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Understanding the Relationship between Teacher Beliefs, Culturally Responsive Teaching Self-Efficacy, and Responsive Classroom Implementation in Middle Schools

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Understanding the Relationship between Teacher Beliefs, Culturally Responsive
Teaching Self-Efficacy, and Responsive Classroom Implementation in Middle Schools

A Dissertation Presented

by

HEE KYUNG PARK

Submitted to the Graduate School of the
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College of Education

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A Dissertation Presented

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DEDICATION

To my eternal wellspring of inspiration, my strength, my superhero, Mom
and my endlessly patient, loving husband.

ACKNOWLEDGEMENTS

Embarking on a Ph.D. journey is often likened to navigating an endless dark tunnel. However, for me, it felt more like encountering a series of new tunnels, each presenting its own set of challenges. Over the course of five years, amidst the backdrop of COVID-19, marriage, relocations to two different states, and the joy of welcoming a baby, I have been fortunate to persistently pursue my commitment to supporting children with social-emotional needs.

This dissertation completion stands as a testament to the unwavering support and love I received from my families, friends, professors, and colleagues. I extend my heartfelt gratitude to Dr. Sara Whitcomb, my dissertation chair and advisor, whose guidance and encouragement were invaluable. In moments of struggle, you provided wholehearted support, modeling each step with patience and without judgment, fostering an environment conducive to my learning. Your trust in my capabilities and willingness to navigate challenging moments together have been instrumental. I aspire to pass on the wisdom gained from you to future generations of scholar students.

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Lastly, thank you to all my families and friends for your prayers. I attribute my journey's success to God and the incredible people who walked with me in every moment.

ABSTRACT

UNDERSTANDING THE RELATIONSHIP BETWEEN TEACHER BELIEFS, CULTURALLY RESPONSIVE TEACHING SELF-EFFICACY, AND RESPONSIVE CLASSROOM IMPLEMENTATION IN MIDDLE SCHOOLS

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More than 55 million students in the U.S. were reported to be impacted by COVID-19. Students faced a variety of challenges in academic, social, emotional, and behavioral areas. Teachers also reported increase of mental health concerns due to unprecedented stress and rise of students' challenges. An extensive body of research found that social-emotional skills are significantly associated with the students' social-emotional well-being and academic success (Cipriano et al., 2023; Durlak et al., 2011; Eisenberg, 2006; Guerra & Bradshaw, 2008; Masten & Coatsworth, 1998; Weissberg & Greenberg, 1998). Also, researchers have found that the success of social-emotional learning (SEL) interventions depends on effective implementation (Elbertson et al., 2009; Barnes&McCallops, 2019). However, there is lack of research investigating SEL implementation practices as well as the factors that influence teachers' implementation practices. The purpose of this study was to explore the teacher-level characteristics that predict teachers' implementation of Responsive Classroom (RC) approach in a middle

schools in an urban district in the southern United States. Sixty-one teachers who completed RC training completed the Teacher Belief, Culturally Responsive Teaching Self-Efficacy Scale, and Fidelity checklist across different data collection periods during the 2021-2022 academic year. In addition, teachers provided their demographic information that includes their gender, race/ethnicity, years of experience, and years of education. Descriptive statistics, correlational analysis, and multiple regression analysis were conducted to understand the relationship between all variables. Findings suggest that race and Culturally Responsive Teaching Self-Efficacy were positively associated with the dosage of implementing RC approach. A summary of findings, detailed descriptions of item-level analysis, limitations, contribution to literature, and possible implication for future research are discussed.

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CHAPTER 1

STATEMENT OF THE PROBLEM

Overview

More than 55 million students in the U.S. were reported to be impacted by lockdown and school closures (Education Week, 2020). In an attempt to continue to provide education, schools provided a variety of education services in-person, remote, or through distance learning, or various hybrid configurations (Education Week, 2020). Despite educators' efforts to adjust to abrupt changes, the pandemic led to a reduction in vital student services, including food and nutrition, extracurricular activities, family and community collaboration, and mental health services (Song et al., 2020).

Children, in particular, faced a variety of challenges ranging from academic struggles and social isolation to heightened family financial concerns, trauma, grief, and screen time (Golberstein et al., 2020). Emerging research confirms that the chronic stress students experienced during the pandemic led to detrimental effects on academic achievement and mental health (Bailey et al., 2021; Demaray et al., 2022). According to Bailey et al. (2021), achievement gaps between low- and high-income students in elementary schools are predicted to increase from 1 standard deviation to 1.3 standard deviations as compared to pre-COVID achievement gaps. In addition, Demaray et al. (2022) found increased anxiety and depression associated with COVID-19 stress among students in fourth through twelfth grade. For example, students reported four types of stressors due to the pandemic, such as fear of COVID-19, social isolation from friends and families, missing important events, and stress related to schoolwork (Demaray et al., 2022). Notably, students with disabilities, students from minoritized communities,

economically marginalized youth, gender and sexually minoritized youth, and students experiencing the intersection of oppressive systems have experienced even greater negative impacts from COVID-19 (Brandenburg et al., 2020; Salerno et al., 2020; Van Lancker & Parolin, 2020).

Teachers, too, confronted several challenges, reporting greater mental health concerns relative to other professionals during the pandemic (Kush et al., 2021). The abrupt shift to remote teaching, accompanied by evolving instructional policies, induced high levels of stress and negative mental health outcomes such as burnout, depression, anxiety, and poor coping styles among teachers (Kush et al., 2021). Teachers' levels of stress are negatively linked to effective teaching practices, resulting in negative students' behavioral, academic, and social-emotional development (Braun et al., 2020; Hoglund et al., 2015; Roberts et al., 2016).

Need for Social-emotional Learning (SEL)

Rising mental health needs in both students and teachers indicate that it is the “right” time to prioritize teaching social-emotional skills. Research from crisis-affected countries suggests that teachers who demonstrate exemplary SEL skills, deliver explicit SEL instruction, and provide safe learning environments with clear expectations mitigate the adverse effects of stress and anxiety on students (INEE, 2018). Also, an extensive body of research found that social-emotional skills are significantly associated with the students' social-emotional well-being and academic success (Eisenberg, 2006; Guerra & Bradshaw, 2008; Masten & Coatsworth, 1998; Weissberg & Greenberg, 1998). Specifically, school-based universal SEL programs have demonstrated positive outcomes across various domains, including social-emotional skills, attitudes toward self

and others, positive social behavior, conduct problems, emotional distress, and academic performance (Durlak et al., 2011). For example, a meta-analysis of 213 school-based universal SEL interventions until December 31, 2007 showed that students increased by 11 percentile points in academic achievement (Durlak et al., 2011). Moreover, negative behaviors such as aggression, delinquent acts, and disciplinary referrals decreased significantly. In addition, emotional distress such as depression, anxiety, and toxic stress decreased among students who received SEL programs. Also, students reported feeling more connected to the school through increased motivation to learn and deeper commitment to the school. These effects of universal SEL programs lasted for a minimum of six months after the intervention and had a larger effect when implemented with fidelity (Durlak et al., 2011). These effects were still present when a meta-analysis was conducted by Cipriano et al. (2023). Cipriano et al. (2023) reviewed universal school-based SEL interventions available from 2008 through 2020, and found students significant improved skills, attitudes, behaviors, school climate and safety, peer relationship, school functioning, and academic achievement.

Need for Culturally Responsive SEL

As briefly discussed above, another area educators find challenging is supporting students' SEL growth in culturally responsive ways. While the majority of students in the U.S. consist of African American and Hispanic students, teachers and teacher trainers are predominantly White, female, middle class, and monolingual (National Center for Educational Statistics, 2023). The National Center for Education Statistics (2023) stated that the number of White students who are enrolled in public elementary and secondary schools decreased from 52 to 45 percent between fall 2010 and fall 2021. Also, the

percentage of Black students decreased from 16 to 15. However, there has been increase in the percentage of Hispanic students from 23 to 28 percent, and Asian/Pacific Islanders from 4.6 to 5.4 percent. It is projected that this trend will continue in the following years.

Increasing cultural divides between students and teachers underscore the pressing need to support educators to provide culturally responsive practices (Barnes, 2019; Macfarlane et al., 2017; Weisz et al., 2005). Culture plays a crucial role in shaping the definition and development of SEL competencies. The inherent cultural mismatch between teachers and students can lead to potential misinterpretation of the observed behaviors of students from diverse backgrounds (Hecht & Shin, 2015). Indeed, the effects of SEL programs on culturally and linguistically diverse students are inconclusive (Durlak et al., 2011; Weare & Nind, 2011). Therefore, unless educators are trained to use culturally responsive practices to support SEL instruction, students from diverse background will lose opportunities to grow their SEL competencies.

However, studies have shown that preservice teachers feel a lack of ability to perform practices that are culturally relevant, responsive, compatible, and sustainable (Moore et al., 2021). Moreover, there is a notable absence of programs preparing teachers to employ culturally responsive pedagogy to support SEL competencies in diverse student populations (Siwatu, 2007). It is imperative that these challenges are addressed in order to ensure that all students, regardless of their cultural background, are equipped with social emotional skills.

SEL and Teacher Training

While the evidence of SEL effectiveness is promising, concerns arise when considering its real-world implementation. The success of SEL interventions depends on effective implementers, and educators play a pivotal role in shaping positive student outcomes (Elbertson et al., 2009; Barnes&McCallops, 2019). Further, the Collaborative for Academic, Social, and Emotional Learning (CASEL, n.d.), identified that a supportive classroom climate, integration of SEL into academic instruction, and explicit SEL instruction are the key components of a SEL-focused classroom. Moreover, students have better outcomes when teachers practice SEL approaches in sequenced activities, active learning, focused, and explicit teaching of social and emotional skills. Therefore, teachers need training that goes beyond understanding SEL; they should learn how to teach SEL skills explicitly and create culturally responsive learning environments that consistently offer opportunities for students to learn and practice SEL (Schonert-Reichl, 2017). However, studies on current preservice teacher education found that teacher training programs lack in training teachers with the knowledge and skills needed to promote students' SEL competencies and to create positive classroom environments (Schonert-Reichl, 2017; Reinke et al., 2012).

Given the current deficit in teacher training on SEL, educators themselves advocate for additional professional development in this area. RAND Corporation researchers surveyed the American Teacher Panel in 2019 and received responses from more than 1,200 teachers across the U.S. (Hamilton & Doss, 2020). The results indicated that although approximately three-quarters of teachers reported receiving some form of SEL-related professional development (PD), teachers clearly expressed a need for

additional SEL-related PD. Specifically, most teachers desired PD to cover a variety of topics such as integrating SEL into academic instruction, adapting SEL to different cultures, reviewing and using SEL data, reviewing SEL definitions and overviews, and building their own SEL skills. Also, secondary teachers reported receiving less SEL-related support compared to elementary teachers. Moreover, secondary teachers reported lower rates of making SEL connections during academic instruction, extracurricular activities, and student-led discussions. These findings highlight opportunities to provide adequate PD on SEL for middle school teachers. Wigelsworth et al. (2016) found that efficacy studies demonstrated larger effects when SEL programs are implemented with adequate supports such as training, coaching, and/or monitoring. Despite the increasing adoption of SEL curricula in schools, the necessary implementation support and technical assistance have lagged behind (Bryant et al., 2020). Addressing these gaps in teacher training is crucial for maximizing the potential of SEL and ensuring its effective integration into educational settings.

Fidelity of SEL Program Implementation

Even when using an evidence-based SEL program, transferring the effective intervention into a real-world setting is a complex process. Diffusion of an effective intervention entails several implementation stages (Durlak & Dupre, 2008). Also, without ascertaining that the intervention components were well delivered, an accurate interpretation of outcomes cannot be made. In fact, a body of literature underscores the positive relation between fidelity of implementation (FOI) and measured outcomes (Dane & Schneider, 1998; Durlak & DuPre, 2008). SEL programs implemented with high

fidelity yielded two to three times larger effect sizes on average, compared to programs implemented with low fidelity (Durlak and Dupre, 2008).

However, Durlak et al. (2011) found that most studies did not report the implementation process. For example, only 5% of the 1,200 prevention studies conducted by 1995 provided information on the implementation process. Also, Dane and Schneider (1998) found that only 24% of mental health prevention publications between 1980 and 1994 documented the implementation process. Among the studies that reported whether there was an implementation problem, or the program was implemented without any problems, the programs that had no implementation problems showed higher outcomes for students (Durlak & Dupre, 2008). In addition, Cipriano et al. (2023) found that studies who had high quality implementation resulted in significant reductions in externalizing behaviors compared to low quality studies.

Compounding the issue, research found that individual programs are often implemented on an ad hoc and discrete basis (Barry et al., 2017; Rimm-Kaufman & Hulleman, 2015). When programs are implemented on ad hoc basis or implemented without fidelity, it can have adverse effects on staff morale and student outcomes (Jones et al., 2018; RimmKaufman & Hulleman, 2015). Consequently, Durlak (2016) emphasizes the need for the field to prioritize understanding teacher processes in developing and implementing more sustainable and effective SEL programs, especially for diverse populations of students and families.

Current Study

The current study aims to investigate the teacher-level predictors of FOI for an evidence-based SEL approach, the Responsive Classroom (RC), in middle schools. The following teacher-level predictors of FOI are explored: 1) teacher demographics, including gender, years of teaching experience, level of education, and race/ethnicity, 2) teacher beliefs about the RC approach and 3) self-efficacy in culturally responsive teaching. Also, the “dosage”, meaning the frequency of implementing RC practices, will be examined when measuring FOI. Although this study focuses on examining “dosage” across multiple dimensions of implementation, it will contribute to the current limited literature on understanding the teacher process in implementing evidence-based SEL programs in middle school settings.

CHAPTER 2

LITERATURE REVIEW

Social-Emotional Learning (SEL) Definition and Competencies

According to Collaborative for Academic, Social, and Emotional Learning (CASEL), social and emotional learning (SEL) is defined as “the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions” (CASEL, 2023). Among many SEL frameworks which comprise of more than 700 SEL competencies (Jones et al., 2017), CASEL’s SEL framework is widely recognized as a standard (Cipriano et al., 2023). CASEL identified five areas of SEL competencies, which are self-awareness, self-management, social awareness, relationship skills, and responsive decision-making. CASEL presented operational definitions of each competency as listed below:

Self-awareness: The abilities to understand one’s own emotions, thoughts, and values and how they influence behavior across contexts.

Self-management: The abilities to manage one’s emotions, thoughts, and behaviors effectively in different situations and to achieve goals and aspirations.

Social awareness: The abilities to understand the perspectives of and empathize with others, including those from diverse backgrounds, cultures, and contexts.

Relationship skills: The abilities to establish and maintain healthy and supportive relationships and to effectively navigate settings with diverse individuals and groups.

Responsible decision-making: The abilities to make caring and constructive choices about personal behavior and social interactions across diverse situations. (CASEL, 2023)

Self-awareness promotes self-efficacy, growth mindset, and confidence as one recognizes one’s own strengths and limitations, personal, cultural, and linguistic assets,

and personal and social identity. Self-management allows individuals to achieve personal and collective goals through self-discipline and self-motivation. In addition to showing empathy and compassion to other individuals, social awareness includes the ability to understand the influence of social norms and systems on behavior. Also, specific skills under relationship skills include the communication skills, teamwork and collaborative problem solving, listening skills, and navigating social demands. Lastly, example of responsible decision-making includes the capacities to think about the consequences of one's action.

Benefits of SEL

An extensive body of research found that social-emotional skills are significantly associated with students' social-emotional well-being and academic success (Eisenberg, 2006; Guerra & Bradshaw, 2008; Masten & Coatworth, 1998; Weissberg & Greenberg, 1998). Notably, the impact of universally implemented school-based SEL programs transcends various domains, yielding positive outcomes in social-emotional skills, attitudes towards self and others, positive social behavior, conduct, emotional well-being, and academic performance (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). For example, a meta-analysis of 213 school-based universal SEL interventions demonstrated that students increased 11 percentile points in academic achievement (Durlak et al., 2011). In fact, SEL programs had a long-term impact on positive academic growth, which students who received SEL intervention maintained an average of 13 percentile points higher when assessed years later (Rebecca et al., 2017). Moreover, negative behaviors such as aggression, delinquent acts, and disciplinary referrals decreased significantly (Durlak et al., 2011). In addition, emotional distress such as

depression, anxiety, and toxic stress decreased among students who participated in SEL programs (Clare et al., 2021). These findings underscore the multifaceted benefits of SEL programs, not only contributing to academic success but also fostering positive social behaviors and enhancing emotional well-being, creating a conducive learning environment for overall student development.

Mechanism of SEL

The mechanism of SEL programs explains the link between SEL and children's outcomes. Research indicates that when children are equipped with social-emotional skills, such as focusing attention, managing negative emotions, navigating relationships, and persisting in the face of difficulties, they can learn better and the classroom functions more efficiently (Ladd et al., 1999; Peddigrew et al., 2022). Children who can effectively manage their thoughts, attention, and behavior are more likely to effectively plan and execute goals, which leads to higher grades and standardized scores (Durlak et al., 2011). Also, social skills enable children to maintain friendships, initiate relationships with peers and adults, and participate in classroom activities which lead to engagement in learning (Denham, 2006). Moreover, social-emotional skills instill resilience in children, serving as a protective factor to navigate through challenging life events (Buckner et al., 2003). Finally, these positive effects contribute to the overall well-being of children that persist through adulthood (Moffitt et al., 2011). While it is essential to note that SEL does not substitute the need for specific mental health services, it fosters "protective factors" that lay the foundation for students' success. SEL, by equipping children with essential social-emotional competencies, becomes a vital contributor to their holistic development and long-term well-being.

Transformative SEL

Although SEL has shown to be effective at preventing challenging behaviors as well as improving students' academic, social, and emotional outcomes, there is a lack of research in understanding a valid and effective SEL framework for a culturally linguistically diverse (CLD) student population (Jagers et al., 2019). Carjuzza and Ruff (2010) urged educators to question:

Recognition of the relevance of non-Western knowledge calls into question the tacit assumptions contained within Western standards. These assumptions need to be identified and questioned to facilitate culturally competent instructional assessment. Questioning academic practices is tantamount to acknowledging the lack of neutrality in academic rationality and from this recognition assessment standards can be renegotiated to facilitate cultural equity. (p.75)

In response to this challenge and recognizing the gap in existing SEL frameworks, CASEL introduced the “Transformative SEL Framework ” in 2020 (CASEL, 2020). This framework is designed to elucidate how SEL can propel educational equity and excellence. In the updated definition, CASEL describes SEL as follows:

SEL advances educational equity and excellence through authentic school-family-community partnerships to establish learning environments and experiences that feature trusting and collaborative relationships, rigorous and meaningful curriculum and instruction, and ongoing evaluation. SEL can help address various forms of inequity and empower young people and adults to co-create thriving schools and contribute to safe, healthy, and just communities. (CASEL, 2020)

The redefined perspective aims to promote holistic education for every student across race, ethnicity, family income levels, learning abilities, home language, immigration status, gender identity, sexual orientation, and other factors. Transformative SEL, as presented by CASEL, seeks to affirm individuals' diversity, providing opportunities to build a sense of belonging within an inclusive learning environment. In addition, SEL can help individuals understand their unique strengths in relation to cultural norms, empowering them to become change agents and leaders (CASEL, 2020).

Culturally Responsive Teaching Conceptual Framework

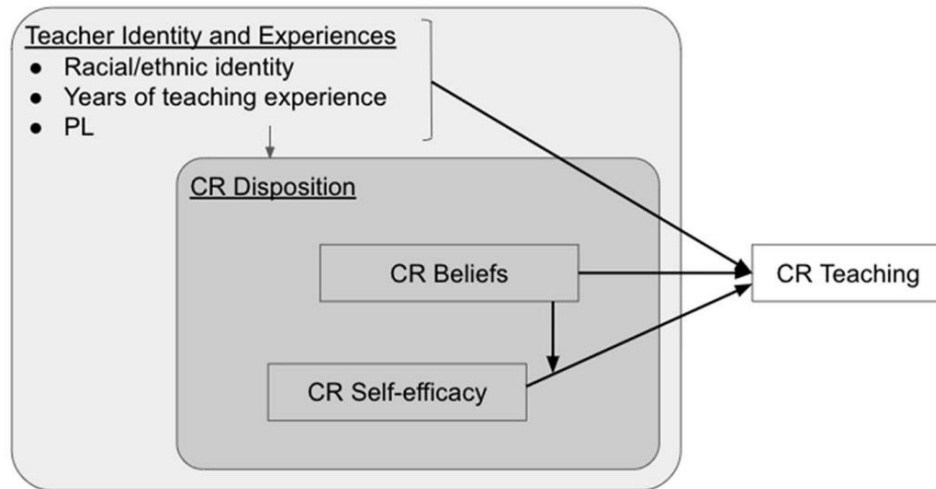
A persistent gap between the diverse student population in the U.S. and teacher demographic demands teachers to adopt a culturally responsive orientation towards instruction (Gay, 2018). According to Gay (2018), culturally responsive teaching (CRT) acknowledges students' cultural assets and learning styles to make learning more relevant and effective. CRT supports students to succeed academically, to understand, value, and sustain their own cultural identities, and to critically view social injustice (Comstock et al., 2023). There is robust evidence that links CRT to positive student outcomes (Bottiani et al., 2018; Dee & Penner, 2017). By practicing CRT, educators can enhance student motivation, foster a sense of connectedness to school, and promote effective learning (Gay, 2018).

Comstock et al. (2023) synthesized prominent asset-based instructional frameworks from Gay (2010) and Ladson-Billings (1995) to present a conceptual framework for CRT. According to Comstock et al. (2023), CRT extends beyond instructional practices. It encompasses a teaching approach that requires teachers to possess specific dispositions toward students and teaching (Comstock et al., 2023). Comstock et al. (2023) state that a culturally responsive (CR) dispositions consist of two components, teachers' beliefs about students, teaching, and cultural diversity and teachers' self-efficacy for culturally responsive teaching. How teachers see themselves as capable of engaging in culturally responsive teaching impacts their practices.

Culturally Responsive Teaching and Teacher's Beliefs

According to Gay (2010), "beliefs and attitudes always precede and shape behaviors" (p.49). Comstock et al. (2023), assert that teachers must hold asset-oriented beliefs about diverse students in order to possess a CR disposition. Teachers with such a

Figure 1
Conceptual Framework of Culturally Responsive Teaching



Note. This framework was produced by Comstock et al. in 2023, summarizing the factors that influence culturally responsive teaching. From “A Culturally Responsive Disposition: How Professional Learning and Teachers’ Beliefs About and Self-Efficacy for Culturally Responsive Teaching Relate to Instruction”, by Comstock et al., 2023, *AERA Open*, 9(1), p.3

disposition maintain high expectations for students without making assumptions about their abilities or motivation for learning. Moreover, CR teachers can support the positive identity development of students of diverse backgrounds by incorporating students’ identities into instruction and by teaching a critical lens for understanding power dynamics in a broader society (Gay, 2018; Ladson-Billings, 1995). Despite limited studies on teacher beliefs and culturally responsive teaching, Civitillo et al. (2019) found a positive relationship between teachers’ beliefs and CR teaching. Teachers with aligned CR beliefs engaged more in CR teaching, compared to teachers with color-blind ideologies. However, evidence also suggests that beliefs do not necessarily translate into action, as some teachers with positive beliefs about incorporating students’ identities into instruction minimally engaged in culturally responsive teaching (Guerra & Wubbena, 2017).

Culturally Responsive Teaching and Teacher's Self-efficacy

Self-efficacy is theoretically grounded in Bandura's social cognitive theory, which refers to "a belief in one's ability to organize and carry out the actions needed to produce desired results, and it provides a theoretical lens through which to evaluate teachers' ability and willingness to implement CRT (Bandura, 1977)" (Cruz et al., 2020, p.197). In teaching, self-efficacy refers to "a teacher's belief that he or she is able to promote and affect student learning in a particular realm (Bandura, 2007; Dembo & Gibson, 1985)" (Cruz et al., 2020, p. 197). Studies have shown that teacher efficacy is a strong predictor of student achievement and student motivation (Hoy & Woolfolk, 1993; Tschannen-Moran et al., 1998). For example, teachers with a high sense of self-efficacy tend to work harder and persist longer in the face of challenges (Hoy & Woolfolk, 1993; Tschannen-Moran et al., 1998). Specifically, teachers with higher self-efficacy feel more confident in working with students from different cultural backgrounds and are willing to take risks to problem-solve during teaching, believing in the positive outcomes of their efforts (Siwatu et al., 2011; Hoy & Woolfolk, 1993; Tschannen-Moran et al., 1998).

Moreover, the context in which teachers operate can impact their self-efficacy. Siwatu et al. (2011) found that preservice teachers placed in suburban areas displayed significantly higher self-efficacy compared to those placed in more diverse and urban settings. Also, Knoblauch Hoy (2008) found that the preservice teachers placed in urban setting increased their self-efficacy when they experienced mentorship, collaboration, and other efforts to boost their confidence integrated within their program.

Factors Influencing Culturally Responsive Dispositions

A culturally responsive disposition is shaped by teachers' identity and experiences. Scholarships speak to the imperatives of teachers' racial/ethnic identities, years of experience, and professional learning opportunities on CR dispositions (Brown-Jeffy & Cooper, 2011; Dover, 2013; Duncan-Andrade, 2007; Ware, 2006). Teachers of color may bring cultural knowledge and experience into their instruction, and present less bias in instructional materials (Ladson-Billings, 1995). Teachers of color may be more attuned to students of color as they share their own cultural knowledge and experiences of their cultural upbringings. Furthermore, years of teaching experience are positively associated with self-efficacy for CR teaching (Cruz et al., 2020). Specifically, for a one-year increase in years of experience, culturally responsive teaching self-efficacy scores increased by approximately 0.33 points. Moreover, some empirical studies show that professional learning that explicitly focuses on CR teaching influences teachers' beliefs and self-efficacy (Fitchett et al., 2012; Parkhouse et al., 2019, Psalti, 2007; Tucker et al., 2005). For example, Tucker et al. (2005) conducted a randomized trial study that involved sixty-two teachers in the Southeastern region of the U.S. The intervention group of teachers participated in a 6-hour workshop, which focused on fostering culturally responsive teaching self-efficacy. The results indicated a significant main effect for treatment condition. According to these studies, professional learning opportunities can help teachers develop CR dispositions.

Relationship between SEL and Culturally Responsive Teaching (CRT)

While CRT has shown promise in education, educators encounter challenges in supporting students' acquisition of social-emotional competencies in culturally responsive ways (Barnes & McCallops, 2019). Especially, cultural mismatch between students and

educators due to different cultural backgrounds poses implications for SEL instruction. For example, different cultures define SEL competencies in various ways, underscoring the necessity for culturally responsive practices in SEL instruction (Hecht and Shin, 2015).

According to Warner and Browning (2021), SEL and CRT are “two distinct education approaches intended to help build or reinforce positive student identity and support learning” (p.3). Both approaches recognize the importance of building a positive sense of self, which is key to be successful at school. The key difference is that while SEL has focused on building general skills on self-awareness, CRT emphasized the development of positive racial and ethnic identities. Whether a teacher is aware of implementing either SEL or CRT, actively affirming students’ cultures creates a more inclusive learning environment (Warner & Browning, 2021). For example, a teacher may have already engaged in both delivering a SEL lesson while practicing CRT. A teacher may ask students to write about an essay on the literature they just read, while reflecting on individual’s views. This requires students to think about how respective cultures may have influenced their views and thoughts about the world.

Also, some researchers recognized that some SEL implementation has utilized a deficit-oriented approach to student of color, and they aimed to “fix” perceived problem behaviors without considering the social and emotional implications of race, racism, and racial identity (Mahfouz & Anthony-Stevens, 2020). Also, Warner and Browning (2021) points out that the meta-analysis of SEL programs highlighted the assumption that interventions are neutral on issues of race and culture, and the values and strategies are equally effective for all students (Jones et al., 2018). These findings emphasize the

necessity to guarantee that all SEL programs adopt an asset-oriented approach for every student, with particular attention to students of color. Schools should implement identity-affirming methods to facilitate the development of SEL skills, which ultimately is connected to students' academic and behavioral enhancement (Warner & Browning, 2021).

Consequently, the Massachusetts Department of Elementary and Secondary Education provided guidelines on aligning SEL and CRT practices. It recognizes that SEL instruction must be culturally responsive and sustaining. Also, SEL instruction should be grounded in reaching equity and racial equity goals to enable all students have access to high-quality SEL. As such the Department of Elementary and Secondary Education presented definitions of three terms (2024):

- *Access to SEL* refers to the imperative that all students have opportunities for SEL experiences and skill development as a part of a tiered system of supports;
- *Culturally proficient SEL* refers to the creation of learning experiences that are bias-free and respectful of students' diverse backgrounds, identities, strengths, and challenges; and
- *Culturally responsive and sustaining SEL* refers to practices that actively draw upon (responsive) and explicitly support (sustaining) students' diverse backgrounds, identities, strengths, and challenges as a strategy to deepen learning. These practices must be interwoven with efforts that seek to address systemic inequities and advance equity goals, including racial equity goals and more (p.3)

Culturally Responsive SEL

In culturally responsive SEL instruction, educators build upon cultural proficiency. Culturally responsive SEL leverages students' lived experiences, frames of references, and cultural assets to reinforce and teach SEL competencies (Barnes & McCallops, 2019). When teachers understand students' interests, views, and preceding knowledge, teachers will be able to identify SEL competencies that matter for individual students and ultimately increase students' engagement in learning (Barrera et al., 2011).

In fact, Barnes and McCallops (2019) conducted a focus group study, which interviewed seven participants who implemented the RULER approach for at least four years.

RULER is an evidence-based approach to SEL that teaches five skills foundational to social and emotional competencies. Five skills are “recognizing emotion in the self and others, understanding the causes and consequences of emotion, labeling emotion accurately, expressing emotion in socially appropriate ways and regulating emotions effectively” (Barnes and McCallops, 2019, p.72). When teachers were asked about how RULER helped them utilize culturally responsive practices in their classroom, they noted that culturally responsive practice is foundational, which should be obtained before implementing SEL interventions. That way, teachers can use culturally responsive practices as part of SEL implementation.

In addition to enacting CRT, making adaptations to evidence-based SEL interventions can also be a way to provide culturally responsive SEL instruction. Blanco-Vega et al. (2008) argued that culturally adapted SEL interventions for Latino English Language Learners should include coping skills that can be used when students are faced with sociocultural challenges. Some of the challenges may be language barriers, parents who are unfamiliar with the school system, acculturative stress, familial acculturation gaps, perceived discrimination, and low socio-economic status (Blanco-Vega et al., 2008; Gonzales & Kim, 1997; Suarez-Orozco & Suarez-Orozco, 2001). According to meta-analyses, Griner & Smith (2006) and Smith et al. (2011) found that culturally adapted interventions are more effective in improving outcomes of CLD students than non-adapted interventions. For example, *Jóvenes Fuertes*, is a culturally adapted intervention to support Latino ELL students in middle and high school (Castro-Olivo and

Merrell, 2012). Castro-Olivo and Merrell (2012) used the ecological validity model, which they considered language, persons, metaphors, content, concepts, goals, methods, and context. The program was delivered in Spanish by bilingual or bicultural personnel. Castro-Olivo conducted a quasi-experimental study that included 102 Latino adolescents. Students who participated in a group that used *Jóvenes Fuertes* yielded significantly higher levels of SEL knowledge and resiliency after the intervention, compared to the control group who did not receive instruction. Therefore, this adapted program proved to be an effective way to increase SEL knowledge and resiliency in Latino adolescents. While there is a pressing need to provide a culturally responsive SEL programs to all children, there are few programs that explicitly aligns SEL with CRT practices. Below, an evidence-based SEL approach is introduced, which incorporated CRT in their guiding principles.

The Responsive Classroom Approach

The Responsive Classroom (RC) Middle School approach is an evidence-based approach that is grounded in the logic of prevention. It specifically focuses on increasing educator effectiveness to improve students' (grades 6-8) social-emotional well-being and academic skills within a healthy and engaging school community. There are four primary domains that ground the RC approach. These include *engaging academics, positive community, effective management, and developmentally responsive teaching practices*. The RC Middle School approach also includes a set of practices and systems that are aligned with the RC domains and enable its core beliefs to be enacted. The RC Middle School practices include *interactive modeling, intentional use of teacher language, responsive advisory meeting, responding to misbehavior, interactive learning structures,*

investing students in rules, brain breaks, active teaching, student practice, small group learning, problem-solving conferences, and closing of the day (Table 1).

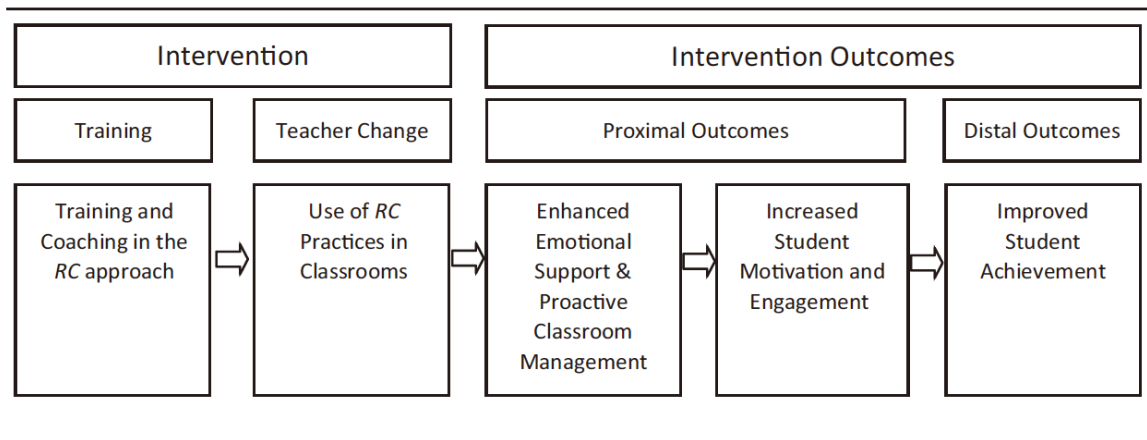
Table 1
Responsive Classroom Middle School Practices (Responsive Classroom, n.d.)

Practice	Definition
Interactive Modeling	An explicit practice for teaching procedures and routines (such as those for entering and exiting the room) as well as academic and social skills (such as engaging with the text or giving and accepting feedback).
Teacher Language	The intentional use of language to enable students to engage in their learning and develop the academic, social, and emotional skills they need to be successful in and out of school.
Responding to Misbehavior	A non-punitive response to misbehavior that allows teachers to set clear limits and students to fix and learn from their mistakes while maintaining their dignity.
Interactive Learning Structures	Purposeful activities that give students opportunities to engage with content in active (hands-on) and interactive (social) ways.
Responsive Advisory Meeting	A practice with a set, predictable routine, organized around one of seven distinct purposes, that offers a solid framework for building meaningful connections and developing respectful and trusting relationships while meeting students' developmental needs. The meetings have four sequential components: arrival welcome, announcements, acknowledgments, and activity.
Investing Students in Rules	A process facilitated by the teacher that is composed of four steps: setting SMART goals, connecting the goals to rules, connecting the rules to concrete behaviors, and making the rules come alive.
Problem-Solving Conferences	A process for addressing a specific problem that a child is having: Establishing what the teacher and student notice, naming the problem and the need to solve it, understanding the cause of the problem, generating alternatives, choosing one strategy to try.
Brain Breaks	Short breaks in whole-class lessons that give students a chance to move and interact, used to increase focus, motivation, learning, and memory.
Active Teaching	A strategy for delivering curriculum content where the teacher presents, explains, illustrates, and demonstrates content in a way that enables students to meet a learning objective. The three phases of active teaching are Teach and Model, Student Collaboration, and Facilitate Reflection.
Student Practice	A process that follows active teaching where students explore and practice, under the teacher's guidance, the content and skills taught during a lesson. This gives the teacher the opportunity to identify and correct students' thinking before they practice further on their own.
Small Group Learning	A structured way for students to work together on a specific learning goal, assignment, or project that is organized by the teacher.

Closing of the Day	Gathering at the end of the day that promotes reflection and celebration through participation in a brief activity or two.
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The theory of change for the RC approach is described in the figure 2. By providing the training to teachers, teachers will change their practices in classrooms, which ultimately yields proximal outcomes of enhancing emotional support and proactive classroom management as well as increasing student motivation and engagement. The distal outcome would be improved student achievement.

Figure 2
Logic Model Describing the Theory of Change for RC Approach



Note: This figure was produced by Rimm-Kaufman et al. in 2014, summarizing the theory of change of Responsive Classroom. Fromm “Efficacy of the Responsive Classroom Approach: Results from a 3-Year, Longitudinal Randomized Controlled Trial” by Rimm-Kaufman et al., 2014, *AERA*, 51(3), p.572

Specifically, the RC approach’s guiding principle, “What we know and believe about our students – individually, culturally, and developmentally – informs our expectations, reactions, and attitudes about those students” connects the RC practices with CRT (Responsive Classroom, n.d.). *Responsive Classroom* supports CRT by supporting educators use strategies to foster students’ sense of significance and belonging by acknowledging respective cultures (Bridgette, 2021). For example, during morning meetings or responsive advisory meeting, individual students and families can provide

teachers with knowledge about the personal interest, cultures, and unique characteristics of themselves. During these activities, students are active participants to share about their identity, culture, and experiences, which creates organic opportunities to build community and connections.

To effectively implement the RC approach, educators are encouraged to engage in the *Core Course*, which includes four days of professional learning about key RC practices. There is also an *Advanced Course* available for those aiming to refine their existing RC practices. One-day workshops focused on particular strategies, resource books, and onsite coaching are also available for schools adopting this approach as well as downloadable resources and videos provided on the RC website.

Studies suggest the positive impact of the RC approach on students in elementary schools. For example, there were gains in students' social skills, math, and reading achievements, and also changes in teacher's perception of their student's behaviors (Elliott, 1999; Rimm-Kaufman et al., 2007; Rimm-Kaufman & Chiu, 2007). However, less is known about the impact of the RC approach on middle school students and teachers.

SEL Implementation Approaches

Acknowledging the positive effect of developing social-emotional skills in culturally responsive way, the next question is how to best teach social-emotional skills to all children. Effective SEL depends on the learning environment and opportunities for children to practice the skills across different settings, such as classrooms, schools, homes, and communities. A systemic approach that integrates SEL throughout academic curricula, schoolwide practices and policies through authentic partnership between

schools and families is critical to establish an effective learning environment (CASEL, 2023). Given the preventive nature of SEL interventions, a schoolwide SEL approach supports all children to build essential skills and prevents them from engaging in maladaptive behaviors.

There are four instructional approaches for SEL, which include “(a) whole-school initiatives integrated into all aspects of the school day; (b) brief strategies that are embedded into teachers’ existing practices; (c) academic curricula that integrate SEL skills and competencies as part of the instructional approach; and (d) stand-alone curricula focused on direct SEL skill instruction” (CASEL, 2019; Elias, 2019). The stand-alone curricula typically comprise pre-packaged lessons structured to teach specific SEL skills. Also, Durlak et al. (2011) found that programs were more effective when they included the “SAFE” components when implementing SEL programs. “SAFE” components are described as programs that “use a connected and coordinated set of activities...(Sequenced),” “use active forms of learning...(Active),” “have at least one component devoted to developing personal or social skills...(Focused),” and “target specific SEL skills rather than targeting skills or positive development in general...(Explicit)” (Durlak et al., 2011, p. 410). Non-curricular programs focus on building a structured environment to provide spaces for students to practice SEL skills organically. Instructors may use different teaching strategies such as discussion, didactic instruction, book or story, vocabulary in SEL concepts, visual display, writing about SEL themes, drawing or art projects, video, song, role-play, game, kinesthetic, and others to integrate SEL skills and academic curricula (Jones et al., 2017). Regardless of the format, systematically teaching, modeling, practicing, and applying SEL skills throughout daily

routines and varied settings consistently yield positive outcomes for students (Jones et al., 2017).

Challenges in Implementation

Durlak et al. (2011) found that programs were more effective when implemented with fidelity. Despite the evidence supporting school-based universal SEL programs, several implementation challenges remain. According to Jones et al. (2018), there are seven common implementation challenges. First, it is difficult to set aside time in the daily schedule to ensure sufficient exposure and intensity. SEL programs, for example, are taught for half an hour or an hour each week. However, teachers are often busy covering academic contents and find no time to fit in the SEL programs. In such a case, students do not learn continuously, which reduces learning effects. Second, many schools view SEL programs as extracurricular, add-ons, or secondary. Although many programs have tried to resolve this problem by integrating SEL skills with academic content, integrating SEL programs into daily school life is rare. Third, providing opportunities for students to practice SEL skills beyond classrooms requires school-wide efforts, posing challenges in real settings. SEL skills are essential in lunchrooms, bathrooms, playgrounds, and everywhere in school, which requires the training of all staff. Every interaction between children and adults is an opportunity to practice SEL skills. Therefore, it is beneficial when all staff receive training on how to promote SEL skills, which takes a lot of time and resources. Fifth, school staff lack ownership and trust because the programs are often adopted by “top-down” decision-making processes. Without ownership, schools do not view programs as meeting local needs and often make modifications. As a result, modifications may result in low program fidelity. Sixth,

schools often do not use data to inform the selection of SEL programs, limiting the evidence-based decision-making process. Lastly, teachers often fail to apply the skills taught in the lesson at the real-time “teachable moments”. Even with the most empirically supported programs, these implementation challenges should be addressed to yield positive outcomes.

Although there are many foreseeable challenges, Jones et al. (2017) list program components that support program effectiveness. One program component is integrating SEL skills into classroom activities. For example, books related to social-emotional skills can be recommended or SEL skills concepts can be introduced into the academic curriculum. Another component is creating a positive school climate and culture. A positive school climate can be implemented through school-wide events such as morning announcements, whole-school projects, policies that reinforce SEL skills, and adult practices to create a caring, safe, and connected community. Adaptability to the local context is also important to meet specific needs. Lesson contents, durations, dosage, implementation timing and other components should be adapted for the most effective results. Also, professional development and training should be provided for all school staff, such as teachers, administrators, staff, etc. This will give adults the opportunity to build their own SEL competencies. Adults who can manage their own SEL skills can teach and practice them with children. Another key feature of effective SEL is that the program should have adequate resources to support successful school-wide implementation. This includes “administrator tool kits, implementation teams, sample checklists and plans, needs assessments, best practices, scripted lessons and/or support for modeling skills, opportunities to receive ongoing coaching, and more” (Jones et al.,

2017, p. 26). Also, family and community engagements are recommended to build connections between students, family, and the community. For example, take-home worksheets, family nights, community service projects, and other highly structured or suggested best practices are effective ways to engage family and the community. Finally, tools to assess program outcomes and implementation are valuable. For example, “informal check-in questions and classroom observations, surveys, observation batteries, implementation logs, and other evidence-based assessments such as Devereux Student Strengths Assessment or Elementary School Behavior Assessment” (Jones et al., 2017, p. 26) are effective tools to assess student progress and fidelity of implementation. By incorporating these suggested program components, schools can navigate implementation challenges more effectively, leading to improved program outcomes.

Multiple Dimensions of Implementation

Implementation refers to “what a program consists of when it is delivered in a particular setting” (Durlak & Dupre, 2008, p.329). Implementation is beyond fidelity, which also consists of different factors that may impact student’s outcomes. For example, Durlak and Dupre (2008) identified eight distinct aspects to implementation, which include fidelity (the extent to which the program was delivered as it originally was intended), dosage (frequency of the program delivery), quality (how well different components of the program were delivered), participant responsiveness (how much were participants hold attention and were engaged), and program differentiation (how the program is unique). While researchers may differ in their definitions and inclusion of implementation constructs, the consensus is that considering multiple dimensions adds complexity to the measurement and monitoring of implementation.

Although not all studies comprehensively examine every aspect of implementation, some explore the relationships between specific implementation constructs and student outcomes. For example, Durlak (2016) identified fidelity as the most common predictor of student outcomes. In contrast, Humphrey et al. (2018) examined the implementation of Promoting Alternative Thinking Strategies (PATH) across 23 schools and did not find significant variability between procedural fidelity and student outcomes. Also, Castro-Olivo and Merrell (2012) argued that SEL interventions can be more effective for CLD students when programs are adapted to fit the needs of diverse students.

Dosage is another construct yielding mixed results. For example, some researchers found that a higher dosage of lesson implementation was associated with better student outcomes (Wolfenden et al., 2017). However, when looking at the long-term impact after 1 year of implementation, Humphrey et al. (2018) found a negative association between dosage and student outcomes. Overall, there are multiple dimensions of implementation, and the varied outcomes describe the intricate nature of implementation and how it is susceptible to diverse factors.

Predictors of Fidelity of Implementation

Among multiple dimensions of implementation, fidelity is considered the most frequently reported construct (Durlak and Dupre, 2008). Specific to measuring the fidelity of implementation (FOI), Domitrovich et al. (2008) proposed a multi-level quality of implementation framework for SEL programs. FOI is impacted by various levels, including the district level (e.g., policy and finances), school level (e.g., school culture, climate, resources), and teacher level (professional and psychological

characteristics). To ensure high-quality implementation, adequate supports need to be in place such as standardization of the program and delivery of core elements of the program. The existing literature on SEL implementation predominantly focuses on understanding school-level and macro-level factors associated with FOI. For example, teachers' perceptions of the school climate factors, such as a school's openness to innovation, participatory decision-making process, and collaboration among teachers, were positive predictors of dosage adherence and quality of delivering the program (Malloy et al., 2015).

However, there is a lack of research examining teacher-level characteristics associated with FOI. Thierry et al., (2022) summarized the research on the predictors of FOI. Thierry et al. (2022) stated that less is understood about the FOI associated with teacher-level characteristics compared to the school-level variables (e.g. organization culture, leadership, etc.). For ethnicity/race characteristics, Williford et al. (2015) found that African American and Hispanic teachers have lower levels of dosage adherence and quality of implementation compared to White, non-Hispanic teachers. The authors speculated that Hispanic teachers require adjustments to be made, such as translation, which can impact FOI. With regard to years of teaching as a predictor of FOI, there were conflicting findings. For example, in some studies, fewer years of experience were associated with a higher level of FOI (Matsumura et al., 2010; Ringwalt et al., 2003; Rohrbach et al., 1993), while others did not find any relations between the variables (Downer et al., 2009; Driscoll et al., 2011; Ringwalt et al., 2003). Thierry et al. (2022) concluded that the teaching experience variable is insufficiently sensitive to predict

teachers' implementation of SEL programs. Instead, measuring teachers' social-emotional competencies may be a better predictor of SEL program implementation.

Among the social-emotional competencies in CASEL's framework, only self-awareness has been researched in relation to FOI. For example, Thierry et al. (2022) identified teachers' self-efficacy as a construct that has been studied in relation to self-awareness. According to Bandura (1986), self-efficacy includes "a person's set of beliefs about their ability to perform well and influence others", which is rooted in social cognitive theory (Thierry et al., 2022). When self-efficacy is defined in the context of teaching practices, it is a teacher's perception of their ability to "engage students in learning, manage classroom behavior, and effectively use instructional strategies" (Tschannen-Moran & Hoy, 2001). There are conflicting results regarding the relationship between teacher self-efficacy and FOI. Some studies have found that greater self-efficacy in teachers is positively associated with FOI of SEL programs (Downer et al., 2009; Ghaith & Yaghi, 1997; Kallestad & Olweus, 2003; Reyes et al., 2012; Rohrbach et al., 1993). However, no relationship was found between teacher efficacy and FOI in other studies (Baker et al., 2010; Driscoll et al., 2011). Although few studies examined the relationship between self-efficacy and FOI of SEL programs, more studies are needed to better understand the important factors that ensure FOI, which ultimately impact students' outcomes.

RC Approach Fidelity Measure

The RC approach is a fully developed intervention with a concrete training manual (Northeast Foundation for Children, 2014). However, it differs from other SEL programs as the RC approach focuses on *how* to teach rather than *what* to teach. In other

words, it is intended to embed instructional practices, such as modeling prosocial behavior, collaboration, and self-control, into existing curricula in the school and routines. The RC approach is built on an assumption that teachers implement RC practices with fidelity. However, studies indicated that the implementation of the RC practices varies across schools and teachers (Abry et al., 2013). For example, some teachers may have received the training, but not use RC practices at all, practice partially, or adopt superficial elements of RC practices and disregard the principles (Rimm-Kaufman et al., 2006).

In this study, fidelity is operationally defined in terms of “dosage”, or as the frequency of using 10 critical RC practices. One of the challenges in measuring the fidelity of the RC approach is that it is intended to impact how teachers provide instruction and support rather than delivering specific SEL knowledge. SEL interventions that use a sequenced curriculum can be measured by assessing the presence or absence of the component and the time spent on delivering the element (Bickman et al., 2009). However, for the RC approach, fidelity can be measured by assessing the frequency of implementing RC practices and the degree to which teachers adhered to RC principles (Rimm-Kaufman et al., 2014).

Precedent Research on the RC Approach

The current study is an extension of a previous quasi-experimental study (protocol ID: 2815) of the Responsive Classroom approach, which was conducted during the 2021-2022 school year. Therefore, a brief description of the previous study is presented, which led to the development of the current research question.

The previous study examined the effect of RC training of the RC Middle School Programs on teachers' beliefs about RC practices, their feelings of self-efficacy about culturally responsive teaching practices, and their perceptions of their relationships with students overall. Also, the study examined how RC training influenced students' perceptions of the school climate.

Data were collected at multiple time points from August 2021 through May 2022 from 131 teachers and 1,543 students. Overall findings suggest that teachers' beliefs about the RC approach and their feelings of self-efficacy about culturally responsive teaching practices significantly improved immediately following the professional development training. However, statistically significant results were not found between the experimental and wait-list control groups on feelings of self-efficacy about culturally responsive teaching practices, perceptions of student-teacher relationships, or students' perceptions of school climate at the end of the school year, when controlling for baseline.

Considering that the evaluation occurred at a unique time during the COVID-19 pandemic, the effects of the program have yet to be fully understood. For example, administrators in the participating district reported changes to the master instructional schedule and format, increases in teacher absences, limited opportunities for students to come together for community events, and the potential trauma experienced by students, families, and school staff following the death of an involved school community member due to COVID-19. Therefore, it is crucial to understand whether the program was implemented with fidelity during this time, before concluding the effectiveness of the program. Also, there was a significant improvement in the teacher belief scores and CRTSE scores immediately after the workshop. It would be valuable to examine how

teacher belief, CRTSE scores, and other teacher level characteristics are related to teachers' RC practices. At last, understanding the mediators of increasing the fidelity of implementation of the SEL approach will benefit schools and districts to better prepare their faculty to effectively implement the SEL approach.

Current Study

The primary objective of the current study is to further explore the teacher-level characteristics that predict FOI of an evidence-based SEL approach, the *Responsive Classroom* (RC) in middle schools. The following teacher-level predictors of FOI will be examined: (1) teacher demographics, including gender, years of teaching experience, and race/ethnicity (2) teacher beliefs of RC approach and (3) self-efficacy in culturally responsive teaching.

During the previous study, survey responses of teacher beliefs of the RC approach and self-efficacy of culturally responsive teaching scales were obtained before and after the implementation of the RC approach. Also, FOI was assessed three times during the school year (Fall, Winter, Spring), by collecting information regarding their dosage of utilizing the RC approach in their practices. Demographic information was collected at the beginning of the data collection as well, which allowed for the examination of differences in FOI by teacher characteristics.

Research Questions and Hypothesis

Given that this study was an extension of the previous research, the program developers and stakeholders collaboratively developed the research questions to gain a deeper understanding of the results. As a result, the present study aims to understand the

relationship between FOI and teacher-level characteristics. The following questions were addressed in this correlational study:

RQ1: To what extent do the teacher characteristics (gender, years of teaching experience, race/ethnicity, and level of education), teacher beliefs (TB) on the RC approach, and culturally responsive teaching self-efficacy (CRTSE) predict the dosage of RC practice implementation (FOI)?

RQ2: For teachers with high CRTSE and TB scores, which RC practices (*interactive modeling, responsive advisory meeting, intentional use of teacher language, responding to misbehavior, interactive learning structures, investing students in rules, problem-solving conferences, brain breaks, active teaching, student practice, small group learning, and closing of the day*) were mostly implemented?

Notably, the second research question aimed at examining which RC practices were mostly used by the teachers with CRTSE and TB scores rather than examining the scores as continuous variable. For the program developers, they were interested in learning about the implementation behaviors of teachers with high CRTSE and TB scores to identify areas of improvement for the RC training.

I hypothesized that among the teacher's demographic characteristics, only the race/ethnicity variable may have differences in the level of FOI, which was the result of a similar study conducted by Williford et al. (2015). According to Thierry et al. (2022), other variables such as years of experience may be insufficiently sensitive to predict FOI. Therefore, I hypothesized that other demographic characteristics may not predict the level of FOI. For the other predictors, teaching beliefs and CRTSE, I hypothesized that the associations of these variables with FOI would be positive. Teachers with higher teaching

beliefs and self-efficacy would implement the RC approach with more frequent dosage, which aligns with the social cognitive theory (Bandura, 1977) as well as the CRT conceptual framework (Comstock et al. (2023).

CHAPTER 3

METHOD

This dissertation aims to conduct a deeper analysis of the data collected during the 2021-2022 school year. Therefore, the procedure on collected data is described below, followed by the analysis for this study. During the evaluation period, teachers from one school received the *Responsive Classroom Core Course* in the summer of 2021 and were expected to implement key RC practices throughout the 2021-22 school year. The remaining three schools were part of a waitlist-control and received the *Core Course* during the summer of 2022. The previous study involved a quasi-experimental group design, in which schools were not randomly assigned. The treatment school was chosen by the school district and the Center for Responsive Schools while the three remaining middle schools formed the wait-list control groups. For this study, only the treatment group teachers' data were used to analyze their implementation practices. Specifically, a correlational study design was used to understand how teachers implement the RC practices in relation to their beliefs about RC practices (TB), culturally responsive teaching self-efficacy (CRTSE), and teacher-level characteristics (gender, race/ethnicity, level of education, years of experience).

Setting

A middle school in an urban district in the southern United States participated as the treatment group in the RC Middle School evaluation. Table 2 contains a list of the

student demographics at the schools retrieved from the National Center for Education Statistics in 2021. While there are no significant differences in the gender distribution, there is a higher number of Black or African American and Hispanic or Latinx students. Also, 44% of students were eligible for free lunch.

Table 2

Student Demographic

Enrollment	1156
Gender (%)	
Female	48
Male	52
Student Diversity (%)	
American Indian/ Alaska Native	0.1
Asian or Asian Pacific Islander	1
Black or African American	52.2
Hispanic or Latinx	32.9
White	7.6
Multi-racial	6.2
Free lunch eligible by Direct Certification (%)	44.12

Note: Data retrieved from National Center for Education Statistics in 2021

Participants

In this study, a total of 61 teacher participants self-reported their demographic information, which includes gender, race, years of experience, and level of education. Table 3 describes the characteristics of participating teachers in each school. In terms of gender distribution, there was a higher number of female teachers (75%) relative to the male teachers (23%). Also, there were significantly more Black or African American teachers (57%), followed by White (36%), Multiracial (5%), and Asian (2%) teachers.

Also, there was a higher number of more experienced teachers with more than 10 years of teaching experience (59%) compared to teachers with 5-10 years of experience (31%) and 1-4 years of experience (10%). Lastly, the school had the highest number of teachers with a Master’s degree (60%), followed by Bachelors (21%), Master with specialist degree (13%), and Doctorate (5%). Table 4 describes teachers' response rates across data collection periods. The overall attrition rate from the baseline to the end of the year survey for CRTSE and TB was approximately 36.07 percent across three measurement

Table 3
Teacher Participants

Characteristic	Treatment	
	<i>n</i>	%
Gender		
Female	46	75.41
Male	14	22.95
Prefer not to say	1	1.64
Race		
American Indian or Alaskan Native	0	0
Asian	1	1.64
Black or African American	35	57.38
Hispanic/Latinx	0	0
Multiracial	3	4.92
Native Hawaiian or Other Pacific Islander	0	0
White	22	36.07
Years of Experience		
1-4 years	6	9.84
5-10 years	19	31.15
More than 10 years	36	59.01
Highest Educational Level		
Bachelors	13	21.31
Masters	37	60.66
Masters with Specialist Degree	8	13.11
Doctorate	3	4.92

timepoints. For fidelity checks, the attrition rate was 16.39% from Fall to Spring term within a school year.

Table 4
Teacher Participation Percentages

	<i>n</i>	<i>%</i>
CRTSE, TB		
Baseline	61	
Posttest 1	57	93
Posttest 2	39	63
Fidelity Check		
Fall	49	80
Winter	34	56
Spring	39	64

Measures

Independent Variables

RC Teacher Belief Measure. The Teacher Belief Survey (Appendix A) was designed by the Center for Responsive Schools (CRS) to assess changes in teachers' beliefs aligned with Responsive Classroom practices. Specifically, the survey measures eight teacher belief domains that are critical to effective teaching and include, *Conditions for Learning, Conditions for Effective Teaching, Goal of Discipline, Goodness of Student Intentions, Nature of Learning, Purpose of Education, Role of SEL in Learning, and Role of School and Classroom Environment.* The survey consists of 41 items with 12 items reverse coded. Survey items are mapped to 8 teacher belief domains, and respondents select from a 5-point Likert scale ranging from *Strongly Disagree* to *Strongly Agree*. Also, the survey

has demonstrated high reliability with a Cronbach's alpha of 0.90 in a previous evaluation of the measure.

In the current study, Cronbach's alpha coefficient for the Teacher Belief Survey was 0.89, which indicates strong internal consistency overall. However, when each domain was reviewed, the internal consistency of items appeared to vary. *Conditions for Learning* domain consisted of 4 items ($\alpha = 0.49$), *Conditions for Effective Teaching* consisted of 2 items ($\alpha = 0.06$), *Goal of Discipline* consisted of 5 items ($\alpha = 0.60$), *Goodness of Student Intentions* consisted of 4 items (0.33), *Nature of Learning* consisted of 3 items ($\alpha = 0.21$), *Purpose of Education* consisted of 5 items ($\alpha = 0.19$), *Purpose of Education* consisted of 5 items ($\alpha = 0.49$), and *Role of School and Classroom Environment* consisted of 5 items ($\alpha = 0.50$). The Cronbach's alpha coefficients by each domain suggest low reliability and would suggest that a majority of the domains should not be reported in isolation. An exploratory factor analysis was conducted which indicated that the Teacher Belief Survey measure may represent fewer domains than how it was originally conceptualized. As such, this report focuses on the overall Teacher Belief Survey measure rather than the eight domains.

Culturally Responsive Teaching Self-Efficacy Scale (CRTSE; Siwatu, 2005). The Culturally Responsive Teaching Self-Efficacy (CRTSE) scale (Appendix B) is a measure developed to assess teachers' beliefs that culturally responsive teaching practices will have positive classroom and student outcomes (Siwatu, 2007). According to Siwatu (2007), the CRTSE scale was developed based on Bandura's (1977) work and Siwatu's (2007) *Culturally Responsive Teaching Competencies*. Siwatu (2007) identified four components of culturally responsive teaching competencies: curriculum and instruction,

classroom management, student assessment, and cultural enrichment. Guided by these four components, Siwatu also integrated Bandura's (1977) work which describes that the ability of self-efficacy beliefs to predict future behaviors is associated with the critical task. Thus, CRTSE consists of 40 Likert-type items ranging from 0 (*not confident at all*) to 100 (*completely confident*) that specifically assess the level of confidence in their ability to engage in specific culturally responsive teaching practices (e.g., "I am able to identify the diverse needs of my students"). The internal reliability for the 40-item measures was .96 as estimated by Cronbach's alpha. A total score is generated by summing all 40 items. The higher score means more confidence in their belief about the ability to practice culturally responsive teaching. In the current study, Cronbach's alpha for the CRTSE was 0.96, which was equally high as the previous studies, suggesting high reliability.

Dependent Variables

The dependent variable in this study included the teachers' implementation of the Responsive Classroom Middle School Approach over one school year.

Fidelity Checklist. The fidelity checklist was designed to measure the frequency of implementation of RC practices over the period of one school year (Appendix C).

Teachers reported on a scale of 1 (Never) to 4 (Everyday) on their practices during the past month(s). As described previously, this approach includes practices and structures that are aimed to improve teacher effectiveness and are grounded in four domains focused on engaging academics, a positive classroom community, effective management of the environment, and developmentally responsive teaching. The 12 key practices that were expected to be implemented as part of this study included *interactive modeling*,

responsive advisory meeting, intentional use of teacher language, responding to misbehavior, interactive learning structures, investing students in rules, problem-solving conferences, brain breaks, active teaching, student practice, small group learning, and closing of the day. At three points during this study (October 2021, February 2022, and May 2022), teachers reported on the extent to which they implemented key RC Middle School practices. Teachers provided a rating on a Likert scale (Never, Rarely, Frequently, Very Frequently) for each practice. The fidelity measure was found to be reliable with Cronbach's alpha of 0.83.

Procedures

Recruitment procedures and the four-day RC *Core Course* occurred during Summer 2021 (August 3-6, 2021). Implementation of the RC Middle School approach occurred during the 2021-2022 school year, and measurement occurred in four primary data collection periods across the year (Appendix D). Procedures for recruitment, training, and measurement are provided in the sections below.

Recruitment

This study was approved by the Institutional Review Board at the University of Massachusetts Amherst and by the participating district in July 2021(protocol ID: 2815). Researchers and staff from the Center for Responsive Schools (CRS) collaborated with the district on recruitment efforts. Together, they reviewed a list of districts that had contacted CRS, indicating interest in receiving RC training. The team selected preferable districts to recruit, and these included large districts, with a diverse population of students and teachers. CRS staff reached out to the participating district and shared recruitment documentation, which outlined the proposed study, with district administrators. The

participating district assigned the schools to the treatment and wait-list control conditions. Then, the teachers were provided with a recorded video of the study description. The researcher presented the study with the link to the online informed consent form before the start of the RC training for the treatment group.

Training

The participating school in the treatment condition received four days of RC training in August 2021. The training was conducted in the treatment school gym and one large room. This was an in-person, interactive training in the participating district and was facilitated by CRS's certified trainers. The training was conducted for 7 hours each day. This course enabled participating teachers to learn about the primary domains of RC as well as engage in the key RC practices.

Incentives

All participants received financial compensation for each measure completed. Also, the treatment group was provided with access to other resources such as free registration to seminars and a subscription to the *Journal of Social and Emotional Learning*.

Measurement

Prior to participating in this study, teachers provided their informed consent. Teachers participating in the RC training then engaged in three measurement periods. Just prior to the RC training (August 2021), teachers completed baseline measures (Teacher Belief Survey, CRSTE) and demographic information. Following the four-day training, teachers completed the same measures immediately after the workshop. Follow-up measures were collected in May (Teacher Belief Survey, CRSTE). Also, teachers

completed the fidelity checklist during three measurement periods (October-November 2021, February 2022, May 2022).

Analysis

A correlational study design was used for analysis. Thus, descriptive summary, correlation analysis and multiple regression analysis were conducted to address the first research question.

RQ1: Do teacher characteristics (gender, years of teaching experience, race/ethnicity, and level of education), teacher beliefs on RC approach, and CRTSE predict the dosage of RC practice implementation?

To understand the overall summary of the data, descriptive statistics were examined. Then, the correlational analysis was conducted to understand the strengths and directions of relationship between the variables. Multiple regression analysis is used when examining the relationship between a single dependent variable and multiple independent variables (Wagner et al., 2006). Specifically, multiple regression analysis allows for understanding whether independent variables can predict the dependent variable. Therefore, multiple regression analysis was used to understand whether any of the teacher level characteristics can predict the implementation dosage.

Given the research interest in examining the relationships between teacher's beliefs about the RC approach, self-rating of CRTSE, demographic characteristics, and fidelity of implementation, average scores across all data collection periods were considered for the analysis. Also, due to the variations in responding to either one, two, or all surveys across all data collection periods, the method of using average of scores for all variables was selected to keep consistent number of observations. Statistical software,

STATA, was used to conduct the analysis. Also, different models were tested by controlling for demographic characteristics and examining the teacher beliefs and CRTSE in relation to the FOI.

RQ2: Which RC practices (*interactive modeling, responsive advisory meeting, intentional use of teacher language, responding to misbehavior, interactive learning structures, investing students in rules, problem-solving conferences, brain breaks, active teaching, student practice, small group learning, and closing of the day*) are related with higher scores on teacher beliefs and CRTSE?

To answer the second question, descriptive statistics were examined for teachers with high CRTSE and TB scores. As mentioned earlier, decision on examining teachers with High CRTSE and TB has been made collaboratively with the program developers. High CRTSE teachers were identified as teachers who scored above 94 on average, which was the score at the 75 percentile in the CRTSE score distribution. High TB teachers were those who scored above 4.51, which was the score at the 75th percentile in the TB score distribution. Each of the RC practices were examined for teachers with high CRTSE and TB scores to gain qualitative insights of teachers' implementation practices.

Power Analysis

Post hoc achieved power analysis was conducted for 61 participants, given that the data had already been collected. G*Power software was used by selecting a two-tailed t-test, 0.54 as the effect size and 0.05 as the alpha level. The effect size was selected based on the body of literatures on how teacher professional development affects student achievement (Yoon et al., 2007). With six predictors, the current study achieved high

power of 0.99, with 54 degrees of freedom. Therefore, the sample size was sufficient to produce a strong power analysis.

CHAPTER 4

RESULTS

A correlational research design was used with descriptive statistics, correlation analysis, and multiple regression analysis to understand the extent to which teacher level-characteristics predict teachers' implementation practices. Teacher beliefs about the Responsive Classroom practices (TB), culturally responsive teaching self-efficacy (CRTSE), gender, race/ethnicity, years of experience, and level of education were examined in relation to the frequency of implementing (FOI) the Responsive Classroom (RC) practices.

Data Cleaning and Matching IDs

One of the challenges in this research was to match participants' research IDs across different data collection periods, in the midst of schools recovering from closures from the COVID-19 pandemic. Across five different data collection periods, participants provided inconsistent responses, as shown in Table 4. Also, teachers struggled with providing the same research ID across data points. As such, there were several missing values due to not being able to identify matching IDs for the participants to understand their changes in beliefs and behaviors. Out of 61 teachers, 27 teachers completed their responses across all data collection periods appropriately.

There are several strategies to treat missing values, such as imputing, replacing, and ignoring missing values (LinkedIn, 2023). It is beneficial to use imputing strategies

when there is a low percentage of missing data. Imputing can help retain the information and sample size of the data, while presenting errors and uncertainties. Replacing missing values with means or medians can also reduce biases and errors but can present distorted relationships and mask true variabilities. Due to the small sample size and the need to preserve the original data in this research, a strategy of ignoring missing values was selected. The strategy may limit the scope of the analysis, but it prevents artificial values and allows the true valuable information to be examined during the unique post-COVID period.

Therefore, the mean of total scores collected across data points for each variable was used for correlational analysis. For example, if a participant responded to the CRTSE scale during the first and second data collection periods, but did not respond during the last collection period, the average scores for the existing values during the first and second periods were used. After iterations of data cleaning and matching participants' research IDs across different data collection periods, the number of observations decreased from 61 to 42.

Descriptive Statistics of Key Variables

Descriptive statistics were calculated for the following variables: mean of total scores of TB, CRTSE, and FOI across different data collection periods.

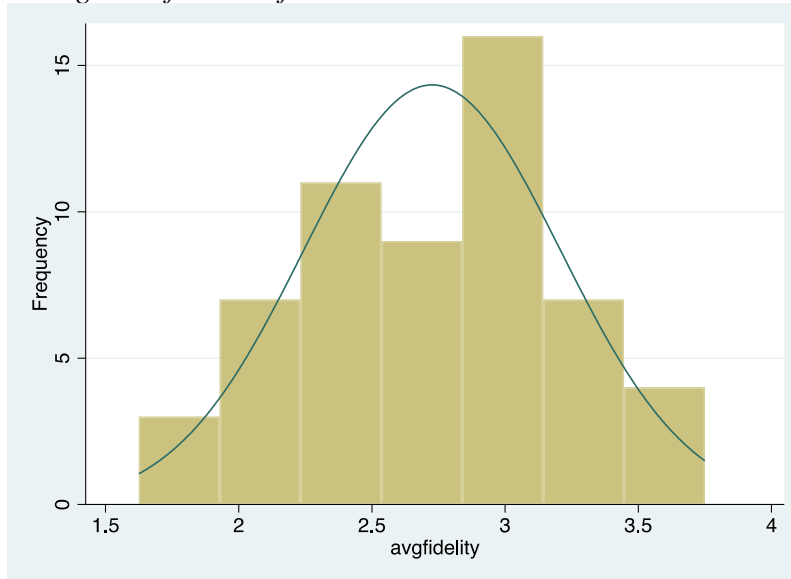
Table 5
Descriptive Statistics for Average Fidelity, CRTSE, and TB

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Avg Fidelity	42	2.72	.48	1.63	3.5
Avg CRTSE	42	86.39	10.35	63.56	100
Avg TB	42	3.86	.29	3.33	4.81

Descriptive Statistics of Fidelity of Implementation

Table 5 shows that teachers implemented the practices with a moderate level of fidelity ($M=2.73$, $SD=0.48$), with the scores ranging from 1.63 to 3.5 out of 4 possible range score. Figure 3 shows that the mean of total fidelity scores across all data collection periods appears to be evenly distributed. When examining the fidelity checklist by RC practices (Table 6), *student practice* and *interactive learning structures* was self-reported as the highest frequency practice ($M=3$, $SD=0.65$; $M=3$, $SD=0.73$), followed by *small group learning* ($M=2.95$, $SD=0.80$), *brain breaks* ($M=2.88$, $SD=0.84$), and *active teaching* ($M=2.82$, $SD=0.60$). The least implemented practices were *responding to misbehavior* ($M=2.38$, $SD=0.52$), *problem-solving conferences* ($M=2.45$, $SD=0.58$), *interactive modeling* ($M=2.63$, $SD=0.66$), *closing of the day* ($M=2.71$, $SD=0.97$), *investing students in the rules* ($M=2.72$, $SD=0.78$) and *responsive advisory meeting* ($M=2.73$, $SD=0.87$).

Figure 3
Histogram of Mean of FOI Across All Data Collection Periods



Overall, teachers were able to provide interactive structures for students to participate in learning and have opportunities to practice the learned skills. However, teachers struggled more with dealing with students' misbehaviors and facilitating conferences to resolve specific problems.

Table 6
Fidelity Results by RC Practices

RC Practices	<i>M</i>	<i>SD</i>
Interactive Modeling	2.63	0.66
Responsive Advisory Meeting	2.73	0.87
Teacher Language	2.43	0.52
Responding to Misbehavior	2.38	0.52
Investing Students in the Rules	2.72	0.78
Problem-Solving Conferences	2.45	0.58
Active Teaching	2.82	0.60
Student Practice	3.00	0.65
Small Group Learning	2.95	0.80
Interactive Learning Structures	3.00	0.73
Brain Breaks	2.88	0.84
Closing of the Day	2.71	0.97

Descriptive Statistics of Teacher Beliefs

Figure 4 shows the distribution of average teacher belief scores across all data collection periods. The mean of total teacher belief scores was 3.86 ($SD=.29$), ranging from 3.33 to 4.81. Examining by each item (Table 7), teachers had the highest beliefs about “Educators are responsible for creating an environment where students can make mistakes and learn from them,” “Students can be good citizens in the classroom

community when they are taught how to do so,” “Teacher-student relationships have a significant influence on student engagement in classroom learning,” and “Development of social and emotional skills is foundational to student success in and out of school.” Teachers had the lowest beliefs about “The primary goal of feedback on student practice is to assess their learning rather than to assess their performance,” “Students are capable enough to make the best choices about their learning,” and “The most effective way to discipline students is to reinforce desired behavior through rewards or punishment.” Overall, teachers agreed with general responsibility of teachers, the importance of social-emotional learning and student-teacher relationships, and possibilities to change students’ behaviors through an explicit teaching. However, fewer teachers believed about the purpose of providing feedback, students’ ability to make the best choices about their learning, and discipline practices.

Figure 4
Histogram of Mean of TB Scores Across All Data Collection Periods

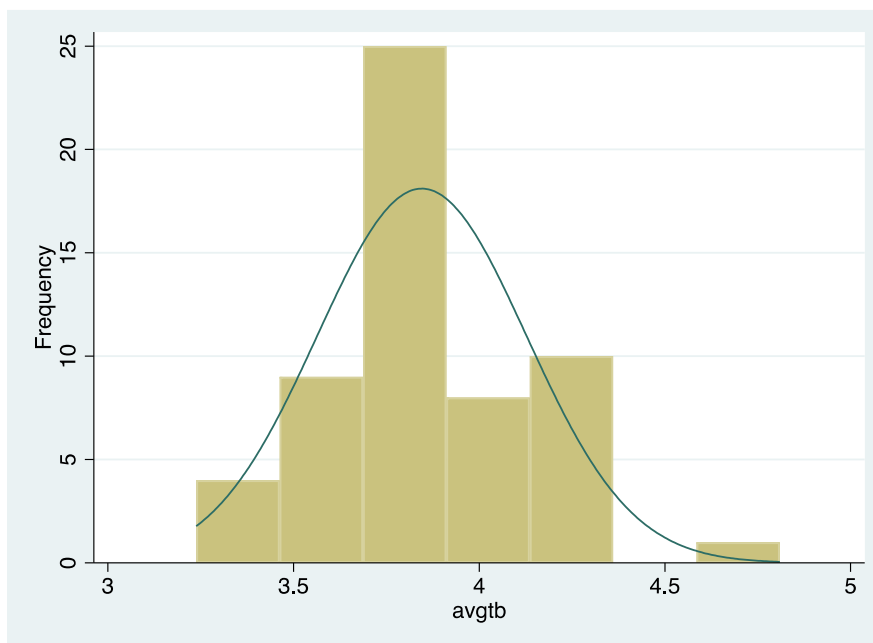


Table 7
Teacher Belief Scale Item-level Summary

Items	Mean (SE)	95% CI
1. Students can be good citizens in the classroom community when they are taught how to do so.	4.81 (0.06)	[4.69, 4.92]
2. Students learn best when they can examine new information rather than simply accept it as presented.	4.63 (0.08)	[4.45, 4.81]
3. It is not my responsibility to ensure all students interact with others.	3.94 (0.16)	[3.62, 4.27]
4. The school and classroom community are strengthened when teachers consistently engage parents with empathy.	4.55 (0.11)	[4.32, 4.78]
5. Development of social and emotional skills is foundational to student success in and out of school.	4.79 (0.06)	[4.66, 4.92]
6. Lesson design and delivery can encourage or discourage students' effort and engagement.	4.76 (0.06)	[4.64, 4.89]
7. A responsibility of education is to prepare all students to develop the attitudes and dispositions that lead to success in play, school, work, and life.	4.67 (0.07)	[4.54, 4.81]
8. The most effective classroom rules tell students what not to do.	3.60 (0.15)	[3.29, 3.91]
9. Students are more likely to obey the rules if they fear punishment for breaking those rules.	3.32 (0.16)	[3.00, 3.64]
10. It is not necessary for social skills to be explicitly taught and modeled at every grade level for students to succeed academically.	4.23 (0.14)	[3.95, 4.51]
11. A primary aim of education is to help students to develop an appreciation of self-discipline to achieve a goal.	4.48 (0.08)	[4.32, 4.65]
12. Teaching students how to reflect on changes in their learning is not as necessary as learning new material.	3.75 (0.16)	[3.42, 4.08]
13. When adults show trust and respect for students in the school and classroom community, students return that trust and respect.	4.46 (0.09)	[4.28, 4.65]
14. Fostering a sense of discovery and wonder about learning is integral to teaching the academic curriculum.	4.64 (0.08)	[4.49, 4.80]
15. Students are capable enough to make the best choices about their learning.	3.38 (0.13)	[3.13, 3.64]
16. Students learn best when the lesson is designed so they can regularly interact and learn from each other.	4.5 (0.08)	[4.33, 4.67]
17. Punishment is an effective strategy for changing student behavior.	3.50 (0.15)	[3.21, 3.80]
18. A student's responsibility during lessons is to listen and take notes and not question what is delivered.	4.17 (0.14)	[3.88, 4.45]
19. A goal of discipline is to maintain the maximum amount of control over students.	3.63 (0.14)	[3.35, 3.91]
20. All classroom instruction is more effective when it is planned before it is delivered to students.	4.47 (0.10)	[4.26, 4.68]
21. Learning is enhanced when instruction reflects and respects the social and cultural identities of students.	4.67 (0.08)	[4.51, 4.82]
22. How students ask and answer questions during a lesson should inform how a teacher continues to teach the lesson.	4.73 (0.06)	[4.61, 4.85]
23. It is my responsibility to ensure all students, regardless of academic success, leave school with a positive sense of self.	4.63 (0.07)	[4.49, 4.78]

24. Students generally break the rules because they are trying to satisfy an unmet need.	3.98 (0.13)	[3.72, 4.24]
25. As an educator, one of my primary goals should be to produce active, socially-conscious citizens.	4.42 (0.11)	[4.19, 4.65]
26. The goal of well-organized classroom and non-classroom spaces is to help students learn to navigate those spaces safely and independently.	4.64 (0.07)	[4.51, 4.77]
27. Educators are responsible for creating an environment where students can make mistakes and learn from them.	4.83 (0.05)	[4.73, 4.93]
28. Social and emotional competence has little to do with whether or not students hope, set ambitious goals, and persevere to achieve them.	3.62 (0.19)	[3.24, 4.01]
29. Student disengagement or lack of motivation typically stems from a lack of skills or unmet needs rather than a limitation or a flaw in their character.	4.12 (0.09)	[3.93, 4.31]
30. Teachers can create a classroom and school community where all students believe they can be successful.	4.71 (0.08)	[4.55, 4.88]
31. Developing social and emotional skills is essential for students to overcome social, behavioral, and academic obstacles.	4.67 (0.08)	[4.50, 4.83]
32. The most effective way to discipline students is to reinforce desired behavior through rewards or punishment.	3.35 (0.15)	[3.04, 3.66]
33. Added effort and relevant learning experiences have limited influence on the capacity to learn.	3.42 (0.18)	[3.07, 3.78]
34. The primary goal of feedback on student practice is to assess their performance rather than to assess their learning.	3.02 (0.18)	[2.65, 3.39]
35. Social, emotional, and cooperative processes must all be present in a lesson for students to learn.	3.88 (0.13)	[3.62, 4.15]
36. The school and classroom environment should communicate belonging and be representative of all students.	4.69 (0.07)	[4.54, 4.84]
37. Providing students with options and input diminishes teacher control over the learning process.	3.77 (0.20)	[3.37, 4.17]
38. Teacher-student relationships have a significant influence on student engagement in classroom learning.	4.79 (0.07)	[4.66, 4.92]
39. Students who develop social and emotional skills are more likely to manage their own emotions and take responsibility for their success than students who do not develop these skills.	4.67 (0.09)	[4.49, 4.85]
40. Educators expressed beliefs and expectations about student intentions and motivations have a profound influence on student behaviors.	4.40 (0.09)	[4.21, 4.58]
41. Equal consideration should be given to what students will learn and how they will learn it.	4.69 (0.07)	[4.54, 4.84]
42. Students are less likely to misbehave when expectations have been taught and regularly reinforced.	4.48 (0.10)	[4.27, 4.69]

Descriptive Statistics of Culturally Responsive Teaching Self-Efficacy

Figure 5 shows the slightly left skewed distribution of mean of CRTSE scores across all data collection periods. In looking at the distribution of average CRTSE scores

in Figure 5, data show that most teachers rated themselves in the 85 to 100 range. The mean of total CRTSE scores was 86.39 ($SD=10.35$), ranging from 63.56 to 100. Table 8 describes the item level responses. Teachers rated that they are most confident to “Build a sense of trust in my students,” “Use my students’ prior knowledge to help them make sense of new information,” and “Use a variety of teaching methods.” Teachers were less confident to “Teach students about their cultures’ contributions to science,” “Obtain information about my students’ home life,” and “Design a lesson that shows how other cultural groups have made use of mathematics.” Overall, teachers rated higher for items that described their efficacy in practicing skills that are applicable in general teaching settings, but less confident when items included understanding individual student’s culture and integrating it to the curriculum.

Figure 5
Histogram of Mean of CRTSE Scores Across All Data Collection Periods

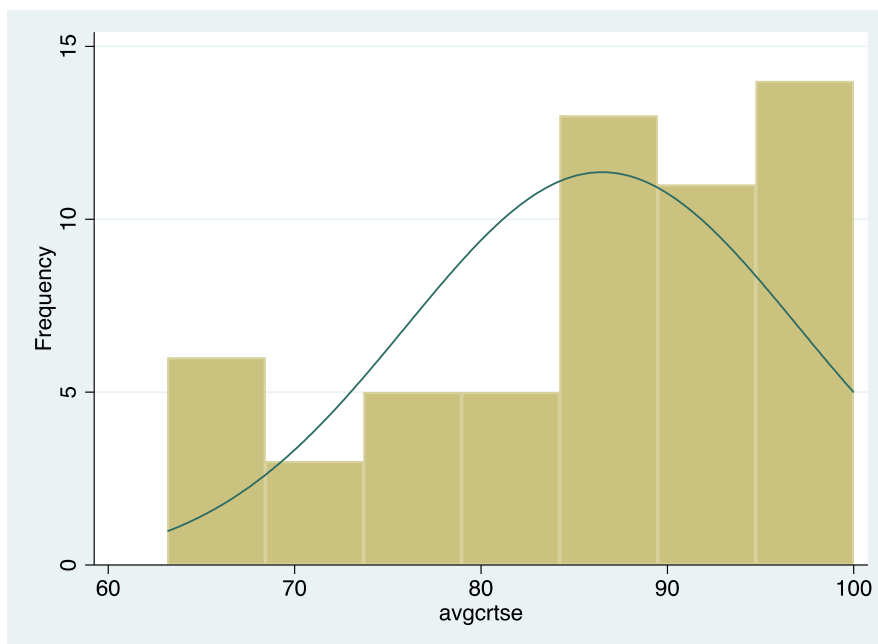


Table 8
CRTSE Item-Level Summary

Item	Mean (SE)	95% CI
1. Adapt instruction to meet the needs of my students	89.85 (1.41)	[87, 92.69]
2. Obtain information about my students' academic strengths	90.68 (1.59)	[87.47, 93.89]
3. Determine whether my students like to work alone or in a group	90.78 (1.59)	[87.57, 93]
4. Determine whether my students feel comfortable competing with other students	89.35 (1.75)	[85.83, 92.88]
5. Identify ways that the school culture (e.g., values, norms, and practices) is different from my students' home culture	80 (3.04)	[73.8, 86.15]
6. Implement strategies to minimize the effects of the mismatch between my students' home culture and the school culture	77.88 (3.15)	[71.51, 84.25]
7. Assess student learning using various types of assessments	90.85 (1.55)	[87.73, 93.97]
8. Obtain information about my students' home life	77.55 (2.99)	[71.51, 83.58]
9. Build a sense of trust in my students	92.10 (8.46)	[89.46, 94.74]
10. Establish positive home-school relations	83.72 (17.18)	[78.36, 89.07]
11. Use a variety of teaching methods	91.77 (10.15)	[88.61, 94.93]
12. Develop a community of learners when my class consists of students from diverse backgrounds	90.25 (10.47)	[86.99, 93.52]
13. Use my students' cultural background to help make learning meaningful	86.95 (12.97)	[82.91, 90.99]
14. Use my students' prior knowledge to help them make sense of new information	91.91 (10.42)	[87.76, 94.25]
15. Identify ways how students communicate at home may differ from the school norms	83.58 (14.35)	[79.11, 88.06]
16. Obtain information about my students' cultural background	83.13 (17.33)	[77.73, 88.53]
17. Teach students about their cultures' contributions to science	76.91 (21.58)	[70.18, 83.63]
18. Greet English Language Learners with a phrase in their native language	80.83 (19.37)	[74.80, 86.87]
19. Design a classroom environment using displays that reflects a variety of cultures	82.50 (17.14)	[77.15, 87.84]
20. Develop a personal relationship with my students	91 (11.92)	[87.29, 94.71]
21. Obtain information about my students' academic weaknesses	91.16 (10.24)	[87.97, 94.35]
22. Praise English Language Learners for their accomplishments using a phrase in their native language	81.59 (19.87)	[75.40, 87.78]
23. Identify ways that standardized tests may be biased towards linguistically diverse students	82.44 (14.96)	[78.01, 86.87]
24. Communicate with parents regarding their child's educational progress	89.75 (14.96)	[85.08, 94.41]
25. Structure parent-teacher conferences so that the meeting is not intimidating for parents	89.85 (11.14)	[86.37, 93.32]
26. Help students to develop positive relationships with their classmates	89.77 (10.64)	[86.45, 93.09]
27. Revise instructional material to include a better representation of cultural groups	83.93 (15.78)	[79.01, 88.85]
28. Critically examine the curriculum to determine whether it reinforces negative cultural stereotypes	79.48 (18.71)	[73.65, 85.31]
29. Design a lesson that shows how other cultural groups have made use of mathematics	77.63 (19.30)	[71.59, 83.66]
30. Model classroom tasks to enhance English Language Learners' understanding	88.60 (11.30)	[85.07, 92.11]

31. Communicate with the parents of English Language Learners regarding their child's achievement	84.87 (18.13)	[79.22, 90.52]
32. Help students feel like important members of the classroom	91.76 (9.80)	[88.71, 94.82]
33. Identify ways that standardized tests may be biased towards culturally diverse students	77.94 (17.25)	[72.56, 83.31]
34. Use a learning preference inventory to gather data about how my students like to learn	89.29 (10.72)	[85.95, 92.63]
35. Use examples that are familiar to students from diverse cultural backgrounds	83.63 (15.01)	[78.95, 88.31]
36. Explain new concepts using examples that are taken from my students' everyday lives	91.06 (9.77)	[88.01, 94.10]
37. Obtain information regarding my students' academic interests	91.43 (10.55)	[88.14, 94.71]
38. Use the interests of my students to make learning meaningful for them	91.01 (10.15)	[87.85, 94.17]
39. Implement cooperative learning activities for those students who like to work in group	90.44 (11.09)	[86.99, 93.90]
40. Design instruction that matches my students' developmental needs	89.23 (10.67)	[85.91, 92.56]

Descriptive Statistics of Variables by Teacher Groups

Table 8 shows average fidelity, CRTSE, and TB by different teacher demographics groups. Teachers who identified themselves as Black or African American group had the highest scores in the mean of total fidelity, CRTSE, and TB scores. For gender demographics, female teachers had higher scores in the average fidelity and CRTSE scores, but male teachers had higher TB scores. Teachers with 5-10 years of experience displayed the highest average fidelity score, but teacher with more than 10 years of experience displayed higher CRTSE and TB scores. For the level of education, a teacher with a doctorate degree showed the highest average fidelity and CRTSE score. However, there was only one teacher that was reported to have a doctoral degree. Teachers with master's with specialist degree reported the highest TB scores.

Correlation Analysis

Next, correlational analysis was conducted to understand any relationship between two variables and also to gain insights on which variables to include in the

model. Although correlation analysis does not explain the causal relationship, it provides insights on the direction and strength of relationship between the variables. Refer to Table 10 for strength of a correlation.

Table 9
Descriptive Statistics by Teacher Demographic Groups

	<i>AvgFidelity</i>	<i>AvgCRTSE</i>	<i>AvgTB</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M(SD)</i>
Race			
White	2.51 (.48) <i>n=15</i>	82.74 (9.94)	3.80 (.30)
Black or African American	2.91 (.39) <i>n=24</i>	89.84 (8.31)	3.95 (.30)
Asian	1.86 (-) <i>n=1</i>	75.82 (-)	3.48 (-)
Multiracial	2.44 (.32) <i>n=2</i>	77.64 (17.49)	3.58 (.24)
Hispanic/Latinx	<i>n=0</i>	-	-
Gender			
Female	2.74 (.48) <i>n=32</i>	86.96 (9.94)	3.86 (.30)
Male	2.67 (.52) <i>n=9</i>	86.92 (9.98)	3.88 (.29)
Prefer not to say	2.42 (-) <i>n=1</i>	63.56 (-)	3.74 (-)
Years of Experience			
Early career (0-4 years)	2.66 (.66) <i>n=2</i>	81.61 (11.84)	3.64 (.37)
Mid-career (5-10 years)	2.74 (.53) <i>n=14</i>	82.44 (11.82)	3.78 (.19)
Long-career (more than 10 years)	2.7 (.46) <i>n=26</i>	88.88 (8.98)	3.93 (.32)
Education			
Bachelors	2.63 (.50) <i>n=9</i>	80.02 (11.97)	3.80 (.24)
Masters	2.77 (.45) <i>n=27</i>	88.30 (8.74)	3.82 (.25)
Masters with specialist	2.48 (.54) <i>n=5</i>	84.83 (12.23)	4.22 (.43)
Doctorate	3.42 (-) <i>n=1</i>	100 (-)	3.86 (-)

Table 10
Pearson's Product Moment Correlation Coefficient Strength

Correlation Coefficient Size (<i>r</i>)	Correlation Strength
.80 to 1.00 or -.80 to -1.00	Strong
.40 to .79 or -.40 to -.79	Moderate
0 to .39 or 0 to -.39	Weak
.00	No Correlation

Please refer to Appendix E for a complete correlation table. The correlation between CRTSE and fidelity scores controlling for all other variables was moderately correlated, $r(40) = .46, p < 0.001$. Also, the correlation between average fidelity scores and Black or African American, controlling for all other variables, was positively correlated $r(40) = .46, p < 0.001$ with a moderate strength. On the other hand, the correlation between the average fidelity and White, controlling for all other variables, was weakly correlated $r(40) = -.328, p < 0.05$ with negative association. Variables that are positively correlated with the average CRTSE are Black or African American ($r(40) = .39, p < .05$), and more years of experiences ($r(40) = .31, p < .05$), although the strengths are weak. However, “prefer not to say” race/ethnicity variable and Bachelor’s degree were negatively and weakly correlated with the CRTSE ($r(40) = -.35, p < .05$; $r(40) = -.33, p < .05$). Lastly, average TB is negatively correlated with Master’s with Specialist degree variables ($r(40) = -.39, p < .01$). Except for the relationship between the Black or African American and fidelity, all other correlations were weakly associated. To check for multicollinearity or high correlation among independent variables, Variance Inflation Factor (VIF) was conducted in the following section.

Multiple Regression Analysis

Multiple regression analysis was used to examine which teacher level characteristics significantly predicted the fidelity of implementation. Five different models were tested. Model 1 included the CRTSE and TB variables. Also, variables that were highly correlated were investigated through different models followed by VIF to assess multicollinearity. A goal of regression analysis is to separate all independent and dependent variables to enable interpretation of a regression coefficient. It assumes that a value of one variable can be changed when holding other independent variables constant. Therefore, when independent variables are highly correlated, changes in one variable may affect changes in other variables, which makes it difficult to estimate the relationship between the independent and dependent variables independently (Frost, n.d.). As such, Model 2 included CRTSE, TB and race/ethnicity variables. For the third model, the education variable was included in addition to race/ethnicity, CRTSE and TB scores. Model 4 included years of experience variable in addition to the model 3. Model 5 considered including all possible variables.

To assess multicollinearity, VIFs for each independent variable were calculated. The interaction between race/ethnicity, CRTSE, and TB yielded a low VIF (1.15). Also, the race/ethnicity, CRTSE, TB, and education variables had a low VIF (1.32). When the years of experience variables were added, it also generated a low VIF (1.50). Even when all variables were included, the VIF was low (1.53). As a general heuristic, VIF values greater than 10 may warrant further investigation (UCLA, 2021). In all models, VIF was low, indicating that linear regression models can be estimated and interpreted. Consequently, all five models were estimated for regression analysis.

Model 1:

$$FOI_i = \beta_0 + \beta_1 \text{AvgCRTSE}_i + \beta_2 \text{AvgTB}_i + \varepsilon_i$$

Model 2:

$$FOI_i = \beta_0 + \beta_1 \text{Race}_i + \beta_2 \text{AvgCRTSE}_i + \beta_3 \text{AvgTB}_i + \varepsilon_i$$

Model 3:

$$FOI_i = \beta_0 + \beta_1 \text{Race}_i + \beta_2 \text{Education}_i + \beta_3 \text{AvgCRTSE}_i + \beta_4 \text{AvgTB}_i + \varepsilon_i$$

Model 4:

$$FOI_i = \beta_0 + \beta_1 \text{Race}_i + \beta_2 \text{Education}_i + \beta_3 \text{Experience}_i + \beta_4 \text{AvgCRTSE}_i \\ + \beta_5 \text{AvgTB}_i + \varepsilon_i$$

Model 5:

$$FOI_i = \beta_0 + \beta_1 \text{Race}_i + \beta_2 \text{Education}_i + \beta_3 \text{Experience}_i + \beta_4 \text{Gender}_i \\ + \beta_5 \text{AvgCRTSE}_i + \beta_6 \text{AvgTB}_i + \varepsilon_i$$

Table 11 describes the summary of the regression analysis of various models. To further describe the regression analysis results, an Akaike Information Criteria (AIC) method was used to compare a set of possible models describing the relationship between the average fidelity scores and CRTSE, TB, gender, race/ethnicity, years of experience, and level of education, and determine the best-fit model. AIC scores are often used when data on variables are gathered, and investigators want to examine which independent variables explain that variation in the dependent variable (Bevans, 2023). Lower AIC scores indicate a better fit model. According to the AIC scores, the best-fit model included CRTSE, TB, and race (Model 2). The regression results indicated that three predictors explained 36% of the variance ($R^2=.36$, $F(5, 36)=4.04$, $p<.01$).

$$\hat{Y}_i = .532 + .013AvgCRTSE_i + .210AvgTB_i + .296Black_i + .011Multiracial_i + \varepsilon_i$$

Table 11
Summary of Regression Analysis of Various Models

	(1)	(2)	(3)	(4)	(5)
CRTSE	.02*** (.007)	.013* (.007)	.008 (.008)	.011 (.008)	.011 (.009)
TB	.239 (.199)	.210 (.192)	.121 (.216)	.027 (.253)	.022 (.262)
Black or African American		.296** (.143)	.381** (.153)	.364** (.159)	.371** (.166)
Multiracial		.011 (.309)	.021 (.310)	-.009 (.319)	.012 (.34)
Bachelor's			-.184 (.183)	-.15 (.211)	-.167 (.229)
Doctorate			.299 (.422)	.357 (.433)	.349 (.450)
Master's with Specialist Degree			-.363 (.22)	-.33 (.232)	-.332 (.243)
Early career				-.035 (.372)	-.022 (.386)
Midcareer				.154 (.162)	.149 (.169)
Female					-.004 (.179)
Prefer not to say					.146 (.51)
Constant	.004 (.915)	.532 (.912)	1.383 (1.011)	1.495 (1.097)	1.470 (1.144)
N	42	42	42	42	42
r ²	0.242	0.359	0.427	0.444	0.446
aic	50.41	49.38	50.69	53.43	57.29

Standard errors in parentheses

* p<.10 ** p<.05 *** p<.01

Specifically, it was found that the Black or African American teacher level characteristic significantly predicted average fidelity scores ($\beta = .296, p < .05$). The slope for Black or African American is the difference in means between individuals who are

Black or African American and those who are White. In other words, Black or African American teachers scored .296 points higher on the average fidelity scores than White teachers. Also, average CRTSE scores significantly predicted fidelity ($\beta = .013, p < .10$). The slope for CRTSE indicates that as CRTSE increases by one score point, the average fidelity score increases by .014 points, controlling for TB and race/ethnicity variables.

Question 2. For teachers with high CRTSE and TB scores, which RC practices were mostly implemented?

Previous research found that teachers significantly increased their TB and CRTSE scores immediately after the training workshop. Therefore, examining the RC practices used by teachers with high TB and CRTSE scores provides program developers and implementers with valuable information about which RC practices were implemented the most frequently. It will guide the program developer in deciding about the resource allocation of the program (Mendive et al. 2016). Next, descriptive statistics of RC practices are presented for different groups of teachers (Table 12).

For teachers with high CRTSE scores, who scored at or above 94, *brain breaks* ($M=3.29$), *student practice* ($M=3.15$), and *small group learning* ($M=3.15$), were the mostly used practices. On the other hand, *problem-solving conferences* ($M=2.29$) and *responding to misbehavior* ($M=2.46$), and *interactive modeling* ($M=2.68$) were least utilized by teachers with high CRTSE scores. For teachers with high TB scores, who scored at or above 4.51, *small group learning* ($M=3.36$), *interactive learning structures* ($M=3.26$), and *student practice* ($M=3.24$) were most frequently used while *problem-solving conferences* ($M=2.61$), *teacher language* ($M=2.73$) and *responding to misbehavior* ($M=2.79$) were used least frequently. Overall, the common RC practices

used the most frequently for teachers with high CRTSE and TB scores were *small group learning* and *student practice*, while these teachers used *problem-solving conferences* and *responding to misbehavior*.

Table 12
Fidelity of Implementation by RC Practices

Practices	All Teachers (N=42)		High CRTSE (N=11)		High TB (N=11)	
	M	(SD)	M	(SD)	M	(SD)
Interactive Modeling	2.69	(.69)	2.68	(.81)	3.03	(.76)
Responsive Advisory Meeting	2.76	(.9)	2.83	(1.04)	3.14	(.81)
Teacher Language	2.41	(.55)	2.73	(.52)	2.73	(.35)
Responding to Misbehavior	2.39	(.56)	2.46	(.61)	2.79	(.34)
Investing Students in the Rules	2.65	(.77)	2.92	(.84)	3	(.6)
Problem-Solving Conferences	2.42	(.51)	2.29	0.43)	2.61	(.5)
Active Teaching	2.79	(.49)	2.92	(.43)	3.02	(.41)
Student Practice	2.93	(.62)	3.15	(.52)	3.24	(.53)
Small Group Learning	3.05	(.65)	3.15	(.52)	3.36	(.55)
Interactive Learning Structures	3.05	(.65)	3.13	(.77)	3.26	(.6)
Brain Breaks	2.85	(.77)	3.29	(.53)	2.85	(.82)
Closing of the Day	2.67	(.96)	3.14	(.73)	3	(.89)

Next, multiple regression analysis was used to examine which specific RC practices are related with fidelity scores for high CRTSE and high TB group of teachers. For the teacher group with high CRTSE scores, their average CRTSE scores significantly predicted *interactive modeling* ($\beta = .316, p < .01$), *teacher language* ($\beta = .139, p < .10$),

student practice ($\beta = .158, p < .05$), and *closing of the day* ($\beta = .267, p < .01$). This indicates that for one score increase of CRTSE scores on average for high CRTSE teacher group, use of *interactive modeling* increased by .316 points, *teacher language* by .139 points, *student practice* by .158 points, and *closing of the day* by .267 points.

When examining the relationship between the TB scores and RC practices for teachers with high TB scores, none of the RC practices were statistically significant. This indicates that the average TB scores did not predict any specific RC practices, for the high TB score group of teachers.

CHAPTER 5

DISCUSSION

This study had two primary goals. The first was to understand the relationship between teachers' beliefs about Responsive Classroom (RC) practices, their feelings of self-efficacy about culturally responsive teaching practices, teachers' sociodemographic characteristics and implementation practices. The second goal of this study was to examine which RC practices were mostly implemented by teachers with high Culturally Responsive Teaching Self-Efficacy (CRTSE) and Teacher Beliefs (TB) scores. First, teachers who perceived themselves as having higher CRTSE reported implementing more RC practices. Second, Black or African American teachers reported more use of RC practices compared to other teachers. Third, teachers with high CRTSE used *brain breaks*, *student practice*, and *small group learning* the most, while using the *problem-solving conferences*, *responding to misbehavior*, and *interactive modeling* the least. For teachers with high TB scores, they utilized *small group learning*, *interactive learning structures*, and *student practice* most frequently. In contrast, they used *problem-solving conferences*, *teacher language*, and *responding to misbehavior* the least. In the following section, implications of these results are discussed.

Need for Embedding Culturally Responsive Teaching (CRT) **in Social-emotional Learning (SEL) Instruction**

Culturally responsive teaching self-efficacy (CRTSE) and fidelity of implementation (FOI) have been found to be positively associated, supporting the need to embed culturally responsive teaching (CRT) in social-emotional learning (SEL). The results show that teachers who reported higher self-efficacy in delivering culturally

responsive teaching reported using more RC practices in their classrooms. This is consistent with Bandura's social cognitive theory, that individuals with high self-efficacy believe in their capabilities to "organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). This sense of efficacy drives teachers' behaviors and reactions to the environment and motivations to maintain effort (Bandura, 1997). A body of research has found that teachers' self-efficacy is highly related to teaching behaviors and student outcomes (Zee & Koomen, 2016). Zee and Koomen (2016) integrated 40 years of teacher self-efficacy research to investigate the influence of teacher self-efficacy on quality of classroom processes, students' academic adjustment, and teachers' psychological well-being. One hundred sixty-five articles were reviewed and the results suggest that teachers' high self-efficacy predicts higher students' academic adjustment, patterns of teacher behavior and practices related to classroom quality, and factors underlying teachers' psychological well-being. Also, there was a negative association between teachers' self-efficacy and burnout factors. Therefore, teachers with higher CRTSE scores implemented RC practices more frequently, as expected from the hypothesis.

CRTSE descriptive findings show most teachers rated themselves in the 85 to 100 range, which is higher than moderately confident. Specifically, teachers felt more confident about building a sense of trust in their students ($M=92.10$) and using prior knowledge to help students make sense of new information ($M=91.91$). This result was consistent with the original research with preservice teachers (Siwatu,2007). These items were those in which the preservice teachers felt most confident. In the initial study, the preservice teachers rated that they felt more confident about building a sense of trust in

their students with a mean of 92.15 while reporting that they felt confident about using students' prior knowledge to help them make sense of new information with a mean of 88.08. The item-level analysis also indicated that teachers felt less confident about utilizing students' cultural information and integrating this information in teaching. These scores were also consistent with the previous study of the preservice teachers. In the current study, the teacher scored 76.91, whereas the preservice teachers scored 74.41 for the item, "Teach students about their cultures' contribution to science". For the item "Obtain information about my students' home lives", teachers in the current study rated with a mean of 77.55 while preservice teachers rated with a mean of 74.40.

To further interpret the data, Siwatu (2007) provided context for how the CRTSE scale was constructed. According to Siwatu (2007), the CRTSE scale consists of a variety of levels of difficulty. Specifically, it was developed based on Bandura's guideline that the self-efficacy scales should measure a variety of degrees of difficulty to avoid the ceiling effects. Also, CRTSE was developed to reflect both general teaching practices, and culturally sensitive, equitable, and responsive teaching practices, which were found to be the essential components of culturally responsive teaching (Foster, 1995; Ladson-Billings, 1995). Therefore, Siwatu (2007) reported that the "easy" items were designed to reflect general teaching practices (e.g. "I am able to use a variety of teaching methods," "I am able to build a sense of trust in my students"). The "difficult" items included more culturally sensitive and responsive teaching practices (e.g., "I am able to teach students about their cultures' contribution to science," "I am able to implement strategies to minimize the effects of the mismatch between my students' home culture and the school culture"). Item-level analysis suggests that teachers feel more confident in engaging in

“easy”, general teaching practices, and struggle more with delivering "difficult", culturally sensitive and responsive teaching practices. Although the RC training workshop includes fostering CRT practices, it does not explicitly target building SEL skills through CRT. This indicates a potential need to provide more support for teachers to gain specific culturally responsive teaching skills through professional development.

Association between Race/Ethnicity and Fidelity of Implementation

The results show that race/ethnicity predicts FOI. Specifically, Black or African American teachers implemented RC practices more frequently compared to teachers of other races/ethnicities. While Willford et al. (2015) found that race could predict the FOI, the directions of study outcomes were different. Williford et al. (2015) found that African American and Latinx/Hispanic teachers have lower levels of dosage adherence and quality of implementation compared to White and non-Hispanic teachers. The authors speculated that Latinx/Hispanic teachers require adjustments to be made, such as translation, which can impact FOI. However, Willford et al. (2015) study reported that most of the teacher participants were White (49%) and Black (42%), Hispanic (3.5%) and Multi-racial or others (3.5%) but did not report the student demographics. Thus, it is unclear how much adjustment was needed based on the students' needs. On the other hand, the current study involved 52.2% of Black or African American students and 57% of teachers with Black or African American race/ethnicity. Teachers may not have made adaptations, such as translation, that affected their frequent use of RC practices.

Another possible explanation for how Black or African American teachers implemented RC practices more frequently may be due to the correlation between CRTSE and Black or African American variables. According to the correlational

analysis, CRTSE and Black or African American variables were positively correlated ($r(40) = .39, p < .05$). This indicates that teachers' Black or African American racial identity is related to culturally responsible teaching practices. Ladson-Billings (1995) asserted that teachers of color may bring cultural knowledge and experience into their instruction, and present less bias in instructional materials. When there is a racial/ethnicity match between teachers and students, they may share cultural knowledge and experiences of cultural upbringings that could help create an inclusive learning environment. Although studies have found that Black students who are taught by Black teachers are more successful than when taught by teachers from different ethnic backgrounds (Bone & Slate, 2011; Easton-Brooks, 2014; Haycock, 2001), Gay (2000) warns against the assumption that belonging to a racial group is essential or adequate for teachers to engage in culturally competent pedagogy. This presumption is as unreasonable as believing that someone inherently understands how to teach English to others solely due to being a native speaker. Therefore, although the results indicate a positive relationship between Black or African American teachers and FOI, the more important message is how to prepare teachers of all colors to connect with students to deepen understanding of individual student's culture. As such, the Culturally Responsive Social-Emotional Competency Development guideline from the Massachusetts Department of Elementary and Secondary Education encourages educators to actively engage in professional development for CRT and SEL that focus on building technical skills and learning to adjust to different situations and contexts in real time. Also, an effective professional development learning itself should be culturally responsive, grounded in SEL practice for adults to also have learning opportunities.

Need for Classroom Management Skills

Teachers reported fairly high use of RC practices overall. According to Durlak and Dupre (2008), the level of implementation fidelity in at-scale interventions is typically around 60% and rarely reaches 80%. In the current study, the FOI was reported about 68% with a mean of 2.73 out of 4 total scores. However, it appears that some practices may have been used more than others. According to results, teachers most frequently used *student practice and interactive learning structures*. However, the least implemented RC practices were *responding to misbehavior and problem-solving conferences*. Teachers who responded with high CRTSE scores also reported *brain breaks and student practice* as most frequently implemented practices, while reiterating that *problem-solving conferences and responding to misbehavior* as the least frequently used practices. Both *problem-solving conferences and responding to misbehavior* are classroom management skills. The *problem-solving conferences* is “A process for addressing a specific problem that a child is having: Establishing what the teacher and student notice, naming the problem and the need to solve it, understanding the cause of the problem, generating alternatives, choosing one strategy to try” (Responsive Classroom, 2004) and *responding to misbehavior* is defined as “A non-punitive response to misbehavior that allows teachers to set clear limits and students to fix and learn from their mistakes while maintaining their dignity” (Responsive Classroom, 2023). While it is difficult to understand the underlying reasons for why teachers used these practices the least through correlational study--whether disciplinary practices were not needed because all students were not presenting challenges or teachers felt it was hard to implement these strategies, careful assumptions can be made through different evidence.

Given the national surge in the frequency and severity of behavioral challenges in classroom post-COVID, it may be more likely that the students in the currently study were also posing similar challenges. These challenges include bullying, tantrums, defiance, elopement, self-injury, aggression, unresponsiveness, emotional outburst, and non-compliance (Whalen, 2023). According to Prothero (2023), more than 70% of teachers reported experiencing increases in disruptive behaviors compared to 66% in 2019. Especially, the COVID-19 pandemic has adversely impacted students' social emotional development, and 87% of schools have reported an increase in misconduct, rowdiness, disrespect towards staff and peers, and unauthorized use of electronic device (NCES, 2022).

However, only about a third of teachers are reported to be effectively trained to manage challenging behaviors (National Council on Teacher Quality, 2020). In fact, 40% of teachers reported that they feel inadequately prepared for classroom management and handling student's misbehaviors (National Council on Teacher Quality, 2014). This deficiency is attributed to the lack of coursework and training provided in teacher preparation programs. Only 15% of special education teacher programs were reported to offer sufficient coursework on classroom management and merely about 33% mandate teacher candidates to practice these skills (National Council on Teacher Quality, 2014).

Compounding the issue is an increased trend of teacher shortages and teachers' burnout. Especially, teacher burnout is directly linked to the teachers' proficiency in classroom management, which can lead to emotional exhaustion, depersonalization, negative perceptions of students, and diminished job satisfaction (Gilmour et al., 2022).

According to Kamentz (2022), with 55% teachers reported to consider leaving the teaching profession after the COVID -19.

While professional development can help teachers, it often lacks focus on practical applications such as classroom management (Whalen, 2021). While the Responsive Classroom trainings include providing knowledge and skills to deal with students with challenging behaviors, it may be beneficial to help teachers to think about practical scenarios and enhance skills in addressing specific problems that a child is having. Moreover, it is imperative to support educators in maintaining their own mental health. This includes learning coping skills as well as providing systems of support for teachers to continuously engage in a learning community. This may alleviate their stress of trying to resolve challenges independently.

On-going Professional Development

Findings from the previous Responsive Classroom study indicate that teachers in the treatment group experienced statistically significant increases in their beliefs about RC practices and their feelings of self-efficacy about culturally responsive practices immediately following the Responsive Classroom *Core Course*. These findings about teacher beliefs were consistent with previous evaluation studies of the Responsive Classroom training (Poplawski, & Gerstner, 2020). Additionally, participating teachers also agreed that RC was a socially valid approach, when asked to respond to a survey at the end of the first year of implementation. These findings suggest that teachers learned from the training and find the approach to be acceptable, effective, and feasible to implement. This is an important finding, especially considering that teachers were

implementing this during a complex time, as schools were navigating a “new normal” as a result of the COVID-19 pandemic.

However, when the effects were observed after a year, there were no significant differences in teachers’ TB and CRTSE scores when compared to baseline. Also, when TB and CRTSE scores were examined in relation to FOI, only CRTSE was found to be a significant variable that predicts FOI. These results have several implications for the need for on-going professional development.

While studies have shown that teacher efficacy is a strong predictor of student achievement and student motivation (Hoy & Woolfolk, 1993; Tschannen-Moran et al., 1998), Bandura also acknowledges that self-perceived self-efficacy may not accurately reflect individuals' true abilities. High-quality professional learning includes opportunities for staff to be exposed to current research and best practices to increase knowledge, build skills, and change beliefs and behavior (Keleher, 2017; Darling-Hammond et al., 2017). Arguably, the 4-day RC training is designed in just this way. However, research has also become more clear that “train and hope” PD opportunities, in which staff are exposed to a one-time training event does little to change behavior, and the most effective PD are those that are thoughtfully sequenced, ongoing and connected to classroom or school-wide practices (Capps et al., 2012; Freeman et al., 2014; Keleher, 2017). Furthermore, technical assistance, a concept that extends traditional notions of PD, and includes follow up support, such as coaching, strategic planning, and program evaluation, in this instance with schools (Maier et al., 2021), is considered best practice and more likely to lead to sustained implementation of practices (Darling-Hammond et al., 2017). The Center for Responsive Schools offers many ideas to schools for

embedding professional learning throughout the year through Quick Coaching Guides, facilitation strategies with school staff, department/grade level teams, professional learning communities, and mentoring/coaching opportunities. It is unclear whether the treatment school used any of these ideas offered across the 2021–2022 school year.

Limitations

There were a number of limitations to this study that are worth noting and perhaps reiterating. First, gathering large quantities of survey data that are linked to participants over time was extremely challenging. In this study, researchers provided detailed instructions to participants about how to create a participant ID that would not identify who they are and also created many strategies and reminders at each time point for participants to use the same ID as they did for the baseline measurement period. This strategy was not entirely successful, leading to attrition across time periods due to unmatched IDs. The missing data limited the scope of analysis and posed obstacles in finding trends across time. Second, there is a possibility that the measure used to collect FOI did not capture the multiple dimensions of implementation of the RC approach. As indicated previously, measuring implementation of an “approach” is extremely difficult compared to measuring the implementation of a packaged curriculum. There is dearth of research on how to best measure the implementation of a teaching approach. As such, the current study measured the frequency of implementing RC practices as suggested by Rimm-Kaufman et al. (2014) through teachers’ self-report. However, the degree to which teachers adhered to RC principles were not captured in this study. Future research using a multi-method approach is necessary to understand their practice in both frequency and adherence to RC principles. Third, it is crucial to acknowledge the possibility of selection

bias, which describe a systematic difference between the teachers who completed responses consistently and the teachers who did not provide reliable data. It is possible that teachers who provided responses more consistently and reliably could have implemented the approach more frequently. Also, the participants self-reported their perceptions on each measure, which may not have been entirely accurate, as responses could have reflected socially desirable answers. In addition, there may be other factors that influenced teachers' beliefs, attitudes, and behaviors. Given that this study was conducted immediately after the COVID -19 pandemic, there could have been many external factors that influenced the results. For example, there was still an option of participating in a hybrid classroom if students desired. Therefore, teachers may have struggled in implementing the RC practices as intended in this particular setting. Also, this unique time posed more challenges in teacher and students' mental health, which may limit generalizability of the findings. Moreover, there were other ongoing SEL programs or initiatives used in the school, which are not all captured in this study. Therefore, the correlation between CRTSE, race/ethnicity, and FOI may be spurious.

Contributions to Research

Educators understand the positive effect of social-emotional learning (SEL) (Cipriano et al., 2023) on students' outcomes. Moreover, recent studies have shown that implementation practices can affect SEL outcomes (Cipriano et al., 2022). However, there is a dearth of research examining the association between teacher-level characteristics and fidelity of implementation (Thierry et al., 2022). According to Durlak (2016), the field of SEL should move forward by investigating the factors that warrant adequate teacher implementation practices.

Accordingly, this research presented with a preliminary finding that add value to the current field of SEL implementation science. Despite several limitations, this study explored how different teacher-level characteristics, such as race, gender, level of education, and years of experience were associated with the frequency of using Responsive Classroom (RC) practices. As a result, this initial study shed light on how race and teachers' own perception about their culturally responsive teaching self-efficacy (CRTSE) would predict higher dosages of implementing RC practices.

In addition, this study is one of the few research studies that examines SEL in relation to culturally responsive teaching. While culturally responsive SEL is emerging at the policy level, studies that provide evidence for practical guidelines for educators have been scarce. This study attempts to integrate SEL strategies with culturally responsive teaching by examining the relationship between the CRTSE and implementation of SEL strategies. Culturally responsive SEL appears to be needed based on preliminary findings on positive association between CRTSE and fidelity of implementation.

While the negative impact of COVID -19 on students' education persists, less is known about the specific challenges and practices teachers engaged with during and post COVID -19. While this study may lack generalizability of findings, it illustrates teachers' implementation of SEL strategies during this unique time. Overall, teachers implemented RC practices about 68% of the time, which was within the level of at-scale school-wide SEL interventions reported by Durlak and Dupre (2008). However, there were certain practices less utilized, such as *problem-solving conferences* and *responding to misbehaviors*. While current research on the RC approach focuses on the impact of RC practices on students' academic gains, less is known about how individual RC practices

are used by teachers. Therefore, this study provides additional information for future studies to utilize in understanding the nuances of individual RC practices after returning from COVID -19.

Future Directions

This work attempted to investigate the teacher-level characteristics associated with teachers' implementation practice of an approach to social emotional learning (SEL). Although this study provided preliminary evidence that teachers' race and culturally responsive teaching self-efficacy are positively associated with the frequency of implementing RC practices, this work is an initial attempt to understand the factors that influence teachers' practices. Specifically, there needs to be further research in adequate measurement of implementation practices, replication of the study with a larger sample size to identify a causal relationship, qualitative research to understand why certain RC practices were practiced the least, and association between teachers' practices and students' outcome data.

First, there is a need for further study on how to adequately measure teachers' practices when implementing an approach to teaching. As indicated in the previous chapter, the Responsive Classroom (RC) approach is different from other SEL interventions as it attempts to change teachers' teaching practices and strategies rather than deliver specific SEL knowledge. While it may be easier to measure the multidimensions of implementation of sequenced curriculums, it is difficult to assess teachers' approach to teaching. In addition to self-ratings, observable data that reflects teachers' changes in teaching behavior in the classroom would be beneficial.

To fully understand the mediators and moderators of teachers' implementation practices, replication of this study with a larger sample size is needed. COVID -19 presented internal and external threats to the validity of this study, as stated in the limitation. It is crucial to understand whether the same findings are examined after a few years since the pandemic. Also, a larger sample of participants across different schools would enable investigating a causal relationship between the variables. Moreover, with a larger sample size, future studies can investigate how different professional development formats and frequency could lead to changes in teachers' behaviors. In addition, the current study included a unique set of participants, with a majority of teachers and students identified as Black or African American. Therefore, the replication of this study with more varied racial demographics would provide a deeper understanding of how racial information is associated with teachers' practices.

Moreover, additional qualitative research on understanding teachers' perception on using *problem-solving conferences* and *responding to misbehavior* would be helpful. In the current study, *problem-solving conferences* and *responding to misbehavior* were the least practices strategies. However, this study lacks information on why these strategies were practiced the least. It is possible that teachers felt these areas were most challenging to implement or there were just fewer incidents that required teachers to use these strategies. By understanding the reasons, future professional development could address the areas that teachers find challenging to implement.

Lastly, understanding implementation practices in relation to students' outcomes is crucial. The essential purpose of implementing a SEL program and strategies is to make a positive impact on students. By linking implementation data with students'

academic, emotional, social, and behavioral outcomes, educators and school administrators will gain a comprehensive perspective on “what to do” to support students in developing social and emotional competencies.

APPENDIX A

TEACHER BELIEF SURVEY

“Strongly Disagree” (1) to “Strongly Agree” (5)

1. Students can be good citizens in the classroom community when they are taught how to do so.
2. Students learn best when they can examine new information rather than simply accept it as presented.
3. It is not my responsibility to ensure all students interact with others.
4. The school and classroom community are strengthened when teachers consistently engage parents with empathy.
5. Development of social and emotional skills is foundational to student success in and out of school.
6. Lesson design and delivery can encourage or discourage students' effort and engagement.
7. A responsibility of education is to prepare all students to develop the attitudes and dispositions that lead to success in play, school, work, and life.
8. The most effective classroom rules tell students what not to do.
9. Students are more likely to obey the rules if they fear punishment for breaking those rules.
10. It is not necessary for social skills to be explicitly taught and modeled at every grade level for students to succeed academically.
11. A primary aim of education is to help students to develop an appreciation of self-discipline to achieve a goal.
12. Teaching students how to reflect on changes in their learning is not as necessary as learning new material.
13. When adults show trust and respect for students in the school and classroom community, students return that trust and respect.
14. Fostering a sense of discovery and wonder about learning is integral to teaching the academic curriculum.
15. Students are capable enough to make the best choices about their learning.
16. Students learn best when the lesson is designed so they can regularly interact and learn from each other.
17. Punishment is an effective strategy for changing student behavior.
18. A student's responsibility during lessons is to listen and take notes and not question what is delivered.
19. A goal of discipline is to maintain the maximum amount of control over students.
20. All classroom instruction is more effective when it is planned before it is delivered to students.
21. Learning is enhanced when instruction reflects and respects the social and cultural identities of students.
22. How students ask and answer questions during a lesson should inform how a teacher continues to teach the lesson.

23. It is my responsibility to ensure all students, regardless of academic success, leave school with a positive sense of self.
24. Students generally break the rules because they are trying to satisfy an unmet need.
25. As an educator, one of my primary goals should be to produce active, socially-conscious citizens.
26. The goal of well-organized classroom and non-classroom spaces is to help students learn to navigate those spaces safely and independently.
27. Educators are responsible for creating an environment where students can make mistakes and learn from them.
28. Social and emotional competence has little to do with whether or not students hope, set ambitious goals, and persevere to achieve them.
29. Student disengagement or lack of motivation typically stems from a lack of skills or unmet needs rather than a limitation or a flaw in their character.
30. Teachers can create a classroom and school community where all students believe they can be successful.
31. Developing social and emotional skills is essential for students to overcome social, behavioral, and academic obstacles.
32. The most effective way to discipline students is to reinforce desired behavior through rewards or punishment.
33. Added effort and relevant learning experiences have limited influence on the capacity to learn.
34. The primary goal of feedback on student practice is to assess their performance rather than to assess their learning.
35. Social, emotional, and cooperative processes must all be present in a lesson for students to learn.
36. The school and classroom environment should communicate belonging and be representative of all students.
37. Providing students with options and input diminishes teacher control over the learning process.
38. Teacher-student relationships have a significant influence on student engagement in classroom learning.
39. Students who develop social and emotional skills are more likely to manage their own emotions and take responsibility for their success than students who do not develop these skills.
40. Educators expressed beliefs and expectations about student intentions and motivations have a profound influence on student behaviors.
41. Equal consideration should be given to what students will learn and how they will learn it.
42. Students are less likely to misbehave when expectations have been taught and regularly reinforced.

APPENDIX B

CULTURALLY RESPONSIVE TEACHING SELF EFFICACY SCALE

Rate from 0 (no confidence at all) to 100 (completely confident)

1. Adapt instruction to meet the needs of my students
2. Obtain information about my students' academic strengths
3. Determine whether my students like to work alone or in a group
4. Determine whether my students feel comfortable competing with other students
5. Identify ways that the school culture (e.g., values, norms, and practices) is different from my students' home culture
6. Implement strategies to minimize the effects of the mismatch between my students' home culture and the school culture
7. Assess student learning using various types of assessments
8. Obtain information about my students' home life
9. Build a sense of trust in my students
10. Establish positive home-school relations
11. Use a variety of teaching methods
12. Develop a community of learners when my class consists of students from diverse backgrounds
13. Use my students' cultural background to help make learning meaningful
14. Use my students' prior knowledge to help them make sense of new information
15. Identify ways how students communicate at home may differ from the school norms
16. Obtain information about my students' cultural background
17. Teach students about their cultures' contributions to science
18. Greet English Language Learners with a phrase in their native language
19. Design a classroom environment using displays that reflects a variety of cultures
20. Develop a personal relationship with my students
21. Obtain information about my students' academic weaknesses
22. Praise English Language Learners for their accomplishments using a phrase in their native language
23. Identify ways that standardized tests may be biased towards linguistically diverse students
24. Communicate with parents regarding their child's educational progress
25. Structure parent-teacher conferences so that the meeting is not intimidating for parents
26. Help students to develop positive relationships with their classmates
27. Revise instructional material to include a better representation of cultural groups
28. Critically examine the curriculum to determine whether it reinforces negative cultural stereotypes
29. Design a lesson that shows how other cultural groups have made use of mathematics
30. Model classroom tasks to enhance English Language Learners' understanding
31. Communicate with the parents of English Language Learners regarding their child's achievement
32. Help students feel like important members of the classroom

33. Identify ways that standardized tests may be biased towards culturally diverse students
34. Use a learning preference inventory to gather data about how my students like to learn
35. Use examples that are familiar to students from diverse cultural backgrounds
36. Explain new concepts using examples that are taken from my students' everyday lives
37. Obtain information regarding my students' academic interests
38. Use the interests of my students to make learning meaningful for them
39. Implement cooperative learning activities for those students who like to work in group
40. Design instruction that matches my students' developmental needs

APPENDIX C

FIDELITY OF IMPLEMENTATION CHECKLIST

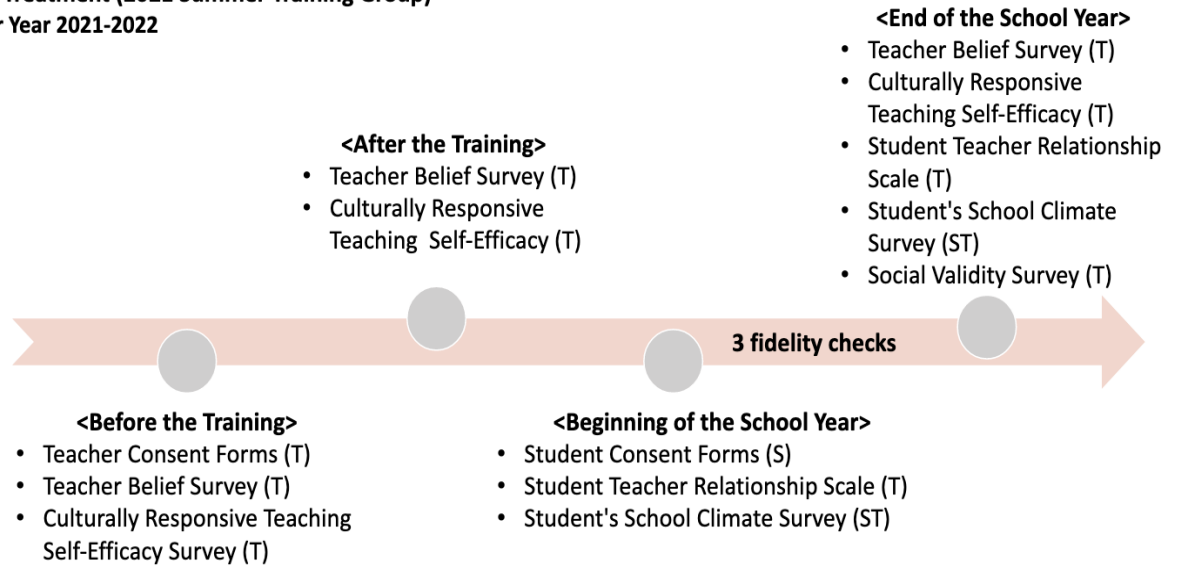
During the past month, I implemented the following key RC practices:

RC Key Practices	1 (Never)	1 (rarely; about 1-2 times a week)	2 (frequently; about 3-4 times a week)	4 (Very frequently; Everyday)
Interactive Modeling				
Responsive Advisory Meeting				
Teacher Language				
Responding to Misbehavior				
Investing Students in the Rules				
Problem-Solving Conferences				
Active Teaching				
Student Practice				
Small Group Learning				
Interactive Learning Structures				
Brain Breaks				
Closing of the Day				

APPENDIX D

DATA COLLECTION TIMELINE

Year 1: Treatment (2021 Summer Training Group)
Plan for Year 2021-2022



(S) = Schools provide info
(T) = Teachers provide info
(ST) = Students provide info

APPENDIX E

CORRELATION TABLE

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Fidelity	1.00																
(2) CRTSE	0.46 **	1.00															
(3) TB	0.26	0.21	1.00														
(4) Female	0.09	0.10	-0.03	1.00													
(5) Male	-0.06	0.03	-0.03	-0.93 ***	1.00												
(6) Prefer not say	-0.10	-0.35 *	0.16	-0.28	-0.08	1.00											
(7) Bachelor's	-0.10	-0.33 *	0.23	-0.25	0.15	0.30	1.00										
(8) Doctorate	0.23	0.21	0.15	0.09	-0.08	-0.02	-0.08	1.00									
(9) Master's	0.14	0.25	0.02	0.05	0.03	-0.21	-0.70 ***	-0.21	1.00								
(10) Master's with Specialist	-0.19	-0.06	-0.39 *	0.21	-0.19	-0.06	-0.19	-0.06	-0.49 ***	1.00							
(11) Asian	-0.28	-0.16	-0.16	-0.28	0.30	-0.02	-0.08	-0.02	0.12	-0.06	1.00						
(12) Black	0.46 **	0.39 *	0.08	0.08	-0.02	-0.18	0.10	0.14	-0.24	0.17	-0.18	1.00					
(13) Multiracial	-0.13	-0.19	-0.06	0.13	-0.12	-0.03	0.16	-0.03	-0.07	-0.08	-0.03	-0.26	1.00				
(14) White	-0.33 *	-0.27	-0.01	-0.05	-0.03	0.21	-0.15	-0.12	0.24	-0.12	-0.12	-0.86 ***	-0.17	1.00			
(15) Longcareer (0-4 years)	-0.03	0.31 *	-0.20	0.14	-0.07	-0.20	-0.31 *	0.12	0.03	0.29	-0.20	0.01	-0.05	0.07	1.00		
(16) Midcareer (5-10 years)	0.04	-0.27	0.30	-0.08	-0.00	0.22	0.12	-0.11	0.11	-0.26	0.22	-0.10	0.08	0.00	-0.90 ***	1.00	
(17) Earlycareer (>10 years)	-0.03	-0.10	-0.20	-0.14	0.16	-0.03	0.43 **	-0.03	-0.30	-0.08	-0.03	0.19	-0.05	-0.17	-0.29	-0.16	1.00

*p<0.05, **p<0.01, ***p<0.00

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