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Article abstract

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Abstract

This qualitative inquiry examined how using Yosso's community cultural wealth (2005) model as a framework in a 16-week teacher-education course focused on home, schools, and communities which supported the development of 24 preservice teachers' equity mindsets in relation to these spaces. To examine the nature of preservice teachers' viewpoints, the following data sources were collected: a researcher-developed survey with open-ended questions based on Yosso's model used as a pre- and post- survey, reflection assignments, and semi-structured interviews. These data were analyzed using priori coding based on the Equity Mindset Framework (Nadelson et al., 2019). Analysis revealed that Yosso's community cultural wealth model provided a framework for preservice teachers to develop all eight attributes of an equity mindset to some degree, but three of those attributes were developed at a higher level: development of culturally relevant practices and thinking, the importance of understanding and knowing student populations, and taking responsibility for student success. This research has implications for teacher educators, as it provides guidance for a practical way to enhance preservice teachers' equity mindset.

Introduction

The research question explored through this study asked, "How does using Yosso's community cultural wealth model support preservice teachers' development of an equity mindset?" The study focused on how the application of Yosso's model impacted preservice teachers' asset, versus deficit framing of teaching and learning in elementary classrooms and the communities that they serve. Teacher-education programs have an obligation to students to develop their equity mindsets (Weisberg & Dawson, 2023), but few studies have explored practical ways to do so. This study sought to fill that gap, by providing an example of how one teacher-education course utilized Yosso's (2005) community cultural wealth model to help preservice teachers advance their equity mindsets (Nadelson et al., 2019).

Research shows the negative effects of having a deficit view of teaching and learning in schools (Davis & Museus, 2019). A deficit mindset has been found to perpetuate a blame-the-victim mentality toward minoritized populations (McKay & Devlin, 2016; Solórzano & Yosso, 2001), maintain classist and racist ideologies (Bruton & Robles-Piña, 2009; Gorski, 2011), lower expectations for students from historically oppressed groups (Bruton & Robles-Piña, 2009), and ultimately undermine student success (Perez et al., 2017). Unfortunately, schools are steeped in deficit narratives, based simply on how they are structured and how student progress is measured (Dutro, 2019). This "corrosive power of deficit perspectives" (Dutro, 2019, p. 22) can be seen in the sheer volume of studies that frame learning through deficit perspectives. Gray et al.'s (2022) meta-analysis showed that 87 out of the 93 studies they analyzed coded cognitive skills in schools through this type of lens.

Knowing the deleterious impacts of deficit framing and the ubiquitous nature of this problem, researchers in an elementary education-teacher-preparation program asked themselves what the alternatives were. Could they introduce students to a method for reframing their thinking toward asset perspectives to avoid the pitfalls of the deficit narratives in which they are surrounded? One well-researched way to approach asset perspectives is Yosso's community cultural wealth model (Carter-Fancique et al., 2015; Shapiro, 2019; Yosso, 2005). This model (CCW) is particularly well-suited as a framework for this research, because CCW is framed around the following tenets that connect to this study: "challenging dominant ideology; the commitment to social justice; the centrality of experiential knowledge" (Yosso, 2005, p. 73). This research challenges dominant deficit ideology seeks to increase equity and social justice mindsets, and relies on preservice teachers' experiential knowledge. To investigate this problem of practice, researchers chose to investigate how immersing 24 preservice teachers in a semester-long course that required application of and reflection on Yosso's (2005) cultural wealth model would impact their equity mindsets toward teaching and schooling.

Community Cultural Wealth

Yosso's (2005) community cultural wealth model, underpinned by critical race theory, expands on Bordieu's (1986) theory of cultural capital by identifying six distinct types of capital shared by communities of colour: aspirational, linguistic, familial, social, navigational, and resistance. Using the community cultural wealth (CCW) framework redirects the emphasis in education from a deficit view of marginalized communities to a recognition of how their strengths are cultivated by families and social circles, which play a crucial role in fostering resilience and upward mobility, even in the presence of systemic inequities. "In other words, cultural wealth challenges hegemonic conceptualizations of the legitimate forms of capital, such as white, masculine, English-speaking"

(Tinning, 2004, as cited Pang et al. 2018, p. 178). Yosso (2005) conceptualized each form of capital as follows:

1. "*Aspirational capital* refers to the ability to maintain hopes and dreams for the future, even in the face of real and perceived barriers" (Yosso, 2005, p. 77).
2. "*Linguistic capital* includes the intellectual and social skills attained through communication experiences in more than one language and/or style" (Yosso, 2005, p. 78).
3. *Familial capital* refers to those cultural knowledges nurtured among *familia* (kin) that carry a sense of community history, memory, and cultural intuition (Yosso, 2005, p. 79).
4. "*Social capital* can be understood as networks of people and community resources. These peer and other social contacts can provide both instrumental and emotional support to navigate through society's institutions" (Yosso, 2005, p. 79).
5. ''*Navigational capital* refers to skills of maneuvering through social institutions" (Yosso, 2005, p. 80).
6. ''*Resistant capital* refers [to] those knowledges and skills fostered through oppositional behavior that challenges inequality'' (Yosso, 2005, p. 80).

Community cultural wealth in teacher preparation

In their research on the utilization of Yosso's (2005) community cultural wealth model in teacher preparation, Zoch and He (2020) found the CCW framework served as a valuable tool for recognizing assets and fostering an understanding of language and literacy usage among 15 preservice teacher participants. This framework served as the foundational basis for the course, enabling teacher educators and preservice teachers to focus their observations, reflections, and discussions on learning from students and the community. Moreover, it expanded preservice teachers' conceptions of literacy teaching, although they encountered challenges in identifying navigational and resistance capital. The CCW model was also noted for its ability to challenge traditional power dynamics (Zoch & He, 2020).

Similarly, Saathoff (2015) stressed the importance of community cultural wealth in teacher education and proposed that field experiences should entail actively researching and documenting the various forms of capital possessed by students, achieved through methods such as interviews and participant observations. This acquisition of knowledge enabled preservice teachers to deepen their comprehension of students, and the complex sociocultural elements intertwined with their lives, ultimately providing them with the means to cultivate a more enlightened perspective on students' strengths and available resources (Saathoff, 2015).

Critiques of community cultural wealth

Yosso's (2005) community cultural wealth model is framed through critical race theory (Ladson-Billings, 1998), which has come under attack in America in recent years, due to former President Donald Trump's executive order to outlaw "divisive concepts" (Exec. Order No. 13,950, section 2, 2020). There are currently 619 bans on the inclusion of anything connected to critical race theory (CRT) to be included in public school curriculum (Alexander, 2023). The university where this study took place is located in one of the states that had a proposed ban on CRT in public education during the course of this study, so utilizing a model that is framed using CRT was a risk, but one that the instructor of the course found necessary for developing students' equity mindsets.

Another critique of CCW is that it fails to "account for symbolic violence" and has an "undertheorized definition of cultural resources" (Song, 2024, p. 236). In Song's critique, an

explanation of the connections between Bourdieusian Theory (Bourdeiu, 1999, 2000) and Yosso's (2005) CCW, highlights how Yosso strays away from Bourdieu in her conceptualization of CCW. However, Yosso (2005) never claimed to frame CCW using Bourdieusian Theory, and instead, highlighted the connections between CRT and CCW. In fact, CCW takes "particular aim at deficit interpretations of Pierre Bourdieu and cultural capital theory" (Yosso & Burciaga, 2016). Hence, CCW was an appropriate fit for this present research, as it examines deficit narratives and offers an asset-framed model for investigating cultural capital.

Conceptual Framework

Mindset is complicated to examine, in part, because the definitions of mindset vary so vastly across the literature. Research examining mindsets often focuses on one specific aspect of it, such as growth mindset (Dweck, 2007), health mindset (Conner et al., 2019), or global mindset (Pallvi et al., 2022), among others. For this research, equity mindset of preservice teachers was investigated to determine if a class framed using Yosso's (2005) community cultural wealth model had an impact on preservice teachers' equity mindset. The research team adopted Nadelson et al.'s (2022) definition of mindset as, "a set of perceptions and motivations that lead to actions aligned with how individuals perceive equity situations in education" (p. 60). Furthermore, Nadelson et al. (2019) added, "we consider an education equity mindset to be the knowledge, beliefs, and dispositions supportive of advocating and working toward equitable education for all learners" (p. 27).

Nadelson et al. (2019) framed equity mindset on a spectrum from a weak to strong equity mindset, by focusing on eight components that contributes to it in education. These eight components include culturally responsive education, student-centred learning, taking responsibility for student success, engaging in informal leadership, perceiving that all students can succeed, knowing and understanding student populations, working to provide access to all, and advocating for equity needs. Figure 1 represents what the education equity mindset framework looks like on a spectrum. The goal of this research was to develop stronger equity mindsets in preservice teachers utilizing Yosso's (2005) community cultural wealth, along with embedding this list of strong equity mindset attributes within the course.

Teacher-education programs play a crucial role in developing teachers' equity mindsets (Weisberg & Dawson, 2023); however, research to date has not explored how different methods can impact them on preservice teachers. The education equity mindset framework for this has been used to explore the attitudes of university faculty members (Nadelson et al., 2022), K-12 principals (Nadelson et al., 2020), and K-12 teachers (Nadelson et al., 2019). This study sought to fill this gap in the literature by applying the education equity mindset framework to explore how utilizing Yosso's (2005) CCW can impact the equity mindset of preservice teachers.

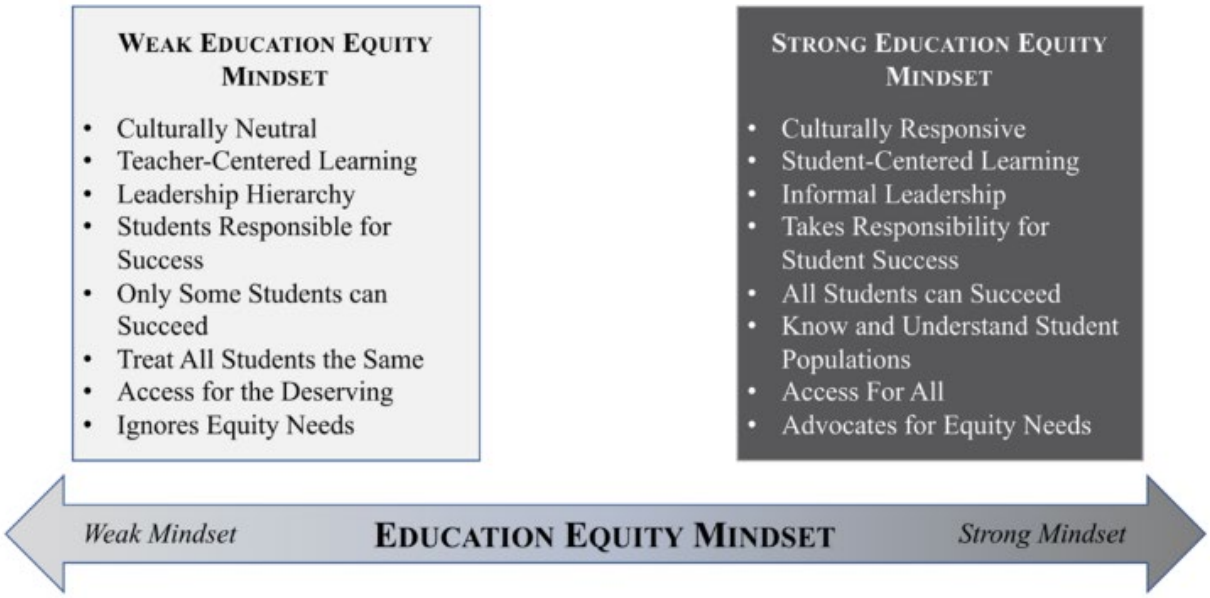

Figure 1: Nadelson et al.'s education equity mindset.

Note: Figure from: Nadelson, L., Miller, R., Hu, H., Bang, M., & Walthall, B. (2019). Is equity on their mind? Documenting teachers' education equity mindset. *World Journal of Education, 9*(5), p. 27.

Methodology

A qualitative case study methodology was used in this research to explore how application of Yosso's (2005) community cultural wealth model impacted preservice teachers' equity mindsets of teaching and learning in elementary classrooms and the communities they serve. Yin (2014) discussed how case study data can come from a variety of sources, including surveys, interviews, and document analysis, all three of which were used in this study. The participants were 24 college seniors enrolled in an upper-level elementary-education course at a mid-size university in the Midwest United States. Data were collected from participants through pre- and post- surveys, class assignments throughout a 16-week semester, and interviews at the conclusion of the semester.

Site and participants

At the time of this research, the university had a student population of just over 23,000, with 2,175 of that total in the college of education, and 361 elementary-education majors. Seventy-seven percent (77%) of the student population identified as White/Caucasian, 4.8% Hispanic, and 3.2% Black with other races and ethnicities, or combined ethnicities, comprising the rest. The elementary-education program faculty was composed of 12 white female and two white male, full-time faculty members.

Amber was the instructor of this course, who was responsible for its redesign, and creation of the assignments that were analyzed in this research. The research team used a convenience sample, since one author was the instructor of this course. The course had 30 students enrolled, and 24 of them opted into participating in the study by completing an informed-consent form. This was obtained by Stacie at the beginning of the semester for all the students enrolled in the course

who chose to participate in the research. Stacie was not teaching the course, but visited one class session to explain the study and answer questions. The instructor was not present for this portion of the class session, and the instructor did not know who was participating in the study until after the final grades were submitted at the conclusion of the semester. Participation was encouraged, but not required.

One upper-level elementary-education course titled Home, School, and Community, was the one selected to be examined in this research. This class was designed to enhance the preservice teachers' collaboration skills and understanding of the relationships between school, colleagues, community, children, and family. Emphasis was placed on diverse family dynamics within a pluralistic society, including the role family functioning has on the child's total educational experience and children as individual learners. Two main frameworks were the drivers of learning in this class: Yosso's (2005) community cultural wealth framework and Brofenbrenner's (1992) Ecological Systems Framework. Using both, preservice teachers investigated their personal home, school, and community relationships, while learning what this connection could look like in their future classroom. This course had a service-learning program called Eliminating Obstacles (pseudonym) embedded within it that allowed preservice teachers to work with refugee and immigrant families in a local elementary school. Preservice teachers taught English language lessons to adult learners and provided literacy enrichment activities for their children through five evening events throughout the semester. This experience allowed preservice teachers to make connections between homes, schools, and communities, while applying what they were learning about Yosso and Brofenbrenner in a real-life context.

Thirty students were enrolled in this course during the semester when this research took place, and 24 of them opted into participating in the study by completing the informed-consent form that allowed the research team to utilize their survey responses and class assignments for data points in the study. These 24 participants included five male preservice teachers and 19 female preservice teachers. Two of them were Black, one identified as multi-racial, and the rest were White. They ranged in age from 20-33.

Researcher positionality

The research team consisted of three white, female, cisgender, middle-class, heterosexual, elementary-education professors at the same Midwest university where the research was conducted. They range in age from 36-40. Each team member spent 4-12 years in the K12 classroom before moving into higher education full time. One team member taught literacy education courses and the other two taught within the elementary-education program. Over the course of preservice teachers' studies in the elementary-education program, it is likely that they would have each of the researchers as instructors at some point. All three researchers framed their teaching and research through an equity-centered lens, and actively revised their courses and class sessions regularly to incorporate more equitable practices to prepare preservice teachers to enter schools with an equity mindset. The team's individual and collective positionality informed what they knew, perceived, and how they interacted (Alcoff, 1988; Harro, 2013; Milner, 2007).

Data collection

A researcher-created pre- and post- reflection survey with open-ended questions was one piece of data collected in this research. This survey asked Likert questions, along with open-ended questions about each of the six elements of Yosso's (2005) community cultural wealth model to

gauge preservice teachers' understanding of these elements at the beginning and end of the course. The research recognizes the limitations of self-reported data in this study, but sought to capture preservice teachers' perceptions of their understanding and application of community cultural wealth. The Likert questions were used solely for descriptive data. All the questions in the survey were framed using language directly from Yosso (2005) and questions from the Emerging Leaders curriculum (2024), used at California State University, to coach teachers in applying CCW. The full survey can be found in Table 1.

Table 1: Survey to examine self-perceptions of ability to apply community cultural wealth.

On a scale of asset to deficit thinking, where would you place yourself? Scale of 10 from Always Deficit Thinking to Always Asset Thinking
Aspirational Capital (Yosso, 2005, p. 77)
1. How confident are you in your ability to help your students maintain hopes and dreams for the future, even in the face of real and perceived barriers? 1-5 from Very Confident to Not Confident at All
2. How do you support and maintain the growth of students' hopes and dreams?
Linguistic Capital (Yosso, 2005, p. 78)
3. How confident are you in your ability to leverage students' intellectual and social skills that they attained through communication experiences in different languages and/or cultures? 1-5 from Very Confident to Not Confident at All
4. How do you support the language and communication strengths of your students?
Familial Capital (Yosso, 2005, p. 79)
5. How confident are you in your ability to include students' cultural knowledge that they attained through family/kin in your classroom? 1-5 from Very Confident to Not Confident at All
6. How do you recognize and help students draw on wisdom, values, and stories from their home communities?
Social Capital (Yosso, 2005, p. 79)
7. How confident are you in your ability to access and utilize the networks of people and community resources to support your students? 1-5 from Very Confident to Not Confident at All
8. How do you tap into the social capital in your community to best support your students?
Navigational Capital (Yosso, 2005, p. 80)
9. How confident are you in your ability to support your students in maneuvering through social institutions? 1-5 from Very Confident to Not Confident at All

10. How willing are we to acknowledge that our institutions, both their structures and cultures, have a history of, and may still in many ways be unsupportive and/or hostile to our students and their communities?
11. How do you help students navigate our institutions?

Resistance Capital (Yosso, 2005, p. 80)

12. How confident are you in your ability to challenge inequality and push back on unjust systems?
    1-5 from Very Confident to Not Confident at All
13. How do you promote students' agency to challenge inequality when they see it?

Concluding Questions

14. Overall, what is your biggest take away from participating in [Eliminating Obstacles] this semester?
15. Overall, what is your biggest take away from applying the Cultural Wealth Model in various settings this semester?

Three reflection assignments from the 24 participants were used as a second data point (Table 2). One of these assignments was a roster audit in which preservice teachers were first asked to identify the strengths of each elementary student in their practicum placement, and later expected to explore how the strengths of elementary students connected to Yosso's (2005) community cultural wealth model. The second assignment that was analyzed was titled The Eliminating Obstacles Reflection that preservice teachers worked on throughout the semester, as they learned about each of the six components of the community cultural wealth model. The final assignment that was analyzed was an end-of-semester reflection assignment in which preservice teachers self-assessed their work for the semester, and shared some of their biggest takeaways from the course.

Table 2: Reflection assignments.

Assignment	Description	Focus/Framework	Expected Outcomes
Roster Audit	Preservice teachers were asked to identify the strengths of each elementary student in their practicum placement. The first submission focused on identifying these strengths, and the second submission connected these strengths to Yosso's (2005) community cultural wealth model.	Dr. Ilana Horn's work (Reich, 2020) and Yosso's (2005) community cultural wealth model	Demonstrate understanding of students' strengths and connect these to broader cultural frameworks.
Eliminating Obstacles Reflection	An ongoing assignment where preservice teachers reflected on how each of the six components of Yosso's community cultural wealth model was present or absent in their own K12 experiences, their 130-hour practicum, and their service-learning program with multilingual families.	Yosso's (2005) community cultural wealth model	Critical reflection on cultural capital in various educational contexts; connection between theory and personal/practical experiences.
End-of-Semester Reflection	Preservice teachers self-assessed their work for the semester and reflected on their major takeaways from the course.	Self-assessment and reflection on overall course experience	Self-evaluation and synthesis of learning experiences throughout the semester.

The final piece of data that was collected was five, 45-minute semi-structured interviews of preservice teachers near the end of the course. These interviews focused on how the inclusion of Yosso's (2005) community cultural wealth model helped preservice teachers shift their mindsets toward a more asset-based way of thinking. The research team constructed the interview protocol that asked questions, such as asking preservice teachers to describe any changes they noticed in their asset versus deficit thinking as a result of the class, how Yosso's (2005) CCW impacted those changes in thinking, and how these shifts in mindset may impact their future classrooms. These interviews were recorded through Zoom and transcribed verbatim for analysis. During this phase, researchers reached out to interview participants for member checking, as needed, to confirm correct interpretation of the data and increase trustworthiness of the findings.

Analysis

In this study, the research team members' various understandings of equity mindset were operationalized using the equity mindset framework (Nadelson et al., 2019), and each attribute that was examined was thoroughly defined to ensure inter-coder reliability and enhance the overall reliability of the research. The team also practiced reflexivity, by having multiple team members code the same pieces of data, and discuss their process and coding to increase reliability.

The education equity mindset framework and the coding process Nadelson et al. (2019) used to code data in the validation process for this context provided the structure for the present research. For each education equity mindset attribute, the research team developed the codes below in Table 3 to connect the data back to an education equity mindset. Some of these codes are borrowed from Nadelson et al. (2019), and some were added through the coding process, based on the works cited under each attribute. For example, to better define the attribute, "culturally responsive," Gay's (2002) work, which coined this phrase to ensure that the codes were connected to how this attribute is defined in the literature, was examined. Priori coding (Merriam & Tisdell, 2016) was used with the codes in this table to analyze the interview transcripts, assignment data, and survey results for education-equity mindset. Other emergent codes, outside of these priori codes, were jotted down by the research team, but ultimately discarded, because they were encompassed within the priori-coding system.

Table 3**:** Codebook for education equity mindset.

Education Equity Attribute	**Representative Codes**
Culturally Responsive (CR) (Gay, 2002)	• Developing a knowledge base about cultural diversity • Including ethnic and cultural diversity content in the curriculum • Demonstrating caring, and building learning communities • Asset thinking • Communicating with ethnically diverse students • Responding to ethnic diversity in the delivery of instruction
Student Centered Learning (SCL) (Wright, 2011)	• Power • Function of content • Role of the teacher • Responsibility of learning • Purpose and process of evaluation
Informal Leadership (IL) (Whitaker, 1995)	• Teacher leaders • Credibility • Expertise • Relationships
Taking Responsibility for Student Success (TRSS)	• Causes of equity gaps • Need to close equity gaps • Responsibility to examine practice & policies
All Students Can	• Strong collaboration • Positive school climate

Succeed (ASCS) (Francia, 2013)	• Family engagement (families are involved in school)
Know and Understand Student Populations (KUSP) (Darling-Hammond, 2008)	• Listen • Cognitive, emotional, & behavioral aspects • Difference (familial culture/influence) • Knowledge of importance of knowing your students
Access for All (AA)	• Structural elements • Features of classroom environment • Teacher-student interactions
Advocating for Equity Needs (AEN)	• Captured in the taking responsibility for student-success portion

Ethical considerations

Due to the nature of academics using their own students as study participants, the research team made a number of decisions throughout the course of this investigation, to ensure protection of the preservice teachers involved in this work. First, Stacie visited Amber's class to explain the study and obtain informed consent. Amber was not in the room for this presentation, and all concerns and questions from the participants were addressed by Stacie. The informed-consent documents were secured in a sealed envelope that Stacie kept in her locked office at the university. Amber had no knowledge of who opted into participating in the research, until several weeks after the final grades from the course were recorded. At that time, pseudonyms were created for all 24 participants, and their assignment data was downloaded and saved on a password-protected computer of which only the research team had access. These assignments all had any identifying information removed and were saved, based on the pseudonym assigned to each participant, so that the author did not know which student had which data, because she was unaware of what pseudonyms were assigned to which student. The survey data that was collected had no identifying information connected to it, so anonymization was not needed for this. Interview transcripts were recorded, but any identifying information was removed prior to analysis. Finally, Amber, the instructor of the course, embedded readings about power dynamics between teachers and students, and taught preservice teachers the importance of sharing power with students by modeling it in her own classroom, thus reducing any supremacy dynamics between students and teachers in the study.

Findings

The research question driving this study was, "How does using Yosso's community cultural wealth model support preservice teachers' development of an equity mindset?" Findings suggested that the course that was framed, using Yosso's prototype (2005), helped all 24 preservice teachers, who participated, develop all of the attributes of an equity mindset, outlined by Nadelson et al. (2019); to some degree, with three attributes, in particular, standing out as developing more than others. The top three characteristics of an equity mindset, which had the most codes connected to it during the data analysis, are outlined in detail below. Throughout these findings, pseudonyms will be used to discuss the participants' responses from the interviews and reflective assignments.

Finding 1: Development of culturally-relevant practices and thinking

The most common attribute of an equity mindset (Nadelson et al., 2019) that preservice teachers developed throughout this course was a culturally-responsive approach to schools and students. The code within this trait that was most often used was *asset thinking*. All five interview participants indicated that they were not familiar with asset and deficit thinking prior to the course, and that the course helped them to develop their understanding of these mindsets. In the interviews, the participants were asked to discuss their understanding of asset and deficit thinking. Peter explained his understanding, "Asset-based thinking keeps us focused on what our students are bringing, and how we can further use what they're bringing to drive instruction." Christine echoed his sentiment in her interview, when she said, "Rather than gearing towards that negativity, you kind of shift your thinking into looking at the assets that they do carry, like the strengths that they have."

To further demonstrate how the course enhanced preservice teachers' understanding of asset thinking, as it relates to culturally responsive practices, the beginning- and end-of-semester survey yielded valuable insights. On the beginning-of-semester survey, preservice teachers were asked to rank their thinking on a scale from (1) *always deficit thinking* to (5) *always asset thinking*. Based on their beginning-of-semester understanding of asset and deficit thinking, six participants ranked themselves in the middle at a three, and the remaining 18 participants ranked themselves at a four, *closer to asset thinking,* but not *always asset thinking*. At the end of the semester, preservice teachers completed the same survey, with 14 of 24 indicating they were closer to *always using asset thinking*, and the other 10 indicating they were at a four, *closer to asset thinking*.

Another code within the culturally-responsive attribute of equity mindset that was prevalent across the data were the codes regarding *understanding and using ethnic and cultural diversity* in the classroom. One of the assignments for the course was a reflection, throughout the semester, in which preservice teachers reflected on the six components of Yosso's (2005) community cultural wealth framework in three different settings: their own educational experiences, their current practicum placement, and in the service learning embedded within the course in which they work with refugee and immigrant families. Through this assignment and their experiences, many participants reported shifts in their understanding of ethnic and cultural diversity, and how to use diversity in the classroom, and leveraging experiences of students, to help develop more global mindsets of all learners. One example of this is from four participants who reflected on their interactions with women who wore a hijab at each language session. For example, Anna mentioned,

> I had never interacted with a Muslim family before, and initially felt nervous working with these women wearing a hijab. After our first session though, I recognized that this was just part of her culture, and [I] was able to interact with her as I would anyone else.

Other participants noted that wearing the hijab was an example of familial capital or cultural capital, and working with these families allowed them to examine their own thinking and biases toward people from other cultures.

Other participants, such as Ariel and George, both mentioned, "as weeks went on, [they] found it easier to communicate" with the families from diverse cultures. Furthermore, seven participants stated that they were more aware of cultural and linguistic differences within their practicum class, and were actively finding ways to showcase that diversity in a way that honoured these students' cultures. For example, Misty wrote, "I have several ELL students in my class….My [cooperating teacher] intentionally adds vocabulary, in their language, into the curriculum." This

was echoed by Charlotte who shared, "We have a Russian student in my classroom. He likes to write in Russian, and sometimes teaches words in Russian to his classmates." She went on to explain that her cooperating teacher encourages this, so that he feels a sense of belonging in the class. Finally, on the end-of-semester reflection, some participants mentioned that getting to work with diverse families was what they would remember beyond this course, suggesting a development of their understanding of ethnic diversity. Taylor wrote, "In 5 years, I will remember the experience of getting to engage in education with ELL families. It was a wonderful experience." Anna agreed with her when she responded in a similar way, "I will remember the opportunity to engage in the Afghan culture, and how I might be able to implement what I learned from this in my own classroom."

Finding 2: The importance of understanding and knowing student populations

The second most common attribute of an equity mindset (Nadelson et al., 2019) present in the data was "know and understand student populations." The representative code within this point that was most prevalent was *knowledge of the importance of knowing your students*. This was possibly most evident in the roster audit assignment, which required preservice teachers to identify a strength of each student in their practicum class. The final reflection portion of this task was the question, "How did [the roster audit] change your thinking about students in your clinical placement?" Maya captured the responses that were similar to many classmates when she said,

> Honestly, it has made me come to appreciate students and their thinking a lot more. It makes me want to get to know them even more than I already do, and see what they do in their future. It has shown me that there is so much more than academics that goes into students, and it is important to acknowledge their interests, and support them through it! I know [that] if I had a teacher acknowledge my strengths, I would continue to work hard for that acknowledgment!

The interviews also showcased participants' development of their *knowledge of the importance of knowing their students*. In Peter's interview, he referred to Yosso's (2005) cultural wealth model as a tool that helped him develop his understanding when he mentioned,

> …building a connection with the students is one of the most important things, I mean, like grades, and like meeting standards, is cool and all, but like the first thing I want, is to be able to do, is connect with my students, and this framework helps me make that connection faster.

Lindsey also mentioned how helpful Yosso's framework was to get to know students better when she said,

> I've been looking at kids in a completely different way, and try to sit there trying to find the different [capitals in] them. I wish I knew them better. Which is why I want to print out those forms, so that I can, like, literally sit there and be, like, okay, okay, and like the roster audit now. where previously it took me, like, two class periods. Now it's like, 'Oh, my gosh!' I could write a paragraph on every child, because of this stuff, you know, and it's, like, it's just way more in-depth.

Finding 3: Taking responsibility for student success

The final attribute of an equity mindset (Nadelson et al., 2019) that was prevalent in the data was taking responsibility for student success. All three of the codes connected to this element were woven throughout the data: *causes of equity gaps, the need to close equity gaps,* and

responsibility to examine practices and policies. Some participant responses that focused on *causes of equity gaps, and the need to close those* included a portion of Christine's interview where she shared,

> …we're trying to, you know, like address biases, unconscious or conscious bias or prejudice, that we might hold against our students, because until you really look at yourself and kind of see the values that you hold, or maybe some beliefs or misconceptions about different students, you can't actively work to change those things and kind of shift your thinking of it, so we did some activities with that, and we've worked on that.

Peter mentioned a *cause of equity gaps* being systemic in his interview when he commented, "barriers where they might have less capital in the areas because of how some systems in our education and government work." Isabella mentioned the systemic issues with how "schools have been built on racism," and went on to explain that this will not change until there is "more action, instead of theory or ideas." She added that the eliminating-obstacles program was just one small way that the class was able to move theory to action to close this equity gap. George echoed this sentiment in his eliminating-obstacles reflection, when he mentioned that one cause of equity gaps is the inequitable distribution of funding to support minoritized populations and that he was "grateful for the funding that allowed us to work with these families."

The *responsibility to examine current practices and policies* was another code throughout the data that showed that the participants were developing this equity mindset trait. Daniel explained the need to examine current practices regarding discipline policies in schools when he said,

> Deficit thinking is more focused on those negative aspects, and [sic] like heavy discipline, for example, or, like, taking [kids] out of classrooms. I think things along those lines that are not really built on relationship building or focusing on the student as an individual, but more, just kind of like quick thinking needs to be looked at, and maybe gotten rid of.

In Jordan's eliminating-obstacles reflection, she noted the need to examine which resources are available in schools. She noted, "accurate and responsible resources and teaching techniques and advocacy for others can create a sense of prosperity and belonging" for minoritized populations. She also mentioned that without examining what resources "students are set up to lose in the end." Lindsey connected the need to shift mindsets to Yosso's (2005) framework in her interview:

> It's really easy to label your good students and your bad students, and it's like so, so, so detrimental to how that student is going to perform in your class, and I think that what we think about our students matters. And so, if we can, you know, self-regulate that, and turn it into this Yosso's framework, like it--it really is the teacher sitting down and creating a roster audit for their whole class, and then pulling from those cultural, the cultural capital resources and changing it in their mind to how they can best suit that child.

Misty directly called herself out on the reflection over the roster audit that asked preservice teachers to examine patterns in the strengths that they identified. She mentioned that it was difficult to find strengths in several students, and examined her current practices by saying, "I should evaluate my patience for these students. I should focus on building a stronger personal relationship with them before judging them on what has made them behave the way they did." Sarah mentioned something similar in her reflection on the same assignment about how her thinking had changed when she said, "[The roster audit] challenges me to take what I know, and somehow apply it to my learning to make myself a better educator as a whole." Amelia summarized her eliminating-obstacles reflection by examining practices and policies in a similar way to Misty and Sarah:

> Becoming more knowledgeable on individuals and their background will create more equity and justice. It is important [that] we realize [how] everyone can make an impact in

> their own ways, and [that] everyone carries their [sic] own value that strengthens our homes, schools, and/or communities.

Overall, participants began examining their own practices and the policies of schools that caused equity gaps during this semester-long course.

Finding 4: Attributes of equity mindset that were less developed than others

All aspects of the equity mindset framework were present within the coded data in this study, and every student showed at least one attribute of equity mindset in their assignments and survey responses, However, there were some qualities that were less developed than others, as shown through a few pieces of data connected to it. One of them is informal leadership. A possible explanation for the lack in these codes is that students in this course did not yet see themselves as leaders in their schools. This equity mindset attribute is connected to developing teacher leaders, which can be defined as "a teacher who works with colleagues for the purpose of improving teaching and learning" (Patterson & Patterson, 2004, p. 74). Students enrolled in this class were seniors in college who had not yet completed their student teaching, so it would make sense that they do not yet see themselves as teacher leaders, so that may have contributed to their lack of identifying teacher leadership within their sites. One student, whose assignments did have codes connected to informal leadership, self-disclosed that an assignment of teacher of record would take place the following semester, meaning that a full-time teaching career would be undertaken while simultaneously completing student-teaching requirements. This student shared that the cultural wealth model helped with "finding ways to better support my school, coworkers, students, families, and myself. I think [that] the cultural wealth model, broken down, will help me better understand myself as a teacher, as well as the people I'm surrounded by." Focusing on the ways to support others in the building, this student showcased some aspects of teacher leadership.

Another code that was not shown as frequently in the data was access for all. This code included the student's ability to identify school's "structural elements; features of the classroom environment; the dimensions of teacher-student interactions that children experience directly; and aggregate indices, such as quality rating and improvement systems" (Pianta, Downer, & Hamre, 2016, p. 120). While the elementary-education program that this course was a part of had recently redesigned the curriculum to centre equity, the lack of this code showed the challenge of getting students to take a systems-oriented view of equity and how it plays out in schools. The data that were connected to this code frequently highlighted teacher-student interactions, such as those that Peter and Luna shared regarding interactions with students when they intentionally made a connection with them to better understand that student's cultural wealth and/or experiences at school were significant. This connects to the second finding that showcased that students seemed to deeply understand the importance of knowing the people who they teach. Aspects of the access-for-all code that were underrepresented in the data connected to systems thinking. It appears that a more intentional focus on how schools and classrooms are a part of the overall educational systems may be an area that could be emphasized more in this class and program. Finally, on the final course survey, all the participants indicated that they either always practiced asset thinking, or rated themselves at a four, for nearly always practicing asset thinking. This led the research team to wonder why those 10 students rated themselves as a four instead of a five. Examining their responses to the qualitative questions on the survey and examining their assignments provided some insight into this. Five of these students mentioned, in the end of semester survey, that they were reluctant to rate themselves the highest on the survey because they recognize that there is always room for growth. This way of thinking shows that they are taking responsibility for student

success and their own success, one attribute of an equity mindset. Three of the other students, who rated themselves as a four on this question, mentioned in their assignments that the CCW model helped them move their thinking, but they did not feel like they had "fully arrived," as Isabelle wrote on her eliminating-obstacles assignment.

Conclusion of findings

The goal of this research was to determine if intentionally incorporating Yosso's (2005) community cultural wealth model into a teacher-education course would support preservice teachers to develop an equity mindset (Nadelson et al., 2019). The findings laid out here suggest that the way this course was structured did indeed have an impact on developing these three attributes of preservice teachers' equity mindset, though there were areas where the course could consider improvement to help develop preservice teachers' ability to identify informal leadership and systemic thinking.

Discussion and Implications

The findings of this study have several implications for teacher-preparation programs, preservice teachers' own lives and mindsets, as well as the use of the equity mindset framework. Gay (2002) outlined that it is the responsibility of teacher educators to prepare preservice teachers for "culturally responsive teaching and for preparing teachers in preservice- education programs with the knowledge, attitudes, and skills needed to do this" (p. 106). While she went on to explain that there are a number of ways to execute this charge, this study showed that using Yosso's (2005) community cultural wealth framework is one more tool to add to the strategies for developing culturally responsive preservice teachers. The study showcased that including assignments, class sessions, and application activities that applied CCW allowed students to develop their own understanding of what Gay (2002) described as culturally responsive instruction. Howard et al. (2020), Darling-Hammond (2008), and Dutro (2019) all outlined the importance of knowing and understanding the population of students with whom teachers are working. This aspect of an equity mindset was the most common code assigned to students' assignments in this study, showcasing the impact of CCW on developing students' understanding of the importance of knowing and understanding learner populations. Saathoff (2015) stressed the importance of identifying CCW in different educational settings through assignments–a finding also supported by this study, as CCW helped preservice teachers deepen their comprehension of the complexity of sociocultural elements in students' lives. One important consideration of multicultural teacher preparation is training preservice teachers to take responsibility for student success, by identifying the causes of equity gaps and taking action to close them (Gorski & Swalwell, 2015). This study confirmed Zoch and He's (2020) findings that the CCW can help preservice teachers examine traditional power dynamics to take responsibility for student success by examining the causes of equity gaps and closing them. These findings all seem to point to developing a stronger equity mindset in preservice teachers by using Yosso's (2005) framework.

Specifically, this study showed the potential for enhancing preservice teachers' equity mindsets through the intentional use of CCW in coursework and field experiences throughout their time in a teacher-preparation program. Teacher educators can design coursework that asks preservice teachers to read about Yosso's (2005) CCW model and apply it to their own and their students' experiences. Programs can also incorporate it into fieldwork, by having preservice teachers conduct observations and interviews that focus on identifying and documenting different

forms of capital that students possess. Teacher-preparation programs can provide opportunities for preservice teachers to apply the CCW model in community settings, similar to the eliminating-obstacles work outlined in the course studied in this paper. Teacher educators can use Yosso's model (2005) to help preservice teachers challenge their own deficit thinking. Finally, this framework provides a way for enhancing relationships between teachers and the families and communities that they serve. Teacher-preparation programs can create a community, or practice around the CCW model, by providing opportunities for preservice teachers to connect with each other, with experienced teachers, and with community members who are committed to equity and social justice.

Outside of viewing these findings simply through a lens of teacher preparation, it is important to consider the impact that mindset work has on the preservice teacher. While the aim of this study was to prepare these preservice teachers for their future classroom, the shifts in their mindsets have effects on their overall ways of being and thinking in the world. Daniel pointed this out in his interview when he said, "I like how I think more now than I did before this class." The shifts in thinking not only inside, but outside, of the classroom was an added benefit of using Yosso's work (2005) to frame the learning in this course.

Limitations and Future Research Opportunities

As in any study, there are limitations to the present research. The researchers acknowledge that the equity mindset framework has not been used robustly outside of the group that created it (Nadelson et al., 2019). While it fit this research well, it was a structure that has not been used to explore the mindsets of preservice teachers to date. Future research should be done that utilizes the education equity mindset framework to further validate this as a tool for gauging shifts in the thinking of different groups of people in the educational field. Using a model that has not yet been tested thoroughly, specifically with preservice teachers, runs the risk of a lower credibility in findings. This was experienced specifically in this study, with the close connection between codes connected to culturally responsive instruction, student centered learning, and knowing and understanding student populations. The latter two of these codes are components of culturally responsive instruction (Fenner et al., 2024), so at times, it was difficult to distinguish these three unique codes from each other. This may have contributed to over-identification of these three aspects of an equity mindset in the present study. More research that applies it, along with priori coding, such as this one, would help validate the framework and coding methodology to increase validity of findings.

Additionally, the sample used in the study was relatively small in size, with just 24 preservice teacher participants from one semester. The first author on this study will continue to teach the course examined in this work, and hopes to continue investigating how the course impacts preservice teachers' mindsets over the coming semester, as small changes to the course are implemented.

Collecting self-reported data, such as what was collected through survey data, has its own limitations. Creswell (2014) mentioned that self-reported data is filtered through the views of the participants, and may include internal bias, because not all people are equally articulate and perceptive. To address this limitation, the research triangulated the self-reported survey data with assignment analysis and interviews. Member checking was also used with interview participants to ensure that the findings were more valid.

Finally, it would be short-sighted to connect all the development of education equity attributes to the use of Yosso (2005), or the work completed in just this course. The semester when

preservice teachers take this course, numerous other courses that explore education equity in a variety of contexts are also available. Attributing any shifts or developments in their equity mindsets solely to one course would fail to acknowledge the work of colleagues who are also working to develop these preservice teachers. This also creates future research potential and program evaluation opportunities to investigate how students enrolled in the elementary- education program develop their equity mindsets over the course of their years within it. Expanding the research more broadly, to a more longitudinal study, could also incorporate an examination of the impact that other courses have on students' mindsets, such as psychology, literacy, and diversity, which would expand the research to a more interdisciplinary approach.

Conclusion

It is critical for teacher-education programs to develop teachers' equity mindsets before sending them into schools (Weisberg & Dawson 2023). This study showed how using Yosso's (2005) community cultural wealth model can impact preservice teachers' education equity mindset. Audrey, a participant in this study, summarized the findings well, in her response on an assignment:

> As future educators, we are constantly trying to push forward and improve the educational system as a whole. We do this by inspiring each other to be better and learn from our mistakes. This type of resistance capital can be what it takes to fix our broken education[al] system that we see through our practicum experience.

It is the hope of this research team that the intentional way this course was redesigned to incorporate Yosso's (2005) community cultural wealth model, and this research, encourages other teacher educators to equip new professionals with one tool to push back the deficit mindsets, which are so prevalent in schools today, to fix the broken education system.

Author Bios

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