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Pre-service Teachers' Implicit Bias: Impacts of Confrontation, Reflection, and Discussion

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Bias can affect beliefs teachers hold about students' achievements, behaviors, and backgrounds. These beliefs, in turn, can influence teachers' subjective thinking regarding students' abilities and grades as well as reduce expectations of students, thereby expanding the existing achievement gap (Jacoby-Senghor, Sinclair, & Shelton, 2016; Peterson, Rubie-Davis, Osborne, & Sibley, 2016). When educators confront the implicit biases they carry, a deeper awareness emerges regarding their everyday decisions and behaviors based on these biases.

Much research on implicit bias appears in fields such as criminal justice and health and to a lesser degree in education (Straats, Capatosto, Wright, & Jackson, 2016). For example, a few studies have been conducted with practicing teachers regarding anti-fat bias toward students in physical education (O'Brien, Hunter, & Banks, 2007). However, little research examines pre-service teachers' (PSTs') attitudes regarding implicit (Straats, Capatosto, Wright, & Jackson, 2016), especially when it comes to issues of racial

bias. The few studies which exist regarding implicit bias with PSTs use quantitative measures such as questionnaires (Glock, Kneer, & Kovacs, 2013), instruments measuring implicit racial attitudes (Glock & Karbach, 2015), and mixed methods studies centering on implicit bias test results, pre- and post-tests, with written reflections (Hartlep, 2015). Therefore, the purpose of this naturalistic inquiry (Lincoln & Guba, 1985) is to fill the gap in qualitative research regarding PSTs' implicit biases and how they address, confront, and talk about them.

It is inevitable that PSTs will be teaching students with backgrounds, perspectives, and ideologies different than their own given that eighty percent of the U.S. population of teachers identify as White, female, and middle-class (Boser, 2014), demographics which differ from those of classroom populations. Discussing biases will potentially enable PSTs to recognize and address them in their classrooms. Author Thompson is all too familiar with implicit biases, and below she

describes a recent experience she had regarding race and implicit bias:

Recently, I had a phone call with my nine-year-old nephew that made me realize the importance of my voice regarding my race and skin color. He called to tell me what had happened at school. He wondered if race mattered in these situations. My nephew goes to a school where he's one of three Black boys in his grade; this has led him to be more aware of his blackness, just as I was at nine, but for a different reason. His reason is because he's one of the few that stand out for being Black, whereas mine was because I stood out because I didn't look Black. It makes me wonder, do people who aren't minorities become increasingly aware of their race or skin color?

For the majority of my life, I've understood what an anomaly I am to almost every person I've met. I don't match the image that people have in their minds when they hear that I'm Black. Not looking the race you identify as takes a lot of figuring out how to wear your skin in every situation you find yourself in.

Growing up, I was often called albino. I not only had to explain why albinism didn't apply to me, I also had to prove to them how I was Black. I did this by bringing in family pictures and telling stories of my ancestors, trying to convince nonbelievers to hopefully believe me. I'm fair-skinned, so when people find out I'm Black, and not White like they previously believed, things often change. This is something that my parents, siblings, and I talk

about because we all have stories in which tension arises, friends are lost, or things get uncomfortable because people were wrong in their assumptions. It's not natural to shake someone's hand upon meeting them and say, "Hi, I'm Kennedy and I'm Black." My younger brother disagrees, as he introduces himself to new people this way to avoid any confusion later on in the relationship.

The truth is, people treat you differently when they feel as if you've deceived them. I've met plenty of people who decide they no longer want to be around me once they learn I'm Black. This is where implicit biases come alive, when people didn't show or even didn't know that they held these ideas, but they come to light. It doesn't always come from a hateful place, but often an unknowing place.

This study examines the reflections and responses of PSTs' in a peer discussion about their biases as they were "brought to the surface, examined, and finally expunged" (Carter, Skiba, Arredondo, & Pollak, 2017, p. 225), similar to what Thompson noted as "com[ing] to light." Our research question was, "How do PSTs address, confront, and talk about their attitudes and beliefs regarding implicit biases they carry, in an online forum, especially when it comes to race?"

We begin by defining implicit bias. Next, we center our research within sociocultural theory with an emphasis on critical literacy practices which connect the culture and environment within the PSTs' course. Then, we share our findings on the course environment, students' reactions to the results of an implicit association test,

and how personal experiences influence results. We end by discussing these findings as well as implications for future teachers and teacher educators.

Review of Literature

According to the Kirwin Institute for the Study of Race and Ethnicity Report (Straats, Capatosto, Wright, & Jackson, 2016), implicit bias is “the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner; activated involuntarily, without awareness or intentional control; can be either positive or negative; [and] everyone is susceptible” (p. 14). Implicit bias stems from various messages received about different groups of people. Assumptions about these groups can be unconsciously associated with them. Implicit and explicit biases differ since implicit bias is outside of awareness and sometimes opposes stated beliefs and attitudes. If Kirwin’s definition of implicit bias, which we support, is examined through King’s (1991) lens of dysconscious racism, it is further complicated: many students have limited and distorted views about inequity and diversity, which make it difficult “to act in favor of truly equitable education” (p. 134). As educators, acting on biases might cause unintentional harm. Haslam (2018) notes:

Although none of us are immune from bias, it is our responsibility as educators to be aware of when they’re creeping in so we can push back against them, question our assumptions, provide counternarratives to stereotypes we might not have known we had, and ensure that we are, in fact, living up to our stated core beliefs in the classroom. (p. 26)

Recent research investigates racial disparities regarding disciplinary measures. According to the Office for Civil Rights (2014), Black students are three times more likely to be suspended than White peers. There are numerous studies on implicit biases of teachers toward gender; for example, teachers show favoritism to males in math and science, but to females in the arts and language (Lavy & Sand, 2015). For girls of color, the confluence of race and gender can have dire consequences; Black girls are twelve times more likely than other girls to be suspended (Office for Civil Rights, 2014).

In a recent study, Okonofua and Eberhardt (2015) asked 57 teachers to review the files of two fictitious students incurring the same minor disciplinary infractions. Teachers were more likely to escalate disciplinary measures for students with a perceived Black name (DeShawn or Darnell) versus a perceived White name (Jake or Greg).

Negative stereotypes will continue to surface in schools unless educators explicitly challenge and reflect upon their own biases (Terrill & Mark, 2000). Carter et al. (2017) noted, “If we are to undo the racial inequities that continue to plague us, we must find constructive ways to talk about them and intervene constructively and consciously to end them” (p. 209). However, in many college classrooms, such controversial topics are difficult to engage in, especially when students are asked to question their privileges and power within the educational system (Sleeter, 2016). Therefore, this study investigates how talking about race improves PSTs’ willingness to confront and reflect on their implicit biases.

Theoretical Framework

The theoretical framework guiding this study centers on sociocultural theory with an emphasis on critical literacy. Through Vygotsky's (1978) sociocultural work, we contend that PSTs' thinking and learning are shaped by culture, that knowledge is shared, and that communicative events cannot be understood without considering the relationship between language and thinking. Here, education is a dialogic practice occurring between teacher, student, and peers. Sociolinguistic scholars note that language influences culture (Gee, 1996; Halliday, 1978). Furthermore, students engage in out-of-school literacy practices, such as gaming, graffiti, graphic novels, and social media which school typically ignores and references as "non-educational" (Batchelor, 2019).

Gee (1996) identified "identity kits" which reside within discourses and identify social, cultural, and political roles within them. Freire (2001) believed that literacy also includes power and empowerment through reading the word and the world. Moreover, language enables learners to name and problematize the world to "take everyday ideological constructions of social relations, of class, race, and gender relations, and question them through reading, writing, and dialogue" (Luke & Woods, 2009, p. 12). Also drawing from Vygotsky, Lave and Wenger (1991) viewed learning as socially and culturally situated within groups called communities of practice; here learning occurs by socially participating through discourse and developing shared meanings and identities both in and out of school. Regarding this study, the online blog posts used in the course, described below, were the PSTs' "community of practice" in which they co-

created ways of talking about race and implicit bias.

Luke and Woods (2009) argued that critical literacy "is not a single unified method or approach. Instead, it consists of a family of approaches to the teaching and learning about cultures and societies, texts and discourses" (p. 16). Centering the undergraduate course within a critical literacy framework enabled PSTs to promote social justice (Souto-Manning, 2017), encourage social action and change (for example, become agents of change) (Lewison, Leland, & Harste, 2015), and instill democratic inquiry (Edelsky, 2004; Herbeck, Beier, Franzak, & Stolp, 2008). Critical literacy encourages us "to imagine how literacy education could open new possibilities for students to know themselves, their circumstances, and their ability to act on their worlds" (Riley & Crawford-Garrett, 2015, pp. 64-64).

Identity is also closely tied to critical literacy (Hagood, 2002). Identity is heavily influenced by the texts one reads, writes, thinks, and talks about as a social practice. Here, the course helped further shape PSTs' emerging identities in relation to their acknowledged biases prior to taking the implicit association test. The next section describes the setup of the course.

Methods

Participants and Context

Participants for this naturalistic inquiry study included 21 PSTs (16 female and 5 male) enrolled in an adolescent education course entitled "Foundations of Literacy" during their sophomore year at a public Midwest university in the United States. All PSTs in the class agreed to participate. Participants were between the ages of 19 – 23 and eighteen identified as White, and one each as Black, Latino, and Native

American. Weekly, the class met twice face-to-face for 55 minutes (Mondays and Wednesdays) and once in an asynchronous, online setting (Fridays).

The course was intended to provide numerous readings and discussions on the history of literacy, various theoretical frameworks about literacy, models of reading, and a specific focus on critical literacy, centering on issues of social justice. Readings were also focused on racism and Whiteness in education.

The purpose of the Implicit Association Test (IAT) and follow-up blog posts (see Figure 1) was for PSTs to confront potential implicit biases associated with their race and then advance through reflective practice and awareness via writing and oral discussion.

The IAT was originally created by Anthony Greenwald (Greenwald, McGhee, & Schwartz, 1998) and contains tests on numerous biases, such as race, gender, and sexuality. The test directions instruct the user to view words and then press either the “e” or “i” keys to categorize the words as either “good” or “bad” (see Figure 2). “Good” words include “happy” and

“laughing,” for example, while bad words include “horrible” and “disaster.”

Moreover, for the test on race, both the words and the faces of African-Americans and European-Americans randomly appear on the screen, one at a time, and the user must categorize them as “good” or “bad”. The quickness which the user presses the “e” or “i” keys associates bias.

This research and discussion is focused on data collected from the asynchronous, online blog where PSTs contributed original content and also responded to peers. Immediately after taking the IAT test on race that focused on African-American and European-American associations, the students wrote a reflection/reaction to their experience and results. Next they transferred their in-class writing to the online blog site where they could expand their thinking and respond to their peers’ contributions for the duration of the week (Wednesday through Sunday). We then held a follow-up class to discuss our responses in person (Monday).

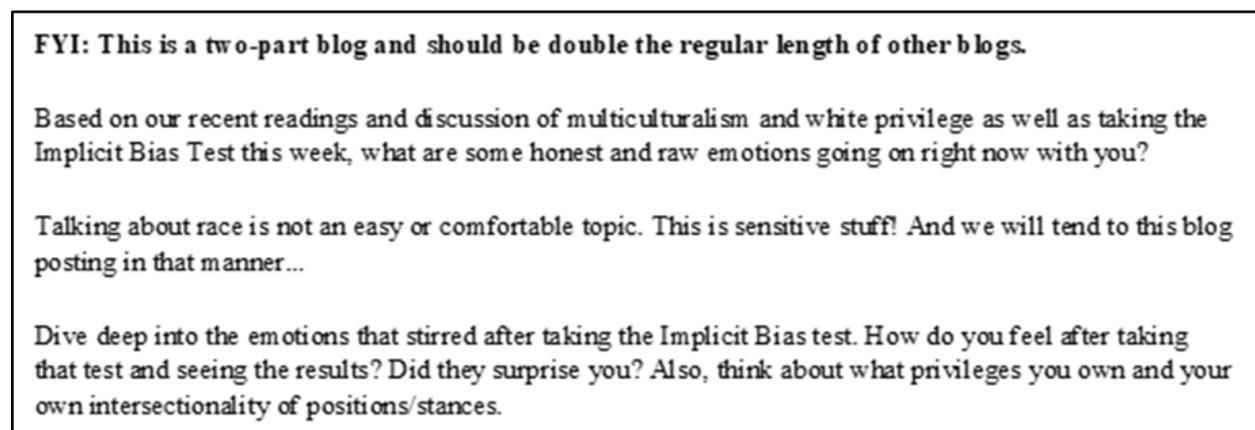


Figure 1. Blog directions.

https://implicit.harvard.edu/implicit/Study?tid=-1

Implicit Association Test

Next, you will use the 'E' and 'I' computer keys to categorize items into groups as fast as you can. These are the four groups and the items that belong to each:

Category	Items
Good	Excellent, Spectacular, Happy, Pleasure, Delight, Cheerful, Laughing, Glorious
Bad	Horrible, Horrific, Disaster, Failure, Humiliate, Hurtful, Nasty, Negative
African Americans	
European Americans	

There are seven parts. The instructions change for each part. Pay attention!

[Continue](#)

Figure 2. Image of test directions (Harvard, n.d.).

Roles as Researchers

As a teacher-researcher, author Batchelor has a deep connection to her students, the instruction conducted, the discussions held, and thus, the data. For this reason, Batchelor created pseudonyms shortly after collecting data and then waited one year before looking at it again. Additionally, she engaged two researchers to look at the data and co-author this article. Author DeWalter is a recent graduate of the university research site's Master's program in education and former graduate assistant of Batchelor. Thompson is a pre-service teacher and also a participant of the study who approached Batchelor to coauthor this article. Throughout this process, the authors problematized their own positionalities and thus biases. Batchelor identifies as a female, cis-gender, White, able-bodied

educator. DeWalter identifies as a female, cis-gender, White person with disabilities. Thompson identifies as a female, cis-gender, Black, future educator, who grapples with her own identity in regards to (dis)ability.

Data Sources

Data came from students' blog posts and responses. Each post was uploaded onto a single Word document along with the identifying time-stamp, author, and peer responses. Authors' names, peers' names mentioned in posts, and authors' responses were immediately substituted with pseudonyms. All 21 students posted their reflections on the blog forum and then responded to at least two other people in the course, with some peers responding to more than five individuals. The document consisted of 47 single-spaced pages.

Data Analysis

Data were analyzed and coded using the constant comparative method (Strauss & Corbin, 1990). Beforehand, we individually looked at the data, seeking codes revealed in students' blog writings/responses. Then we each independently created a chart on a separate document that housed broad codes (such as "personal identity and background", "societal", "results") which were broken down into specific codes (such as "acknowledges personal privileges," "experience with diversity matters," and "classroom environment"). We categorized students' comments within each code.

Throughout data analysis, we also wrote descriptive, reflective memos regarding what caught our attention about particular codes, as well as key moments of conversation which appeared throughout the blog postings/discussion. As a second layer of analysis, we met and shared our data and reflective memos, and condensed codes by consensus. We also confirmed the student comment examples for each code were properly categorized. Themes emerged through our discussion and we unanimously decided the three presented in the next section were particularly important: classroom environment, IAT test results, and personal and cultural experiences.

Findings

We set out to investigate how PSTs address, confront, and talk in an online forum about their attitudes and beliefs regarding implicit biases, especially when it comes to the Black/White binary. The experience: (a) centered on the supportive classroom environment produced by Batchelor and supplemental readings chosen to build schema on systemic race

issues in education; (b) focused on PSTs' reactions to their results of the test (for example, arguing with the test's validity, and revealing racial identities other than White); and (c) confirmed that sociocultural experiences and an individual's intersectionality awareness influenced thinking about bias.

Class Environment

The classroom environment that teacher-educators create directly impacts future classroom structure and leadership. Batchelor structured the class to be informal and students shared without traditional hand raising. The physical classroom was also set up intentionally; tables which accommodated two people created space for engagement. These tables were arranged in a U-shape, which enabled eye contact and conversation. Finally, readings preceded every discussion, during which Batchelor asked students to relate content to their future teaching.

Many students mentioned the classroom environment, the readings, and the class in their posts and how reflecting on these "tough" topics made a difference. Kelly (all student names are pseudonyms) said, "Through the readings and discussions we have had in class, I have become much more comfortable talking about race and beginning to explore my own personal biases about these topics." Cynthia and Monica add to this idea as follows:

The discussions we have in this class inspire me to become an open-minded and culturally aware teacher. In the past, these types of conversations about race and systemic racism have made me uncomfortable, but in this class, I feel as if I am speaking in a safe and accepting environment. I know that I can speak my mind and also be

honest about my views. I think because our class is discussion-based we have been able to get to know each other on a much deeper level.
(Cynthia)

I feel as though most classes try to avoid “tender” subjects. I like how we have the open concept idea where we are free to say what is going through our heads, while still respecting others and their viewpoints. I think it is important as future educators to be able to learn how to deal with these types of conversations so that we can address them in our future classroom.
(Monica)

A few of the students discussed how the environment lessened their discomfort around sharing about race and biases. Anastasia noted:

Until this year, I have always been uncomfortable and afraid to discuss the topic of race. I think that this may stem from the fear of being afraid to say something “incorrect”, or to make myself leave my comfort zone.

Morgan also discussed classroom environment:

Through this [class], I believe I am learning some techniques that will help me teach race in the future, in a way that I consider to be the most appropriate. I want to create a safe classroom environment where my students feel comfortable sharing their differing perspectives with their peers.

Aaron agreed, “Through simply *listening* to what people who think differently than you

have to say, one can make much more progress through forming a well thought out rebuttal. Quality questions mature a person far more than angry arguments.”

Not every student felt supported and comfortable in this class environment, however. Kent stated the following:

But even though I am learning to understand that these implicit bias[es] exist in the world, it remains difficult for me to contribute to class discussion as much as I once would, and I think a major factor for this is that I simply continue finding myself in the position of learning more than I have to input.

Each collective classroom and individual student experience differs; not everyone will react identically to what they read and encounter. However, many of these PSTs noted the impact of the classroom environment in their discussions and posts, acknowledging how environment may influence their future teaching styles and ways they discuss race. Such was the case in this study, where Batchelor’s race and gender identities of White and female matched the majority of the PSTs. Her presence and engagement in classroom conversations regarding race may have been shaped by these similarities if students felt as though Batchelor was a part of their homogenous group and therefore they could openly discuss their implicit biases. Many teacher-educators who are non-White and who delve deeply into race with predominantly White PSTs receive pushback and apprehension (Johnson & Bryan, 2017), whereas Batchelor received none. This may indicate the students’ sense of belonging to the same group as the instructor characterized the “safe space” for discussions.

Results of Test

Implicit Association Test (IAT) results are reported based on a continuum of no preference, slight preference, moderate preference, or strong preference to a group. In this case the groups were African-Americans or European-Americans. Results for the PSTs in this course varied. For example, four PSTs indicated they received a strong preference for European-Americans, while one PST received a strong preference for African-Americans. The reactions of PSTs who received their test results on their personal computers during class were generally consistent with content about results posted to the blog space. PSTs seemed to do one of three things to explain their results: (a) declare that they are not racist; (b) state that all people are equal no matter their identity; or (c) argue with the premise of the test itself. Additionally, assumptions were made about the races of others in the classroom, and problematic statements appeared regarding race.

One of the most common ways that PSTs reacted to their test results was to announce that they were “not a racist.” This denial was represented implicitly in their writing as well as explicitly in statements concerning racism. Kelly stated, “Although I do not see myself as a racist person either, my results did not reflect this.” Claire wrote, “I was surprised by the results to the race test. I do not identify myself as a racist.” Cassie noted, “So when I entered the classrooms and seen [sic] black people, I immediately sat down next to a White person. This isn’t because I was ‘racist’ but because I was uncomfortable.” Kelly’s statement below reflects this unwillingness to accept the label of “racist” as she works through her reactions:

They said that I have a strong automatic preference for White people over Black people. Reading this, I was offended because I do not consider myself a racist person. After reflection throughout the day and discussions with others, I have accepted my results a little more now. Although I do not consider myself racist towards Black people, I do consider myself unexposed to Black people.

This desire not to be labeled as racist continued in PSTs’ responses to one another. In many cases, they validated each other in not being racist, or tried to ‘explain away’ racism. Karin responded to Anastasia, saying, “While I don’t think either of us are racist, this was very important for us to understand how we need to be careful in the future and to change how our explicit biases will show.” Kai wrote something similar in response to Lacy: “For starters, your results don’t mean that you’re racist/one in the same with someone who is racist, so I don’t want you to feel defeated by them!”

Many PSTs stressed the idea that people are equal no matter their identity. For instance, Lacy maintained, “I’m not at all defending Whites, I just truly don’t see race as ‘Black/White’ kind of thing.” Gwen agreed, “I believe myself to value all human life, regardless of color (or any other sort of difference),” and Jackie echoed, “I feel I was blessed to get to experience living in two different neighborhoods with primarily one race over the other. It taught me how to not see skin color and to just be friends with everyone.” “Colorblindness” was discussed during the semester, including how people have the misperception that it is not appropriate to acknowledge differences in race. This viewpoint combines with an

attitude that “everyone is equal,” which is problematic since people do see race, and race provides meaning (Sensoy & DiAngelo, 2017). However, some PSTs were quick to ignore differences and focus on treating everyone equally. Morgan exemplified this, “I was hoping that my results would not show a preference for either group because I like to believe that I treat and interact with all people the same way, no matter our differences.”

Another way that PSTs deflected results was to blame the test itself. Octavia reflected, “It is interesting to me that they chose ‘bad’ and ‘good’ qualities because I think if they would have chosen something such as stereotypes among those groups, my results would differ,” and added, “This made me question how accurate the test was and what the test is really testing.” Jackie agreed, “I also thought it was really odd that the implicit bias test chose to use good and bad characteristics... I also agree that it seems the test is conditioned for a certain group.” Kelly stated, “After learning a little more about the actual test, I began to question the legitimacy of judging biases in this way.” Cynthia questioned the test’s structure:

Another part of this test that was so frustrating to me was the way the test was designed. Personally, I feel that the test is biased. In the beginning of the test, we are told to pair Black people with “bad” words. Why are we not prompted to do the opposite first? Instead, we get used to associating Black people with negative words, just as society has led us to believe. Then, we are prompted to match Black people with good words. This may or may not have anything to do with our results in the end, but I wish I was not

first presented with the way society historically views Black people.

Most of the PSTs assumed this class was exclusively White since we met twice a week face-to-face. Lacy said, “I really have been enjoying listening to discussion and hearing others’ thoughts on the matter of race. However, I can’t help but wonder, would I feel differently if an African American were in the room with us? After all, we are all the exact same race.” It turns out, though, that there were three PSTs in the classroom who did not identify as White, and their identities were revealed in their blogs. Kai revealed herself as Black in her blog, saying:

This has always been, and I feel always will be in the back of my head because people may have a different perception of me after they learn which race I belong to, and in some people, I find this to be true. For the last nineteen years I’ve had to explain myself and having to constantly explain why you look the way you do, when you yourself have never actually been sure, is pretty rough.

Gwen also revealed herself as Native American. She wrote:

I have used my European looks to hide a huge part of myself from many people out of fear of ridicule. I know that I am privileged in this way because there are others who are unable to hide their racial identity based upon what they look like and the stereotypes associated with particular communities. It sickens me to think that others have to suffer for sharing a

similar identity when I can hide behind my looks.

Gwen gave an intriguing opportunity to look at implicit bias: the need to hide one's self, depending on one's community.

Reactions to these announcements were largely supportive. Kai responded to Gwen, saying, "I am so happy you mentioned being Native American! It's really unfortunate that people have treated you poorly because of it." Some of the responses misunderstood the difficulties these PSTs might have had. Aaron exemplified in responding to Kai:

But anyways, you said that your unique identity regarding race will be both a disadvantage and an advantage, but I kind of believe that even the disadvantages could be worked out to be advantages through the discussion opportunities that arise.

Aaron also revealed an identity previously unknown to Kai:

I also think it's pretty cool because I'm Hispanic, but most people don't realize because I'm White (although my last name gives it away). This has never been helpful to me in resonating with other Hispanics however, being that I don't speak Spanish.

The three students who revealed their non-White identities in the online forum responded to one another's blog posts, but the White PSTs in the classroom did not comment on these conversations.

PSTs reacted in a variety of ways to their IAT results, but consistently attempted to remove some of the guilt and blame associated with them. Some PSTs even

challenged their classmates' ideas of race by revealing their own race. The conversations surrounding reactions to the results occasionally demonstrated problematic ideas, but also showed reflection and growth through engagement, deliberation, and discussion.

Personal and Cultural Experiences

PSTs commonly discussed their upbringing and its effect on their perspectives. They discussed how neighborhoods, relationships, and schools shape their current biases (or lack thereof), and also how society, as well as specific events, are factors which contribute to their perspectives.

Personal relationships were important: connections with people of color or with people who often talked about race influenced their potential biases. Alyssa said, "I like to point out to people when talking about racial issues, I am dating an African American man." Aaron mentioned, "My best friend was Black when I lived in Maryland, but then moving to Hamilton right before third grade, I didn't even have another black friend again until middle school." Jackie noted, "While growing up, 99% of my friends were African Americans." Karin wrote:

My friends of color and I also discuss and talk about race and White privilege, and I like to think that I have a better grasp on what it means and how to deal with it in a respectful way for everyone.

PSTs also realized that lack of personal relationships with people of color might contribute to biases. Molly stated, "In my family, there was no discussion of other races... I never knew that a race NOT being represented actually represents them."

These personal relationships contributed to how PSTs thought about race and how they reflected on the causes for their test results.

The racial makeup of the places where students spent time as children was also important to them. Kevin wrote, "During the race test, I honestly expected myself to prefer White people over Black people, not because I consider myself racist by any means, but due to my upbringing in a very White suburban community." Kelly talked about her schooling, "Growing up in a predominately White, conservative community, the topic of race was not discussed often. When these issues were brought up in the classroom, conversations were left at a surface-level, without allowing students to dive into these topics." Claire stated, "I had a lot of interaction/grew up around African American students and now have a bias toward European Americans just like others in the class as well."

Some wondered what the results would have been if their neighborhoods or schools had had different demographics. Cynthia asked, "Do I have an automatic preference because I simply am not exposed to Black people? I grew up in an area where Black people made up about 3% of the population." Morgan stated:

After reading your blog, though, I am starting to wonder if my results would be different if I had gone to a school with more diversity. I definitely think this exposure would influence my results, but I'm not sure how.

Gwen noted, "I definitely agree that our upbringing and surroundings can have big impacts on our implicit biases and it can be hard to recognize that we have certain

preferences that we may not agree with." These experiences informed how PSTs explained some results, correlating biases and past experiences.

Many PSTs made reference to societal structures or historical events influencing their biases. Alyssa talked about everyone having bias: "In our American society, since the beginning of it, really, White people have reigned superior. This is not up for discussion; this is fact... Historically, African American people have suffered in our society, and that shows even today." Other PSTs had similar notions regarding Black and White people in history. Cynthia argued:

Historically, Black society is seen as less than White society. It's frustrating to me that this is a fact and something that plays into my view of a group of people. What if the history was reverse, and White people were the population owned by Blacks, unable to vote, seen as the 'lesser' beings?

Nick explained his results of favoring African Americans by referencing history, saying, "White people staged a genocide on native peoples, enslaved other human beings up until only 150 years ago, and committed countless other atrocities. How could I not associate White with 'badness' after that sort of education?" Nick's reaction here encouraged us to think about the importance of studying historical contexts, often absent in pre-service teachers' curriculum.

PSTs discussed how society is today and how that impacts their opinions. Kevin talked about bias affecting education by addressing special education: "Black males create an un-proportional representation of special education students." A few stressed

that our society today is still racialized. Kai said, “I’ve always thought I had a cynical outlook, but I feel like fifty years ago we thought fifty years from then we’d be equal. It’s still a work in progress.” Morgan had an explanation for the lack of progress: “For instance, when race is brought up in conversations today, most people get uncomfortable and automatically put up their defenses. These conversations never tend to end well and our societal problems centered around race continue to go unsolved.” For PSTs, past environments, the historical context of the United States, and the current climate of today’s society regarding race greatly affect their biases.

Discussion

We investigated how engaging in discussions about race impacts PSTs’ willingness to confront and reflect upon their implicit biases. PSTs were able to engage in deep conversations due to the class environment. Some teachable moments addressed assumptions about no “students of color” being present because they all “appear White.” Also noted was how the classroom fostered an openness in which to ask questions and listen, given that talking about race is “messy” and mistakes will be made. For example, PSTs in course evaluations mentioned repeatedly how Batchelor created a safe and respectful classroom through seminar format, non-judgmental discussions, reflection, and questioning.

Regarding IAT test results, most PSTs felt an automatic denial of evidence that they had a bias for preferring White people. Several coping mechanisms allowed them to reflect on this, but it was clear that many did not agree with their results. This may be common when tackling the idea of racial bias (Linder, 2015) as well as adopting what

Castagno (2013) refers to as “powerblind sameness,” which denies power-related difference.

PSTs seemed to want peers to know that they were not racists, but good people. This need for peer affirmation and recognition is important: exploring racial biases and understanding is highly personal, yet the desire to not be seen as a racist represents a more public reaction. This desire to deflect and defend also implies the inherent guilt that those in dominant positions have concerning their own privilege and bias (Marx & Pennington, 2003; Picower, 2009).

This implicit bias test experience also required PSTs to learn from and respond to others. Some, such as Kai and Aaron, challenged ideas and requested deeper reflection from peers. Others, including Gwen, demonstrated growth as reflective future teachers during their reflections. However, reinforced stereotypes and biases recurred throughout the blogs when PSTs assured each other that they were neither racist nor biased.

Unsurprisingly, PSTs who challenged others were those with racial identities which were in the minority and those more experienced with race conversations and reflection (Brown, 2014). Direct experience with racial marginalization or social justice conversations helps growth to occur. These data reflect the trend of placing the responsibility of education about societal structures on marginalized populations (Valencia, 2012).

Furthermore, PSTs brought up racial identities in the classroom and thus influenced the conversation. While three PSTs revealed identities during the blog posts, these posts were near the end of the blog; most other PSTs had already reflected before seeing this new information. Many

assumed that their classmates were all White and proceeded with that idea as they reflected. The researchers wonder how discussions might have differed if these identities were revealed earlier. This study's data may demonstrate that conversations about race within racial groups significantly differ from conversations across racial groups (Amos, 2016; Brown, 2014). Without that cross conversation, reflection might be thoughtful, but less productive.

PSTs often used words like "sad," "surprised," and "bad" when talking about specific instances of racial bias. This vocabulary use demonstrates recognition of bias, but not responsibility or focus on change. Many PSTs were in their social justice exploration phase (Aronson, 2016) and several talked about addressing issues of bias in their future careers. It was most common to hear the students say they would keep these ideas in mind as they moved forward, but none of them gave specifics about how they would do so. It is our hope that these PSTs will continue exploration and work toward dismantling oppressive structures.

It is clear in the review of literature that society and societal structures contribute significantly to continued racial bias and discrimination (Sensoy & DiAngelo, 2017). PSTs were quick to realize this, even drawing upon specific personal and cultural experiences. This is significant because these theory to practice connections indicate the PSTs' have the capacity to reflect, continue to explore, and apply what they learn to their future careers. Their desires to grow into better teachers was evident in their reflections and recognizing sources of their own biases may help them to do so. It may also help them identify and

address biases in the learning communities of their future students.

This study's data reveal how social justice growth and reflection happens. When PSTs identified the *why* of their bias, they better understood how to mitigate it. This *why* was also evident when PSTs connected history to how contemporary society operates. Knowing the history and context of the United States allows PSTs to better comprehend society and the difficulties which may face some of their future students (Carter et al., 2017).

Naturalistic inquiry methodology supported exploration into both how PSTs addressed, confronted, and talked about biases after discussing race within a social justice framework and whether that framework impacted the PSTs' willingness to confront implicit biases. The small number of participants afforded a thorough investigation of rich qualitative data. While this study cannot support generalizations, it illuminates a need for dialogue centering on racism and implicit bias in teacher education courses. Additionally, the PST participants in this study demographically represent the current teacher workforce in the United States with regards to race (Boser, 2014). Additional studies are needed to examine implicit bias with PSTs of all races; a longitudinal study which follows PSTs into their first years of teaching may prove insightful.

Implications for Future Teachers and Teacher-Educators

What should we do with these biases? What comes after acknowledging bias? What keeps more classes from talking about bias and race? If for no other reason than to practice talking about race, PSTs must broach uncomfortable topics. If they are comfortable, they are not being

challenged. If they are not being challenged, they are not growing. Since White PSTs will influence youth in great numbers, they in particular, must grow. As Matias (2013) posits:

White teachers then have two options in their role within the racial structure. First, they can say nothing, maintain a false colorblind ideology, and refuse to learn about race and Whiteness, which ultimately defaults to maintaining White racial dominance. Secondly, they can revolt against a supremacist school system when they choose to self-initiate anti-racist endeavors, a process needed to become White allies and thus effective culturally responsive teachers. (p. 76)

Teachers and teacher educators cannot change students' schemas or provide the experiences to prepare them for these conversations. Students cannot be forced to be open to talking about race or other difficult topics. However, the reflection that inevitably happens when students explore their implicit biases is important.

Talking about race cannot wait until college. How does one talk to students about race? To begin, talk *with* the students, not *at* them. Morgan mentions the problem of hectoring students about race rather than discussing it with them. In her school, "I now realize that my teachers talked at us about race; they told us what we needed to know and quickly moved onto the next topic." Looking back, Thompson realizes that on the days her classes did address race, her teachers were not open to class discussion and did not even offer to answer any questions. Whether the students are in middle, high school, or college, they have much to offer

to these conversations. Additionally, teachers can use classroom activities to elicit discussion on bias. For example, issues related to race often surface in literature and in current events, so using these texts and contexts as a springboard to orchestrate seminars or have in-class reflective writing is a pathway to engage in much-needed conversations.

The Kirwin Institute (2016) suggests the following: (a) educate yourself by taking the Implicit Association Test; (b) take action by increasing contact with groups of people outside of your own demographics and begin to view situations from others' perspectives; and (c) be accountable by examining your actions and beliefs.

These steps can help PSTs open their minds to being educated on the experiences, backgrounds, and positionalities of those who differ from them. Taking the IAT is only a first move towards addressing bias. The next is taking action by forming connections and relationships with those outside of your own demographic, which a few PSTs, including Octavia, mentioned, "I began to think who I have surrounded myself with." This often starts with an acknowledgement like Anastasia's response to a peer's post, "Reading your post really opened my eyes to the fact that I have not had any experience similar to this. I have not been exposed to different types of people."

Understandings such as Anastasia's statement prompt the third step: people should hold themselves accountable. Karin reflected by coming to terms with her results, "I think that although these aren't the results I was necessarily hoping for, I am able to recognize why they are my results." Many PSTs reflected on the past to express why they were feeling the way they were; as when Molly admitted, "I think there were

a lot of experiences in my life where I wish I would've asked more questions about race. I wish I could at least consider other races when considering literacy, especially when I was young. I definitely think that was something I wish I could redo."

Conclusion

More research is needed about implicit bias in college student populations, especially in pre-service teacher education. Given the discussion and reflection which came from the one course in this study, one wonders what more could come of additional coursework. Recognizing biases and learning how to address them could be a permanent staple in education methods classes: if PSTs are self-aware and reflexive regarding the impact of their implicit biases, they might embody and model ways future students may understand their own. As Kent mentioned to his peers, "Recognizing the biases that reside within each of us is important for us to grow not only as a future educator, but also as a person."

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