system that fails most students. report*. Manhattan Institute for Policy Research.

<https://eric.ed.gov/?id=ED589831>

Census Block Group Map. (n.d.). *Census block group map with arcgis web application*.

<https://tea-texas.maps.arcgis.com/apps/webappviewer/index.html?id=90eaceb0831a4eda96434231e652591b>.

Florida, R. (2017). *The new urban crisis: How our cities are increasing inequality, deepening segregation, and failing the middle class—and what we can do about it*. Basic Books.

Milner, H.R., IV. (2012). But what is urban education? *Urban Education*, 47(3), 556-561.

Ross, M. & Bateman, N. (2019). *Brookings-Metro_low-wage-workforce_Ross-Bateman*.

https://www.brookings.edu/wp-content/uploads/2019/11/201911_Brookings-Metro_low-wage-workforce_Ross-Bateman.pdf.

Sandel, M. J. (2013). *What money can't buy: The moral limits of markets*. Penguin Books.

Subban, J. E. (2007). Adult literacy education and community development. *Journal of Community Practice*, 15(1-2), 67–90. https://doi.org/10.1300/j125v15n01_04

Texas Education Agency. (n.d.). *A-F Resources*. <https://tea.texas.gov/texas-schools/accountability/academic-accountability/a-f-resources>

Texas Education Agency. (n.d.). *Texas school report cards*. <https://txschools.gov/>.

Warren, M. (2005). Communities and schools: A new view of urban education reform. *Harvard Educational Review*, 75(2), 133–173.

<https://doi.org/10.17763/haer.75.2.m718151032167438>

Welsh, R., & Swain, W. (2020). (Re)defining urban education: A conceptual review and empirical exploration of the definition of urban education. *Educational Researcher*, 49(2), 90-100.

Comparative Analysis: Defining Urban Education, Funding Inequities, and Solutions

Kara Woodley

Department of Teaching, Learning, and Culture, Texas A&M University

Abstract

This work explores Milner's (2012) definition of urban education in his editorial *But, what is urban education?* and offers a comparative analysis of how Warren (2005) and Welsh & Swain (2020) contrast Milner's definition of urban education. I also discuss how stakeholders in urban communities may begin to define and interpret the implications for educational inequities in urban schools. Lastly, I suggest solutions for urban education inequities in funding by connecting these articles to Richard Florida's (2017) book, *The New Urban Crisis*.

Keywords: urban education, urban communities, educational inequities

Comparative Analysis: Defining Urban Education, Funding Inequities, and Solutions

Milner's (2012) definition of urban education is contextualized with the location and population density where urban schools and districts are located. In his editorial, Milner (2012) encourages researchers and practitioners to consider his framework as a classification and definition of urban education for improving the outcome for students in urban schools (p. 560). He defines urban education in a framework with three tiers beginning with the term *urban intensive* to describe schools and districts that are in large metropolitan areas in the United States like Atlanta, Chicago, Los Angeles, and New York because they meet the population size of over 1 million people and the density of a large metropolitan city. Milner (2012) discusses that because of the sheer size of these cities, there is an inherent difficulty in providing the appropriate and necessary resources to the people who need them (p. 559). Further in his framework, Milner (2012) defines an *urban emergent* school or district is a school in a large city like Nashville, TN, Austin, TX, Charlotte, N.C., and Columbus, Ohio but does not meet a population of 1 million people or more, but still has a large density (p. 559). He states that they do not meet the "magnitude of challenges" that *urban intensive* schools do (p. 559). Lastly, Milner (2012) describes that a school defined as *urban characteristic* is located in a "big or mid-sized city but might be starting to experience some of the challenges associated with *urban intensive* or *urban emergent* districts" (p. 559).

Milner (2012) states "urban education typically has some connections to the people who live and attend school in a social context, the characteristics of those people, as well as surrounding community realities where the school is situated" (p. 558). Milner (2012) offers that not all urban districts and the people in them are bad (p. 558). Stating that an urban district is

“bad” is a racist and classist description of urban education that undermines the varied moving parts and nuances of what makes urban districts tick.

Warren’s (2005) article has a similar foundational concept with Milner’s (2012) editorial as they both discuss the idea that urban education needs reform. Warren (2015) discusses in *Communities in Schools, A New View of Urban Education* three types of community-school collaborations to provide solutions and processes for anchoring the school as an institution within the community to help urban schools and the communities around them succeed in partnerships with one another: “the Service Model, the Development Model, and the Organizing Model” (p. 139). These school-community partnership solutions are in specific urban metro areas around the country, and each has a unique concept that works for the community around it and helps anchor the school within the community. In contrast with Milner’s (2012) editorial, Warren (2005) encourages researchers and practitioners to consider the impact of leveraging school-partnerships within the communities where they are located to improve student outcomes in urban schools.

Welsh & Swain (2020) consider and expand on Milner’s (2012) typology of defining urban education through location and population density when they discuss the importance of including empirical data to define urban education issues. With regard to the empirical data, Welsh & Swain (2020) authors offer a helpful multi-faceted definition to support a solution focused context for urban education when they state, “urban education can be defined as a continuum of conditions dependent on the characteristics, challenges, and context” (p. 91). Their framework begins with offering this first defining characteristic: “urban education connotes dynamic and complex rather than static and monolithic settings, with communities that continue to be shaped by the vestiges of a discriminatory and oppressive past” (p. 97). Second, Welsh &

Swain (2020) state that “urban education can be defined as a continuum of conditions dependent on the characteristics, challenges, and context” (p. 97). Welsh & Swain (2020) offer a third defining characteristic for urban education: “urban education is centrally defined by the presence of educational inequality” (p. 97). Fourth, Welsh & Swain (2020) discuss rejecting the deficit perspective while focusing on the idea “that considerable assets exist within “urban” communities that scholars have yet to fully discuss or empirically document” (p. 99). All four of these definitions extend Milner’s (2012) charge in his editorial when he encourages researchers and practitioners to consider his framework and apply it to focus areas in urban education including, “curriculum and instruction; counseling and social services; educational policy; equity; leadership; psychology and human development; special education; and teacher education” (p. 560).

Defining anything in education without considering proper context, nuances, cultural needs, and economic structures will cause any solution-seeking process to sabotage itself from within. Milner (2012) poses a question about how we “construct knowledge, through common language and definitional categorization” about urban education (p. 558). His question falls in line with thoughts from Welsh & Swain (2020) that “urban education rejects deficit perspectives and contends that considerable assets exist within “urban” communities that scholars have yet to fully discuss or empirically document” (p, 99). Researchers and academic practitioners must commit to discovering the assets and cultural nuances as solutions are developed to strengthen urban education.

Urban Education Stakeholders

Students and Community

Welsh & Swain (2020) cite Buendía (2011) with the quote “that urban signifies not just the place but also denotes particular meanings of “urban” populations and highlights that place and people have been conflated in the definition of urban education” (p. 94). Warren’s (2005) framework about community-oriented school relationships in urban education discusses how the stakeholders in each of the school communities: community members, parents/guardians, students, school faculty staff, and teachers all benefit from the social capital and relational power that is shared in the relationships among them. When resources, social capital, and relational power are shared, the students are the greatest beneficiaries. Warren’s (2005) example of The Quitman School’s transformation to a community anchor that provides food, health care, and other tangible, physical needs is an exceptional example of how urban education stakeholders benefit through intentional partnerships. All stakeholders - students, families, business owners, and community residents benefitted from The Quitman School transformation in the mid 1990s. Considering Maslow’s (1943) hierarchy of needs, when physical deficiency needs are met, students can ultimately succeed in their academic, extracurricular fine arts, and sports programs. The urban community stakeholders, including business owners and community residents all benefit from residual positive effects when the student and family needs are met.

Preservice teachers

Welsh & Swain (2020) discuss that Jacobs (2015) found that deficit perspectives in the conceptualization of urban schools were common among teacher learners (preservice teachers) (p. 94). When stakeholders such as preservice teachers share a negative perspective on urban

education perpetuated by deficit-oriented thinking, the cycle of negativity continues. Jacobs (2015) shares the idea that perceptions around urban education are “largely based on the issues and challenges facing these districts.” When new and preservice teachers are not challenged in their deficit-oriented thinking about urban education they will not see that urban districts and schools have positive, unique, and cultural aspects to them that are left undiscovered or underutilized. As a result, every stakeholder will suffer from the lack of fresh and new ideas from preservice teachers who have the potential to not only champion the unique aspects of a school or district, but also offer ways to consider challenges that can arise in urban education.

School administrators, teachers, and parents/guardians

In discussing the framework for school-community partnerships, Warren (2005) provides a unique way for all stakeholders to benefit through intentional partnerships championed by the school administrators as explained in how the “Industrial Areas Foundation” (IAF) (p. 28). As school leaders commit to the partnerships with other community stakeholders, the result is improved outcomes for their students, teachers, and parents/guardians. Warren (2005) states “It turns out that many school principals proved willing to join the Alliance because they saw the IAF as an effective organization with a willingness to collaborate and compromise” (p 28).

Milner (2012) discusses in his editorial his conversation with a school’s superintendent as they enter their “urban” school in the district. Stakeholders include school administrators who view urban education as a problem to be solved rather than an opportunity to explore and leverage the aspects that make each district or school unique. This harmful view perpetuates deficit-oriented thinking about urban education that inevitably filters down to the teachers. Milner (2012) further states that the instructional leaders believe that parental involvement was

problematic in that school (p. 557). Through the language used, Milner's (2012) conversation reveals that the administrator and school leaders have racial, economic, and academic biases that have negatively impacted the parent/guardian and student stakeholders in that school to a marked degree.

Solutions to Improve Urban Education Funding Inequality

Welsh & Swain (2020) state:

“urban education is centrally defined by the presence of educational inequality.

Educational inequality exists in varying degrees across all districts. Educational inequality is the result of the interplay of outside of school factors and inside of school factors that shape educational opportunities and experiences as well as learning environments. Thus, if urban education speaks to educational inequality and we accept that these disparities in opportunities and outcomes are the results of a broad range of sociological factors, then one cannot discuss educational inequality without considering social and economic inequality” (p. 97).

Welsh & Swain's (2020) idea that educational inequality cannot be discussed without considering social and economic inequalities applies to the issue of school funding in urban education. The majority of school funding in the United States comes from state and local revenue sources. Data from the National Center for Education Statistics notes that in the school year 2017-2018, only eight percent of funding for schools in the United States came from federal sources. 47% came from state sources and 45% came from local sources like property taxes (NCES, 2019). The results of the education inequality will always affect students the most.

Policymakers and lawmakers compound the issue of the lack of school funding when it is not a priority for their election or re-election. One solution to solve a lack of school funding would be for lawmakers and policymakers to commit to leveling allocations for educational resources and teacher salaries across districts. This will give students in low-income urban areas the same opportunity to have top-tier learning resources, teachers, and technology as the students in wealthy schools in urban or suburban areas. Eliminating the funding gap for learning resources will raise the bar for equity in the poorest districts across the county, regardless of their location or population density as Milner (2012) classifies urban education in his framework.

Cortez (2009) offers the idea that “Inequity in public school funding in Texas is due to the state’s failure to neutralize great differences in taxable property wealth (and referred to as “district wealth”), where the poorest school districts have about \$10,000 of taxable property per student, while the wealthiest have access to over a million dollars per student” (p. 2). In Texas as in many other states, school buildings and facilities are largely funded by local and state revenues. All across the state, school buildings and resources are significantly inequitable as some districts in the Dallas-Fort Worth metroplex can spend 5 million dollars for a new football stadium while schools in central Texas and the Rio Grande Valley still have inaccessible school buildings to people with disabilities and have 50-year-old chalk boards on the walls. Money strongly influences policies and until our government officials make education a priority for all and not just for some, students in the poorest districts will continue to suffer the inequalities of the funding gap.

Outside of policymakers making school funding a priority for increasing state and local revenue for schools, another solution to solve the lack of funding for urban schools is to use a community sponsorship concept that include co-funding by corporate foundations and religious

organizations and then leveraging funding and social capital from community stakeholders as explained in Warren (2005) in *The Development Model: Community Sponsorship of schools in the urban area of Los Angeles*. Some schools in this model are charter schools and some are semiautonomous (Warren, 2005, p 146). The Camino Nuevo Charter Academy is a good example of how all stakeholders can benefit when the community comes together to solve not only a lack of funding and resources, but to increase parent and community involvement.

Another solution to provide an increase in school funding in urban areas is to provide a tax write off for large privately held companies in an urban area when they fund a significant percentage of the public schools in their city. This would require lawmakers to encourage large corporations to give tax breaks to corporations that pour money into the schools in the area where they operate. If large tech companies that are headquartered in “superstar” urban cities (Florida, 2017) like New York, Tokyo, London, and San Francisco sent a large percentage of funding to the school districts there and in the satellite cities where they operate, school districts could essentially be “sponsored” by these large corporations in the same way private individuals and small businesses sponsor student field trips or school t-shirts with their name on it.

Conclusion

Urban education is a multi-faceted and unique part of where students learn around the United States and across the world. Students in urban education systems are creative, talented, and full of promise. They are also on the receiving end of social, political, racial, and economic inequalities that plague urban cities across the United States and around the globe. To invoke change, educational researchers should consider Milner’s (2012) framework for defining urban education and then take the empirical and qualitative data presented by Warren’s (2015) and

Welsh & Swain (2020) to discuss how to help urban school districts overcome any identified academic deficits. Urban education researchers and practitioners should seek to understand and apply Florida's (2017) research because it can offer foundational data principles and solutions about urban economic issues in community schools while capitalizing on the creativity and cultural nuances that students and teachers in urban school districts give their communities.

References

- Buendía, E. (2011). Reconsidering the urban in urban education: Interdisciplinary conversations. *Urban Review*, 43(1), 1–21.
- Cortez, A. (2009). *The status of school finance equity in Texas: A 2009 Update*. Intercultural Development Research Association.10074.pdf
- Florida, R. (2017). *The new urban crisis: How our cities are increasing inequality, deepening segregation, and failing the middle class—and what we can do about it*. Basic Books.
- Jacobs, K. B. (2015). “I want to see real urban schools”: Teacher learners’ discourse and discussion of urban-based field experiences. *Perspectives on Urban Education*, 12(1), 18–37.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396. <https://doi.org/10.1037/h0054346>
- Milner, H. R., IV. (2012a). But what is urban education? *Urban Education*, 47(3), 556–561.
- Stone, D. (1997). *Policy paradox: The art of political decision making*. W.W. Norton & Co.
- Tatum, A. W., & Muhammad, G. E. (2012). African American males and literacy development in contexts that are characteristically urban. *Urban Education*, 47(2), 434-463.
- Warren, K. (2020). *Jeff Bezos is the first person ever to be worth \$200 billion. This is how the Amazon CEO's immense wealth stacks up to the average US worker, the British monarchy, and entire countries' GDP*. Business Insider.
- Warren, M. (2005). Communities and schools: A new view of urban education reform. *Harvard Educational Review*, 75(2), 133–173.
<https://doi.org/10.17763/haer.75.2.m718151032167438>

Wells, A. S. (2014). *Seeing past the “colorblind” myth of education policy: Addressing racial and ethnic inequality and supporting culturally diverse schools*. National Education Policy Center.

Welsh, R., & Swain, W. (2020). (Re)defining urban education: A conceptual review and empirical exploration of the definition of urban education. *Educational Researcher* 49(2), 90-100.

CUREs in Biological Sciences: A Model for Increasing Underrepresented Students'

Access to Undergraduate Research Experiences

Michelle B. Pass, Sharon K. Bullock

University of North Carolina Charlotte

Abstract

Undergraduate research experiences (UREs) have been shown to increase interest, engagement, and persistence of underrepresented students in STEM majors. However, UREs are highly competitive and not easily attainable due to the large number of STEM students pursuing these opportunities and the limited space available in traditional research laboratories. Course-based undergraduate research experiences (CUREs) can be used to address the disparity in URE opportunities available to underrepresented students. Recommendations are made for developing and incorporating course-based undergraduate research experiences (CUREs) into an undergraduate STEM curriculum.

Keywords: biological sciences, course-based undergraduate research experience (CURE), underrepresented students, STEM

Author Note

We have no known conflict of interest to disclose.
Correspondence concerning this article should be addressed to
Dept. of Biological Sciences, 9201 University City Blvd., Charlotte, NC 28269
Michelle B. Pass Email: mbpass@uncc.edu
Sharon K. Bullock Email: sbulloc8@uncc.edu

CUREs in Biological Sciences: A Model for Increasing Underrepresented Students' Access to Undergraduate Research Experiences

The purpose of this research study was to evaluate two Course-based Undergraduate Research Experiences (CUREs) which have been incorporated into the undergraduate curriculum in the Department of Biological Sciences at an urban research university. The CUREs were the result of a collaboration of two faculty members in biological sciences who sought to increase the number of underrepresented students participating in undergraduate research in biological sciences. This research study assesses the effectiveness of CUREs to increase interest and engagement in undergraduate research.

It is well established that involving undergraduates in research significantly benefits their educational experience (Lopatto, 2004). The Department of Biological Sciences has historically valued the importance of undergraduates participating in research as it is a part of our curricula. The department encourages our students to incorporate these types of experiences in their matriculation through the program during all levels of their academic advising. Subsequently, we have seen an increase in the numbers of students interested in research each year. From the Fall 2014/Spring 2015 academic year to the Fall 2021/Spring 2022 academic year, we have seen a 288% increase in the numbers of students that participated in undergraduate research. The department considers this upward trend in student interest in research as a positive phenomenon as we have observed benefits for both faculty and students.

The department has identified two issues related to undergraduate participation in research: there is a lack of diversity of the pool of students that participate in undergraduate research and there are a very limited number of research opportunities for students. We proposed that incorporating CUREs in our curricula would broaden the pool of students that

can participate in undergraduate research, and it would provide more research opportunities for our students. Underrepresented minority students (URMS) enter college considerably behind their counterparts in science and math and are less likely to choose a STEM major or pursue a STEM career. Those URMS who choose a STEM major are twice as likely as non-URMS to leave the major before graduation (Graham et al, 2013). Many URMS face additional barriers such as lack of awareness of academic opportunities and financial strains that require them to work and consequently prevent them from participating in undergraduate research (Dika & D'Amico, 2015). As a result, the pool of students that participate in undergraduate research lacks diversity (Bangera & Brownell, 2014). When you take into consideration that oftentimes research experiences spark student interests in STEM graduate programs and STEM careers, it is clear that a potential long-term consequence of this would be a lack of URMS pursuing these academic/career trajectories. Broader research has shown that URMS who have regular contact with faculty members through research experiences and mentorships demonstrate increased self- efficacy and science-identity, increased interest in STEM careers, earn higher grades, are more likely to complete a STEM degree (Cole & Griffin, 2013; Kim & Sax, 2009; Stolle-McAllister et al., 2010). Incorporating authentic research experiences into a course through a CURE, helps to eliminate some of these barriers which can increase the diversity of students involved in these research experiences.

Currently we offer several ways that students can pursue research opportunities. We have an undergraduate research course which allows students to work in a faculty member's laboratory for a semester and present their research at the end of the term for a letter grade. The second way is for students to be invited into our Honors Program based on grade point average (GPA) requirements. The Biological Sciences Honors Program allows students to do

two semesters of research in a faculty member's laboratory. These students are also required to present their research for a letter grade. The third way is for students that meet GPA requirements to declare our Biotechnology Minor which includes a semester of undergraduate research. Although we have multiple mechanisms for students to get involved in undergraduate research, all of them are dependent on the limited available openings in our faculty laboratories and they restrict participation based on GPA requirements which is an additional barrier. The fact that the number of faculty with research programs that can accept undergraduate researchers has not increased at the same rate as the increasing number of biology majors, compounds this problem. In summary, we have more students that have expressed a desire to get involved in research than we have positions available in our faculty laboratories and this problem has created an even wider disparity in the numbers of URM students participating in undergraduate research compared to other students.

We proposed that incorporating CUREs in our curriculum would increase the number of undergraduate research opportunities for all students and would likely provide more opportunities for URM students to secure research opportunities, thereby decreasing the disparity between URM students compared to other students that participate in undergraduate research. CUREs have been found to provide many of the same enriching benefits to undergraduate education as traditional individualized instruction-based research opportunities occurring in faculty laboratories (Shaffer et al., 2010, Rowland et al., 2012, Jordan et al., 2014). By incorporating CUREs into our curriculum, more of our students will be able to reap the benefits of participating in biological research which facilitates matriculation into post graduate studies such as graduate school and professional schools (i.e., medical, dental, veterinary).

Framework

The theoretical framework that guided this study was participatory action research (PAR). Mordock & Krasny (2001) note that PAR can be used as a framework in education research because of its comprehensive theoretical base. PAR emphasizes inquiry, learning, and action to improve the community or environment. Forming collaborations is an essential component of PAR. It brings researchers and participants together to solve a problem or to bring about change (Kindon et al., 2007). Some of the techniques that can be used in PAR include interviews, observations, interpretations, and participatory planning sessions.

Research Methodology

The methodology used to assess the effectiveness of CUREs in this study was Lewin's (1946) model of action research. Action research positions the teacher at the center of the research study. Action research is used by educators to assess pedagogical practices and to make changes as needed to obtain the desired outcome. Action research differs from traditional education research in that the teacher is the researcher (Manfra, 2019). The type of action research used in this study was participatory action research (PAR). In PAR, teachers, collaborators and participants engage in a cycle of action and reflection.

The development and implementation of the CUREs began with researching existing CUREs through literature reviews and consultations with institutions that had established CUREs. As a result of this work, we determined that the Howard Hughes Medical Institute's Science Education Alliance-Phage Hunters Advancing Genomics and Evolutionary Science (SEA-PHAGES) program would be one of the CUREs that we would implement. The SEA Phages CURE focused on having students isolate and analyze viruses from soil bacteria called bacteriophages. The second CURE we implemented was created by us and it was a

collaborative class or Globally Networked Learning (GNL) Experience between our institution and the University of Lagos in Lagos, Nigeria (UNILAG). This CURE was named EDUCHALA which is an acronym for Education in Charlotte and Lagos. It consisted of the students at our institution working remotely with students at UNILAG to isolate and characterize soil bacteria from soil samples taken from across our campus. The strategy for adapting the SEA Phages CURE) and creating the GNL CURE consisted of first defining learning objectives for our courses. We used the CURE model presented in Corwin et al., 2015 as a guide for our student learning objectives.

Each learning objective was then tied to a specific inquiry-based research question and each research question was incorporated into a part of an overall research project for the class. Lastly, we identified a diverse pool of students who would benefit the most from the research experience. Our assessment of the CUREs consisted of evaluating the effectiveness of the actual laboratory methodologies and evaluating student outcomes through surveys, face-to-face interviews, and our own observations. The assessment utilized descriptive quantitative data collected using a six-point Likert scale, ranging from “strongly agree” (1) to “strongly disagree” (5) to assess the SEA-PHAGES CURE, and qualitative data collected from online surveys to assess the GNL CURE.

Results

Research has shown that persistence in the sciences is related to the six psychosocial states: Project Ownership Content, Project Ownership Emotion, Self-Efficacy, Science Identity, Scientific Community Values, and Networking, as shown in Table 1 (Hanauer et al., 2016). The Persistence in the Sciences (PITS) assessment survey effectively evaluates the variables that we sought to measure in our study. The PITS survey rating scales are from one

(strongly disagree) to five (strongly agree) for all measures except for scientific community values, which had a one (not like me at all) to six (very much like me) scale.

Analysis of PITS Survey data for BIOL 4000 Fall 2019 and Fall 2021 showed the averaged class outcomes for the 6 psychosocial measures exceeded the averaged outcomes for the whole of the SEA-PHAGES program. These findings are consistent with broader literature which suggests that when courses are taught in more interactive ways, students are more engaged, and students learn more (Handelsman et al., 2007). In a comparison study of 2,850 students enrolled in traditional laboratory courses and SEA-PHAGES courses at 67 institutions across the United States, Hanauer et al. (2017) showed that students in SEA-PHAGES courses rated five of the six survey categories significantly higher than students in traditional laboratory courses. There was no significant difference in how students in SEA-PHAGES courses and traditional laboratory courses rated self-efficacy. Self-efficacy in this study was related to confidence in laboratory procedures and skills. In comparison, the PITS Survey data for students in our SEA-PHAGES Fall 2019 and 2021 courses rated all categories including self-efficacy higher than the ratings for the whole SEA-PHAGES program (Figure 2, 3). Therefore, we can infer that our students would rate all categories on the PITS survey higher than the traditional laboratory students. Students participating in our GNL CURE were assessed at the end of course using an online survey. A sample of the survey results are shown in Table 2. These results are representative of the survey results from the class and demonstrate that students in the GNL CURE were positively impacted by the research-based focus of the course. Student comments collectively show that students were engaged in the course and were interested in pursuing additional STEM education, research, and careers.

Table 2

GNL CURE Student Survey Results

Student 1	“From the brainstorming/crowdsourcing of ideas for protocols, finding credible articles/papers that aligned with what we were trying to do, to having the freedom to make some choices about our work. It was a very nice breath of fresh air and was an amazing experience overall!”
Student 2	“I learned many things in this course, most importantly being the skills that I can apply to future projects. The skills learned in this lab were the most important, especially creating so many dilutions. The first time I had ever made a serial dilution was in this lab and I believe this skill will follow me for many years, along with learning how to pour plates. In my academic career I plan on pursuing a master's degree and hopefully even a PhD. This course is only the tip of the iceberg in honing my research skills.” Another student who also commented on the skills acquired in the course stated “

<p>Student 3</p>	<p>“The different tests we learned like how to do the MacConkey agar test, Durham tube test, catalase test, etc. that I did not know before will be very useful in other labs and knowing when and how to do them is only advantageous in my academic pursuits. I think all these skills will help me in the future academically and in the job market because I will be more confident that I know these skills and I can refer back to my knowledge from this class to apply them to other areas in my career. I am hoping to get into biological research and into more labs and I know the research programs will seek out people who already have these skills because it will allow them more time to conduct the actual research than to have to teach these skills. I will be able to give suggestions for tests or further analysis that can be conducted, complete literature searches for anything that I may not be clear on how to conduct and apply that as well into further research. I am glad that we took the time to do these things thoroughly and I know that it will be a great asset when applying to research labs and jobs as well.”</p>
<p>Student 4</p>	<p>“This was my first time in a research setting (and the first time in a lab setting since 2016!) and I wasn't sure what to expect. During my undergraduate education, the most I was required to do in a lab setting was a cat dissection (apart of an anatomy and physiology lab). I was in for a big surprise when conducting the varying tasks/experiments that this lab required of us. Learning a variety of techniques for the first time while often times executing them was no easy feat. I experienced frustration when things did not go well (during gram staining, which ended up yielding great results after much trial and error), nervousness to not mess things up (transmission electron microscopy grid prep was something else) and many other emotions along the way. Ultimately, I learned a ton and feel that I have become much more confident in myself as a result”</p>

<p>Student 5</p>	<p>“The EDUCHALA Program has truly shown me that while research requires a great amount of diligence, discipline, and time, it can ultimately be a fun experience that yields fantastic results. This experience has also provided me with an abundance of confidence as I move forward because if I can learn the wide array of techniques that were needed to be successful in this class from scratch, I can do just about anything with enough time, practice, and commitment to the process”</p>
-------------------------	---

Solutions for the Field

This work has confirmed that incorporating CUREs into an undergraduate curriculum can increase the number of research opportunities for all students which can result in several enriching benefits to their overall educational experience. As a result of carrying out this project, we have determined that there are three key components needed in order to establish a CUREs in an undergraduate curriculum. The first component is a model or template CURE. The model or template can be used as a basis for developing your own curriculum or institution could implement the model CURE without any personalization. We used the HHMI SEA-PHAGES CURE course without many modifications. This saved us time in that we were able to implement the SEA-PHAGES course fairly quickly after being accepted into the HHMI SEA-PHAGES Program and receiving their instructor training. Our other CURE was modeled from our institution’s Office of International Programs Globally Networked Learning course. A literature search can identify potential models or templates of CUREs in a particular field of study. Once models or templates are identified, it is important to reach out to the affiliated institutions in order to get guidance on implementing the CURE, which is the

second key component, a guide or mentor. A guide or mentor that has experience in implementing the CURE is a critical component. We had a team of guides provided to us during the HHMI training we received in the SEA-PHAGES program and our institution's Office of International Programs staff guided us in implementing our GNL CURE. Having access to guides or mentors helped us to implement our CURE more smoothly. The third component is support. It is very important to have support for developing your CURE from within your unit/department as well as support in upper administration. The support is necessary to provide access to the resources needed to implement the CURE. The resources that are needed consist of both human resources such as instructors to help with teaching the course as well as monetary resources to be able to purchase the supplies needed for the course.

Gaining support for developing CUREs can be a challenging task. One strategy that instructors can use to help with gaining support is to provide faculty and upper administration with a thorough presentation explaining CUREs, the details of your plans for implementation, and the benefits the CUREs will have for your curriculum. We have found that gaining support is much easier when all the information is provided, and everybody involved is well informed. With these three components in place, an institution is primed to be able to establish a CURE in their curriculum. Once one CURE is established, the scale up process is much more straightforward because you have designed your own model or template which can be modified to create several, different courses. This strategy can be used in both higher education as well as secondary education. All levels of education can reap the benefits of having the critically important hands-on, experiential education that CUREs have to offer.

References

- Bangera G, Brownell S (2014). Course-based undergraduate research experiences can make scientific research more inclusive. *CBE-Life Sciences Education* 14, 602-606.
[10.1187/cbe.14-06-0099](https://doi.org/10.1187/cbe.14-06-0099)
- Cole, D., Griffin, K. A. (2013). *Advancing the study of student-faculty interaction: A focus on diverse students and faculty*. In *Higher education: Handbook of theory and research* (pp. 561-611). Springer Netherlands. [10.1007/978-94-007-5836-0_12](https://doi.org/10.1007/978-94-007-5836-0_12)
- Corwin L, Graham M, Dolan E. (2015). Modeling course-based undergraduate research experiences: An agenda for future research and evaluation. *CBE-Life Sciences Education* 14, 1-13. <https://doi.org/10.1187/cbe.14-10-0167>
- Dika, S. L., D'Amico, M. M. (2016). Early experiences and integration in the persistence of first-generation college students in STEM and non-STEM majors. *Journal of Research in Science Teaching*, 53(3), 368-383. <https://doi.org/10.1002/tea.21301>
- Graham, M. J., Frederick, J., Byars-Winston, A., Hunter, A. B., Handelsman, J. (2013). Increasing persistence of college students in STEM. *Science*, 341(6153), 1455-1456.
[10.1126/science.1240487](https://doi.org/10.1126/science.1240487)
- Hanauer, D. I., Graham, M. J., & Hatfull, G. F. (2016). A measure of college student persistence in the sciences (PITS). *CBE—Life Sciences Education*, 15(4), ar54. [10.1187/cbe.15-09-0185](https://doi.org/10.1187/cbe.15-09-0185)
- Hanauer, D. I., Graham, M. J., Sea-Phages, Betancur, L., Bobrownicki, A., Cresawn, S. Garlena, R.A., Jacobs-Sara, D., Kaufmann, N., Pope, W.H., Russell, D.A., Jacobs, W.R., Sivanathan, V., Asai, D.J. & Hatfull, G. F. (2017). An inclusive Research Education Community (iREC): Impact of the SEA-PHAGES program on research outcomes and student learning.

Proceedings of the National Academy of Sciences, 114(51), 13531-13536.

doi.org/10.1073/pnas.1718188115

Jordan C, Burnett H, Carson S, Caruso M, Clase K, DeJong J, Dem1ehy J, Denver R, D1mbar D, Elgin R, et al. (2014). A broadly implementable research course in phage discovery and genomics for first-year Undergraduate students. *MBio* 5, e01051-13.

[10.1128/mBio.01051-13](https://doi.org/10.1128/mBio.01051-13)

Kim, Y. K., & Sax, L. J. (2014). The effects of student–faculty interaction on academic self-concept: Does academic major matter? *Research in Higher Education*, 55(8), 780-809.

<https://doi.org/10.1007/s11162-014-9335-x>

Kindon, S., Pain, R., & Kesby, M. (2007). Participatory action research approaches and methods. *Connecting people, participation and place*. Abingdon: Routledge, 260.

<https://doi.org/10.4324/9780203933671>

Lopatto, D. (2004). Survey of undergraduate research experiences (SURE): First findings. *Cell biology education* 3, 270-277 <https://doi.org/10.1187/cbe.04-07-0045>

Manfra, M. M. (2019). Action research and systematic, intentional change in teaching practice. *Review of Research in Education*, 43(1), 163–196. doi.org/10.3102/0091732X18821132

Mordock, K., & Krasny, M. E. (2001). Participatory action research: A theoretical and practical framework for EE. *The Journal of environmental education*, 32(3), 15-20.

[10.1080/00958960109599140](https://doi.org/10.1080/00958960109599140)

Rowland L, Lawrie A, Behrendorff B, Gillam M (2012). Is the undergraduate research experience (URE) always best? The power of choice in a bifurcated practical stream for a large introductory biochemistry class. *Biochemistry and Molecular Biology Education*, 40, 46-62. <https://doi.org/10.1002/bmb.205>

Shaffer, C. D., Alvarez, C., Bailey, C., Barnard, D., Bhalla, S., Chandrasekaran, C., ... & Elgin, S. C.

(2010). The genomics education partnership: Successful integration of research into laboratory classes at a diverse group of undergraduate institutions. *CBE Life Sciences Education*, 9, 55-69. [10.1187/09-11-0087](https://doi.org/10.1187/09-11-0087)

Stolle-McAllister, K., Domingo, M. R. S., & Carrillo, A. (2011). The Meyerhoff way: How the Meyerhoff scholarship program helps black students succeed in the sciences. *Journal of Science Education and Technology*, 20(1), 5-16. [10.1007/s10956-010-9228-5](https://doi.org/10.1007/s10956-010-9228-5)

Hip Hop Diagnosis: Exploring Lyrics and Traumatic Experiences of First-Generation College Students

Toneyce S. Randolph

Vice President of Academic Services, Clinton College

Abstract

As more first-generation college students from distressed urban communities enroll in college, it is necessary to examine the impact of traumatic experiences on those who live in poverty-stricken urban communities. Unfortunately, research on this topic has been sparse, especially on understanding the lyrical messages in hip-hop and how these lyrics explore the truths of many first-generation college students. Hip-hop lyrics give a grim look into the lives of those who reside in distressed urban communities. This roundtable posits engaging dialogue surrounding overarching national issues while examining hip-hop lyrics and trauma.

Keywords: trauma, first-generation college student, hip-hop lyrics

Hip Hop Diagnosis: Exploring Lyrics and Traumatic Experiences of First-Generation College Students

Meek Mill states, "Ain't no PTSD's, them drugs keep it as ease, they shot that boy twenty times when they could have just told him to freeze, could have put him in a cop car, but they let him just bleed." Why are some first-generation college students not successful in completing? Some theories focus on first-generation college students; however, they often overlook the complexity of transitioning from their communities to the collegiate environment. This paper aims to explore traumas described in hip-hop lyrics that expose and debunk the notion of normalcy relating to problems in distressed urban communities. Hip-Hop songs, as we know, can give a vivid picture of what life can be like for those who live in distressed urban neighborhoods. This paper is used to highlight the life of first-generation college students who come from distressed urban communities and publicly acknowledge the experiences that produce enduring emotional pain and distress. Finally, this paper explores effective practices in establishing encouraging and supporting relationships and the development of first-year experience programs that are needed to ensure success.

Theoretical Framework

Historically, first-generation college students from poor socio-economic backgrounds live with the daily stress of violence and poverty (Falkenburger, Arena & Wolin, 2018). Details of these traumas show in today's hip-hop music. The hip-hop artist Robert Rimeek Williams known as Meek Mills, gives a vivid look into the world of trauma with his lyrics from the song titled Trauma. Meek Mills states in the song trauma, "When the drugs got a hold of your mama, and the drugs got a hold of your father, go to school bullet holes in the wall." This paper uses Trauma-Informed Social Policy as a theoretical framework to explore

the pain and suffering of students. Meek Mills conveys the message by telling the story of drug-addicted parents and how schools have violence on campus.

Falkenburger, Arena, and Wolin (2018) argue that the historical disenfranchisement, racism, and isolation of those residing in distressed urban communities and public housing spaces is a continuation of broken promises. The hip-hop artist Shawn Carter, Jay Z, states in his song Smile, "That's why it is called the projects cause its exactly that." Those living in the same space sharing similar experiences share community trauma (Falkenburger, Arena & Wolin, 2018). These community traumas are shown chiefly in housing projects, which rapper Jay Z describes as a project meaning the purposeful planting of African Americans in a community without adequate resources leading to disproportionate underachievement. Gaps in academic achievement result from systematic forces of oppression like living in a housing project.

Bassetti (2018) shares that education is where dreams happen and where one can achieve their goals. Education is the way out for many students coming from distressed urban communities. First-generation college students from urban areas are entering college trying to escape. Barnett (2007) states that while first-generation college students enter college, many leave. Evaluating where these students come from is necessary to disrupt this problematic issue for colleges. First-generation college students from distressed urban communities will not disappear from the student body's makeup. Colleges must be intentional about addressing community trauma. Using the theoretical framework Trauma-Informed Social Policy, this paper will seek to address the challenges first-generation college students from distressed urban communities have while in college and bring awareness to community traumas.

Research Methodology

Bowen & Murshid (2016) uses the term trauma-informed care to discuss a model for service provision across health and social service settings. When it comes to identifying how to assist first-generation college students from distressed urban communities, incorporating a service model in first-year experience programs is most appropriate. This study uses exploratory research as a methodology. Exploration of hip-hop lyrics and understanding trauma provides a deeper understanding of what some first-generation college students go through living in these communities. There has been conversation regarding hip-hop lyrics, but much discussion is needed to help others understand how the traumas depicted in those lyrics affect first-generation college students.

In addition to trauma-informed social policy, this research utilizes trauma-informed community building and engagement. Post-secondary education is in an era where more students attend college with unaddressed traumas. It is incumbent upon college communities to counter the traumas presented and inform the misinformed when it comes to first-generation college students. Bowen & Murshid (2016) explains that the trauma-informed care approach will help to recognize the intersections of trauma with health and social problems. First-generation college students from distressed urban communities need a certain level of care to achieve their academic goals. When listening to hip-hop lyrics, you will hear a cry for help from a community of individuals who have experienced traumas that one could not imagine. Bowen & Murshid (2016) also states that no population is immune to experiencing trauma, but specific people disproportionately is higher.

Findings

From the studies conducted by Bowen & Murshid and Falkenburger, Arena, and Wolin, each set of authors noted trauma is a social issue. A commonality across both studies showed that others could use trauma-informed care to diffuse the problems within social groups and communities. It is important to note that first-generation students are a specialized group within the college community. One of the most prominent findings from both studies was around community trauma that suggests historical and ongoing root causes of social inequities, including poverty and racism being the cause. Based on the preliminary findings from reviewing the studies from Bowen & Murshid and Falkenburger, Arena, and Wolin, there is value in creating first-year experience programs that support trauma-informed care. Colleges have to employ creative strategies from a student affairs perspective to combat retention issues of those suffering from traumatic environmental experiences.

Significance of Work

It is imperative to have culturally competent students, faculty, staff, and administrators to meet the needs of first-generation college students from poor socio-economic backgrounds. Cultural competence leads to a better understanding of how to support, which equates to effective teaching and learning. There are several solutions to the attrition issues of first-generation college students. The significance of this work is to acknowledge the harm done and promote consciousness of the traumatic experiences some of our students have encountered throughout life. This work is essential to collegiate institutions looking to provide programs that support precise and meaningful engagement on campus. Lastly, peer mentoring programs are a great way to bridge the gap for those students attending college as first-generation college students. Developing peer mentoring programs that partner students with others from different socio-economic backgrounds can help infiltrate and disrupt the mindset of those who believe their community traumas are an accurate depiction of how one should live.

References

- Barnett, E. (2007). *Validation experiences and persistence among urban community college students*. University of Illinois at Urbana-Champaign.
- Bassetti, M. (2018, February). *Academic inequality in the urban school setting: Funding disparities that lead to educational disadvantages*.
- Bowen, E., & Murshid, N. (2016, February). *Trauma-informed social policy: A conceptual framework for policy analysis and advocacy*.
- Carter, S. (2017, June). *Smile*. <https://genius.com/Jay-z-smile-lyrics>
- Falkenburger, E., Arena, O., & Wolin, J. (2018, April). *Trauma-informed community building and engagement*.
- Williams, R. (2018). *Trauma*. <https://genius.com/Meek-mill-trauma-lyrics>.

Table 1

Psychological States Measured on PITS Survey

Variable	Construct Measured
Project Ownership Content	Measures the degree of personal ownership and engagement a student feels in relation to the research they have conducted in a specific class.
Project Ownership Emotion	Measures the degree to which a student has a positive emotive response to the research they have conducted in a specific class.
Self-Efficacy	Measures the degree to which a student feels confident in functioning as a scientist.
Science Identity	Measures the degree to which a student thinks about her/himself as a scientist.
Scientific Community Values	Measures the degree to which a student has affinity to the values of the scientific community.
Networking	Measures the degree to which students are talking about their research in both professional and personal networks

Note. Table 1 provides a summary of the psychological states measured in Figure 2 and Figure 3.

Figure 1

Illustration of Action Research Methodology

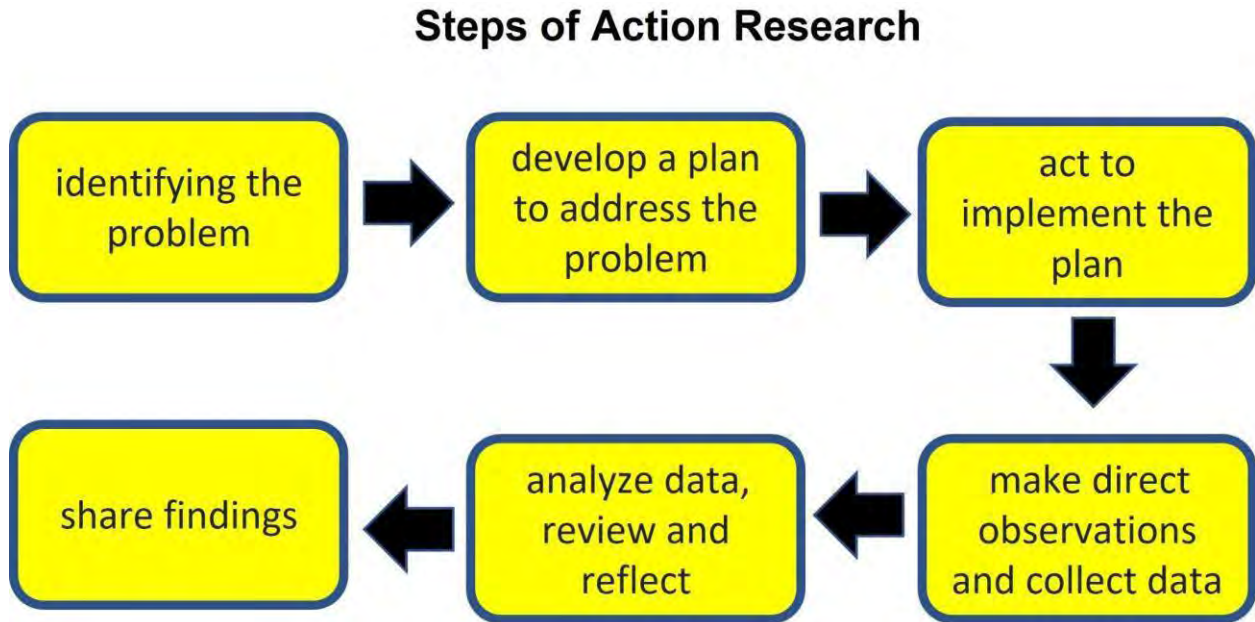
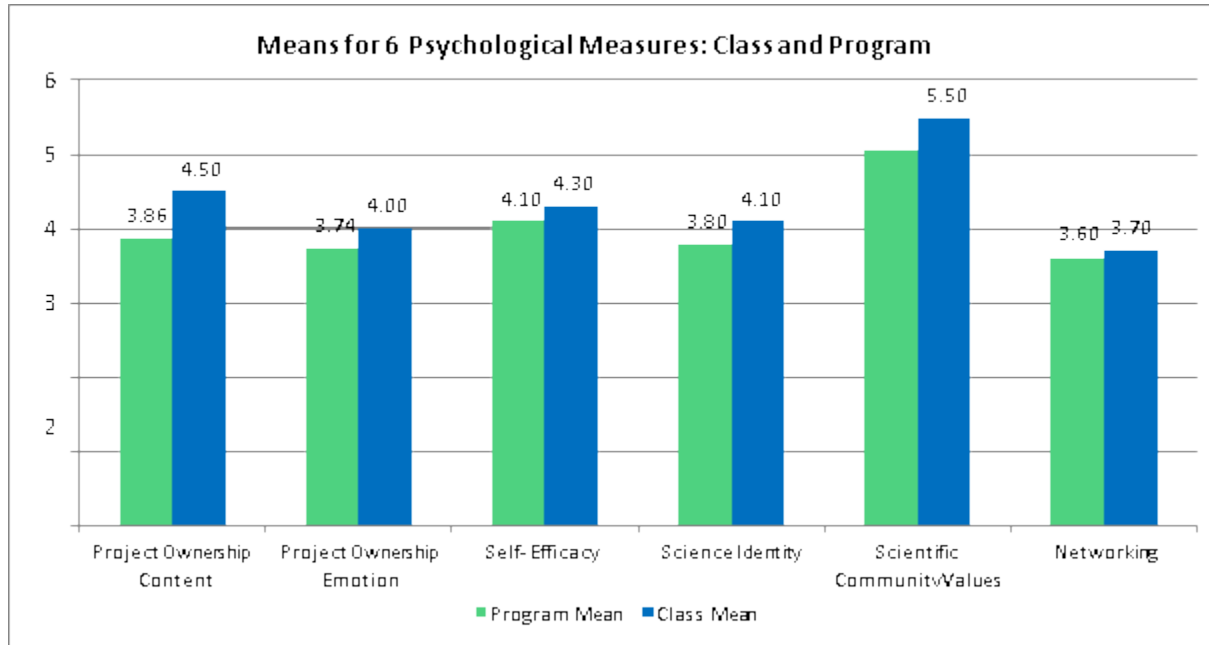


Figure 2

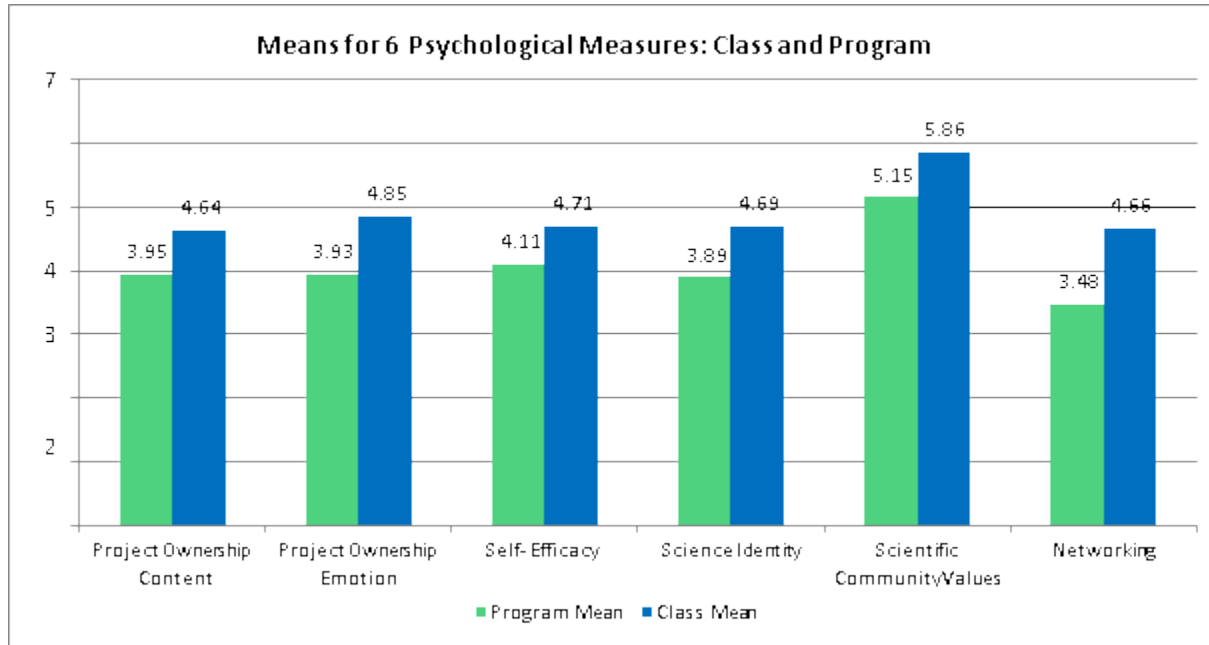
Persistence in the Sciences Survey: Class Outcomes Report Fall 2019



Note. Figure 2 compares averaged BIOL 4000 SEA-PHAGES class outcomes with averaged outcomes for the whole of the SEA-PHAGES program for the 6 psychological measures on the Persistence in the Sciences (PITS) survey.

Figure 3

Persistence in the Sciences Survey: Class Outcomes Report BIOL 4000 SEA-PHAGES Fall 2021



Note. Figure 3 compares averaged BIOL 4000 SEA-PHAGES class outcomes with averaged outcomes for the whole of the SEA-PHAGES program for the 6 psychological measures on the Persistence in the Sciences (PITS) survey.