A META-ANALYSIS OF CULTURALLY SUSTAINING INSTRUCTIONAL EFFECTS ON AFRICAN AMERICAN STUDENTS' ACADEMIC AND BEHAVIORAL OUTCOMES

by

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ABSTRACT

DEONDRA S. GLADNEY-CAMPBELL. A Meta-Analysis of Culturally Sustaining Instructional Effects on African American Students' Academic and Behavioral Outcomes (Under the direction of DR. YA-YU LO)

Researchers have identified that inequitable learning experiences for African American students have negatively impacted their educational outcomes in the United States, and culturally sustaining practices offer great promises in supporting African American students. This meta-analysis investigated the effectiveness of culturally sustaining practices on African American students' academic and behavioral outcomes. This study built on prior attempts to synthesize multiple definitions of culturally sustaining practices with recommendations from the literature aimed directly at African American students. In this dissertation, I first used the existing synthesis to establish a theoretical framework with an operational definition of culturally sustaining practices for African American students (CSPAAS). I then conducted a systematic review to identify group design studies aligned with the components of the CSPAAS framework. Effect sizes were extracted from each individual study and a random effects model was employed to determine the overall effectiveness of CSPAAS interventions. Additionally, I evaluated the included studies for methodological rigor using the Council for Exceptional Children (CEC, 2014, 2023) quality indicators to determine the extent to which CSPAAS interventions could be identified as evidence-based practices. Results revealed CSPAAS academic interventions were highly effective (n = 17; g = 1.01) and CSPAAS behavioral interventions were moderately effective (n = 5; g = 0.5). The CSPAAS practices for both academic and behavioral interventions also met CEC (2014, 2023) criteria to be categorized as evidence-based practices. Implications for future research are discussed.

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DEDICATION

I dedicate this dissertation to my mom and dad who always wanted me to know that my education is something no one can take away from me and to my ancestors whose blood was shed to afford me this opportunity. Last but certainly not least, I dedicate this to God for letting an idea become a reality through faith and perserverance and love.

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CHAPTER 1: INTRODUCTION

Statement of the Problem

Inequitable educational experiences for minority students have led to academic and disciplinary disparities between them and their White student peers, which is estimated to cost the United States (U.S.) trillions of dollars in funding (McKinsey & Company, 2009). McKinsey and Company (2009) posit that the achievement gap alone deprives the U.S. economy of nearly 2.3 trillion dollars in lost spending power from missed economic opportunities for minority and at-risk populations who experience these academic and behavioral disparities in their educational experiences. One of the groups most impacted by these disparities are African American students. Researchers have long studied how a host of inequities in education have negatively affected the academic achievement of African American students and how disparate exclusionary discipline practices for African American students have had deleterious effects on this population (Girvin et al., 2021; Lynch, 2004; Skiba et al., 2002; Welch, 2018). Thus, it is important to understand the conditions that have led to these disparities for African American students, and outline some solutions that have been put forth to address these issues.

Inequitable Educational Experiences for African American Students

A number of researchers across multiple fields have documented how African American students endure inequitable experiences in our education system (Children's Defense Fund, 1975; NAEP, 2019; Skiba et al., 2002). For instance, the Office of Civil Rights in the U.S. Department of Education noted widespread disparities in access to preschool, college counselors, and college preparation and advanced courses for minority students (U.S. Department of Education, 2021). Moreover, researchers have identified issues such as segregation in schools, disproportionate use of exclusionary discipline practices due to racial biases and subjectivity,

negative racial bias from instructors and gross underfunding of African American schools as compounding factors that lead to negative academic and behavioral outcomes for African American students, which constitutes an "opportunity gap" where they are deprived of quality educational experiences in comparison to their White peers (Noguera, 2017; Skiba et al., 2003).

Evidence of these disparities can be seen as early as preschool in the ways African American students are treated differently than their White student peers. For example, researchers have noted that many African American students are denied access to quality early childhood education programs, and those who participate in preschool often face the same discriminatory and exclusionary practices many encounter in their later educational careers. Sabol et al. (2022) conducted a study of 400 racially diverse 4-year-old children in preschool programs and their teachers' responses to these students' behavior. Researchers compared teacher complaints about student behavior and their recommendations for disciplinary action with standardized observations of disruptive behavior as measured by the Disruptive Behavior Diagnostic Observation Schedule (DB-DOS) observation tool. In this study, African American students received significantly higher rates of teacher complaints about behavioral concerns in comparison to White students, despite no observable differences in behavior between the groups based on objective standardized measurement of observable disruptive behavior. Findings from this study are consistent with the literature on the prevalence of racial bias some teachers display towards African American students, even in preschool (Ferguson, 2003; Gregory et al., 2011 Tenenbaum & Ruck, 2007).

Beyond preschool, as African American students continue in their educational journeys, many are continually confronted with negative experiences that result in several disparities in outcomes in comparison to their White peers. For instance, Hussar et al. (2020) discovered a

large percentage of African American students (n = 45%) attend high-poverty schools. This is problematic as high-poverty schools have been linked to a host of educational challenges such as teacher shortages, limited retention of highly qualified teachers with advanced training, lack of resources, issues with safety (Garcia & Weiss, 2019; Hussar et al., 2020). Similarly, Garcia and Weiss (2019) revealed in their compelling report on high-poverty schools, that large numbers of teachers working in these schools reported challenges such as high teacher turnover rates, teacher shortages, struggles with parental involvement, and insufficient public investment in schools with the most need. Thus, lack of access to quality schools and teachers is another barrier African American students must overcome to perform comparably to their White peers (Garcia & Weiss, 2019; Hussar et al., 2020). Darling-Hammond (2011) asserts that these inequities constitute an opportunity gap that consists of low levels of social supports for students living in poverty that intersects with African American student demographics, disparities in the allocation of school funding, unequal access to high quality curriculum emphasizing critical thinking skills and authentic learning experiences, and a lack of highly qualified teachers clustered primarily in high poverty schools in African American, Hispanic, and Native communities.

Evidence exists that supports how this trend of disparities continues throughout African American students' educational careers and in the ways African American student behavior is addressed. Behavioral disparities have been observed in the frequency and severity of disciplinary consequences given to African American students in comparison to White students. Specifically, researchers have identified a pattern of disproportionality where school officials more often use exclusionary discipline practices when responding to African American students' behavior (Skiba et al., 2002). Exclusionary discipline practices such as out-of-school suspension and expulsions were more often employed as punitive consequences for African American

behaviors, in comparison to their White peers even for the same behaviors (Children's Defense Fund, 1975; Skiba et al., 2002; Welch, 2018). According to the Children's Defense Fund (1975), between 1972 and 1973 several districts reported suspending between one third and one half of their Black student enrollment. This resulted in an average of one in eight African American students being subject to punitive disciplinary practices that led to their removal from the educational setting in comparison to one in 16 White students receiving similar disciplinary action (Children's Defense Fund, 1975). Additionally, the Children's Defense Fund's report on school suspensions revealed that in an analysis of over 2,900 school districts, 67.9% showed higher suspension rates for Black students than White students. Since these initial findings, little has changed in the landscape of educational equity for African American students (Girvan et al., 2017; Young, 2018). Most recent data available showed that although African American students currently make up around 15% of the nation's public school students, they still account for nearly one third of students who receive suspensions in schools (Girvin et al., 2021). Researchers use the phrase, "discipline gap," in reference to the disparities in disciplinary outcomes between African American students and their White peers (Losen & Gillespie, 2012). Research has also shown that in spite of efforts to address the disparities between African American students and White students, disparities have remained consistent for the past 50 years (Campbell et al., 2000; Levine & Eubanks, 1990; NAEP, 2019; Ogbu, 2002).

Common trends in disparities for African American students can also be seen when data are disaggregated along gender lines. For instance, research has reveals similar discipline disparities between African American girls in comparison to their White female counterparts, and African American boys and their White male peers (Blake et al., 2011; OCR, 2023; Young, et al., 2018). Researchers at New York University in the Georgetown Law Center on Poverty and

Inequality complied a fact sheet as part of their Initiative on Gender Justice & Opportunity (Epstein et al., 2020; OCR, 2023). They found that African American girls were 4.19 times more likely to be suspended and 3.99 times more likely to be expelled than their White female counterparts (Epstein et al., 2020; OCR, 2023). These findings suggest that African American students experience discriminatory practices across grade levels and gender.

Consequences of Racial Educational Disparities on African American Student Achievement

Researchers have observed academic and behavioral disparities in educational outcomes between African American students and White students for a number of decades as a result of inequitable educational experiences (Children's Defense Fund, 1975). One example of academic disparities in achievement have been identified as the differences in standardized test scores between African American students and White students. For instance, evidence of academic disparities can be seen in the National Assessment of Educational Progress (NAEP) data that reveal African American students score an average of 25 points lower than their White peers on both reading and math assessments across grade levels (NAEP, 2019). Moreover, many researchers have identified numerous negative school-based outcomes correlated to these academic and disciplinary disparities, including loss of instructional time that negatively impacts academic achievement and leads to a higher risk of dropping out of high school for African American students (Gagnon et al., 2017; Hernandez, 2011; Hussar et al., 2020). Hussar et al. (2020) reported that the acadeic achievement gaps in reading and math result in a number of negative educational experiences for African American students that correlate to lower high school graduation rates and higher rates of high school dropout in comparison to their White peers. Researchers also have determined that academic achievement gaps, particularly in literacy, emerge early in African American students' educational experiences, and are major predictors of

their future difficulties in school (Christian & Barbarin, 2001; Washing et al., 2019). Hernandez (2011) demonstrated this in a study to determine the effects of poverty and emergent literacy gaps in the third grade on students' future academic success in school. In this longitudinal study of nearly 4,000 students from different ethnic backgrounds, he discovered that students with literacy gaps in the third grade were four times as likely to not graduate from high school on time in comparison to proficient readers. Additionally, 23% of students with the lowest reading proficiency scores dropped out of school or failed to graduate on time in comparison to 4% of students who demonstrated reading proficiency in the third grade as measured by national standardized tests. Data collected on African American students revealed that 31% did not read proficiently and dropped out of high school. This is about eight times the rate for all proficient readers (Hernandez, 2011).

The cumulative effects of these academic achievement gaps can also be seen in the national educational outcomes of African American students (Hernandez, 2011; Hussar et al., 2020). In a congressional annual report on the condition of education, Hussar et al. (2020) reported that a number of factors such as the concentration of African American students in low-income, poorly funded public schools negatively impact African American students. In this study, they revealed that in the fall of 2021, 45% of African American students attended high-poverty schools in contrast with only 8% of White students who attended high-poverty schools. High poverty schools were defined as schools where over 75% of students qualify for the government free and reduced lunch program (Hussar et al., 2020). These data are consistent with findings from the literature that links inequitable educational experiences for African American students to negative educational and postsecondary outcomes (Rubinton & Issacson, 2022). For instance, Rubinton and Issacson (2022) found that schools with a higher share of African

American students spent less per pupil than schools with higher shares of White students, in spite of receiving more funding. Hussar et al. listed these disparities as correlates to negative school outcomes for African American students. According to Hussar et al., although the national graduation rate was 88%, the graduation rate was only 79% for African American students nationally. In the same report, Hussar et al. also disclosed that in spite of decreases in both the national and African American rates of high school dropouts, African American students' average dropout rate (6.4%) was still higher than the national average of 5.3% and the average rate for White students (4.2%). These negative educational outcomes for African American students are directly linked to lower rates of proficiency in English and math that can be observed throughout the course of their educational experiences (Hussar et al., 2020).

In addition to revealing the deleterious effects of the inequitable educational experiences on African American students' educational outcomes, researchers have also become increasingly aware of the ways in which disciplinary disparities have negatively impacted African American students' educational experiences and outcomes (Balfanz et al. 2015; Pearman et al., 2019; Skiba et al., 2014). Lewis et al. (2010) demonstrated evidence of a discipline gap when they examined the effects of exclusionary discipline practices on over 3,500 African American male students and their academic performance in an urban Midwestern school district. In this study, they found that African American students missed a total of 3,617 school days due to exclusionary discipline, including in-school and out-of-school suspension and expulsion. Lewis et al. also drew attention to the academic performance of the same student groups, revealing that only 36% of African American students scored the proficiency level on their standardized tests for that academic year for reading and fewer than 19% of students scored proficiency in science and math. This trend was worse when accounting for high school African American students with

just 9% of students meeting proficiency in math (Lewis et al., 2010). Further, researchers indicated that low standardized test scores for African American students may be attributed in part to the disproportionate amount of days missed as a result of exclusionary discipline used to address their behavior (Lewis et al., 2010; Balfanz et al. 2015; Pearman et al., 2019; Skiba et al., 2014). Thus, these findings compound the negative educational experiences that impact African American students' achievement, as researchers have long identified a strong positive relationship between time students spend engaging in academic learning with high quality instruction and higher academic achievement (Davis & Jordan, 1994; Gregory et al., 2010; Greenwood et al., 2002; Hussar et al., 2020).

Another example of the ways in which discriminatory disciplinary practices have negatively impacted African American students can be found in out-of-school suspension data. Researchers have discovered that out-of-school suspensions in several states are highly correlated with increased high school dropout rates for African American students (Gagnon et al., 2017; MacIver et al., 2009; Skiba et al., 2014). Balfanz et al. (2015) reported that one suspension in the ninth grade increased a student's risk of dropping out from 16% to 32%, and being suspended twice further increased the risk of dropping out to 42%. Data from these studies have led researchers to identify a reflexive relationship between the discipline gap and the achievement gap where excessive loss of instructional time due to exclusionary discipline practices has emerged as a major predictor of lower academic outcomes for African American students (Gregory et al., 2011). Thus, the combined impact of academic and behavior disparities leaves African American students particularly vulnerable to failure in school and the interplay between the harmful effects of both gaps creates a cycle of negative educational experiences for African American students (Pearman et al., 2019).

In addition to the consequences of the achievement gap and the discipline gap for African American students' success in school being sobering, researchers have noted that the compounded effects of these disparities on postschool outcomes for African American students and the nation are even starker (Mallet, 2017; McKinsey & Company, 2009). Some of these effects include higher likelihood of involvement with the juvenile justice system, higher risk of incarceration, decreased postsecondary education enrollment, decreased wages for African American students and in turn, the perpetuation of a cycle of poverty for this population (Ladson-Billings, 2006; Marchbanks et al., 2015; Mowen & Brent, 2016; Shollenberger, 2015). For instance, students who have received exclusionary discipline action such as suspension or expulsion are at risk for involvement with the juvenile justice system (Fabelo et al., 2011; Mallet, 2017). A report by McKinsey and Company (2009) estimated that students who scored in the bottom quartile on math assessments in New York earned of 40% less income than their peers who scored in the top quartile. This longitudinal data set was collected 12 years after students graduated from high school. Additionally, according to the Center for Labor Market Studies (2014), high school dropouts earn approximately $375,000 less than high school graduates. These economic outcomes for high school dropouts contribute to the cycle of poverty many African Americans already face nationally (Marchbanks et al., 2015). Even more alarming is the economic impact of these disparities in the United States. Economists have estimated that due to the national racial achievement gap, our economy has lost billions of dollars, thus impeding the growth of our gross domestic product (GDP) for decades (Center for Labor Market Studies, 2014). These numerous negative outcomes correlated with the lack of access to quality eduation, instruction and discriminatory practices in behavior management and racial bias from educators

have prompted researchers and key educational stakeholders to tackle academic and discipline gaps in a number of ways discussed below.

Efforts to Address Racial Disparities of African American Students

In response to the long-lasting negative effects of academic and behavioral disparities on African American students' in-school and postschool outcomes, researchers have investigated a number of interventions aimed at eliminating these academic and disciplinary gaps. To address the achievement gap, some researchers in the 60s and 70s focused on the impact of segregation in American public schools and the lack of quality of African American schools in comparison to White schools as a key cause of the academic achievement gap (Bradley & Bradley, 1977). Proponents of this explanation for the achievement gap focused on eliminating segregation as part of a larger system of inequitable educational opportunities African American students receive in comparison to their White peers (Condron et al., 2013; Owens, 2017). In their work exploring the connection between racially segregated schools and the achievement gap, Reardon et al. (2019) found that segregation was highly correlated with achievement gaps in grades 3–8. Moreover, they discovered that these academic disparities were accounted for entirely due to disparate rates of school poverty between minority students and White students. This correlation was due to their findings that minority students were concentrated in high-poverty schools, which were demonstrably less academically effective than the lower-poverty schools attended by White students.

In addition to addressing the negative impact of segregated school systems on African American students' achievement, researchers also investigated a number of other potential causes of the achievement gap and ways to close it, such as economic factors and access to quality early childhood education programs (Reardon, 2011; Takanishi, 2016; Whaley &

Dubose, 2018). Reardon (2011) conducted a survey study that reported the gaps in reading and math performance of students at the highest income percentile (10^{th} percentile) and the lowest income percentile (90^{th} percentile) from the 1940s to the 2000s. He found that children born in the 2000s had an income achievement gap over 75% larger than gaps experienced by children born in the 1940s. As a number of researchers have associated the academic achievement gap with issues that arise from poverty (Reardon, 2011), the widening of the income gap has been used to predict the stability of the achievement gap between African American students and their white peers throughout the years.

In addition to investigating the effects of segregation and socioeconomic disparities on African American students' future outcomes, others became increasingly focused on the role of culture in the educational system. Some theorized that the marginalization of African Americans in American society created a host of discriminatory practices that privileged the experiences of White students and groups with cultures that share similar cultural norms to the detriment of outsiders or people of color (Boykin, 1986; Monroe, 2005; Ramsay-Jordan, 2020). These researchers focused on searching for possible interventions that could mediate the effects of cultural incongruency experienced by African American students and theorized that doing so could positively improve African American students' achievement.

Whereas most researchers were preoccupied with the achievement gap between African American and White students, other researchers began to investigate ways to address the discipline gap. Many researchers examined alternative disciplinary programs that emphasized in-school interventions and positive solutions for behavior management to reduce overreliance on exclusionary discipline (Anyon et al., 2014). School-Wide Positive Behavior Interventions and Supports (SWPBIS) is one example of a behavioral framework that has been used as an

alternative to exclusionary discipline responses to problem behaviors. SWPBIS emphasizes positive school interventions and multitiered levels of support to promote positive social and academic skills needed for success in school (Horner& Sugai, 2015; Lo et al., 2010). Components of SWPBIS include explicit instruction and modeling of desired behaviors, the establishment of positive systems of rewarding these behaviors and appropriate consequences for inappropriate behaviors, and the use of three tiers of support with respect to various levels of behavioral needs (Horner & Sugai, 2015; Sugai & Horner, 2020). Another alternative disciplinary practices is restorative justice (Anyon et al., 2014; Kavula, 2014). Restorative justice within the context of education refers to a behavior management system that seeks to resolve conflicts by addressing the negative impact of misbehavior through the concepts of restitution, resolution, and reconciliation (Morrison & Vaandering, 2012). Within the restorative justice framework, behavior interventions such as community conferences and peace-making circles promote the idea of school as a community and help reintegrate students back into the learning environment where they have misbehaved (Gonzalez, 2012).

Research has linked these alternative disciplinary practices such as SWPBIS and restorative justice to decreased office disciplinary referrals and suspensions (Anyon et al., 2014; Gonzalez, 2012; Morrison & Vaandering, 2012; Sugai & Horner, 2020). For instance, Morrison et al. (2006) found that behavior referrals for physical aggression decreased from 773 to 173 for elementary schools in a school district that used restorative justice behavioral interventions. Similar improved behavioral outcomes have been observed with the use of SWPBIS (Noltmeyer et al., 2019). Bradshaw et al. (2010) demonstrated schools that implemented SWPBIS had a significant 6.99% decrease in office discipline referrals and suspensions in comparison to schools that did not use SWPBIS. Nocera et al. (2015) reported similar findings regarding the

effects of SWPBIS on the rates of physical aggression in a low-income middle school. Specifically, the participating school in this study experienced a 31% decrease in reported referrals for physical aggression and other behavior infractions due to the use of SWPBIS emphasizing positive student rewards for appropriate behavior. Most recently, Noltmeyer et al. (2019) demonstrated the effectiveness of SWPBIS in a synthesis, which identified 55 studies associated with SWPBIS, and 90% of these studies demonstrated positive effects of SWPBIS on decreasing student rates of office disciplinary referral data.

Despite the effectiveness of alternative disciplinary practices such as SWPBIS and restorative justice, even in schools with these supports in place, African American students are still more likely to be targeted for behavior consequences that result in removal from the school setting in comparison to their non-African American peers (McIntosh et al., 2018; Smolkowski et al., 2016; Vincent et al., 2011; Vincent &Tobin, 2011). Vincent and Tobin (2011) reviewed the disciplinary records of 77 schools and found that White students benefitted most from schools' implementation of SWPBIS, whereas Black students at these schools remained overrepresented in exclusions. Researchers have suggested that even though behavioral programs that emphasize alternatives to exclusionary discipline can be correlated with positive effects on students' social behavior in school, more is needed to ensure that African American students can access these benefits to the maximum extent possible (Larson et al., 2018; Robinson-Ervin, 2012; Robinson-Ervin et al., 2011). One such way to enhance the benefits of alternative disciplinary practices is through the incorporation of culturally responsive or culturally sustaining pedagogical models (Ladson-Billings, 2014; McIntosh et al., 2018; Robinson-Ervin, 2012; Robinson-Ervin et al., 2011). For example, Bal (2018) presented a framework to operationalize culturally responsive instruction within the context of PBIS as the culturally

responsive positive behavioral interventions and supports (CRPBIS). In this framework, he traces the trajectory of the development of culturally responsive behavior intervetions from being culturally neutral where interventions are employed regardless of students' unique cultural strengths and characteristics, to researchers approaching behavior from a cultural deterministic way. The latter approach necessitates the need for schools to honor students' cultural identities and build bridges between student communities and school behavioral practices.

Furthermore, Bal (2018) argues that schools must go beyond even a cultural deterministic way of approaching behavior where schools may posit that different cultural groups have cultural norms which determine their behaviors. Instead, ultimately schools must move towards being culturally instrumental where schools take the time to develop and understand how the diverse cultures of their students can be used to create their own school culture that lays out its own methods of addressing behavior in ways authentic to their students' cultural experiences. Thus, Bal borrows Levi-Strauss (1976) concept of culture within the context of behavior management becoming a "floating signifier" or a symbol that can hold multiple meanings. Conceptualizing behavioral support in this way allows for schools to create their own behavior support system that directly speaks to the needs, communities, assets and cultures of their students, rather than merely taking a set behavior framework or approach and applying it to the context of their schools. Thus, culture emerged as an important lens through which researchers have tried to address both the achievement and discipline gaps for students of color.

Culturally Sustaining Pedagogy

Culturally sustaining pedagogy emerged as a concept from the work of many researchers in the field of multicultural studies to identify ways in which a student's unique cultural background can be used to improve the student's educational experiences (Gay, 2002; Ladson-

Billings, 1995). During the development of theories centered around the effects of culture on student learning, prominent researchers, Geneva Gay and Gloria Ladson-Billings advanced their own frameworks. Geneva Gay outlined her framework for culturally responsive instruction (Gay, 1995, 2002, 2018) and Ladson-Billings (1995) outlined her framework for culturally relevant pedogogy. Earlier iterations of these frameworks focused on providing ways teachers could conceptualize centering their instruction and curriculum around their students' unique cultures to transform learning into the dynamic act of subverting harmful systems that negatively impact students of color (Gay, 1995; Ladson-Billings, 1995). To these ends, Gay (1995) made recommendations such as teachers decentralizing power structures within the classroom to allow for student agency in their own learning. Moreover, Ladson-Billings (1995) also made a number of recommendations for teachers such as developing a willingness to analyze content and standards through a critical lens to ensure academic content validates and celebrates the unique cultural experiences of all students.

Throughout the evolution of these theoretical frameworks placing culture at the center of learning, some researchers expressed concerns that the operationationization of culturally sustaining and culturally relevant pedogogical frameworks had given way to surface level changes to content and learning materials that failed to help students locate themselves within the content, instruction, and pedagogy. Thus, some researchers sought to refine the ideals of culturally sustaining pedagogy to ensure the framework was not merely reduced to simple representations of marginalized groups into academic content and curriculum (Ladson-Billings, 2013; Paris, 2012). These concerns sparked Ladson-Billings (2013) to "remix" her original theoretical framework from culturally relevant pedagogy to culturally sustaining practices. The latter of which served to represent a shift towards the need for a deeper understanding of how

teachers must create emancipatory and transformative educational experiences for their students beyond surface changes to academic materials to represent different races. Instead, the work of researchers like Alim and Paris (2017) advanced the notion that not only educational experiences should be inclusive of the diverse cultural experiences marginalized students bring to the classroom, but also their education should teach them how to sustain their culture. The implicit assumption behind this theoretical concept is that the students who come from marginalized communities have valuable cultural experiences that are just as valid as school cultures, which may primarily be based off dominant cultural groups (Alim & Paris, 2017). Culturally sustaining pedagogy is an educational framework that emphasizes ways schools and educators can make adjustments to the educational environment, curriculum, and pedagogy to ensure it is culturally validating for students from different ethnic backgrounds and helps them sustain their cultural identities (Ladson-Billings, 2013; Paris, 2021). Since its inception, the concept of culturally sustaining pedagogy has been widely accepted and used in the field of education as evidenced by the adoption of this philosophy by several regional centers in the U.S. Department of Education's Equity Assistance (https://www2.ed.gov/programs/equitycenters/contacts.html).

Several researchers have adopted the concept of culturally sustaining pedagogy and identified components for practical implementation in the classroom across many different cultures and academic subject areas (Gay, 2018; Nganda & Laughlin, 2011). Despite the abundance of literature on the necessity of incorporating culturally responsive and sustaining pedagogical practices, researchers have asserted that there is a paucity of empirical studies establishing casual relations between culturally sustaining pedagogical practices and African American students' academic and behavioral outcomes (Morrison et al., 2008). Howard and Terry (2011) demonstrated the positive effects of culturally relevant instruction on student

performance across all academic areas. In this longitudinal study, students received the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) Services that embedded culturally sustaining components, such as emphasizing student/teacher relationships based on their cultural background and elements of whole child teaching such as the quality of care students received in their home environments. Data were collected for 450 minority high school students in California and were gathered from school records, including information on numbers of students enrolled in Advanced Placement classes, students' exit exam test scores, college acceptance rates, and graduation rates. Although the participating high school had a history of low performance, there existed improved student outcomes during the 3 years that the GEAR UP program was in place. Results showed major increases in all areas over the 3-year period: 23% and 65% increases in student enrollment in Advanced Placement classes in math and science programs, respectively, an 85% increase in seniors passing exit exams, the largest graduating class in a decade with nearly a 25% increase from previous years, and double the rate of African American students accepted to 4-year colleges.

In addition to a dearth of extant quantitative research demonstrating the effectiveness of culturally sustaining interventions on academic outcomes for African American students, there is an even greater lack of empirical support linking culturally sustaining behavioral programs to improved behavioral outcomes for African American students (Sleeter, 2012). Culturally responsive social skill instruction is one example of a culturally sustaining behavioral intervention that has been correlated with improved behavior outcomes for African American students (Lo et al., 2011). Culturally responsive social skill instruction is the direct, explicit instruction of appropriate social skills that may help students form and maintain positive peer relationships and assist them with navigating school expectations in a way that draws on

students' own cultural characteristics and what is considered important to them in their communities (Robinson-Ervin et al., 2011). Lo et al. (2011) demonstrated the effectiveness of culturally responsive social skill instruction on African American male students' knowledge of appropriate classroom social skills and aggression-resolution social skills. They used a peer-mediated social skill instructional program and measured student response accuracy based on social skill probes. This social skill instructional program included culturally sustaining components such as the use of African American folk stories, materials that included depictions of children from multicultural backgrounds, and activities that required participants to make connections to their own experiences beyond the classroom. All participants increased their knowledge of appropriate social skills, and six out of seven participants decreased their inappropriate classroom behaviors. Robinson-Ervin et al. (2016) demonstrated similar positive effects of culturally responsive social skill instruction on behavior outcomes of African American middle school students with the use of a computer-based social skill instructional program that included culturally responsive materials. Robinson-Irvin et al. used a single-case, multiple probe across participants design to investigate the effects of the intervention on students' ability to follow adult directions. All participants demonstrated increases in direction-following skills from baseline to treatment conditions. Even though these studies provided evidence for the effectiveness of culturally responsive social skill instruction on African American students' behavior, more research is needed.

In alignment with recommendations from extant culturally sustaining pedagogical frameworks, some researchers have identified a number of shared cultural dimensions with the potential to influence African American students' learning behaviors and improve their success in school (Boykin, 1986; Hale, 2016; Monroe, 2005). These cultural dimensions have been

identified as African American learning styles or preferences and are described as a set of common learning behaviors and habits students develop within the context of their communities and home environments (Hale, 2016; Willis, 1989). Several researchers differentiate between cognitive theories of learning styles and African American learning preferences (Gutierrez & Rogoff, 2003; Hale-Benson, 1982; Hilliard, 1976). The former theory primarily advances the possibility that students have different ways they prefer to cognitively process information or learn (Dunn et al., 2001; Pashler et al., 2009). Proponents of these theories suggest that alignment with these learning preferences can improve student success in school (Dunn et al., 2001; Pashler et al., 2009). Yet, research on cognitive learning styles has yielded little evidence of supporting academic achievement (Kirschner, 2017; Newton & Miah, 2017). Moreover, other researchers have problematized assumptions behind learning style theories by questioning whether strict adherence to student preferred methods of learning is beneficial due to the potential to promote students' dependency on using preferred ways of interacting with content even if these preferences do not maximize student achievement (La Lopa & Wray, 2015; Rogowsky et al., 2015). Other researchers have also cautioned that sorting entire ethnic groups by learning style categories can potentially be used to support pseudoscientific theories of intellectual inferiority or superiority between ethnicities (Gutierrez & Rogoff, 2003; Hale-Benson, 1982; Hilliard, 1976).

On the contrary, a number of researchers have countered that the incorporation of African American students' learning preferences into current instructional practice differs from extant definitions of cognitive student learning styles (Hilliard, 1976; Shade, 1982; Willis 1989). They assert that instruction must deliberately embed African American students' learning preferences due to the absence of culturally validating experiences they may encounter in the school setting

(Boykin, 1983; Hale, 2016; Hale-Benson, 1986). Rather than advancing cognitive learning style theories defined by students learning differently, theories on African American cultural learning preferences address cultural incongruency and the integration of cultural learning preferences in curriculum has been demonstrated as effective in improving African American students' academic achievement (Hilliard, 1985; Lee, 2008; Willis, 1989). Researchers attribute the success of these interventions to helping African American students validate their own unique cultural ways of interacting with knowledge within existing learning environments that rarely do so (Hale, 2016; Hilliard, 1985). This current absence of culturally validating experiences for African American students has led to a host of psychological and emotional issues, such as low self-esteem, anxiety from attempts to reconcile these environments with their own cultural experiences, disengagement, and a lack of motivation (Allen et al., 2013; Hilliard, 1992). Thus, researchers have asserted that teachers can use these cultural dimensions to identify ways they can enhance instruction to increase culturally validating experiences for African American students (Blake et al., 2017; Hilliard, 1985; Lee, 2008; Willis, 1989). Researchers have indicated that doing so may signal to African American students that their cultural behaviors, communication styles, and learning habits are valuable, and help these students feel welcomed with a sense of belonging within learning environments outside of their communities (Allen et al., 2013; Lee, 2008). Capitalizing on their cultural currency has been demonstrated to positively affect a number of factors correlated with improved academic success for African American students, such as increased student engagement and motivation (Bailey & Boykin, 2001; Dill & Boykin, 2000; Hurley et al., 2005).

Even though there is promising evidence supporting the benefits of incorporating culturally sustaining pedagogical elements into academic and behavioral interventions to

improve school outcomes of African American students (Howard & Terry, 2011; Lo et al., 2011; Robinson-Ervin et al., 2016), there is a need for a synthesis of studies involving culturally sustaining practices aimed specifically at African American students to determine the effectiveness of these interventions to promote the use of this model in schools. Although a number of researchers have provided a synthesis of interventions using culturally sustaining pedagogy (Aronson & Laughter, 2016; Dee & Penner, 2017; Morrison et al., 2008), there is no comprehensive synthesis of culturally sustaining intervention studies for African American students. For instance, Morrison et al. (2008) presented a synthesis of classroom-based research involving elements of culturally sustaining pedagogy. They examined 45 classroom-based research studies starting from 1995 to 2008, and described how culturally sustaining pedagogy was used in those classrooms to offer examples of its application across multiple class settings. Despite their review being systematic with details for future researchers to replicate their searches, they neither conducted any statistical analysis of the studies to determine the effectiveness of these interventions on student achievement, nor did their synthesis focus specifically on African American students' outcomes. Their study also did not provide any analysis of the quality of the studies included in their synthesis. Sleeter (2012) identified this lack of knowledge of quantitative research undergirding culturally sustaining pedagogy as one of the primary reasons the framework is not applied more widely. Additionally, the lack of a clear operationalizable definition of culturally sustaining pedagogy has been noted as contributing to the marginalization of this framework (Sleeter, 2012). Specifically, very few studies have actually put forth a clear definition of the theory and even fewer have analyzed the magnitude of the effects of these studies, particularly in regards to African American students' academic achievement and social behavior. There is also a need to evaluate the quality of these studies to

ensure that these studies meet the standards for research of rigor so that valid recommendations can be made to educators on interventions they should use to improve African American students' educational outcomes and to eliminate achievement and discipline gaps through maximizing quality educational opportunities.

Purpose of the Study and Research Questions

To address the gaps in current literature, I conducted a meta-analysis of extant research on culturally sustaining pedagogy for African American students. The purpose of this meta-analytic study was to present a theoretical framework of culturally sustaining pedagogy that is clearly defined and includes strategies aligned with the learning preferences of African American students. This study also was designed to determine the effectiveness of these strategies on African American students' academic and behavioral outcomes. Lastly, this study was designed to provide an evaluation of the quality of the research on culturally sustaining pedagogical interventions aligned with the learning preferences of African American students. Specifically, this study aimed to answer the following research questions.

1. What is the effectiveness of culturally sustaining academic interventions aligned with the Culturally Sustaining Pedagogy for African American Students (CSPAAS) framework on African American students' academic outcomes?
2. What is the effectiveness of culturally sustaining behavioral interventions aligned with the CSPAAS framework on African American students' behavioral outcomes?
3. What is the quality of the research conducted on culturally sustaining academic and behavioral interventions aligned with the CSPAAS framework?

Significance of the Study

I designed this dissertation study to extend the current literature on culturally sustaining academic and behavioral interventions aligned with African American students' learning preferences. This research may provide researchers, teachers, and policy makers with a guide to inform them of interventions that are highly effective, moderately effective, or have no demonstrable effect on African American students' academic or behavioral outcomes. Knowledge of the effectiveness of culturally sustaining practices aligned with African American students' learning preferences holds the potential to increase teacher implementation of these interventions to directly improve student academic outcomes and/or decrease student problem behavior. Either of these outcomes may be achieved by increasing academic engagement of African American students in the curriculum through culturally sustaining practices, which may improve their academic success, or by decreasing their removal from the classroom or school setting through focusing on classroom management interventions that avoid overreliance on traditional exclusionary discipline practices. Although teachers have indicated a desire for more training in the culturally sustaining pedagogical framework, many also reported that they neither fully understand the framework, nor did they know how to operationalize it (Archibald et al., 2011; Demonte, 2013; Wei et al., 2010). Moreover, researchers have identified a dearth of literature demonstrating the effectiveness of culturally sustaining practices aligned with African American students' learning preferences (Sleeter, 2012). Confusion surrounding the definition of culturally sustaining pedagogy for African American students, how to operationalize it, and its effectiveness, has led to the marginalization of these interventions in schools and has hindered teachers' implementation of these interventions (Sleeter, 2012). Thus, to meet the needs of African American students and their educators, this study includes a theoretical framework that

clarifies what culturally sustaining pedagogy for African American students entails based on their unique learning preferences and cultural characteristics.

Second, this study aimed to determine the effectiveness of culturally sustaining academic and behavioral interventions for African American students across different settings, ages, and grade levels. Currently, no meta-analytic studies exist that establish the effect sizes of culturally sustaining pedagogy on African American students' academic and behavioral outcomes. Meta-analytic research requires a systematic review of intervention studies and statistical analysis of the magnitude of the effect of a particular intervention or its effect size (Borestein et al., 2009). Doing so helps researchers understand the strength of a relationship between two variables. Thus, this study will help researchers understand the strength of the relationship between culturally sustaining practices and African American students' academic and behavioral outcomes. Such research has the potential to help inform teachers and educational stakeholders of research-based strategies with the most promise in supporting African American students' academic and behavioral needs and could help educators close or reduce the achievement and discipline gaps for these students.

Finally, to date there is no evaluation of the quality of the research conducted on culturally sustaining practices aligned with African American students' learning preferences. This study provided an examination of the quality of the research that has been conducted on culturally sustaining practices for African American students to further determine whether extant evidence in the literature for these interventions is valid based on adherence to current standards for high quality research. This study may demonstrate potential to support teachers by increasing educators' awareness and implementation of effective culturally sustaining practices for African American students based on research of rigor, and to support African American students by

maximizing their engagement in school, reducing use of exclusionary discipline, and minimizing the resultant loss of instructional time that has been demonstrated to widen both achievement and disciplinary gaps (Gay, 2018; Nganda & Laughlin 2011; Robinson-Ervin, 2016).

Delimitations

There are several delimitations that could affect the analysis of results. First, in this study, I would only include quantitative group experimental design studies that demonstrated a casual relation between culturally sustaining practices with elements of African American students' learning preferences and improved academic and behavioral outcomes for African American students. Even though there are a number of qualitative research studies and case studies on culturally sustaining pedagogy for African American students, these studies do not provide empirical evidence of the effectiveness of these interventions on African American students' academic and behavioral outcomes, thus they would be excluded from the analysis. Moreover, due to the constraints of statistical analysis, which require a separate process for analyzing the effect size of single-case studies, this study would focus primarily on intervention studies with group experimental designs. Second, studies that do not include a substantial portion (at least 30%) of African American student participants woulld be excluded from the study. This might present a delimitation as there might be other studies with fewer African American student participants that demonstrated positive effects on African American learners. However, due to the difficulty in generalizing the effects in studies with smaller numbers of participants, these studies would be excluded from the analysis. Third, only studies aligned with the theoretical framework advanced in this current study would be included. Despite that there might be a number of other interventions that improved African American students' academic and behavioral outcomes, the scope of this study was to analyze the effectiveness of those that used

components of culturally sustaining pedagogy for African American students (i.e., Culturally Sustaining Pedagogy for African American Students [CSPAAS] framework). This would provide a focused analysis of interventions that are especially impactful for African American students and extend the literature on the efficacy of culturally sustaining pedagogy. To meet this criterion, studies must include interventions that align with at least one of the operationally defined components of the CSPAAS model as outlined in Table 1 (presented in Chapter 2). Any studies addressing an intervention that does not include any components of the CSPAAS model would be excluded from the study. Finally, each study would be analyzed for quality using the Council for Exceptional Children (CEC) quality indicators, which outline standards for high quality research (CEC, 2014; Cook et al., 2014; Gersten et al., 2005; Odom et al., 2005). There are other resources that outline different standards for methodological rigor and evaluation of research quality (e.g., Preferred Reporting Items for Systematic Reviews and Meta-Analyses [PRISMA], What Works Clearinghouse [WWC]), but the CEC framework was developed to analyze educational research on students with disabilities and at-risk populations. Thus, it is the best fit for the purposes of this study. Other measurements of research quality would not be used in this study.

Definition of Terms

Below is a list of terms used throughout this dissertation. Knowledge of these terms and corresponding definitions is important for understanding the conceptualization and methodology of the study.

Achievement Gap

Achievement gap refers to disparities in reading and math standardized test scores between African American students and their White peers, which have been observed in the

United States since the 1960s (Campbell et al., 2000; Levine & Eubanks, 1990; NAEP, 2019; Ogbu, 2002).

African American Learning Preferences

African American learning preferences refer to differences in African American student culture and how these differences affect learning behaviors and motivations in African American students (Boykin, 1983; Hale-Benson, 1986; Hilliard, 1976; Shade, 1982; Willis 1989). Boykin (1983) outlines nine cultural dimensions of African American students' learning for educators to incorporate into African American students' educational experiences to maximize positive academic and behavioral outcomes for these students. These dimensions include spirituality, harmony, movement, verve, affect, communalism, expressive individualism, orality, and social time perspective. The current study combined these nine dimensions into three major areas, including social/affective, spirituality/harmony, and oral/expressive creativity.

African American Students

The term "African American students" is used to denote an ethnic group of students with partial or total ancestry related to enslaved Africans who were brought to the United States during the era of the Transatlantic slave trade.

Council for Exceptional Children Standards for Evidence-Based Practices

Council for Exceptional Children (CEC) Standards for Evidence-Based Practices refer to a number of quality indicators developed by special education researchers to measure the quality or methodological soundness of special educational research based on different research methodologies (Cook et al., 2014). For group design studies, Gersten et al. (2005) developed a set of criteria or quality indicators to answer the national call for educational researchers to promote findings from group design studies that align with rigorous standards of experimental

research designs. This evaluation tool uses rubrics that help researchers determine whether studies that used a group design methodology met the standards to be defined as having an "acceptable" or "high" level of quality based on the extent to which the studies had required components of sound research methodology and design (Cook et al., 2014; Gersten et al., 2005). Similar evaluation tools were developed to determine the quality of intervention studies using single-case designs (Horner et al., 2005), qualitative designs (Brantlinger et all., 2005), and correlational designs (Thompson et al., 2005). Based on the scope of this dissertation, I used the standards delineated by Gersten et al. to evaluate studies using group experimental designs. These quality indicators allow researchers to categorize studies on a scale of 1–3 with 1 indicating the highest level of quality and 3 indicating the lowest level of quality. Although these standards were initially developed to evaluate special education research studies, they are also useful for studies included in this dissertation due to the overlap between interventions used to improve academic and behavioral outcomes for students with disabilities and students deemed to be at risk academically or behaviorally (Cook et al., 2014).

Culturally Sustaining Pedagogy

Culturally sustaining pedagogy is a framework that draws on the theoretical underpinnings of numerous scholars and emphasizes the importance of attending to the cultural needs of the students to ensure content and pedagogy help students locate themselves within their learning environments and help them combat systemic inequity through education (Gay, 2018; Ladson-Billings, 1995; 2013; 2021). This current study acknowledges that culturally sustaining pedagogy is a derivative of older theoretical frameworks that posit ways teachers can plan, analyze and implement strategies and content that celebrates students' unique cultural backgrounds and empowers them to confront systems that harm them (Gay, 2018; Ladson-

Billings, 1995; 2013; 2021). However, this most recent iteration of culturally relevant and responsive pedagogies demands that teachers dig deeper into the modifications they may make to their instruction to go beyond surface level changes to materials and activities. Instead, culturally sustaining pedagogy pushes teachers to critically analyze standards, content chosen, instructional methods and strategies used to ensure curriculum is developed in such a way that it empowers students at every level of learning (Alim & Paris, 2017; Gay, 2018; Ladson-Billings, 2013).

Culturally Sustaining Pedagogy for African American Students

Culturally Sustaining Pedagogy for African American Students (CSPAAS) is a framework put forth in this dissertation that aligns key components of work by Geneva Gay and Gloria Ladson-Billings in culturally sustaining pedagogy with research-based strategies from work on African American learning preferences to create a framework for content and pedagogy specifically for African American students (Boykin, 1979; Gay, 2018; Ladson-Billings, 1995; 2013; 2021).

Discipline Gap

Discipline gap refers to patterns in educational research on trends in behavioral data, which reveal the extent to which African American students are subject to exclusionary disciplinary consequences such as expulsion and suspension at higher rates than their White peers (Balfanz et al., 2015; NAEP, 2019; Office of Civil Rights, 2019).

Effect Size

Effect size refers to a calculation used to determine the strength or magnitude of the impact an independent variable has on a dependent variable in a single study or a set of studies (Borenstein et al., 2021). In meta-analytic studies, effect sizes are reported after conducting a systematic review to identify studies that will be included in the analysis. When conducting a

meta-analysis, effect sizes can be calculated in a number of different ways depending on the types of studies identified from the systematic review conducted prior to statistical analysis (Borenstein et al., 2021). Measuring the strength of the causal relationship between independent variables and dependent variables assists researchers and stakeholders in determining effectiveness or impact of an intervention within a research study (Borenstein et al., 2021).

Meta-Analysis

Meta-analysis is a form of research that synthesizes results from a number of studies on a common topic and analyzes the studies statistically to determine their effect sizes (Borenstein et al., 2021). Researchers conducting this form of research must systematically review all studies aligned with predetermined criteria prior to analyzing the results statistically in order for the results to be meaningful and replicable (Borenstein et al., 2021).

Opportunity Gap

This term refers to a number of inequitable experiences that create disparities for students of color, which negatively impact their ability to access quality educational resources such as access to high quality curriculum, poorer students being segregated within low-quality, underfunded schools, and lack of access to highly qualified, effective teachers (Darling-Hammond, 2011).

Racial Disparities

The term “racial disparities” is used in this dissertation to describe a pattern of differences in academic achievement and behavioral outcomes between African American students and White students. These disparities have been referred to in the literature as *achievement gaps* and *discipline gaps* to describe how African American have traditionally performed lower than White students on standardized test scores, and how African American

students are disproportionately removed from the school setting due to the use of exclusionary discipline practices in comparison to their White peers.

Systematic Review

A systematic review refers to the process of establishing a clear set of rules that determine the inclusion or exclusion of a set of studies related to a particular topic of interest and then locating and compiling studies using methodology that is clear and replicable for future researchers (Borenstein et al., 2021). Despite that selection of inclusion/exclusion criteria entails some subjectivity, the systematic documentation of selection criteria ensures that methodology is still transparent and replicable, thus strengthening the validity of the results obtained from this research design (Borenstein et al., 2021).

CHAPTER 2: REVIEW OF THE LITERATURE

This chapter consists of three strands reflecting a body of literature that builds a foundation for this dissertation. The first strand addresses how inequitable educational experiences have resulted in achievement and discipline gaps for African American students in the United States. Information includes the history of these disparities and current issues in our education system, as well as the impact of these disparities on African American student outcomes. The second strand consists of an outline of the Culturally Sustaining Pedagogy for African American Students (i.e., CSPAAS) theoretical framework for the current study. A discussion is included on the evolution of asset pedagogies and how they were used to form the CSPAAS framework. Additionally, this strand includes a description of a theoretical framework that advances the CSPAAS model, and its purpose. The third strand explores the research that undergirds the use of systematic review and meta-analysis. There is also a discussion on the necessity of identifying empirical studies with functional relations between interventions aligned with CSPAAS and improved African American student academic or behavioral outcomes to determine the effectiveness of this framework. In addition, this strand includes a brief discussion of the importance of evaluating the quality of studies identified in systematic reviews and the short-term and long-term potential outcomes of this research. Figure 1 illustrates the logic model for this dissertation that also supports the structure of the literature review.

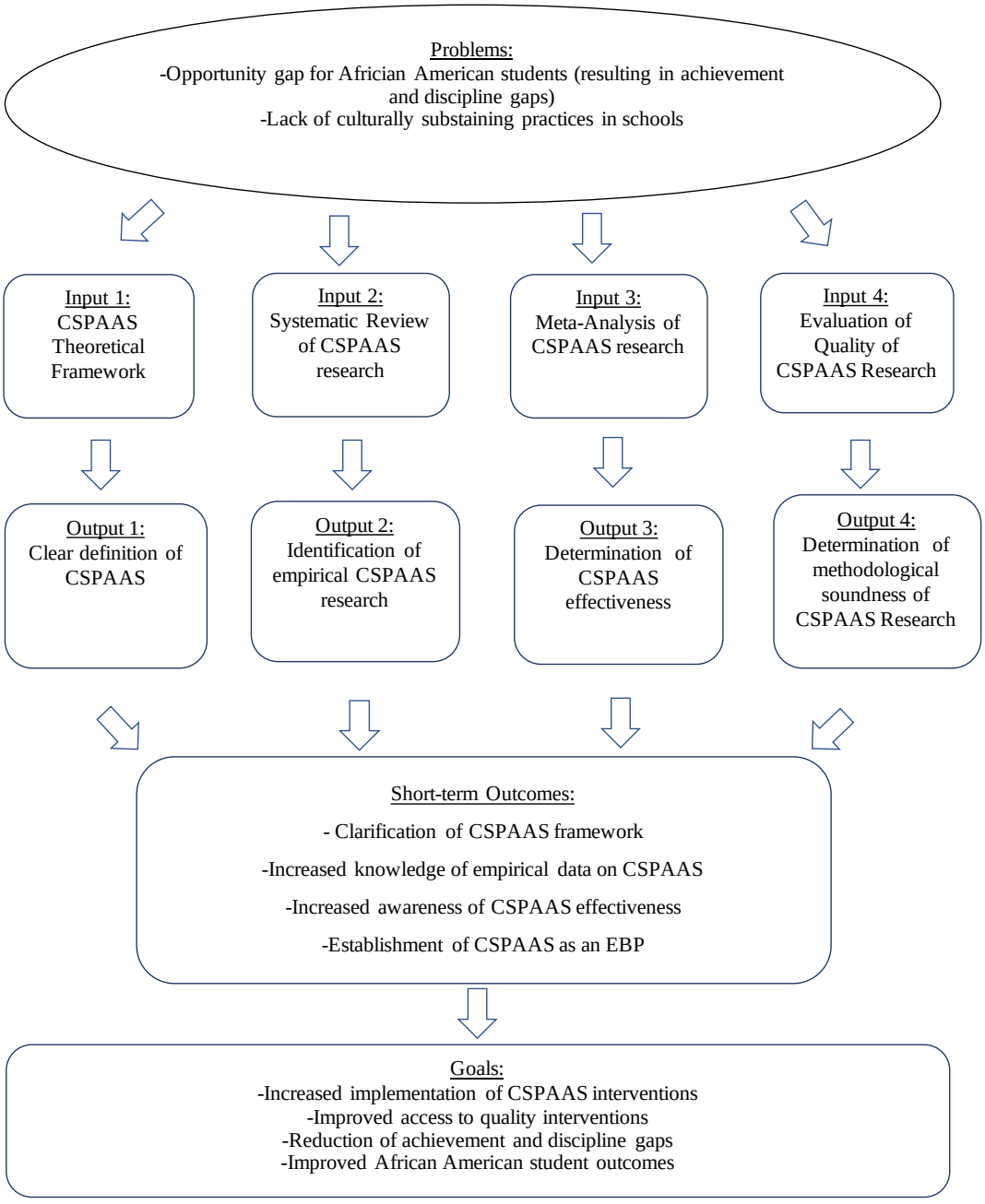

Figure 1

Logic Model for Identifying the Effectiveness of Culturally Sustaining Pedagogy for African American Students (CSPAAS) Interventions on Improving African American Student Outcomes

African American Students

The National Center of Educational Studies (de Brey et al., 2019) reported that African American students account for 15.7% (7.8 million) of the total students enrolled in American public elementary and secondary schools. Despite representing a small percentage of students in American public schools, African American students experience a number of academic and behavioral disparities when compared to their White peers (Skiba et al., 2002; Welch, 2018). Researchers have long identified a host of inequitable experiences for African American students leading to disparities in their educational outcomes (Cooper et al., 2022; Toro & Wang, 2022; Wint et al., 2022). Many of these inequitable experiences happen academically in the form of segregation in our school system and disparate access to high quality education (Weathers & Sosina, 2022; Wang et al., 2022), whereas other inequitable experiences are centered around behavioral disparities such as disparate disciplinary responses to African American student behavior in comparison to their White peers (Skiba & White, 2022; Wilson et al., 2020).

African American Students' Academic Experiences

Researchers have revealed that African American students historically have had disparate educational experiences in U.S. schools. In 1951, a father's lawsuit against the Board of Education in Topeka, Kansas, sparked what has been hailed by several scholars as the start of the civil rights movement as the Supreme Court moved to ban segregation in schools as violation of 14th amendment rights (Brown vs. Board of Education, 1954; Mizrav, 2023). This law resulted in schools around the nation becoming integrated as students of color were moved into schools with their White peers (Brown vs. Board of Education, 1954; Mizrav, 2023). Although this law banned segregation as a discriminatory practice, research shows that African American students still face a number of inequitable educational experiences to the detriment of their academic

outcomes (Skiba et al., 2002; Welch, 2018), and researchers have identified continued segregation as one of the main causes of these inequities (Garcia, 2020; Wang et al., 2022; Weathers & Sosina, 2022). For instance, Garcia (2020) found that school systems still remain largely segregated in spite of it being outlawed under several key pieces of legislation resulting from the Brown vs. Board of Education law upheld by the Supreme Court (Brown v. Board of Education, 1954; Garcia, 2020). In a report for the Economic Policy Institute, Garcia analyzed NAEP data on school segregation and its potential impact on math performance for eighth graders. Garcia reported that African American students are five times as likely as their White peers to attend schools that are highly segregated by race and ethnicity. In this study, there was a direct correlation between segregated schools and African American students' math achievement with White students scoring 20 points higher (n = 275) than African American students (n = 255) on their math assessments.

According to Garcia (2020), segregation in itself is not the primary issue correlated with low African American student achievement. Instead, researchers have noted that segregation results in African American students having a lack of access to high quality schools, teachers, and educational experiences, and these issues were correlated with low African American student achievement (La Salle et al., 2020; Triplett & Ford, 2019). In Garcia (2020) study, the distinction was made between economically segregated schools and racially segregated schools. The former was used to describe schools that were high poverty and defined as having 51%–100% of the students eligible for free or reduced lunch. High-poverty schools have long been associated with a host of issues related to poor student achievement, such as low teacher retention, lower public spending, and a lack of access to rigorous academic programs and curriculum (Reardon, 2016; Tsoi & Bryant, 2015). Reardon (2016) identified 16 factors related

to segregated school systems that were associated with the achievement gap between African American students and White students. He investigated connections between segregation and academic achievement gaps by analyzing school data from test scores of students grades 3–8 between the years 2009 and 2012 in over 300 urban school districts. Nearly 100 million school records were accessed. Among the 16 different factors he identified as correlates between the segregated school experiences of African American students and their White peers, socioeconomic disparities emerged as a leading theme. Specifically, disparities between school poverty rates emerged as the most significant correlate with lower African American student performance and the maintenance of the academic achievement gap. Reardon discussed this was due in part to high poverty schools having less resources and a harder time recruiting and retaining high quality teachers. Moreover, higher poverty families may have fewer resources that can benefit student learning to fill the deficits in educational experiences for students in high poverty schools (Reardon, 2016).

Educational Disparities for African American Students

Research shows that African American students have been disproportionately marginalized in a number of different ways in our education system. Specifically, African American students experience academic disparities between them and their White peers, and disproportionately receive more exclusionary disciplinary actions resulting in loss of instructional time due to being removed from the educational setting (Balfanz et al., 2015; NAEP, 2019; Office of Civil Rights, 2023). These academic and behavioral disparities also have been linked to numerous negative K–12 and postschool outcomes for African American students, including the presence of an academic achievement gap, unemployment, and involvement in the criminal justice system (Losen, 2015; Shollenberger, 2015).

African American Discipline Gap

In addition to African American students having disparate educational experiences from their White peers, researchers also have identified disparities in disciplinary consequences given to African American students in comparison to those received by their White peers, known as the "discipline gap." Daniel Losen (2015) defines the discipline gap as "the high frequency with which we remove students from school for disciplinary reasons and the large disparities in disciplinary exclusion that flow along the lines of race, gender, and disability status" (p. 1). A study by Losen and Martinez (2013) showed that approximately one in four or 24% of African American students were suspended in middle and high schools at least once during the 2009–2010 academic school year in comparison to their White peers, who only had a 7% rate of suspensions. The most recent data available reported by the Office of Civil Rights (OCR, 2023) from 2020–2021 revealed similar disparities for African American students across grade levels starting at even the earliest years of education. Specifically, the OCR (2023) data indicated that for the 2020 school year, African American preschool children were disproportionately given at least one or more out-of-school suspensions than their White preschool peers. Moreover, although African American children only represented roughly 17% of preschool enrollment, they accounted for over 31% of preschool children receiving at least one or more out-of-school suspensions or expulsions. Comparatively, White children represented over 43% of preschool enrollment, yet they accounted for 51% of children who received out-of-school suspensions. These disparities in disciplinary practices continue to persist as African American students become older. For instance, even though African American students accounted for 15.7% of total students enrolled in public elementary and secondary schools, they were expelled more than twice the rate of their enrollment at 38.8%. Additionally, African American students were 1.9

times more likely to be expelled from school without educational services than White students (OCR, 2023). Stastistics on the discipline gap for African American students are disheartening.

African American Achievement Gap

Several scholars have linked the loss of instructional time due to African American students experiencing high rates of exclusionary discipline consequences to lower performance for African American students (Balfanz et al., 2015; Losen, 2015; Marchbanks et al., 2015; Shollenberger, 2015). Disparities in academic achievement on standardized tests scores between students of color and their White peers has been referred to as "the achievement gap" (NAEP, 2020). The National Assessment of Educational Progress (NAEP) has tracked the academic data for American students since the 1960s based on student performance on standardized assessments in a number of subject areas. Based on their findings, achievement gaps or persistent academic disparities exist between African American students and their White peers, which have remained constant for a number of decades since the 1970s (NAEP, 2020). According to NAEP (2020), achievement gaps occur when "one group of students (e.g., students grouped by race/ethnicity, gender) outperforms another group and the difference in average scores for the two groups is statistically significant (i.e., larger than the margin of error)." A number of researchers expanded the definition of the achievement gap to include differences between minority student achievement and their White peers in other areas such as graduation rates, college admission rates, grade point averages, and other academic outcomes (Howard & Terry, 2011; Pitre, 2014).

The first reports of achievement gaps between African American students and White students existed in the 1970s after the U.S. Department of Education established the NAEP to track educational testing scores (Barton & Coley, 2010). In their report on the Black-White

achievement gap, Barton and Coley (2010) reported that in spite of the initial presence of the achievement gap between African American and White student test scores, there was a significant narrowing of the gap from the 1970s to the late 1980s. For instance, they reported large reductions in gaps across multiple cohorts of students, such as the reduction in the reading gap for 13-year-olds from 39 points to 18 points, and the sharp reduction in the reading gap for 17-year-olds from 53 points to 20 points (Barton & Coley, 2010; Rampey et al., 2008). In spite of the progress made towards closing these achievement gaps during this time period, this progress halted and even increased during the 1990s (Barton & Coley, 2010; Rampey et al., 2008). In 1988, the achievement gap was at an all-time low for 13-year-old reading test scores at 18 points; however, by the end of 1990s, this progress was reversed and the achievement gap was at an all-time high for this cohort at 30 points (Barton & Coley, 2010; Rampey et al., 2008).

These academic disparities have persisted and are apparent in recent trends. For instance, the NAEP 2019 report revealed that African American students scored an average of 206 on their fourth-grade reading tests in comparison to White students who scored an average of 230 on the same assessment, representing a difference of 24 points (NAEP, 2019). Data collected from the eighth-grade standardized test results showed similar disparities between African American students and White peers in that African American students scored an average of 244 on their reading tests in comparison to White students who scored an average of 272 on the same assessment, a difference of 26 points (NAEP, 2019).

Academic disparities in math subject areas between African American students' achievement scores and White students' achievement scores are also evident. Based on the NAEP 2019 report, fourth grade math standardized testing results showed that African American students scored an average of 224 in comparison to White peers who scored an average of 249,

representing a 25-point difference. These academic disparities persist across grade levels, as there are similar trends in the eighth-grade math scores. Specifically, African American students scored an average of 260 on their eight-grade math tests in comparison to White students, who scored an average of 292, indicating a difference of 32 points (NAEP, 2019). Similar to the discipline gap, the achievement gap between African American students and their White counterparts, resulting from opportunity gaps and lack of access to quality instruction and reosurces, is a great concern for the society.

Impact of Achievement and Discipline Gaps on African American Students

Researchers have linked the academic and discipline gaps to a number of negative academic and postschool outcomes for African American students, including overidentification in special education programs, increased involvement with the juvenile justice system, high dropout rates, high unemployment rates, and increased economic costs correlated with achievement gaps and exclusionary discipline (Balfanz et al., 2015; Losen, 2015; Marchbanks et al., 2015; Shollenberger, 2015). First, several researchers have noted links between academic achievement gaps for African American students and their overidentification in special education programs both as a result of their lower academic achievement and as a potential cause of it (Annamma et al., 2017; Annamma et al., 2014). Annamma and colleagues (2014) posit that the existing national trend in special education that promotes the overidentification of students of color in certain special education categories (e.g., learning disabilities [LD], emotional disabilities [ED]) is due in part to the subjective nature of the identification practices for those areas. For instance, identification of students with disabilities in these categories relies, in part, on the subjective judgement of teachers, school staff, and other stakeholders; whereas, in special education categories that are primarily medically defined (e.g., hearing impairment), such an

overrepresentation of minority students does not occur (Losen & Orfield, 2002; Maydosz, 2014). These identification practices for special education become particularly problematic in relation to their potential role in widening the achievement gap for African American students due to some negative factors associated with receiving specialized instruction (Maydosz, 2014). Special education programs can be associated with increasingly restrictive environments, a lack of challenging and rigorous curriculum, and social stigmas (Maydosz, 2014). When combined with the underrepresentation of African American students in talented and gifted programs, and lower teacher perceptions of both African American students and students identified for special education services, these factors have been found to critically attribute to the national achievement gap (Maydosz, 2014; Osher et al., 2004).

Researchers have similar concerns for the links between special education identification and the discipline gap for African American students. In addition to African American students experiencing racial disparities in their suspension and expulsion rates in comparison to White peers, students with disabilities (including African American students with disabilities) are also disproportionately represented in exclusionary discipline when compared to their peers without disabilities (Losen & Gillespie, 2012; Office of Civil Rights, 2016; United States Government Accountability Office [GAO], 2018). GAO (2018) reports that although students with disabilities only made up around 12% of the overall K–12 school population, they accounted for 25% of the students who received out-of-school suspensions. When the discipline gap for African American students was taken into account with discipline disparities experienced by students with disabilities, an even starker pattern emerged where African American students with disabilities were doubly impacted by inequities in exclusionary discipline practices (Losen et al., 2015). Losen et al. (2015) investigated the relationship between race and discipline as well as race and

special education identification, and found in 2011–2012, African American students with disabilities experienced much higher suspension rates than their White peers. Specifically, during the 2011–2012 school year, 46% of African American children with disabilities were suspended in comparison to 18% of White students with disabilities. Results of the study by Losen et al. suggested the intersection between special education identification and race presents a unique problem for many educators across the country.

A second troubling effect of academic and discipline disparities for African American students is seen in connections between these gaps and African American students' involvement with the juvenile justice system. Research indicates that the achievement gap and exclusionary discipline are highly correlated with increased risk for African American students' involvement with the juvenile justice system (Balfanz et al., 2015; Maydoz, 2014; Pesta, 2018; Skiba et al., 2014). Researchers have used the phrase, "school-to-prison pipeline," to capture the complexities of the connections between academic disparities and harmful exclusionary discipline practices linked to an increased likelihood of incarceration (McGrew, 2016; Skiba et al., 2014). Wald and Losen (2003) specifically defined this phrase as a metaphor used to describe a process where students experience education as:

> a journey through school that becomes increasingly punitive and isolating for its travelers. Many will be taught by unqualified teachers, tested on material they never reviewed, held back in grade, placed in restrictive special education programs, repeatedly suspended, and banished to alternative out-placements before dropping or getting pushed out of school altogether. Without a safety net, the likelihood that these same youths will wind up arrested and incarcerated increases sharply (p. 11).

Several researchers have delved into the complex relationship between academic achievement, exclusionary discipline, and negative educational and postschool outcomes in relation to the school-to-prison pipeline, particularly for African American students. With regards to the achievement gap, some researchers have identified the combination of decreased academic rigor in schools serving minority students and high-stakes testing as major predictors of African American students' induction into the school-to-prison pipeline (Lipman, 2008; Winn & Behizadeh, 2011). Au (2007) asserted that the overemphasis on high-stakes testing results in learning environments where minority students are primarily taught basic skills, with an absence of instruction in critical thinking skills and culturally relevant academic content. Ironically, this stripping of academic rigor from African American learning experiences in favor of basic or rudimentary skills has been noted as a contributing factor in widening the achievement gap, rather than closing it (Mintrop & Sunderman, 2009; Winn & Behizadeh, 2011). Winn and Behizadeh (2011) drew on the work of Au (2007) and Lipman (2008) to outline this process where African American students who may already be served in underfunded or low quality schools are also targeted for high-stakes testing and receive instructional strategies that emphasize basic skills over higher level skills. The lack of opportunities for African American students to be exposed to advanced skills has been identified as a contributing factor to higher dropout rates, lower employment rates, higher likelihood of obtaining low paying jobs, and increased likelihood of incarceration thus completing the school-to-prison pipeline (Lipman, 2008; Mintrop & Sunderman, 2009; Winn & Behizadeh, 2011).

Skiba et al. (2014) conducted an examination of the evidence surrounding the assumption that exclusionary discipline is correlated with increased student involvement in the juvenile justice system. First, they identified major themes in the literature on school-to-prison pipeline.

These themes included: (a) the prevalence and widespread use of exclusionary discipline and the increase in its use in schools across the nation; (b) the use of exclusionary discipline increasing probability of long-term negative outcomes, particularly involvement in the juvenile justice system; (c) the disproportionate usage of these disciplinary practices on African American student populations; and (d) the establishment of causality for these practices being directly responsible for a number of negative outcomes, rather than based on characteristics of the students themselves. After reviewing the literature on these major themes, Skiba et al. conducted a systematic review of research on these themes published in peer-reviewed journals using a number of online databases. During their review of the literature, they found that between 1974 and 2010, the rate at which students had been suspended had doubled (Losen & Gillespie, 2012), thus indicating that the use of exclusionary discipline practices such as suspension and expulsion have increased substantially over time. Moreover, they found that the use of exclusionary discipline was not restricted to being used to mitigate extreme behaviors or behaviors resulting in threats to safety. Rather, exclusionary discipline was applied in response to a wide range of school rule violations and infractions. Specifically, they discovered the majority of offenses resulting in students being suspended were nonviolent offenses and minor or moderate infractions such as disrespect or noncompliance, defiance, attendance, and general classroom disruption (Gregory & Weinstein, 2008; Mendez & Knopf, 2003; Rosen, 1997).

In addition to the above findings, Skiba et al. (2014) also found substantial evidence of disciplinary disproportionality at all school levels for African American students in over 21 studies. In their review, several studies eliminated variables such as poverty or differential rates of behavior as sufficient causes that could be used to explain the discipline disparities in African American students (e.g., Bradshaw et al., 2010; Wallace et al., 2008). Further, they discovered a

large body of research supporting exclusionary discipline practices as an indirect predictor of negative postschool outcomes. In their examination of the literature, they found that although several researchers had identified exclusionary discipline as a correlate to African American students' involvement with the juvenile justice system (e.g., Fabelo et al., 2011), there was not a direct one-to-one correlation to juvenile justice involvement. Instead, they noted trends indicating that exclusionary discipline resulted in a number of short-term negative outcomes, such as a lack of engagement due to lost instructional time in class and resultant dropout rates, which in turn led to involvement with the juvenile justice system.

Several other researchers have replicated findings in Skiba et al. (2014) study and linked other short-term negative outcomes associated with the achievement gap for African American students to exclusionary discipline practices. For instance, Marchbanks et al. (2015) studied the risks of grade retention and increased dropout rates associated with suspensions. They also assessed economic costs associated with exclusionary discipline. To investigate these relationships, Marchbanks and colleagues conducted a longitudinal study where they used the Texas Education Agency's (TEA) Public Education Management System (PEIMS) to track nearly one million students in Texas from 1999 to 2007. Three cohorts in this group were on track to graduate in 2006, 2007, and 2008. Researchers began to track these students' progress in the seventh grade and continued through the 12th grade and 2 years beyond. They used the following characteristics as predictor variables during the analyses: student demographic information, attendance, grade promotion, special education status, and educational standardized test performance. The number of students represented in the sample was nearly even for White and Hispanic students at 43% and 40%, while African American students represented 14% of the sample taken. Researchers collected discipline data from the PEIMS database to include in-

school suspension data, out-of-school suspension data, expulsion data, and data on students who have been placed in alternative living or school settings due to behavioral concerns. Marchbanks et al. analyzed the impact of discipline on the likelihood of students dropping out and being retained at least once throughout the duration of their secondary education. They used multivariate techniques such as binomial logit analysis to provide an odds ratio on the probability of students dropping out based on a number of factors listed above. Logistic regression models were used to refine the data collected to account for the differences in dropout/retention rates for students who received discipline in comparison to students who did not have any school disciplinary contact. Results from the study revealed large disparities consistent within the literature on exclusionary discipline. Specifically, 75% of African American students were subject to exclusionary discipline despite only representing 14% of the sample in the study. Comparatively, 65% of Hispanic students and 49% of White students were subject to exclusionary discipline while representing 43% and 40% of the sample participants in the study, respectively. Moreover, students who received in-school suspension and out-of-school suspension were 23.5% more likely to drop out at some point in their secondary education career. Findings of the study also showed exclusionary discipline having negative impacts on retention rates in that students who received one instance of in-school suspension doubled their probability of grade retention from 0.013 to 0.025, in comparison to students who did not receive any exclusionary discipline. The economic data in the study indicated the state of Texas spent $11,543 a year per student and was forced to spend this amount for an additional year when students were retained. Calculating the additional cost per student for those retained and multiplying it by the number of students identified as having a discipline-based retention yielded an annual cost of over $76 million.

Findings from the aforementioned reports and studies indicate that the achievement and discipline gaps have had a number of negative effects on African American students. These disparities have been correlated with increases in the academic achievement gap, increased student dropout rates, increased retention rates, and increased spending at the state level to address economic effects of these negative outcomes. Proactive approaches to combatting the achievement gap and discipline disparities for African American students have emerged as a national priority in U.S. educational policy (NAEP, 2011). The following section will focus on Culturally Sustaining Pedagogy that show promise in addressing these gaps for African American students.

Summary

Historically, African American students have had inequitable educational experiences in U.S. schools. The inequitable educational experiences led to opportunity gaps and lack of access to quality instruction and reosurces for African American. As a result, a large body of research has revealed troubling academic disparities between African American students and their White peers. Academically, there is an achievement gap between African American students and their White peers that can be observed in the differences in the standardized testing scores in reading and math (NAEP, 2019). Moreover, researchers have reported the presence of a discipline gap due to African American students being disproportionality targeted for exclusionary discipline practices such as suspension and expulsion (Balfanz et al., 2015). These disparate academic and behavioral outcomes for African American students have resulted in a number of related negative outcomes for African American students, such as loss of instructional time due to their removal from the educational setting and negative postschool outcomes such as increased incarceration rates (Balfanz et al., 2015; NAEP, 2019; Office of Civil Rights, 2019; Pesta, 2018;

Skiba et al., 2014). Culturally Sustaining Pedagogy offers a proactive approach to combating the academic and discipline disparities for African American students.

Culturally Sustaining Pedagogy

A number of schools, stakeholders, and educators have been galvanized by the deleterious effects of the achievement gap and the discipline gap on African American students and sought alternative ways to address these disparities in schools (Anyon et al., 2014; Gregory et al., 2017; Townsend, 2000). Researchers have focused on a number of explanations for the achievement and discipline gaps in schools from school segregation and the subsequent lack of instructional resources in low-income, minority schools (Reardon et al., 2019), to socioeconomic disparities (Hanushek et al., 2019) and cultural incongruity between students and teachers (Gregory et al., 2017). The latter explanation of cultural incongruity has led several researchers to stress the importance of addressing cultural differences between teachers and students to build positive relationships that address negative teacher perceptions of African American students' academic expectations and discourage the disproportionate use of exclusionary discipline practices (Gregory et al., 2017; Ladson-Billings, 2006). Additionally, researchers have identified the incorporation of culturally substaining elements into instructional and disciplinary practices as a successful tool that can be used to improve academic achievement and reduce negative disciplinary outcomes for African American students (Anyon et al., 2014; Gay, 2015; Gregory et al., 2017; Townsend, 2000). This section will include the findings of major contributors to literature on Culturally Sustaining Pedagogy for African American Students (CSPAAS) to create a theoretical framework, which informs the current dissertation.

Definition and Origins of Culturally Sustaining Pedagogy

To fully understand culturally sustaining academic and discipline strategies, it is necessary to have a firm understanding of the culturally sustaining pedagogy framework. There has been a vast amount of literature recommending the usage of the framework to improve the cultural climate within increasingly diverse classrooms (Au, 2016; Brown, 2017; Gay, 2018; Ladson-Billings, 1995). Yet, many educational practitioners and researchers have identified difficulties with operationalizing the framework to create practical models for teachers to use in the educational field (Ladson-Billings, 1995; Powell et al., 2016). Thus, a number of researchers have contributed to the literature to demystify this theoretical framework and to make it easily accessible to educational practitioners and stakeholders. Among these researchers, Gloria Ladson-Billings (1995) and Geneva Gay (2015, 2018) have emerged as major contributors to the area of culturally sustaining pedagogy. Their contributions are introduced in the next subsections.

To understand the culturally sustaining pedagogy framework specifically for African Americans, it is essential to contextualize it within the scope of the history of African American educational experiences. During slavery, African Americans were tortured or killed if they attempted to learn to read or educate themselves, as their illiteracy was a cornerstone of racist philosophies used to justify their continued enslavement (Butchart, 2010; Harmon, 2012). To these ends, the South maintained a culture of racial inferiority and projected this onto African Americans, while codifying these ideas in law and legislation that banned African Americans from being educated. Yet, enslaved populations persisted in their attempts to become educated in spite of these dangers (Butchart, 2010; Harmon, 2012). This hunger for knowledge continued after slavery was abolished as evidenced by the prominent role education played within early

African American traditions. Even though White Southerners were resistant to educating African Americans, African Americans formed their own schools in direct opposition to these firmly entrenched cultural norms of the mental inferiority of African American children. The majority of teachers in these schools were African American teachers from the North, freed African Americans, and individuals from various associations and religious groups dedicated to promoting equity for African Americans, particularly after the abolishment of slavery (Butchart, 2010; Harmon, 2012). Historical accounts from teachers of African American students reflect shock and surprise at the sheer number of African Americans clamoring for the opportunity to learn (Anderson, 1988; Butchart, 2016). Accounts assert that African Americans of all ages ranging from very old to very young filled classrooms, facilities, and buildings for instruction (Butchart, 2010; Harmon, 2012). For instance, historians recounted that so many schools were formed in New Orleans for African Americans, that they became known as a public school system. However, because public school systems were illegal during this time period, all of these schools were promptly shut down. Thus, private schools were formed in response to many earlier public schools for African American students being shut down and the sheer number of students still requiring instruction (Butchart, 2010; Croom &Alston, 2009; Harmon, 2012).

The privatization of education for early African American students brought its own unique challenges. Many of these schools were founded by religious groups and organizations who operated within the mindset that if African Americans had to be educated, they should be provided with instruction that maintained concepts of racial inferiority in alignment with cultural norms in the south that perpetuated the perception of African Americans as a permanent underclass (Butchart, 2010; Harmon, 2012). In her article on the history of culturally sustaining pedagogy, Harmon (2012) provides accounts from Samuel Chapman Armstrong, a prominent

American educator and subsequent founder of one of the first Historically Black Colleges and Universities (HBCU), Hampton University, that reflects his preoccupation with the educational content he felt was most appropriate for African American students. He expressed concern that "the colored student does not come to us bred in the atmosphere of a Christian home and community; but too often with the inheritance of a debased nature, and with all his wrong tendencies unchecked either by innate moral sense or by a good domestic influence" (Butchart, 2010, p. 120). To these ends, he was instrumental in the belief that academic curriculum for African American students should be focused primarily on practical life skills and should not include instructional content requiring abstract thought. Moreover, he recommended that math not be included in curriculum developed for African American students (Butchart, 2010; Harmon, 2012). Proponents of Armstrong's ideas on appropriate academic content for African Americans developed curriculum that lacked science and math while emphasizing traditional lecture style pedagogy (Croom & Alston, 2009). Additionally, the curriculum integrated textbooks containing disparaging and inaccurate depictions of African Americans (Harmon, 2012). This curriculum was free and distributed to various schools that provided instruction solely to African American students.

In contrast, curriculum and pedagogical styles developed by African Americans for their own populations differed greatly from curriculum developed for African Americans by Whites (Butchart, 1988; Harmon, 2012). Specifically, curriculum developed by African American included materials and textbooks that positively affirmed African American experiences with accurate historical depictions of their history (Butchart, 2010; Harmon, 2012). Moreover, African American teachers employed a wide variety of instructional strategies such as allowing students to work in small groups to foster interpersonal skills, engaging students in problem-

solving activities and incorporating content from all subject areas, including math and science (Anderson, 1988). Thus, we get the nascent beginnings of culturally responsive pedagogy for African American students.

Gloria Ladson-Billings' Culturally Responsive Pedagogical Framework

Building on the work of several researchers in the field, Gloria Ladson-Billings conceptualized the unique instructional strategies employed by early African American teachers for African American students in separate schools as a pedagogical practice (Ladson-Billings, 1995). In her seminal text, Ladson-Billings (1995) expressed frustration at the dearth of work grounding discourse surrounding teacher education, equity and educational reform within a practical pedagogical framework, despite there being a major emphasis on social justice within teacher preparation programs. Thus, she conducted an ethnographic case study of eight teacher participants in a low-income elementary school district in North California. Teachers were identified through a process described as "community nomination" where African American parents in the community recommended outstanding teachers according to their own positive relationships with these teachers and positive student attitudes towards the teachers. The selected instructors were compared with an independent list of exemplar instructors identified by principals and teachers. Eight teachers were selected using this selection process. Five of the eight teachers were African American and three were White.

Throughout the duration of the study, Ladson-Billings (1995) first conducted ethnographic interviews with each of the participants to elicit responses on their teaching philosophies, opinions on curriculum, classroom management styles, and interactions with parents and the community. Afterwards, she observed teachers. Visits were not scheduled ahead of time to ensure authenticity. Many of these sessions were videotaped. Finally, teachers were

encouraged to work together to analyze their own instructional practices and those of their colleagues over the course of ten 2- to 3-hour sessions. Three major themes emerged from her observations, interviews, and conversations with the participants, including (a) concept of self and others, (b) social relations, and (c) concept of knowledge. Each of these concepts encapsulates one of the major underpinnings of culturally responsive pedagogy as described below.

Concept of Self and Others

This first theme refers to the idea that the teachers Ladson-Billings (1995) observed all espoused positive perspectives of their students and themselves as being part of the community of the students they served. They manifested these ideas in a number of ways such as (a) constantly affirming their students' ability to succeed academically, (b) conceptualizing their pedagogy as a process of evolutionary art and being willing to adjust and change their practice as needed, (c) viewing themselves as being part of the same community and culture of the students they served, and (d) working tirelessly to "mine" or pull effort and knowledge out of students. Thus, the teachers observed in this study demonstrated a number of actions attributable to positive attitudes they espoused towards their students. For instance, all teachers consistently refused to accept failure in their classes, employed numerous tactics and strategies to push students to operate at higher intellectual levels, and did not demonstrate any use of language or action associated with the belief that their students were limited.

Social Relations

This theme relates to the social interactions observed in the participants' classrooms between the teachers and students and the students themselves. Within this dimension, Ladson-Billings (1995) observed that teachers used a variety of different forms of cooperative learning

within their classrooms through providing students with the opportunity to work in different groups. Attending to social dynamics within the classroom helped students conceive their classes as communities. Thus, these exemplary teachers consistently emphasized a sense of connectedness with the students, while encouraging connectedness among the students and their peers. Power dynamics between the students and the teachers were fluid in that students received ample opportunities to be leaders in the class and teach one another to leverage individual strengths and promote peer learning and collaboration.

Concept of Knowledge

The final theme captures how the exemplary teachers conceptualized the content and curriculum they taught and how they assessed student proficiency and mastery of concepts they learned in class. This theme emerged from observations of all exemplary teachers consistently demonstrating a number of beliefs about knowledge in the following ways: (a) knowledge is dynamic in that it is shared and constructed, (b) knowledge should be analyzed critically and always questioned, (c) there should be a passion for knowledge and learning, (d) teachers facilitate learning through providing supports for student learning, and (e) assessments should be varied to leverage multiple demonstrations of student achievement.

In alignment with these major themes that emerged from observations and interviews with the teachers, Ladson-Billings (1995) noted that teachers shared their power in the classroom with students in relation to their knowledge of the content. This meant that teachers encouraged students to learn from each other and be leaders in the classroom instead of teachers being the primary distributers of knowledge. Therefore, students were constantly required to present their findings and work products to establish themselves as experts in their learning of the content.

Moreover, students were encouraged to constantly question the curriculum and content they learned in class to help them develop a critical lens towards knowledge.

A passion for knowledge was promoted in these classes by linking concepts learned to critically important issues within students' lives and communities, and through applying knowledge to useful skills and work products that could be used to influence their communities. For instance, a variety of student assignments observed consistently across participants required students to become direct agents of change within their educational experiences. Activities such as providing a critical critique of their social studies textbooks or facilitating student protests against the lack of diversity within the required district mandated literary canon required students to demonstrate proficiency with concepts learned in class by applying their knowledge to issues relevant to their own lives.

Lastly, teachers emphasized a variety of ways to measure student mastery of learning beyond mere standardized assessments to encourage students' perception of themselves as experts in their perspective fields of knowledge. To these ends, teachers were more concerned with students being critical thinkers and engaged them in a series of problem solving activities and discussions designed to make students locate the knowledge they learned in school within the context of their homes and communities. For example, some teachers helped students understand how to code-switch to help students navigate the differences between learning in school and skills they learned in their communities.

Based on Ladson-Billings' (1995) observations, interactions, and conversations with these exemplary teachers, she was able to conceptualize a framework of culturally responsive pedagogy. The pedagogy emphasized teachers conceptualizing themselves as a part of a learning community with their students, attending to critically important social relationships between

themselves and students in their classes, and conceptualizing knowledge as a series of ideas that are fluid, which must be analyzed critically and used to promote changes within the lives and communities of the students (Ladson-Billings, 1995).

Geneva Gay's Culturally Responsive Teaching Framework

In addition to Ladson-Billings' seminal work, which elucidated culturally sustaining pedagogy as a pedagogical framework, Geneva Gay was another major contributor to the theory of culturally sustaining pedagogy. In her much cited text, Gay (2018) defined culturally responsive teaching as the process of "using the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (p. 31). She goes on to posit that there are six major components of culturally responsive teaching, including: (a) social and academic empowerment, (b) multidimensional learning, (c) learning that validates every student's cultural experiences, (d) learning that engages the whole child, (e) learning that is transformative of social inequities, and (f) learning that grounds itself in emancipatory practice (Gay, 2018). *Social and academic empowerment* refers to the idea that culturally responsive instructors are expected to have the highest expectations for their students' success as a form of empowerment for each student to achieve their goals in adulthood. *Multidimensional learning* relates to the need for teachers to use a number of different perspectives, views, and experiences within their content and instruction to engage students. *Validating cultural experiences* involves culturally responsive teachers employing students' own culture and communities to help them locate themselves within what is being taught. *Engaging the whole child* speaks to the need for teachers to engage the whole child in the learning process, rather than merely providing academic instruction. This includes attending to social and emotional needs as well as incorporating the needs of students'

communities within their learning. *Transformative learning* refers to the idea that culturally responsive teachers are capable of helping their students by advocating for changes within the educational system through leveraging students' unique abilities to direct instructional practices, assessment, and changes to curriculum. Finally, *emancipatory learning* emphasizes the need for teachers to provide instruction that can help students engage in social justice for themselves and empower them to combat oppressive ideologies and norms embedded within the educational system.

Gay (2018) includes all of these dimensions as necessary components of culturally responsive teaching. To successfully implement these components, Gay (2013) also posits that teachers need to check any deficit mindsets or perspectives they may have prior to knowing their students, as these internalized stereotypes of African American students being unable to succeed have been shown to negatively affect these students' achievement (Seyfried, 1998; Tyler et al., 2006). Moreover, Gay (2013) asserts that teachers must be willing to understand culturally responsive teaching within the larger context of the fight for social equality and the overall improvement of society.

From Culturally Responsive Pedagogy to Culturally Sustaining Practices

Since these seminal works, a number of scholars have been involved in the evolution of these frameworks to ensure they continue to meet the current needs of diverse students (Alim & Paris, 2017; Gutierrez, 2008; Paris, 2012). In the seminal works described above, Ladson-Billings and Gay call for educational practices, content and instruction to be academically rigorous, create cultural competence within schools and classrooms, and create scholars who can be critical or social and systemic structures that contribute to the marginalization of diverse students (Gay, 2013; Ladson-Billings, 1995; Paris, 2012). In spite of the popularity of these

frameworks, some scholars began to question whether the phrase "culturally responsive or relevant" was descriptive enough to fully embody the ways in which our educational structures not only should respond to diverse students' cultural needs, but also should validate and help these students *sustain* their cultural and linguistic traditions (Paris, 2012). Paris (2012) reflects on this very phenomenon and offers the term "culturally sustaining practices" to push the ideals of asset pedagogies such as culturally responsive instruction to go beyond merely incorporating students' cultural practices into the curriculum, and but rather to support students in "sustaining the cultural and linguistic competence of their communities while simultaneously offering access to dominant cultural competence." In this work, Paris reaffirms the value of students being trained in traditional educational ways and learning traditional forms of knowledge, while also requiring educators to go beyond these traditions to not only include the cultural practices students may bring to the classroom, but also teach students how to sustain their own cultural and linguistic identities.

Paris and Alim (2014) continue to build on an understanding of asset pedogogies such as culturally sustaining pedogogies by providing a critical lens to help researchers evaluate these frameworks and push their future evolution. In what they describe as a *loving critique*, Paris and Alim challenge researchers to question what parts of the dominant culture are being maintained even in asset pedogogical attempts to respond to or validate diverse cultural and linguistic experiences. In doing so, they sought to problematize the very purpose of past iterations of asset pedogogies to challenge researchers to go beyond framing issues of equity and access around getting students of color to act like their white peers. Instead, they call for a more dynamic and flexible understanding of asset pedogogy where we sustain cultural practices to prepare them to

navigate a future where their languages and cultural practices emerge as keys to success in a society that is becoming more diverse and global (Paris & Alim, 2014).

Ladson-Billings (2014) responded to Paris' (2012) critical call to use the phrase "culturally sustaining practices" to fully embody the idea that education must go beyond merely responding to students' culture to teach students the value of their diversity and how to sustain as they learn about the dominant cultural norms of society. In her response, Ladson-Billings called for a "remix" or revision of her earlier imaginings of culturally responsive instruction and supported the shift to referring to this asset pedagogy as culturally sustaining practices. In support of this revision, she asserted dissatisfaction with the ways educators and schools had begun to interpret her framework as being used to highlight "limited and superficial notions of culture" (Ladson-Billings, 2014). For instance, she mentioned having observed how many teachers may incorporate characteristics of their students, but few seem willing to tap into the rich sociopolitical connections that can be made to help students question and critique their society (Ladson-Billings, 2014). She also supports the evolution of earlier iterations of culturally responsive pedagogy to incorporate new forms of cultures that are developing within current societies such as the recognition of global identities, languages and communities beyond racial categories (Ladson-Billings, 2014).

Considering the importance of the aforementioned evolution, this dissertation uses the phrase "culturally sustaining pedagogy for African American students" (CSPAAS) to refer to not only the need for education to be highly rigorous and welcoming of the cultural preferences and characteristics African American students may bring to the classroom, but also teaching African American students how to be critical of social structures that seek to sustain their culture. Moreover, this framework makes room for African American students to define culture for

themselves and recognizes the ever-shifting nature of culture so as to avoid limiting African American students' experiences to one dimension.

African American Students' Learning Styles vs. Learning Preferences

Ladson-Billings' and Gay's contributions to the advancement of culturally sustaining pedagogy as a useful theoretical framework for educators and practitioners were preceded by several other scholars who emphasized important learning characteristics of African American students. The literature refers to these learning characteristics as "learning styles" and scholars became interested in how student learning styles could potentially affect their achievement in school. Research on African American students' learning styles began in the 1960s as a host of African diasporic scholars began to expand efforts to fight oppressive social norms by turning a critical eye towards traditional European educational pedagogy and how it affects African American students (Hilliard, 1985; Lee, 2008; Willis, 1989). As African American scholars began to question the impact of traditional educational systems on African American student achievement, theories around cultural influences on African American student learning styles began to emerge (Hale-Benson, 1982; Hilliard, 1976; Shade, 1982; Willis 1989).

Within the context of interpreting the differences between African American student achievement scores and White student achievement scores, Hilliard (1992) asserts "that two groups of students with the same intellectual potential would, because of diversity in cultural socialization, develop habits and preferences that would cause them to manifest their mental powers in somewhat different ways" (p. 1). Willis (1989) synthesizes key assumptions of the literature on learning styles asserting that a child's preferential way of conceptualizing knowledge and interacting with the learning environment can be influenced by behaviors and habits within their culture and home environments. For instance, Ewing and Yung (1992)

investigated the learning preferences in a comparative study of African American, Chinese American, and Mexican American gifted students. They found significant differences between the learning preferences of the three student groups in terms of environmental preferences (e.g., lighting, sounds temperature), emotions associated with their learning (e.g., persistence, motivation), learning modality preferences (e.g., visual, auditory), and sociological learning preferences (e.g., working in groups, working independently).

The concept of cultural socialization affecting the way students learn and organize information, however, has been regarded with caution by a number of researchers who wish to avoid conflating disparate learning styles as differences in intellectual ability (Gutierrez & Rogoff, 2003; Hale-Benson, 1982; Hilliard, 1976). Furthermore, the theory of learning styles has been the subject of controversy for a number of years. Since its inception, several researchers have demonstrated that the theory of learning styles or students having different cognitive patterns in their ability to acquire and process information is inaccurate (Kirschner, 2017; Newton & Miah, 2017) and that congruence between instructional practices and alleged student learning styles does not appear to necessarily have a positive effect on student learning (La Lopa & Wray, 2015; Rogowsky et al., 2015). Some researchers have implied that theories associated with learning styles can harm student achievement due to teachers failing to help students overcome learning deficits they may experience as a result of overreliance on students' self-reported learning styles (Kirschner, 2017). Additionally, researchers also raised the question of the validity of learning styles being the most effective vehicle for student learning as comfortable patterns of knowledge acquisition may not necessarily be the most effective way to retain information (Kirschner, 2017).

In light of the mounting evidence on the ineffectiveness of the use of learning styles as a useful framework for positively affecting student achievement, it is important to distinguish between "learning styles" and "learning preferences" in this dissertation. Whereas the former concept of "learning styles" focuses on the assumptions that students learn differently or can be categorized into different types of learners according to their "modalities" or styles of learning (Coffield et al., 2004), the latter concept of "cultural learning preferences" emphasizes how cultural dimensions shape students' learning habits, psychological and emotional needs, and the extent to which validation of these cultural dimensions or absence of them can impact student achievement in school.

Willis (1989) foreshadowed some of these issues in the context of racial understandings of learning preferences in his earlier work by asserting "the differences between Black and White children's cognitive functioning and learning styles are simply that—differences—not deficits" (p. 48). In doing so, Willis drew an important distinction between the traditional understanding of learning styles in contrast with cultural learning preferences that can be influenced by a child's community and culture. Although some researchers have demonstrated the ineffectiveness of tailoring instruction to individual student learning styles on student achievement (Kirschner, 2017; Rogowsky et al., 2015), others have found that student learning is affected by cultural incongruence between African American cultural learning preferences and the school environment (Bailey & Boykin, 2001; Dill & Boykin, 2000). Hurley et al. (2005) described this process in their study on the effects of communal learning on African American students' achievement on a math estimation task. In their study, they described the usefulness of incorporating culturally familiar learning themes into the school environment. They asserted that doing so would help African American students function in culturally familiar cognitive modes

that affirm their sense of self-worth, which in turn increases student motivation for learning, activates student interests, and increases their willingness to perform. None of these findings can be used to support claims that African American students cannot perform in school unless the school environment mimics their home environment. Instead, researchers maintain that the discontinuity between the African American students' culture and the school environment may create social, emotional, and psychological strains on African American students that negatively affect their self-esteem, identity, motivation, and willingness to learn content or adhere to school behavioral norms (Bailey & Boykin, 2001; Dill & Boyd, 2000; Hurley, 2005).

Addressing the reconceptualization of learning preferences in the literature, the focus then attends to the importance of considering the influence of unique African American cultural dynamics on African American students and how discontinuity between these cultural learning preferences and the school environment can affect their achievement. According to Boykin (1983), there are nine cultural dimensions of African American students' learning as follows.

1. *Spirituality* refers to the belief in a higher power.
2. *Harmony* is a reference to the belief in the interconnectedness of the world with oneself and a need for integration of ideas and concepts.
3. *Movement* refers to the need to incorporate rhythm and movement in their understanding of life, which may manifest through music and dance.
4. *Verve* describes the psychology behind the movement dimension; specifically it refers to a preference for learning that involves "multiple stimuli, rather than singular, routinized" (Willis, 1989, p. 50) orientations towards learning.
5. *Affect* is the orientation towards emotional expressivity and connections between social/emotional awareness and cognitive processes.

6. *Communalism* is the need for a social orientation of interconnectedness with others as a part of their community.
7. *Expressive individualism* refers to importance of validating one's individual style or unique characteristics in the way they express themselves and their knowledge.
8. *Orality* emphasizes the importance of transmitting knowledge orally through storytelling, fables, and folklore.
9. *Social time perspective* refers to the concept of time being understood in reference to events and people, rather than as an empirical measurement.

Boykin's (1983) cultural dimensions for African American students serve as important conceptual foundation for the development of the theoretical framework for the current dissertation. Specifically, this dissertation combines several of these cultural dimensions advanced by Boykin (1983) into three main categories: (a) social/affect, (b) non-verbal/expressive creativity, and (c) harmony/spirituality to draw attention to the importance of attending to the social aspect of African American student learning, the need for African American students to have information presented to them in a multitude of ways and provide them with the opportunity to prove their academic proficiency in a variety of ways, and the need for learning to be interconnected with issues that are important to them in their own communities and lives.

Culturally Sustaining Pedagogy for African American Students Framework

Aronson and Laughter (2016) first synthesized the work by Gloria Ladson-Billings and Geneva Gay to create a model for culturally relevant education and identify research aligned with their model. In their work, they first outlined major tenants of both Ladson-Billings' definition of culturally sustaining pedagogy and Gay's framework on culturally relevant

instruction to operationally define culturally relevant education (Aronson & Laughter, 2016). Specifically, they aligned the culturally responsive teaching components of Geneva Gay's framework (e.g., social and academic empowerment, multidimensionality, cultural validation, social, emotional, and political comprehensiveness, school and societal transformation, emancipation or liberation from oppressive educational practices and ideologies) with those from Ladson-Billings' work (e.g., academic achievement, cultural competence, sociopolitical consciousness) to create their own framework for understanding culturally relevant education. In turn, Aronson and Laughter developed three defining components of culturally relevant education: academic skills and concepts, critical reflection, cultural competence and critique discourses of power. In their framework, *academic skills and concepts* refers to changes teachers can make to academic content to be more culturally sensitive to students. *Critical reflection* refers to the awareness teachers should cultivate to ensure they are always analyzing their practice. Lastly, *critique discourses of power* refers to the recommendation that teachers should develop a disposition oriented towards being critical of current power structures in society to help students increase their awareness of these structures and ways to mitigate any harmful effects of them on diverse student populations (Aronson & Laughter, 2016).

Similarly, I synthesized the works by Gloria Ladson-Billings and Geneva Gay, but revised and expanded Aronson and Laughter's (2016) synthesis to include recommendations from research on culturally sustaining practices (Paris, 2012) and African American students' learning preferences and cultural dimensions (Boykin, 1983) for the purpose of this dissertation. The alignment of the cultural dimensions for African American students with the culturally sustaining pedagogical components described in the previous sections offers a definition of the Culturally Sustaining Pedagogy for African American Students (CSPAAS) framework as: *high*

quality instruction that (a) promotes social justice through learning that helps African American students sustain their own traditions while also leaving room for the evolution of cultural-linguistic traditions, and (b) uses a wide variety of instructional practices related to specific components of African American learning preferences, and engages the whole child with both social/emotional and academic content relating to African American cultural and linguistic experiences, while also providing opportunities for African American students to demonstrate their mastery of learning in ways that leverage their unique learning strengths. Specifically, the CSPAAS theoretical framework addresses the following three categories.

1. *Social justice perspective*: This perspective aligns with Ladson-Billings' (1995; 2013) concept of *social relations,* Paris and Alim's (2014) call for culturally/linguistically sustaining practices, and Gay's (1995, 2013) concepts of *social academic empowerment* and *transformative learning* and *emancipatory learning,* and the *social/affective* cultural dimension of African American student learning preferences to describe how culturally sustaining pedagogy can help students learn through a variety of social interactions with peers and adults, while also connecting content to important issues within their own community to overcome oppression through learning the strengths of their own ever-changing cultural traditions and languages associated with those traditions.
2. *Whole child learning* attends to Ladson-Billings' (1995) concept of *self and others,* Gay's (1995) concept of *engaging the whole child*, and African American cultural dimension of *spirituality/harmony* to describe instruction that makes connections to all aspects of students, including rigorous academic content and personal social-emotional growth.

3. *African American learning preferences* align with Ladson-Billings' (1995) *concept of knowledge*, Gay's (1995, 2013) concepts of *validating cultural experiences* and *multidimensional learning*, and the African American cultural dimension of *expressive creativity/non-verbal* learning to describe how teachers should incorporate a number of different learning strategies beyond traditional methods to engage and assess African American students using activities that incorporate movement and high levels of task variation.

Table 1 illustrates the alignment of these concepts with African American learning profiles that offers the conceptual development of the CSPAAS framework for the purpose of this dissertation.

Table 1

Aligning Culturally Sustaining Pedagogical Frameworks with African American Student Cultural Dimensions to Form the CSPAAS Framework

CSPAAS Dimensions for Current Study	Ladson-Billings (2014); Paris (2012); Paris & Alim (2014)	Gay (1995, 2013)	African American Learning Preferences Research (Boykin, 1983; Hilliard, 1992; Shade, 1982; Willis, 1989)
Culturally/Linguistic Social Justice Perspective	Social Relations Culturally/linguistically sustaining social traditions	Social Academic Empowerment; Transformative Learning; Emancipatory Learning	Social/Affective

Table 1

Aligning Culturally Sustaining Pedagogical Frameworks with African American Student Cultural Dimensions to Form the CSPAAS Framework cont.

CSPAAS Dimensions for Current Study	Ladson-Billings (2014); Paris (2012); Paris & Alim (2014)	Gay (1995, 2013)	African American Learning Preferences Research (Boykin, 1983; Hilliard, 1992; Shade, 1982; Willis, 1989)
Whole Child Instruction	Concept of Self and Others	Engaging Whole Child	Spiritual/Harmonious
African American Learning Preferences	Concept of Knowledge	Validating Cultural Expectations; Multidimensional Learning	Expressive Creativity/Non-verbal

Summary

Culturally sustaining pedagogy for African American students can be traced back to a number of instructional strategies for African Americans that were adopted after enslavement to cope with the large number of freed slaves seeking an education after the abolishment of slavery (Butchart, 2010; Croom & Alston, 2009; Harmon, 2012). Overtime, a number of scholars began to identify unique cultural elements associated with improved academic and behavioral outcomes for African American students (Allen & Butler, 1996; Boykin & Bailey, 2000; Boykin & Cunningham, 2001; Boykin et al., 1997, 2004; Cole & Boykin, 2008; Cunningham et al., 2017;

Dill & Boykin, 2000). For the purpose of this dissertation, I outlined the Culturally Sustaining Pedagogy for African American Students (CSPAAS) framework by drawing on the seminal works of Gloria Ladson-Billings (1995) and Geneva Gay (1996) and a large body of work on African American student learning preferences (Boykin, 1983; Hurley et al., 2005; Lee, 1995; Parson, 2008; Parson et al., 2005; Serpell et al., 2006; Serpell, & Cole, 2008; Tuck & Boykin, 1989; Tyler et al., 2006). Additionally, the framework includes more recent iterations of asset culturally sustaining pedogogy from Paris (2012) and Paris and Alim (2014) work to acknowledge the importance of helping African American students keep their own traditions and the languages used in these traditions as keys of power in a world that is becoming more and more diverse. Lastly, the CSPAAS framework extends Aronson and Laughter's (2016) synthesis on culturally responsive education and includes recommendations from research on African American students' learning preferences and cultural dimensions (Boykin, 1983). Specifically, the CSPAAS framework addresses three dimensions of culturally/linguistic social justice, whole child learning, and African American learning preferences, and serves as the core content of this dissertation.

Meta-Analysis

A number of researchers have asserted there is a dearth of empirical research demonstrating functional relations between culturally sustaining practices and improved student academic and behavioral outcomes (Cochran-Smith et al., 2004; Sleeter 2012). Some researchers have noted that the overwhelming majority of the literature available on culturally sustaining practices consists of qualitative research or small-scale studies (Aronson & Laughter, 2016; Sleeter, 2012). Consequently, Sleeter (2012) posits that the lack of empirical data directly linking culturally sustaining practices to positive student outcomes has contributed to the

marginalization of such practices within educational settings. The dearth of quantitative research supporting the use of CSPAAS interventions to improve African American student outcomes constitutes a need for further research in the following areas: identifying quantitative CSPAAS studies, determining effectiveness of CSPAAS, and evaluating the quality of studies aligned with the CSPAAS framework in supporting African American students. Thus, this current meta-analytic study seeks to address these gaps in the literature on culturally sustaining practices that have been used to support African American students.

Overview of Meta-Analysis

Meta-analysis refers to a type of research that is used to synthesize the results of series of studies (Borestein et al., 2009). Historically, the use of meta-analytic research can be traced back to the 1900s when astronomers were interested in combining the results of a number of different astronomical observations made at different locations and observatories. Many of these observations were conducted under unique conditions. Thus, scientists found it necessary to develop a statistically sound method of combining the results of these observations to draw accurate conclusions about the magnitude or effect of different conditions on observed astronomical phenomena (Hedges, 1992).

Later on, much of the work that advanced the use of meta-analysis originated in the health industry. Hedges (1992) described how Karl Pearson was one of the earliest researchers to use meta-analytic research methods in 1904. During this time period, the country was ravaged by typhoid fever and a number of doctors and scientists were devoted to creating a vaccine or inoculation to protect against it. Thus, early researchers were highly interested in determining the effectiveness of the inoculations developed to fight the disease (Pearson, 1904). As summarized by Hedges (1992), Pearson (1904) provided a number of data sets with the rates of infection for

different samples of people who received the inoculation and those who did not receive it. These data were collected across the world in different geographical locations. After analyzing the correlations between the data sets, Pearson calculated the average or value of the effect of the inoculation to determine the size of the effect of the intervention on those infected. While these studies provided samples of earlier meta-analytic work, Gene Glass is credited with first coining the phrase "meta-analysis" in 1976 (Suurmond et al., 2017). Over the decades, a number of researchers later contributed to refining and defining meta-analytic research and establishing the components of this form of research (Borestein et al., 2009; Glass, 1976; Hedges, 1992).

Since the earlier examples of meta-analytic research described above, the statistical model has been used in different fields to help researchers resolve conflicting research outcomes and establish evidence-based practices (Borestein, 2009; Gurevitch et al., 2018). Meta-analytic research is of particular interest to policy makers and political stakeholders because they can use results from these studies to make better informed decisions due to being able to look at summaries of results from a number of studies conducted on a given intervention. As the nation shifted to emphasizing evidence-based practices in education, educational researchers have increasingly relied on meta-analytic research to help them determine the effectiveness of educational interventions used to improve student learning and behavioral outcomes (Borestein, 2009; Gurevitch et al., 2018; Pigott & Polanin, 2020).

Procedures of Conducting a Meta-Analysis

A meta-analysis can be defined as a quantitative form of research that is used to synthesize the results of a number of studies to determine the effectiveness of a particular intervention on outcomes outlined in a given research question or topic (Borestein et al., 2009). According to Ahn et al. (2018), high quality meta-analytic research goes hand-in-hand with

thorough and transparent systematic reviews. However, researchers caution against conflating the two different types of research methods (Borestein et al., 2009; Page et al., 2021). Although systematic reviews of studies are considered a necessary component of meta-analysis, they can be conducted independently; whereas majority of meta-analytic studies always include systematic reviews. To clarify the methods of meta-analytic research, researchers have identified specific components that should be included in a meta-analysis. These steps include identifying research questions, developing inclusion/exclusion criteria, conducting a systematic review, and performing data analysis and evaluation of the quality of the studies (Cumming et al., 2023; Page et al., 2021; Valentine et al., 2010). In their discussion of high-quality systematic reviews in special education, Cumming et al. (2023) echo these steps for systematic reviews specifically for special education studies. In their paper, they mentioned that systematic reviews should have: (a) *coherence* or a clearly defined purpose and alignment throughtout the study; (b) *contextualization* where research should be conducted within specific parameters and contexts such as historical, methodological, or disciplinary lenses; (c) *generalivity* where reviews build in prior knowledge obtained from previous studies to generate new ideas; and (4) *transparency* where the processes followed are clearly outline so as to be replicable by future reviewers. The steps outlined below reflect these recommendations for conducting high quality systematic reviews.

First, to conduct a meta-analysis, researchers are to identify the questions they wish to investigate with the meta-analysis (Cummings et al., 2023; Page et al., 2021). Because meta-analytic studies are used to determine the magnitude of effect of a particular intervention, research questions are formed with inquiries centered around the effectiveness or impact of an intervention reported in a group of studies. Valentine et al. (2010) asserted that there needs to be

at least two studies in order to adequately answer the question of effectiveness or calculate a cumulative effect size. Although there are meta-analyses with smaller numbers of studies, these studies often have a number of limitations that severely affect the results, thus rendering researchers incapable of drawing useful conclusions about the effectiveness of interventions analyzed in these reviews (Seide et al., 2019; Valentine et al., 2010). It becomes problematic to draw meaningful conclusions about studies with differences that can be attributed to random sampling of different populations, if there are only two studies analyzed. Some researchers, however, still assert the value of conducting a meta-analysis even with smaller numbers of studies due to the potential increase of statistical power of averaged effect sizes over those reported individually (Goh et al., 2016).

After researchers have developed their research questions, they are to create the parameters for the studies they will include and omit from their meta-analysis (Cummings et al., 2023; Page et al., 2021). This is called inclusion/exclusion criteria. Systematic reviews and informal reviews of literature can yield large amounts of studies loosely related to topics outlined in research questions. Based on the scope of the research in a particular meta-analysis, some of the studies must be carefully filtered to be suitable for answering the research questions being investigated (Stern et al., 2014). Thus, studies are included or excluded in alignment with the goals of the meta-analysis. Some studies may be omitted due to the research designs (e.g., single-case studies,), whereas other studies may be omitted because they are outside of the time frame specified by the researchers (Stern et al., 2014). Other studies may be omitted if researchers are interested in the effectiveness of an intervention on a specific population or location (Stern et al., 2014). Regardless of the reasoning undergirding the inclusion/exclusion criteria, researchers

must carefully outline these parameters before conducting their systematic review of the literature (Stern et al., 2014).

Third, once the inclusion/exclusion criteria have been established researchers will then conduct a systematic review of the literature. Systematic reviews can be conducted as a separate study or within a meta-analysis (Page et al., 2021; Stern et al., 2014). Some systematic literature reviews report and disaggregate the studies and discuss trends in the literature without applying statistical analysis of the results of the search. However, most meta-analyses include systematic reviews to increase internal validity of the results and minimize errors in the data that can arise from the exclusion of studies from data analysis. A systematic review differs from an informal review of the literature because of the level of transparency inherent to the systematic review process (Page et al., 2021; Stern et al., 2014). To conduct a sound systematic review, researchers must identify the databases and search terms they used to conduct their searches, and outline the process they followed to obtain the studies their searches yielded (Stern et al., 2014). Researchers must also identify how inclusion/exclusion criteria were applied to the studies identified during the search to justify why studies were included or omitted (Cummings et al., 2023; Page et al., 2021; Stern et al., 2014).

Fourth, researchers will analyze the results using statistics to determine the effect size (Page et al., 2021; Stern et al., 2014). Depending on the inclusion/exclusion criteria for the studies, specifically the nature of the research designs of the studies included in the systematic review, there are a number of ways a researcher may choose to analyze the data (Borestein, 2021). For instance, meta-analyses conducted on single-case design studies have a separate set of statistical procedures used to calculate effect sizes (e.g., percentage of non-overlapping data [PND], Scruggs et al., 1987; percentage of data exceeding the median [PEM], Ma, 2006;

percentage of all non-overlapping data [PAND]; Parker et al., 2007) from the statistical procedures for experimental group studies (e.g., ES = mean of treatment group – mean of control group/standard deviation of control group, Borestein et al., 2021). Thus, researchers must look at the results of their systematic review and determine their statistical procedures according to the studies' research designs and the levels of variance within the studies identified from the systematic review.

After determining what measure of effect size they will use, researchers will then calculate individual effect sizes for each study included. Then, researchers will make a decision between whether they wish to use a fixed effect model or a random effect model to synthesize effects from all studies into one effect size. This decision is based on the levels of homogeneity (similarity) or heterogeneity (differences) between studies. For instance, if a systematic review of the literature yields a substantial amount of studies that are significantly similar in research design, population, settings, and other variables, researchers may employ a fixed effect model. This model assumes there is one true effect across multiple studies and any differences found can be attributed to sampling error. Thus, there is an assumption of homogeneity underlying the fixed effect model for effect sizes (Borenstein, 2021).

Educational research takes place across a wide range of settings, populations, grade levels and demographics, thus intervention studies and their effects may vary from study to study. These differences are described by the assumption of heterogeneity and aren't attributed to chance or error. In these cases where there is significant heterogeneity between studies, researchers employ a random effects model that assumes there may be different effects for each study based on their differences that cannot be attributed to chance or error alone. Instead, due to the unique characteristics of each study, each study may yield a different true effect distributed

around a mean. When assumptions of homogeneity or heterogeneity aren't met, it can effect how data are interpreted. Researchers may seek to analyze data further to determine what variables are responsible for creating subgroups of effect sizes within the overall analysis (Borenstein, 2021; Viechtbauer, 2007). After the data have been analyzed and effect sizes have been calculated, researchers will discuss the results and make recommendations for the literature (Cumming et al., 2023).

Evaluation of Study Quality

An additional component of some meta-analyses is the evaluation of the quality of the studies identified and analyzed. In 2003, the CEC's Division for Research established a task force charged to establish a set of standards that could be used to evaluate the methodological rigor or quality of research specifically within the field of special education (Gersten et al., 2005). This taskforce outlined a number of complexities that must be considered when conducting research in special education, such as the diversity of potential student populations. For instance, there can be countless settings, demographics, ethnicities and language groups represented in just one eligibility category (Gersten et al., 2005). Moreover, the educational contexts present an additional challenge to methodological rigor in that students with disabilities are served in a number of unique settings that can make it difficult to control for multiple variables, or randomize groups. Thus, heterogeneity of participants in special education can present the need for multiple methodologies to address different contexts and groups interventions could potentially impact (Gersten et al., 2005).

In 2005, the Council for Exceptional Children (CEC) drew on the work of Gersten et al. (2005) and Horner et al. (2005) and developed a list of quality indicators used to analyze whether a research study adhered to recommended standards of evidence-based research in special

education (CEC, 2014). The first of these checklists were developed for experimental and quasi-experimental studies; however, standards for single-case, experimental designs have also been added since these standards were recommended to researchers (CEC, 2014). These CEC quality indicators include procedures where researchers can analyze studies using a checklist to determine the level of quality of a study specific to its design. The checklist includes a number of features that should be included in high quality experimental, quasi-experimental or single-case research designs to determine whether a study was conducted ethically and in alignment with the tenants of the scientific process of inquiry.

The checklist includes the following eight quality indicators for all experimental, quasi-experimental, and single-case studies (if applicable based on research design): (a) context and setting, (b) participants, (c) intervention agent, (d) description of practice, (e) implementation fidelity, (f) internal validity, (g) outcome measures/dependent variables, and (h) data analysis. The CEC (2014) guide for using the checklist helps researchers identify which of the quality indicators need to be used for specific research designs by denoting a letter "G" for indicators that only apply to group studies, "S" for indicators that only apply to single-case studies, and "B" for indicators that apply to both. Each of the indicators have criteria that must be met for that specific indicator. For instance, Quality Indicator 7.0 has six criteria including a requirement that researchers must identify whether studies included interrater agreement data, which is where separate researchers are trained in the collection of data for a certain study and asked to verify the results of data collected by the primary data collector in a study (CEC, 2014). Usually, a percentage is calculated based off the difference between the two data collectors' results to strengthen the claims drawn from observable data in a study. Inclusion of interrater agreement data is widely known as a way to strengthen internal validity of a study and is one of the markers

of quality on the CEC quality indicator checklist. Appendix A provides a summary of the information that must be included for each of the quality indicators for group experimental, quasi-experimental, and single-case research designs.

Most recently, CEC's Division for Research (CEC-DR) introduced a special issue in *Exceptional Children* (Volume 89, Issue 4) where groups of researchers aimed to update and advance quality indicators for research in special education from the 2005 version. To this end, these researchers considered essential components of high quality research such as transparency in descriptions of research methodology and increased rigor reporting validity data. In this special issue, groups of researchers built on the quality indicators outlined in the 2005 version to help future design and implement investigations that reflected more current trends in the evolution of the field. For instance, in one article, researchers outlined ways to conduct single-case synthesis to provide a deeper understanding of the effectiveness of interventions that may be investigated using this particular research design. There are also general recommendations for conducting high quality reviews and ways researchers can strengthen qualitative research by improving author reflexivity or the extent to which qualitative researchers identify their own assumptions and biases when engaging in their work.

The CEC standards for evidence-based practices are not the only set of standards that can be used to evaluate the quality of research or methodological rigor (CEC, 2014). Researchers can also choose to use the What Works Clearinghouse (WWC) standards (WWC, 2011). CEC quality indicators are used to assess the quality of special education intervention studies (CEC, 2014), whereas WWC standards have been used to evaluate a wider range of studies in general (WWC, 2011). The WWC standards are for evaluation of both group and single-case experimental studies using two different sets of criteria. Much like CEC quality indicators,

WWC standards have been used to evaluate quality of some broader educational programs (e.g. SRA, Stockard, 2013) that may be used by special educators (Cook, 2014). However, CEC quality indicators are specifically designed to assess discrete interventions where special educators have more control over the experimental designs to meet the needs of smaller groups of students depending on the disability categories (Cook, 2014). Such adjustments can be difficult to do with broader or larger comprehensive programs when conducting intervention studies (Cook, 2011, 2014).

In spite of CEC standards being designed primarily for special education interventions and/or interventions that are more focused for specific groups (Cook, 2014) and WWC standards being used to evaluate broader learning programs, both sets of standards use similar methods to evaluate methodological rigor. For instance, much like with CEC standards, in WWC standards for group experimental designs, evaluation of the methodological rigor is according to three different study characteristics: (a) study design or whether participant groups were randomly assigned, (b) attrition or differences between study groups from the beginning of the study to the end, and (c) presence of confounding variables. For the single-case designs, evaluation is based on the following standards: (a) data availability, (b) interobserver agreement, (c) residual treatment effect, and (d) demonstration of effect over time and between conditions. Based on the criteria met, a study can be categorized as meeting WWC standards without reservations, meeting WWC standards with reservations, or it does not meet WWC standards. After researchers determine the quality of each of the studies identified in the systematic review and meta-analysis, researchers report the results to help determine whether the intervention investigated in these studies can be validated as an evidence-based practice (CEC, 2014).

Meta-analysis and CSPAAS

A cursory look at the reviews of the literature produced on culturally responsive or sustaining practices reveals a number of gaps in the research. Researchers corroborate this conclusion and have asserted that there is a dearth of experimental research on the effects of culturally responsive or sustaining practices on students' academic and behavioral outcomes (Aronson & Laughter, 2016; Dee & Penner, 2017; Sleeter, 2012). Even though researchers have identified promising theoretical and qualitative evidence in support of culturally responsive or sustaining practices, quantitative support has been limited (Aronson & Laughter, 2016; Dee & Penner, 2017; Sleeter, 2012). One major reason for this gap in the literature has been attributed to difficulties with defining exactly what culturally responsive or sustaining instruction is (Aronson & Laughter, 2016; Sleeter, 2012). Without a clear operational definition, researchers have encountered difficulty with identifying studies that may use components of culturally responsive or sustaining practices or are aligned with the culturally sustaining framework in the literature (Aronson & Laughter, 2016; Sleeter, 2012). As a result, intervention studies that are not explicitly titled or categorized as culturally responsive or culturally sustaining may be overlooked in spite of providing compelling evidence of their effectiveness. Despite the alleged absence of experimental studies supporting culturally responsive practices and the CSPAAS framework, preliminary searches on particular components of the CSPAAS framework outlined for this dissertation yielded a substantial number of studies directly linking these interventions to improved outcomes for African American students. For instance, there is a substantial amount of experimental research studies directly linking instructional strategies, programs, or interventions that leverage components of African American learning preferences to improved academic and behavioral outcomes for African American students (Allen & Butler, 1996; Boykin et al., 1997;

Boykin & Bailey, 2000; Boykin & Cunningham, 2001; Boykin et al., 2004; Cole & Boykin, 2008; Cunningham et al., 2017; Dill & Boykin, 2000; Hurley et al., 2005; Lee, 1995; Parson, 2008; Parson et al., 2005; Serpell et al., 2006; Serpell, & Cole, 2008; Tuck & Boykin, 1989; Tyler et al., 2006), but these were not included in several past literature reviews on culturally responsive or sustaining practices (Allinger, 2018; Aronson & Laughter, 2016; Bond, 2017; Chessman et al., 2010; Jackson & Hodge, 2010; Morrisson et al., 2008).

In addition to several studies being overlooked in the search for quantitative data supporting the effectiveness of culturally responsive or sustaining practices, to date there have been few systematic reviews of the literature on culturally responsive or sustaining instruction that determine its effectiveness and none have been conducted on studies aligned with the CSPAAS framework outlined in this dissertation. Moreover, there has been no evaluation of the quality of any of the research conducted on culturally responsive instruction or CSPAAS. Specifically, although there have been a number of reviews of the literature on culturally responsive instruction (Allinger, 2018; Bond, 2017; Chessman et al., 2010; Jackson & Hodge, 2010), few have been aimed specifically at African American students' academic or behavioral outcomes (Allinger, 2018; Lateef et al., 2021; Larson, 2016; Jackson et al., 2010). Of these reviews, most are neither systematic reviews, nor do they apply any statistical analysis to determine the effectiveness of the intervention identified. Furthermore, none of these reviews evaluated the quality of the studies identified.

One of the earliest attempts to review literature on interventions associated with success for African American students comes from Willis (1989). Willis wrote an informal review of the literature on interventions and strategies correlated with successful academic outcomes for African American students. In her review, she provided information on interventions that formed

the earliest foundations of understanding African American cultural learning styles or learning preferences (Willis, 1989). Specifically, she presented a number of studies that demonstrated common observations of learning preferences in African American students, such as a predisposition towards learning supported by social/affective dynamics, learning that harmonizes or unifies different ideas with connections to personal experiences, and preferences for nonverbal and expressive creativity in communication styles and assessment requirements. Although this review contributed to the literature on CSPAAS by helping identify studies that support the use of the framework, it did not include a systematic review of the literature, and did not analyze the studies for effectiveness or quality.

Morrison et al. (2008) conducted a review of the literature on the implementation of culturally responsive classroom interventions. They began their review in 1995 and ended the review in 2008. Only one out of 45 studies (Bell & Clark, 1998) included in their review met the criteria outlined for the current dissertation (i.e., were quantitative, experimental studies; used interventions that incorporated at least one or more elements of the CSPAAS framework; and demonstrated effectiveness on academic and/or behavioral outcomes for African American students). In their review, they established themes from the literature that support the use of culturally responsive instruction, such as creating a nurturing environment and using student experiences to drive instruction. Even though this review contributed to the literature on culturally responsive instruction, it did not analyze the studies for effectiveness or quality. Lastly, the studies identified in this review were not primarily studies with experimental designs that could be used to establish a functional relation between culturally responsive or sustaining practices and African American student outcomes.

In another study, Aronson and Laughter (2016) conducted a review of the literature on culturally responsive instruction. In the review, they synthesized Gloria Ladson-Billings' and Geneva Gay's works to create a theoretical framework for culturally responsive instruction that forms the foundation of the CSPAAS theoretical framework outlined in this dissertation. After presenting a synthesis of culturally responsive instruction and pedagogy, they conducted a systematic review and identified 40 studies that provided compelling support for the use of culturally responsive instruction to improve student achievement. Despite that this review contributed to the literature on culturally responsive or sustaining practices by identifying studies that support the use of the framework and it included a systematic review of the literature, this study neither presented any statistical analysis of the effectiveness of the studies identified, nor did they report any analysis of the quality of the studies. Additionally, this study did not specifically focus on African American students. Lastly, the studies identified in this review were not primarily studies with experimental designs that could be used to establish a functional relation between culturally responsive or sustaining instruction and African American student outcomes.

The study closest to the current dissertation is the work by Jackson et al. (2010). Jackson et al. conducted a meta-analysis, including a systematic review of the literature, on culturally sensitive interventions designed to decrease high-risk behaviors among African American youth. This study reviewed a wide range of studies of positive behavioral interventions for African American youth, but did not focus on school-based interventions. In their review, they systematically outlined the procedures used to ensure the process was transparent and replicable. They provided information, such as words and phrases and specific search engines and databases. Moreover, after identifying seven studies as a result of their systematic review, they

calculated the effect size of each study using a Hedges *g* formula where effect size results correspond with the following interpretation of calculated values: < .20 =s mall effect, < .50 = medium effect, and < .80 = large effect. Afterwards, they applied a random-effects statistical procedure to estimate the overall effect size of culturally sensitive interventions. Random-effects approach assumes that effects of variables being investigated can vary between studies, or that there is heterogeneity between studies (Borenstein et al., 2021), thus making results more generalizable to other populations. Lastly, they provided an examination of the quality of studies identified from their search. To assess the methodological rigor of the studies obtained from their systematic review, they used a scale advanced by the American Psychological Association (Gingerich & Eisengart, 2000; Kim, 2008). This scale included criteria such as randomization of samples, comparison to other treatments, and treatment sizes to determine the quality or methodological rigor of each study. Results from this study yielded seven studies with a combined effect size of .35. This indicates that culturally sensitive psychosocial interventions were determined to have a small-to-medium effect size similar to other interventions documented in the literature. Although this review contributed to the literature on culturally sensitive psychosocial interventions that could be used to address problem behaviors displayed by African American students, it did not investigate the efficacy of culturally responsive educational interventions in school settings.

In sum, several reviews of literature have been conducted related to culturally responsive or sustaining practices in the past. However, previous reviews of the literature for culturally responsive or sustaining instruction neither included a systematic review, nor conducted statistical analysis of the effectiveness of the studies identified in these reviews. Moreover, very few of these reviews were specifically aimed at African American students and some did not

provide an analysis of the quality of the studies identified from the reviews. Thus, this meta-analytic dissertation contributes to the literature by measuring the effectiveness of interventions aligned with the CSPAAS framework on academic and behavioral outcomes for African American students and evaluating the quality of research on these interventions.

Summary

Meta-analytic research has been conducted since the 1900s and has become increasingly widespread as a research design in current years (Borestein, 2009; Gurevitch et al., 2018). This research design allows researchers to determine the effect size of interventions or the magnitude of the effectiveness of interventions (Borestein, 2009; Gurevitch et al., 2018). Researchers conduct meta-analytic studies by first forming their research questions, and then conducting a systematic review of interventions related to the research topic. Afterwards, researchers apply statistical procedures to calculate the effect sizes of each study and an average effect size across all studies. Researchers also evaluate the quality of the research using a set of peer-reviewed standards for evidence-based practices. Although several reviews of the literature on culturally responsive or sustaining practices exist, most reviews were not systematic. Additionally, most reviews did not include statistical analysis of the effectiveness of the intervention and did not evaluate the quality of the research conducted. This current dissertation seeks to address these gaps in the literature by conducting a meta-analysis of interventions aligned with the CSPAAS framework to determine its effectiveness on school outcomes for African American students. It also seeks to add to the literature with an evaluation of the quality of the studies identified through a systematic review of the literature.

Summary of the Review of the Literature

This chapter presents a review of the literature that supports the current dissertation. The first strand consists of discussion of the national findings on African American students' academic and behavioral outcomes in U.S. public schools. A review of the data revealed that inequitable educational experiences for African American students have resulted in a number of disparities between African American students and their White peers across several different measures. These disparities have been called achievement and discipline gaps to describe differences between African American students and their White peers on academic testing and in the ways African American students are disparate recipients of exclusionary disciplinary action that results in their disproportionate removal from the school setting. The second strand addresses the literature on culturally sustaining instruction by contextualizing it within the history of African Americans from slavery to present. I synthesized several frameworks to create the CSPAAS theoretical framework and a definition of culturally sustaining practices for African American students that emphasized three major components: (a) social justice perspective, (b) whole child instruction, and (c) African American learning styles (Aronson & Laughter, 2016; Boykin, 1983; Gay, 2019; Ladson-Billings, 1995). The synthesis of the literature includes Ladson-Billings' (1995) culturally relevant pedagogy, Gay's (2019) culturally responsive teaching, and Boykin's (1983) cultural dimensions of learning preferences for African American students, to expand on the review of the literature on culturally sustaining pedagogy by Aronson and Laughter (2016). The final strand explores the purpose of meta-analysis in research, procedures for conducting meta-analyses, and how this research design can help determine the effectiveness of interventions aligned with the CSPAAS framework. I also highlighted relevant prior reviews on the effects of culturally responsive or sustaining practices. Despite the

availability of reviews of literature on culturally responsive or sustaining practices, most reviews were not systematic, did not include statistical analysis of the effectiveness of the intervention, and did not evaluate the quality of the research conducted. Results from this dissertation may help to establish CSPAAS as an evidence-based practice and help stakeholders and educators determine effective interventions that can be used to support African American students by helping to close the achievement and discipline gaps experienced by this student population.

CHAPTER 3: METHOD

In this chapter, I outlined the method and procedures that were used to conduct this dissertation study. The chapter includes descriptions of the procedures used to conduct a meta-analysis, the inclusion/exclusion criteria, the search procedures and keywords used, and the procedures used to code data and statistically analyze studies identified from the meta-analysis. Additionally, this chapter includes descriptions of the fidelity and validity measures, and the instruments used to evaluate the quality of the studies analyzed.

Meta-analysis

Systematic reviews are defined as a synthesis of a number of studies on a particular topic using methods that are transparent and replicable (Pigott & Polanin, 2020). One of the most widely used guides for conducting meta-analyses is the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moehr et al., 2009). The PRISMA statement is a protocol that is highly regarded and widely used by systematic reviewers and researchers. It was developed in 2005 by 29 researchers to standardize the process and help those engaging in systematic reviews and meta-analyses. PRISMA includes a 27-item checklist and sample flowcharts that can guide researchers through the process of conducting systematic reviews and meta-analyses (Moehr et al., 2009). The PRISMA flowchart takes researchers through the process of completing a systematic review and meta-analysis, including the identification process, the screening process, and the application of the inclusion/exclusion criteria to identify studies. In this dissertation study, I used the PRISMA statement to conduct a meta-analysis of CSPAAS interventions using the steps outlined in the following sections. Figure 2 provides the PRISMA Protocol used for this current study.

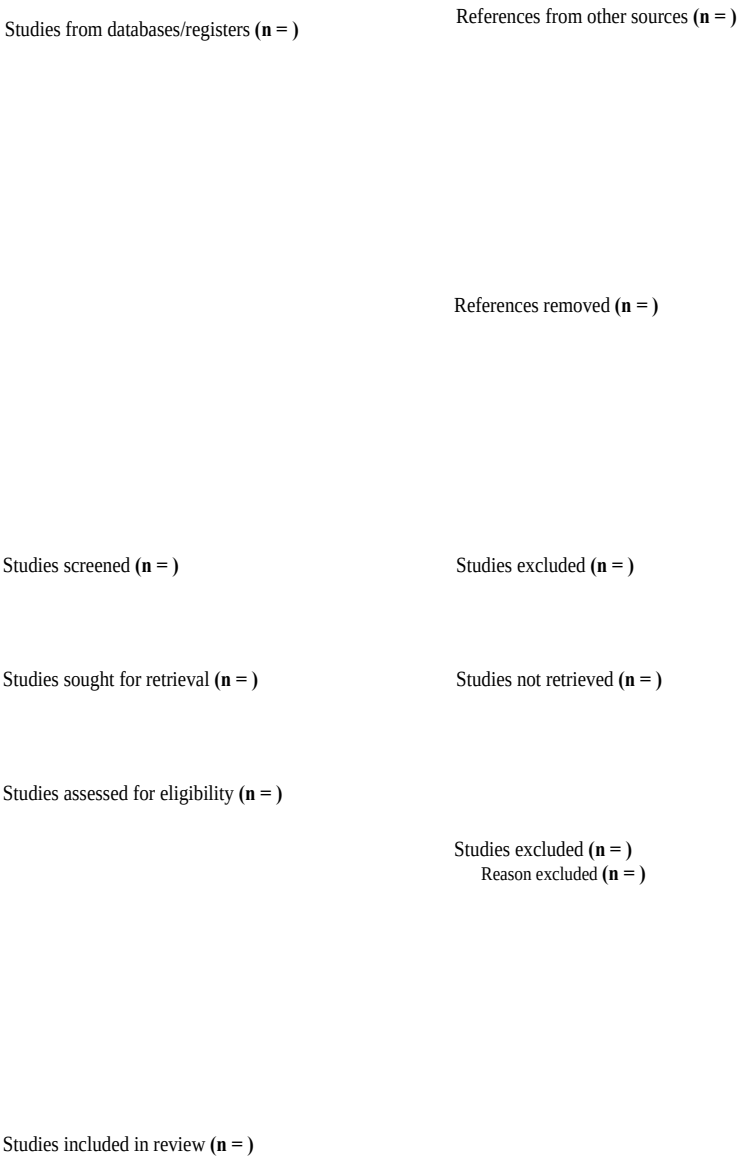

Figure 2

PRISMA Protocol for Current Meta-Analysis

Step 1: Informal Review to Identify Search Terms

To conduct a systematic review and meta-analysis of interventions aligned with the CSPAAS framework, I used the following procedures to ensure the search was thorough. First, I completed an informal review of the literature prior to this dissertation study using the snowballing method or auditing the reference lists of other studies or reviews (Greenhalgh & Peacock, 2005). The informal review was conducted using a Boolean search on Google Scholar using a combination of phrases, including "culturally responsive instruction" and "African American students." Then, I scanned literature reviews on culturally responsive instruction for academic or behavioral experimental intervention studies focused primarily on African American student populations. I also used ancestral searches to identify reference lists of these literature reviews. However, this review was informal because no steps were taken to ensure the process for identifying these studies was transparent or replicable. The informal review of the literature yielded 27 studies aligned with components of an earlier framework called the Culturally Responsive Instruction for African American Students (CRIAAS) framework between the years of 1995 and 2017. Table 2 provides a breakdown of these studies including the components of the CSIAAS framework with which they are aligned. Since then, the framework for the current study has been updated to the CSPAAS framework to reflect new iterations of culturally sustaining practices for African American students. Studies from Table 2 were included in the search results of the systematic review conducted, but were evaluated using the study inclusion criteria described later in this section. Thus, some may have been excluded from the final results.

Table 2

Studies Identified through Informal Review (n = 27) of the Culturally Response Instruction for African American Students (CRIAAS) Literature

Culturally Responsive Instruction Components	Experimental Studies Addressing Academic Outcomes	Experimental Studies Addressing Behavioral Outcomes
Social Justice Perspective	(Bell & Clark, 1998) (Cartledge et al., 2015) (Dee & Penner, 2017) (Howard, 2011)	(Presley & Hughes, 2000)
Whole Child Instruction	(Bell & Clark, 1998) (Cole, 2008) (Rodriguez et al., 2004)	(Robinson-Irvin et al., 2016)
African American Learning Preferences	(Allen & Butler, 1996) (Bailey & Boykin, 2001) (Boykin et al., 1997) (Boykin & Bailey, 2000) (Boykin & Cunningham, 2001) (Boykin et al., 2004) (Bui & Fagan, 2013) (Cole & Boykin, 2008) (Cunningham et al., 2017) (Dill & Boykin, 2000) (Hurley et al., 2005) (Lee, 1995) (Parson, 2008) (Parson et al., 2005) (Serpell et al., 2006) (Serpell & Cole, 2008) (Tyler et al., 2006)	(Lo et al., 2011)

Step 2: Conducting the Searches

To begin the formal systematic review, I conducted a number of searches using the J. Murrey Atkins Library search engine tool at the University of North Carolina at Charlotte. This search engine retrieved articles from multiple electronic databases, including *ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center,* and *Urban Studies Abstracts*. I conducted searches for studies aligned with components of the CSPAAS framework using a combination of search strategies such as Boolean operators and truncation in alignment with recommendations from the literature on systematic reviews (Aliyu, 2017). Boolean operators are words (AND, BUT, OR) that can be used to narrow or expand keyword search results retrieved from databases (Aliyu, 2017). For instance, to retrieve results on math interventions for African American students, the Boolean operator "AND" can be used along with keywords "African American Students" and "math instruction" to search for all math interventions related to African American student populations. Truncation is another search strategy that allows for the use of a symbol at the end of the word to ensure database search results include all variations of a specific keyword being searched (Salvador-Oliván, 2019). For example, studies that investigate casual relationships may have some variation of the word "effect" in the title to denote a study was conducted to test the effectiveness or efficacy of a particular intervention. Thus, a truncated search of "effect*" can be used to retrieve all variations of the word within titles and abstracts on a desired subject. The current study used a combination of these search strategies to form search strands with the following terms and phrases: *African American students, ethnic studies, effect*, systematic review, literature review, cooperative learning, social justice, Afrocentric, music, verve, urban, learning preference, learning styles,*

reading, movement, Boykin A. Wade. Table 3 provides a summary of the search strands used and the databases searched for the current systematic review.

Table 3

Search Strands for the Systematic Review in this Dissertation

Search Strands and Keywords Used	Date of Search	Database(s) Searched	# of Studies Found
*(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students)	9/6/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	883
*(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and Ethnic studies	9/6/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	1
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and effect	9/6/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	397
*(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and systematic review or literature review	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	19

Table 3

Search Strands for the Systematic Review in this Dissertation cont.

Search Strands and Keywords Used	Date of Search	Database(s) Searched	# of Studies Found
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and cooperative learning	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	1
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and social justice	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	88
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and afrocentric*	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	16
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and music	9/8/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	39
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and verve	9/8/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	16

Table 3 *Search Strands for the Systematic Review in this Dissertation cont.*

Search Strands and Keywords Used	Date of Search	Database(s) Searched	# of Studies Found
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students) and urban	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	397
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (learning preference or learning styles)	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	24
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students AND reading)	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	17
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students AND movement)	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	6
Boykin, A. Wade	9/9/23	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	33

Table 3

Search Strands for the Systematic Review in this Dissertation cont.

Search Strands and Keywords Used	Date of Search	Database(s) Searched	# of Studies Found
(culturally sustaining pedagogy or culturally responsive teaching or culturally relevant pedagogy) AND (black students or African American students AND language)	2/26/24	ERIC, Academic Search Complete, APA PsycArticles, Child Development & Adolescent Studies, Education Research Complete, Exploring Race in Society, MathSciNet via EBSCOhost, Teacher Reference Center, Urban Studies Abstracts	33
Total Studies Retrieved			1,937

Note: The asterisk at the beginning of a search strand represents interrater reliability data collection.

Results from each individual search strand were imported into the Covidence systematic review software package. According to the Covidence website (www.covidence.org), it is a web-based collaboration software platform that allows researchers to streamline the production of systematic literature reviews. Covidence has been identified by a number of researchers as an evidence synthesis software tool that can assist with shortening the length of time taken to complete a systematic review by helping with the removal of duplicates, presentation of studies for easy and quick screening, and data extraction (Babineau, 2014: Kellermeyer et al., 2018; Macdonald et al., 2016). My searches in Step 2 yielded 1,937 studies.

Step 3: Screening for Inclusion/Exclusion Criteria

Title/Abstract Screening. All results of the searches described above were imported into Covidence (n = 1,937). The software identified and removed any duplicate studies obtained from the search results. A total of 630 duplicates were removed from the search results imported into Covidence, leaving 1,307 studies left to screen. Afterwards, I reviewed the titles and abstracts of all studies according to the inclusion/exclusion criteria. Only studies conducted between the

period of 1995 and 2023 were included in this current review. The year 1995 was chosen as the starting period for the search due to the CSPAAS framework relying heavily on the seminal works of Gloria Ladson-Billings and Geneva Gay produced in 1995 (Gay, 1995; Ladson-Billings, 1995). For this systematic review, I screened studies for the following inclusion criteria: (a) quantitative, group experimental and quasi-experimental studies that demonstrate a direct causal relationship between the intervention and positive academic and/or behavioral outcomes; (b) studies with interventions that incorporated at least one or more elements of the CSPAAS framework (i.e., social justice perspective, whole child perspective, African American learning preferences) as defined in Appendix B; (c) a majority of participants being African American students (*n* = 70% or more) or studies that reported enough information that data can be extracted from the study on African American students; (d) studies conducted in the United States; (e) peer-reviewed studies being published (i.e., assigned to a journal volume, had a doi number), and (f) interventions that took place in an educational setting. Studies that did not meet the inclusion criteria were excluded from the results of the search. The systematic review excluded studies with the following characteristics: (a) non-experimental designs, (b) single-case designs, (c) dissertation and thesis studies, (d) unpublished studies and other forms of gray literature, (e) studies that did not report sufficient data to calculate effect sizes (e.g., mean and standard deviations), (f) studies that did not report adequate information on participant demographics, research design, intervention data and/or measurement tools, and (g) studies that did not take place in the school or an educational settings (e.g., home-based interventions). For the purpose of this study, academic and behavioral outcomes are operationally defined. Academic outcomes included intervention effects on any measure of academic performance in any subject area (e.g., math, science, social studies, English/Language Arts) such as grade point average (GPA) and

assessment data. Behavioral outcomes included intervention effects on observable and measurable student behaviors, such as decreases in office disciplinary referral data, attendance rates, and engagement rates, but could be extended to include other behaviors such as motivation to learn, interest in content, levels of self-esteem, if appropriate measures were included. If I was unable to tell whether the studies were eligible from the title and abstract alone, they were included in the full screening process.

Due to the purported paucity of experimental studies on asset pedagogies such as culturally sustaining practices, this dissertation sought to identify intervention studies with experimental designs that demonstrated causal relations between CSPAAS interventions and academic and/or behavioral outcomes for African American students. Thus, qualitative and other non-experimental designs were not included. Studies using single-case designs were also excluded due to the differences in statistical calculation of effect sizes between group design studies and single-case studies, which make combining effect sizes of studies with these two different research designs difficult to interpret.

Full Text Screening. After screening titles and abstracts, I removed any studies that did not meet the inclusion criteria or met the exclusion criteria outlined above. I obtained PDF files of full texts for the remaining studies from online databases and uploaded into Covidence in preparation for full text screening. For the full text screening, I read each study in its entirety and screened them based on inclusion/exclusion criteria. For any studies removed at this phase of the screening process, I provided a rationale code or reason for the removal (e.g., wrong study design, wrong participant group).

Step 4: Data Extraction and Coding

I developed a coding sheet to capture key details of all studies that met the inclusion criteria during the full text screening process. Specifically, I coded studies for the following categories: *author and year of publication, title, educational setting, grade level, intervention location, total number of participants, race, study summary (brief description of study), intervention type (academic, behavioral or both), intervention academic subject area, intervention behavior subject area, CSPAAS component (SJP, WCP, AAP), study design, intervention program description, results, data analysis procedures, effect size reported, number of treatment groups/conditions and effect sizes reported, type of effect size reported (if any), Quality Assessment Score*, and *notes*. After coding all studies, I made a final decision for included studies and generated literature tables to summarize the results of the systematic review.

Data Analysis

I used descriptive statistics to analyze data extracted from studies identified from the systematic review. Specifically, I calculated an individual effect size for each study and recorded on the coding sheet. For studies with multiple effect sizes, I reported and calculated individual effect sizes and, when appropriate, these effect sizes were averaged to get a single effect size per study (Durlak, 2008; CEC, 2014). Effect sizes refer to the size or magnitude of the statistical significance found between two variables or groups. Standardized effect sizes provide an explanation of effect on a scale that can be easily interpreted. Thus, it is necessary to calculate standardized effect sizes when comparing results from different studies (Ferguson, 2016; Sullivan & Feinn, 2012). The general calculation for effect size entails taking the difference between the mean of two variables and dividing it by the standard deviation.

I calculated the effect sizes for all studies using a Hedges' g formula. Cohen's *d* is the most commonly used statistical measure of effect size for meta-analyses among several different formulas (e.g., Glass' delta, Hedges' g, Ferguson, 2016; Glass, 1975; Hedges, 1983). However, several of the studies identified from the systematic review had small sample sizes due to the nature of educational research taking place in settings with smaller student populations. Thus, the Hedges' g standardized mean formula provided the most appropriate formula for all studies in this dissertation study, because it can be used to correct for bias in small samples in studies (Hedges, 1983). This calculation for Hedges' g is represented here:

$$g = \frac{\bar{x}_1 - \bar{x}_2}{s^*}$$

Where, g=effect size; $\bar{x}_1$=mean of experimental group; $\bar{x}_2$=mean of control group; s^*=pooled standard deviation. Standard deviation refers to how spread out the data are from the mean or average data reported. Using the pooled standard deviation gives more weight to the variance of larger group sizes within studies. Both weighted and unweighted effect sizes across studies were reported to account for between study differences in sample size and variance. Hedges' g calculations are reported and interpreted as: < .2 = small effect, < .5 = medium effect, and < .8 = large effect.

In the included studies for review, several different types of effect sizes were reported depending on the unique characteristics of the studies. Half of the studies identified from the full screening process during step 3 did not report effect sizes (n = 11) or reported Cohen's *d* effect sizes (n = 3). If no effect size was reported, I calculated the effect size using the standard deviation, mean, and sample size. If Cohen's *d* was reported, then I converted Cohen's *d* to Hedges' *g*. Other studies (n = 6) reported alternate effect sizes (e.g., correlation, regression, eta squared) and I converted these effect sizes by hand calculations or with online effect size

calculators (Houle et al., 2005). For instance, for studies with pretest/posttest designs I adjusted the effect sizes by calculating the difference between mean posttest scores and mean pretest scores and then dividing it by the standard deviation of the pretest group (Morris, 2008).

Once I calculated and recorded effect sizes for all studies, I used a random effect model to calculate an overall effect size of all interventions aligned with the CSPAAS framework. The random effect model was deemed most appropriate due to the anticipated variation of conditions, methods, and population samples of studies identified from the systematic review (Borenstein et al., 2009; Cheung & Vijayakumar, 2016; Hedges, 1983). The random effect model assumes that populations included in studies are representative of larger populations; thus, differences in effects reported across studies are not assumed to be due to sampling errors (Borenstein et al., 2005; Cheung & Vijayakumar, 2016; Hedges, 1983). Instead, they are assumed to result from true differences between studies. For this reason, I used the random effect model due to the amount of possible variance between different studies identified from the systematic review, as educational research often takes place under a wide variety of different conditions and settings (Ferguson, 2016; Sullivan & Feinn, 2012). The calculation for the random effect model is represented here:

$$E\,Q = \tau\,2\,\sum w\,i\,,\,F\,E - \sum w\,i\,,\,F\,E\,2\,\sum w\,i\,,\,F\,E + k - 1$$

Where Q is calculated using an estimate from an FE analysis $\mu\,\hat{}\,F\,E$ with, $Q = \sum w\,i\,,\,F\,E\,y\,i - \mu\,\hat{}\,F\,E\,2 = \sum y\,i - \mu\,\hat{}\,F\,E\,2\,v\,i$ (DerSimonian & Laird, 1986). Lajeunesse (2021) published a step-by-step online guide to calculate random effects for meta-analysis. I used this guide to formulate the spreadsheets in Microsoft Excel to calculate the random effect for this current meta-analysis (Lajeunesse, 2021).

To assist with data analysis, I presented data graphically (Borenstein, 2009; Neyeloff et al., 2012). Specifically, I generated forest plots for analysis. Figure 3 provides an example of this graph. In a forest plot, each study's effect size is signified by lines and squares. The size of the squares signifies weighted contributions to the overall point estimates of the effect sizes. The overall point estimates of effect size are represented by a diamond at the bottom of the forest plot. The tips of the diamond in the forest plot represent confidence intervals or how confident or certain a researcher may be about whether the current results lie in the range of values of the population studied. Confidence intervals are primarily set at 95% to represent that the researcher is 95% confident that data reported are representative of the true average or mean of the population studied.

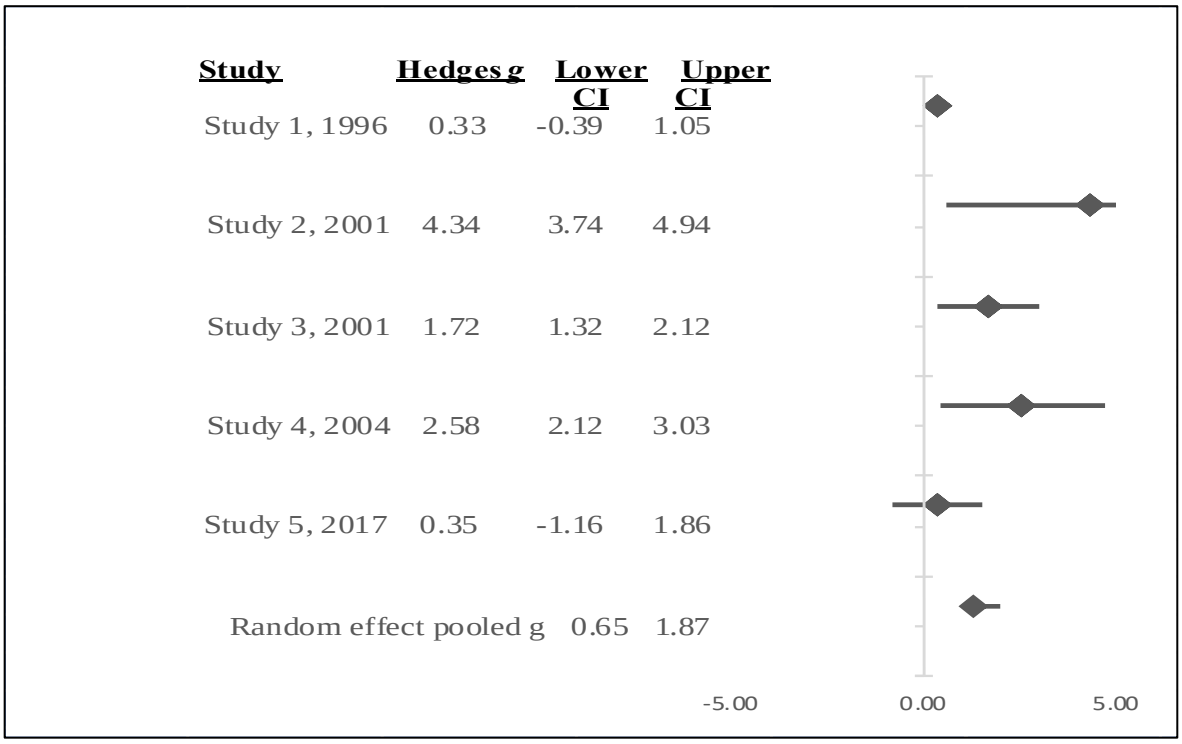

Figure 3

Sample Forest Plot of Example Data

Bias Assessment

Publication bias has long been identified as a major drawback of meta-analytic research (Franco et al., 2014; Rosenthal, 1979). It is commonly referred to as the "file drawer" problem where studies with statistically significant results are more likely to get published, whereas those with null findings, or findings that do not support positive associations between interventions and groups, are relegated to proverbial file drawers (Franco et al., 2014; Rosenthal, 1979). The inclusion of only studies with statistically significant results can make conclusions drawn from meta-analytic studies unreliable and can result in exaggerations of the true effect of an intervention due to all results not being taken into account (Dubben & Beck-Borneholdt, 2005).

To account for the presence of publication bias in this study, I calculated the Rosenthal's failsafe N formula. The statistic is a common way to account for possible missing unpublished studies by estimating how many possible missing studies (failsafe studies) would need to be accounted for before results from a meta-analysis became nonsignificant (Becker, 2005; Rosenthal, 1979). This calculation is described below:

$$N_{fs} = \frac{N(d - d_c)}{d_c - d_{fs}}$$

In this equation, N_{fs}=number of failsafe studies; N=number of studies in the meta-analysis; d_c=lowest possible value of overall effect size calculated (e.g., In Hedges' g, 0.2 = smallest effect size); d=average effect size; d_{fs}=number of failsafe studies needed to lower effect size. In this dissertation, I used a funnel plot to present the results graphically. Funnel plots can be used to visually analyze publication bias (Light & Pillemer, 1984). The assumption is that smaller studies may be more susceptible to bias than larger ones due to the amount of effort larger studies may require from researchers. If publication bias exists, it more than likely could be due to smaller studies with negative results being unpublished. Therefore, on the funnel plot, the size

of the study is contrasted against the reported effect size of the study. As the size of the study increases, it is thought that studies will congregate around a true effect size on either side whether positive or negative. When there is asymmetry in the graph, however, this may indicate publication bias where charted studies only show up to the right of the true effect size on the graph in absence of any potential negative results from studies that may not have been published (Harbord et al., 2006). See Figure 4 for a sample funnel plot of data.

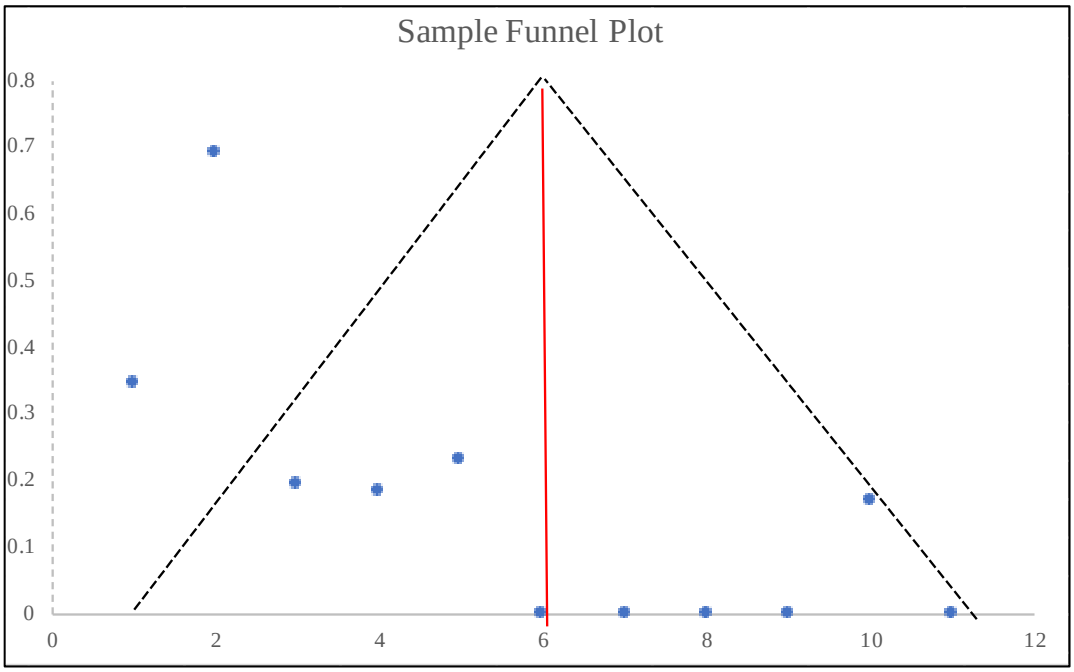

Figure 4

Sample Funnel Plot of Example Data

Methodological Rigor

Some systematic reviews and meta-analysis reports averaged effect sizes on studies that have not been evaluated for methodological rigor. The PRISMA statement, however, encourages use of tests of methodological rigor when conducting systematic reviews and meta-analyses (Moehr et al., 2009). Tests of methodological rigor aim to examine the quality of the studies identified in support of interventions evaluated. Gersten et al. (2005) proposed that interventions

should have a sound body of research that meets specific criteria before an intervention can be considered an evidence-based practice or a practice with a rigorous body of research that supports its efficacy for group experimental studies. Gersten et al. and Horner et al. (2005) developed a checklist of quality indicators for group and single-case designs, respectively, to help researchers evaluate the methodological rigor of studies conducted on specific interventions. In 2014, CEC modified and adopted these guidelines to evaluate the quality of research to determine whether there is sufficient support to deem a practice as evidence-based.

In this dissertation study, I evaluated studies identified from the systematic review using a modified version of the CEC (2014) Standards for Evidence-based Practices for group experimental designs based on the inclusion/exclusion criteria of this study. Figure 5 provides a flow chart for how studies were evaluated for quality and how I determined the extent to which the CSPAAS framework was evaluated as an evidence-based practice according to the CEC Standards.

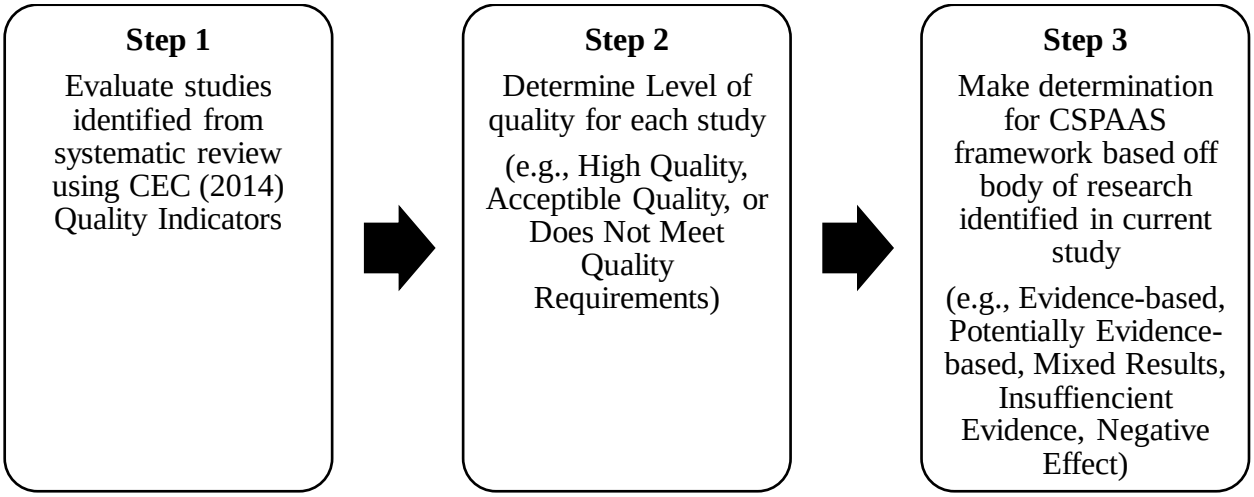

Figure 5
Procedures for Evaluating Quality of CSPAAS Studies and Determining CSPAAS Classification as an Evidence-Based Practice

The CEC standards comprise a checklist of 24 quality indicators for group studies that assess the following eight categories of research: context and setting, participants, intervention agents, descriptions of practice, implementation fidelity, internal validity, and outcome measures and data analysis. I evaluated each study included in the meta-analysis using this checklist to determine whether the study met or did not meet the requirements for each of the quality indicators. I used a weighted coding system to evaluate the studies and ensured credit was given for quality indicators that might be partially met (Lane et al., 2014). Weighted coding systems are often used in lieu of absolute coding systems where studies are only given credit for each major quality indicator if all components of the quality indicator are met. I assigned an overall score of 0, 0.5, or 1 for each of the eight categories for each study. Studies that met all of the components of an indicator received a score of 1. Those that met fewer than all of the components of an indicator received a score of 0.5. Studies that met none of the criteria for the indicators received a score of 0. Studies determined to be methodologically sound were those that met at least 80% of the eight categories of the checklist. Studies meeting 80% or higher of the quality indicator requirements were classified as high-quality studies. Studies meeting between 50% and 79% were determined to be acceptable quality studies, and those meeting 20% or less were classified as not meeting quality requirements.

After I evaluated each study, I determined the extent to which these studies provided sufficient evidence for the CSPAAS framework to be considered an evidence-based practice. The framework was categorized as one of the five classifications: (a) evidence-based practice, (b) potentially evidence-based practice, (c) mixed effect, (d) insufficient evidence, or (e) negative effect. According to CEC (2014), to be categorized as an evidence-based practice, there must be two or more group comparison studies of acceptable or high quality with random

assignment to groups, demonstration of positive effects, and at least 60 total participants across studies. Alternatively, the CSPAAS framework can also be categorized as an evidence-based practice if there are four or more group comparison studies of acceptable or high quality with non-random assignment to groups, demonstration of positive effects, and 120 or more total participants across studies. In addition, there must be no studies of high or acceptable quality that demonstrate negative effects and no more than one study with neutral or mixed effects for every three high quality studies identified from the literature (CEC, 2014).

To be categorized as a potentially evidence-based practice, there must be one group study of high or acceptable quality with random assignment to groups and positive effects or at least three or more group comparison studies of high or acceptable quality with non-random assignment to groups, and positive effects. Moreover, there can be no studies of high or acceptable quality with negative effects, and no more than one study with neutral or mixed effects for every two high quality studies with positive effects identified from the literature (CEC, 2014).

To be categorized as having a mixed effect, studies must meet the same criteria as an evidence-based or potentially evidence-based practice. However, there may be studies with less than a 2:1 ratio of those that demonstrate positive effects and neutral effects, or the number of high or acceptable quality studies with negative effects do not outnumber those with positive effects. An intervention can be labelled as having insufficient evidence if it does not meet the criteria outlined in any of the other categories outlined above. Finally, an intervention can be classified as having a negative effect if more than one high or acceptable quality study demonstrated negative effects and the number of studies demonstrating negative effects

outnumbers those of high or acceptable quality with positive effects. Table 4 outlines the criteria for evidence-based classifications described above.

Table 4

Criteria for Evidence-Based Classifications based on CEC (2014)

Classification Category	Evidence Requirements
Evidence-Based Practice	• 2 or more group comparison studies of high or acceptable quality with random assignment to groups • Studies must demonstrate of positive effects • At least 60 total participants across studies **OR** • 4 or more group comparison studies of high or acceptable quality with non-random assignment to groups • demonstration of positive effects, and 120 or more total participants across studies **AND** • No studies of high or acceptable quality that demonstrate negative effects • No more than 1 study with neutral or mixed effects for every three high quality studies identified from the literature
Potentially Evidence-Practice	• 1 group study of high or acceptable quality with random assignment to groups and positive effects or • At least three or more group comparison studies of high or acceptable quality with non-random assignment to groups and positive effects **AND** • No studies of high or acceptable quality with negative effects **AND** • No more than 1 study with neutral or mixed effects for every 2 high quality studies with positive effects identified from the literature

Table 4

Criteria for Evidence-Based Classifications based on CEC (2014) cont.

Classification Category	Evidence Requirements
Mixed Effect	• Studies must meet the same criteria as an evidence-based or potentially evidence-based practice as described above. • There may be studies with less than a 2:1 ratio of those that demonstrate positive effects and neutral effects **OR** • The number of high or acceptable quality studies with negative effects do not outnumber those with positive effects
Insufficient Evidence	• Does not meet the criteria outlined in any of the other categories outlined above
Negative Effect	• More than one high or acceptable quality study demonstrates negative effects **AND** • The number of studies demonstrating negative effects outnumber those of high or acceptable quality with positive effects

Interrater Reliability

Interrater reliability is a measure of agreement between different researchers under identical conditions in a study (Bliese, 2000). To ensure all steps of this dissertation study are transparent and replicable, I measured interrater reliability across different phases of the meta-analysis.

Systematic Review Interrater Reliability

An undergraduate student majoring in psychology served as an interrater to conduct this systematic review. I trained the undergraduate student on how to conduct literature searches and to screen studies based on the inclusion/exclusion criteria and coded studies. Training consisted of having the undergraduate student conduct a search using combinations of key terms outlined in this dissertation and code one of the duplicate studies identified from the search. After the interrater was able to conduct the search and code one study, the training was complete. Interrater reliability was calculated by dividing the lower amount of studies identified by the larger amount of identical studies identified and multiplying the ratio by 100 to determine the percent of agreement for the systematic review. For this study, the undergraduate student conducted four of the same exact searches in the exact same databases during the systematic review phase of the study. The searches conducted by the interrater are denoted by an asterisk (*) in Table 1.

Afterwards, the undergraduate student screened approximately 30% of the 1,937 study abstracts retrieved from the initial searches for the systematic review (for a total of 581 studies). Studies were screened for inclusion and exclusion criteria outlined earlier in this study using the Covidence software. Once all studies had inclusion and exclusion criteria applied, the undergraduate student reviewed 30% of final full text screening.

Data Analysis

After eligible studies were identified from the systematic review and data were analyzed, an independent statistician calculated the effect sizes of 30% of the studies reported and reviewed the averaged effect size estimates of calculations reported for this study. Interrater

reliability was determined by taking the number of agreements for effect size scores and dividing it by the total effect size scores and multiplying by 100.

Methodological Rigor

To collect data on interrater reliability for the evaluation of the quality of the studies, I trained the undergraduate student to use the CEC (2014) quality indicators. Training consisted of the rater reviewing one randomly selected study and using the CEC (2014) Quality Indicators checklist to determine the quality of the study. The independent rater received instruction on how to use weighted coding where a study can be given credit for each component of a Quality Indicator to determine a final score in each category. Training also consisted of a practice session where the interrater evaluated a study with me. I reviewed the recommendations from Lane et al. (2014) and CEC (2014) guidelines for this process with the independent rater. Afterwards, the undergraduate student coded at least 30% of randomly selected studies independently. The results of the two independent coding processes were compared item by item while noting agreements and disagreements. The number of agreements for both raters were divided by the number of agreements plus disagreements and multiplied by 100 to get an interrater reliability percentage.

CHAPTER 4: RESULTS

The purpose of this dissertation was to determine the effectiveness of CSPAAS interventions on African American students' academic and behavioral outcomes and the quality of studies included in the systematic review by conducting a meta-analysis. The meta-analysis included a systematic review of the literature to identify studies aligned with the CSPAAS framework that met this study's inclusion/exclusion criteria. I used descriptive statistics to calculate effect sizes for each study identified from the systematic review if they were not reported. Afterwards, I averaged effects from each study using a random effect model to determine an overall effect of intrventions based on the CSPAAS framework. Additionally, I evaluated each study for its methodological rigor and quality using the CEC (2014) quality indicator for group design research. This chapter includes a report of the interrater reliability data, along with descriptive results of the systematic review, statistical analysis, publication bias analysis, and quality analysis.

Interrater Reliability Results

Interrater reliability data were collected throughout all phases of the meta-analysis. An undergraduate student served as the interrater during the stages of systematic review and the study quality assessment. An independent statistician served as the interrater for data analysis of effect size calculation.

Systematic Review

Interrater reliability data were collected during all phases of the screening process of the systematic review. First, the undergraduate student conducted four of the 14 (28.6%) exact searches in the exact same databases during the month of September in 2023, after I have completed the searches (September of 2023). There were no disagreements between the studies

retrieved by the undergraduate student and me, as the undergraduate student's searches yielded the exact same results as my searches. Thus, there was 100% agreement.

During the title and abstract screening phase, the undergraduate student individually screened 392 of the 1,307 studies (30%) identified from the searches after the Covidence software removed all duplicate studies from the 1,937 total studies identified from all searches. Of the 392 studies, there were four studies that were included by the undergraduate student as meeting inclusion criterion, but were not included by me. These studies met the inclusion/exclusion criteria but did not provide ample information needed to be able to calculate effect sizes. We met and resolved any disagreements. After these disagreements were resolved, there was 100% agreement between the two raters.

From the title and abstract screening phase, 204 studies were identified as potential studies. Of the 204 studies identified for full text screening, the undergraduate student independently screened 30% of these articles (i.e., 61 studies) for the full text review based on the inclusion/exclusion criteria. There were no disagreements that needed to be resolved and there was 100% agreement.

Data Analysis

An independent statistician selected a random sample of six studies from the 20 studies (i.e., 30%) identified from the systematic review to measure interrater reliability during the data analysis phase of the meta-analysis. The statistician independently used the information reported from these studies such as individual treatment effect size, standard deviations, mean averages and population size to calculate individual effect sizes, standard errors, confidence intervals, and confidence levels for each of the six studies. There were no differences in the results of the calculations done by both raters. Afterwards, the independent statistician ran a random effects

model using the Meta Comprehensive software package. There were also no differences in the results of this independent analysis, resulting in 100% agreement.

Quality Assessment

The undergraduate student independently assessed the quality of six of the resulting 20 studies (i.e., 30%) included in this meta-analysis using the same CEC (2014) quality indicator checklist. The scores of the undergraduate student were compared with my scores for each item on the quality indicator checklist for each of the six studies. There was an agreement of 100% between the raters on the methodological rigor of the evaluated studies.

Systematic Review

After the completion of multiple screening procedures, the systematic review yielded 20 studies that met the inclusion/exclusion criteria for this dissertation. See Figure 6 for a breakdown of the results based on the PRISMA guidelines. Table 5 provides a summary of each study included. Of the 20 studies, 15 reported on only academic interventions and 3 reported only behavioral interventions, and two studies addressed both academic and behavioral interventions. Therefore, the two studies with both academic and behavioral interventions were analyzed twice to extract academic effects and behavioral effects, respectively. There were 10 academic studies that were associated with all three components of the CSPAAS model: social justice perspective (SJP), whole child instruction (WCI), African American student learning preferences (AAP), whereas seven studies were associated primarily with the African American student learning preferences (AAP) component of the framework. Of the 17 studies that reported on academic interventions, 10 studies were on literacy interventions, 4 studies were on math interventions and 1 study was on science interventions. In two studies, researcher investigated intervention effects on both reading and math outcomes. For behavioral studies, four studies

were associated with all components of the CSPAAS framework and one study was associated with only the African American student learning preferences component of the framework. For behavior studies, 3 studies investigated invention effects on variables like student motivation to learn, and one study was on decreases in problem behavior, while another study was on school drop out rates. A total of 16,588 participants were identified from this systematic review and meta-analysis, all of whom were African American students.

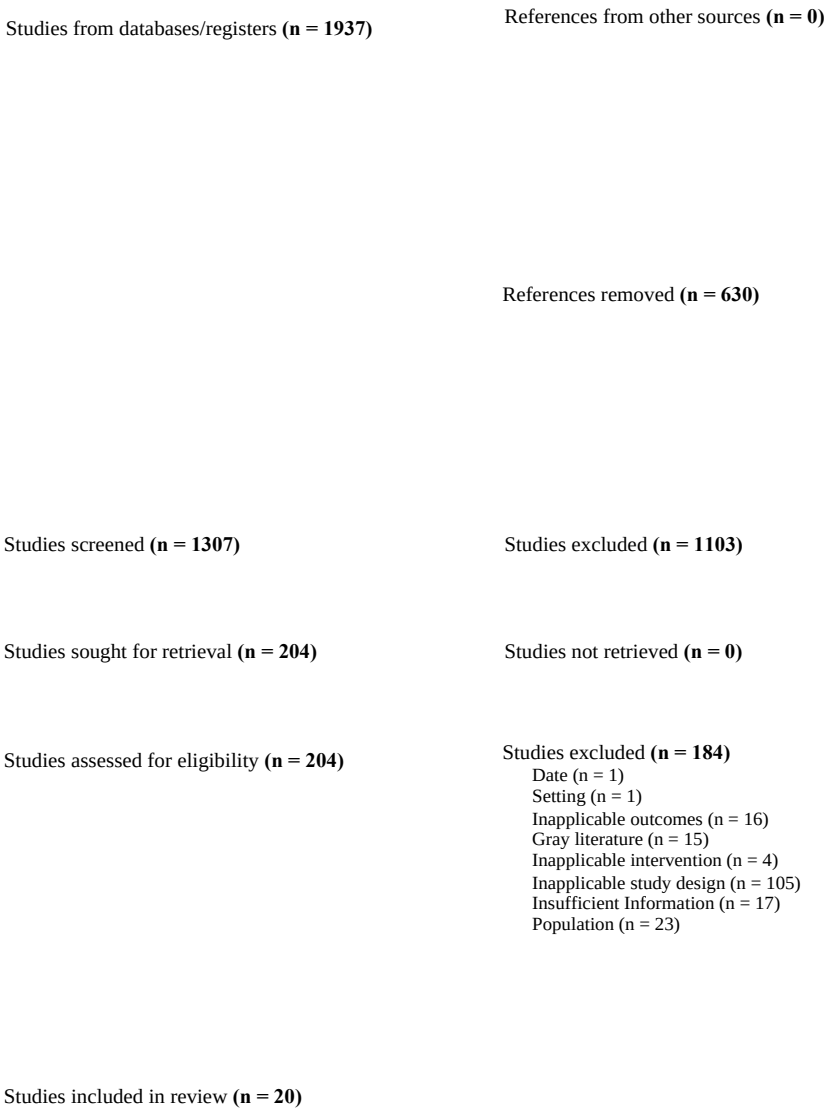

Figure 6

PRISMA Systematic Review Results

Table 5
Summary of Included Studies

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Allen & Butler, 1996	28 students (15 AA, 13 whites); elementary school; non-randomized experimental design; investigated whether music and movement opportunity impacts students analogical reasoning skills in reading (e.g., encoding, inferring and mapping) under different learning contexts- High Movement Expression (HME)/Low Movement Expression (LME); Results showed AA student performance significantly better under (HME) learning context.	Academic	SJP WCI AAP	0.33
Bailey & Boykin, 2001	72 AA students; elementary school; non-randomized experimental design; examined the effects of verve as defined by task variability on academic task performance and task motivation in African American students in two conditions where students were instructed to complete different tasks in random order (high variability) or in sequenced order (low variability); Results showed AA student performance significantly better under high variability condition. Students reported greater motivation in high variability conditions.	Academic (A) Behavioral (B)	AAP	A-4.342 B-0.446

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Boykin & Cunningham, 2001	64 AA students; elementary school; non-randomized experimental design; explored the effects of two different stories in two different learning contexts on student encoding and inferring skills. Conditions: Stories= Low Movement Theme stories/High Movement Theme Stories (LMT vs. HMT); Context=Low Movement Expressive/High Movement Expressive (LME vs. HME). Results showed students performed significantly better with stories with high movement themes and in high movement contexts.	Academic	SJP WCI AAP	1.72
Boykin et al., 2004	69 AA students; elementary school; non-randomized experimental design; investigated the effect of culturally-informed learning contexts on the geography recall performance of 69 African American students. Results revealed that students performed significantly better in the communal learning context than those in the individual context.	Academic	SJP WCI AAP	2.58

Table 5

Summary of Included studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Clark, 2017	131 AA students; elementary school; randomized experimental design; evaluated the effectiveness of a culturally responsive reading intervention with African American centered texts on reading achievement of African American students. Results indicated that students demonstrated significant improvements in the culturally responsive condition than those in the non-culturally responsive condition.	Academic	SJP WCI AAP	0.35
Cole & Boykin, 2008	48 AA students; elementary school; non-randomized experimental design; investigated the impact of learning conditions characterized by different types of music and movement opportunities on 48 African American students' story recall skills. Results reveal students performed best in learning conditions with higher opportunities to move and music incorportated over other conditions that did not have both music or movement incorporated.	Academic	SJP WCI AAP	0.755

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Coleman, 2017	96 AA students; elementary school; randomized experimental design; examined the effects of learning contexts on the performance ofAfrican American students' fraction problem solving skills. Results showed that students randomly selected for the communal learning context significantly outperformed students who learned in the individualistic context.	Academic	AAP	0.43
Cole et al., 2023	124 AA students; elementary school; randomized experimental design; examined lasting learning effects of communal contexts on ability to solve fractions. Findings showed that students in the communal condition outperformed those who learned individually.	Academic	AAP	0.731
Cunningham et al., 2017	64 AA students; elementary school; non-randomized design; African American students exposed to different stories in two different learning contexts and themesAfrican American students performed best with high activity stories in high movement learning contexts.	Academic	AAP	3.948

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Dee & Penner, 2021	15,250 AA male students; high school; non-randomized experimental design; investigated the effects of African American Male Achievement (AAMA) Program on African American student dropout rates. AAMA program focuses on classes for African American male students taught by black male teachers with lessons that emphasize social-emotional learning, ethos of community, personalize guidance and support in college-readiness. Findings revealed that AAMA significantly reduced African American students' dropout rates.	Behavioral	SJP WCI AAP	0.59
Dill & Boykin, 2000	72 AA students; elementary school; randomized experimental design; examined the literacy performance of African American students exposed to different learning contexts (communal, peer, individual) to learn about prose. Students in communal setting outperformed students in the area of story recall in both the peer and individual learning contexts.	Academic	SJP WCI AAP	0.702

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Gbolo & Grier-Reed, 2019	18 AA students; high school; non-randomized experimental design; investigated the impact of African American Student Network on African American students Results revealed positive trends in pre-post-test GPAs, referrals, attendance.	Academic (A) Behavioral (B)	SJP WCI AAP	A-0.169 B-0.192
Gordon et al., 2009	61 AA male students; middle school; non-randomized experiemental design; examined the effects of the Benjamin E. Mays Institute (BEMI) mentoring program with Afro-centric components on Black male students. Results revealed that students in the BEMI program had significantly greater academic attachment scores and academic success than their non-mentored peers.	Academic	SJP WCI AAP	1.48
Ha et al., 2021	39 AA students; elementary and middle school; non-randomized experimental design; investigated impact of culturally relevant summer reading camp on African American students' motivation to read. Findings demonstrated small positive impact on students' motivation to read in a variety of areas from pretest to posttest.	Behavioral	SJP WCI AAP	0.18

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Hurley et al., 2005	78 AA students; elementary school; non-randomized experimental design; investigated impact of learning contexts on student math skills. Results reveal students in high communal learning conditions significantly outperformed those in low communal settings	Academic	AAP	0.65
Mason & Chuang, 2001	51 AA students; elementary school; non-randomized experimental design; investigated the impact of Kuumba Kids positive behavior program on African American students' social competency scores. Findings indicated that experimental group experienced a statistically significant increase in scores compared to the comparison group.	Behavioral	SJP WCI AAP	0.93
Mesa et al., 2021	116 AA students; elementary school; non-randomized experimental design; examined reading scores of children participating in three sites of Freedom Schools to determine summer reading loss. Results revealed students experienced significant decreases in summer reading loss in comparison to those who did not participate.	Academic	SJP WCI AAP	0.22

Table 5

Summary of Included Studies cont.

Author & Year	Study Summary	Type of Intervention	CSPAAS Components	Effect Size
Serpell et al., 2006	90 AA students; elementary school; randomized controlled trial; study investigated the impact of contextual factors on African American students' learning on science tasks. AA students were randomly assigned to different communal groups to work on a task. Results revealed students scored significantly higher in communal learning contexts than control group context.	Academic	AAP	0.70
Serpell & Cole, 2008	100 AA students; elementary school; non-randomized experimental design; examined how movement in learning conditions impacted reading performance in story recall for 100 African American students. Results revealed students performed highest under learning conditions with movement and music.	Academic	AAP	0.94
Walker & Hutchinson, 2021	17 AA male students; middle school; non-randomized experimental design; investigated the effects of a Culturally Responsive Teaching (CRT) curriculum on African American male students' reading scores. Results revealed high significant increases scores by an average of 14.72 points.	Academic	SJP WCI AAP	1.035

Note: SJP = social justice perspective; WCI = whole child instruction; AAP = African American student learning preferences

Meta-Analysis

Random Effects Model Results

I employed a random effects model for the data analysis of the 20 included studies. Using the Comprehensive Meta-Analysis Version 4 software package (Borenstein et al., 2022), I carried out the computations. The studies in the analysis are assumed to be a random sample from available potential studies. Figure 7 displays the results of the random effects model for academic studies and Figure 8 displays results for behavioral studies. Results include effect size *g* and confidence intervals for reported effect sizes for each study. Confidence levels for each study were listed as the upper and lower limit of 95%. The mean effect size was 1.060 with a 95% confidence interval of 0.592 to 1.529. The mean effect size in the universe of comparable studies could fall anywhere in this interval. The confidence levels refer to the likelihood of getting close to the same estimate if we are to repeat the experiment again or resample the population in the same way. Lower limit confidence intervals that include 0.00 indicate results are not significant at the traditional 0.05 level (Borenstein, 2005).

Results revealed that academic interventions aligned with at least one component of the CSPAAS theoretical framework had an overall effect size of 1.01 (CI=1.11–1.60). The effect size used in this random effects model was Hedges *g.* Hedges *g* effect sizes are interpreted as: 0.2 or below = small effect, 0.5 = medium effect, and 0.8 and above = large effect. An effect size of 1.01 can be interpreted as CSPAAS interventions having extremely large positive effects on African American students' academic achievement across content areas. Behavioral interventions aligned with the CSPAAS theoretical framework had an overall effect size of 0.5, indicating these interventions were moderately effective on positively affecting African American students' behaviors. There were significantly fewer studies associated with behavioral

interventions (n = 5) than there were academic interventions (n = 17) extracted during the systematic review process.

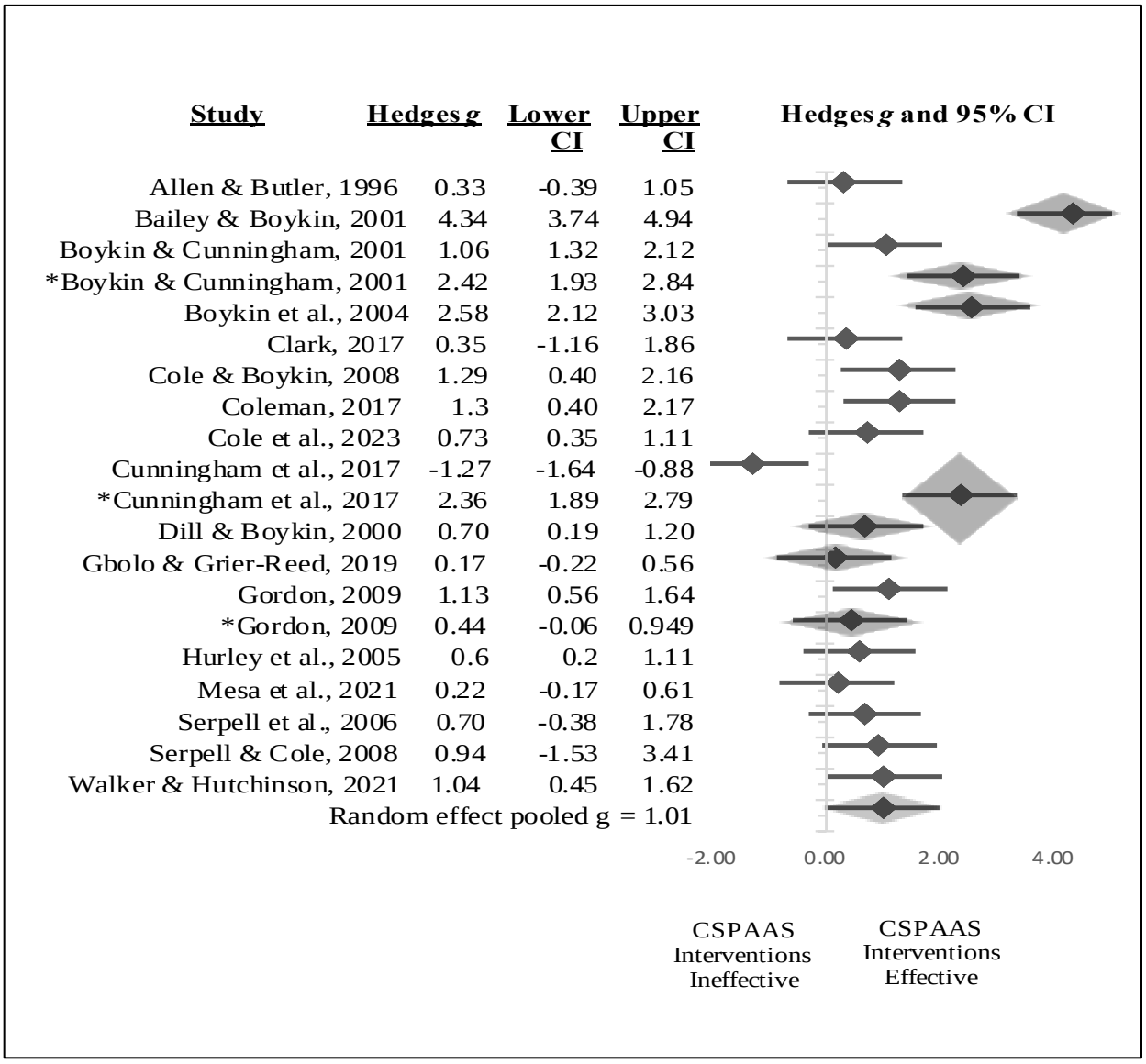

Figure 7

Random Effects Model Results for Academic Interventions

*Studies with asterisks indicate different research conditions that were reported separately from the same study.

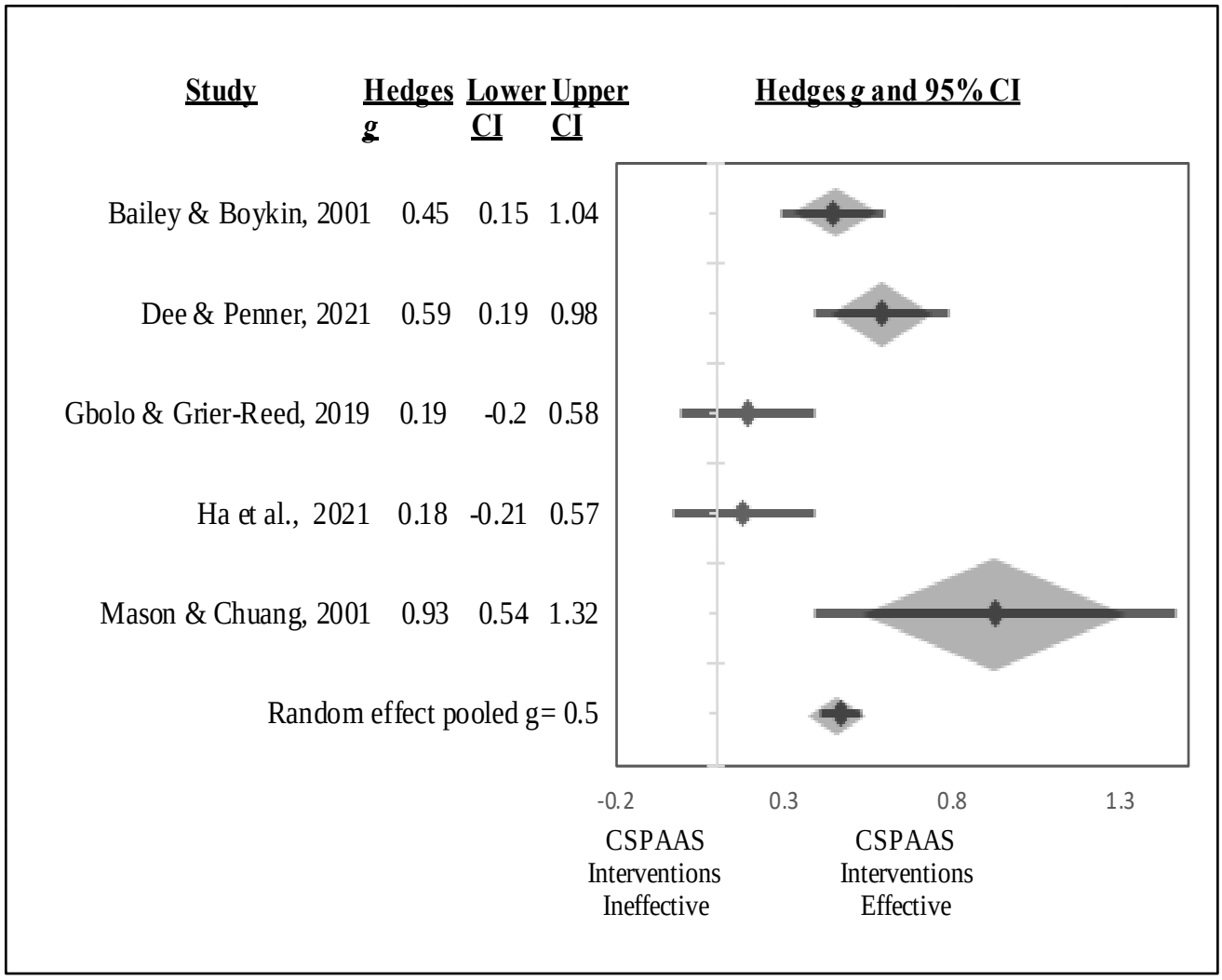

Figure 8

Random Effects Model Results for Behavior Interventions

*Studies with asterisks indicate different research conditions that were reported separately from the same study.

Overwhelming majority of studies extracted and analyzed were on interventions that took place in the elementary school setting (n = 16). Four studies took place in the middle school setting and only one study was identified as having an intervention provided in the high school setting.

Results for Publication Bias

I employed statistics to test for publication bias in the data set presented in this dissertation and graphed data using a funnel plot. The funnel plot is a plot of a measure of study size on the vertical axis as a function of effect size on the horizontal axis. On funnel plots, larger studies appear at the top of the graph and cluster near the mean effect size, whereas smaller studies appear towards the bottom of the graph due to there being more sampling variation in effect size estimates in smaller studies that will be dispersed across a range of values. If there is relatively little publication bias, we would expect studies to be distributed symmetrically on each side of the line that indicates the mean effect size of all studies. If there is asymmetry, this could reflect that smaller studies may have been more likely to be published if they have larger than average effects (Borenstein, 2009). Figure 8 reflects the funnel plot for this dissertation, which shows symmetry on both sides of the effect size line indicating very little publication bias.

Additinally, I employed the Rosenthal's fail-safe statistic to account for possible missing unpublished studies by estimating how many possible missing studies (failsafe studies) would need to be accounted for before results from this meta-analysis became nonsignificant (Becker, 2005; Rosenthal, 1979). The fail-safe *N* value for this study was calculated to be 1,651. This means that 1,651 null studies or studies with nonsignificant effects would need to be identified for the true effect established from this meta-analysis to be nullified or rendered nonsignificant, thus indicating very little publication bias present in this study.

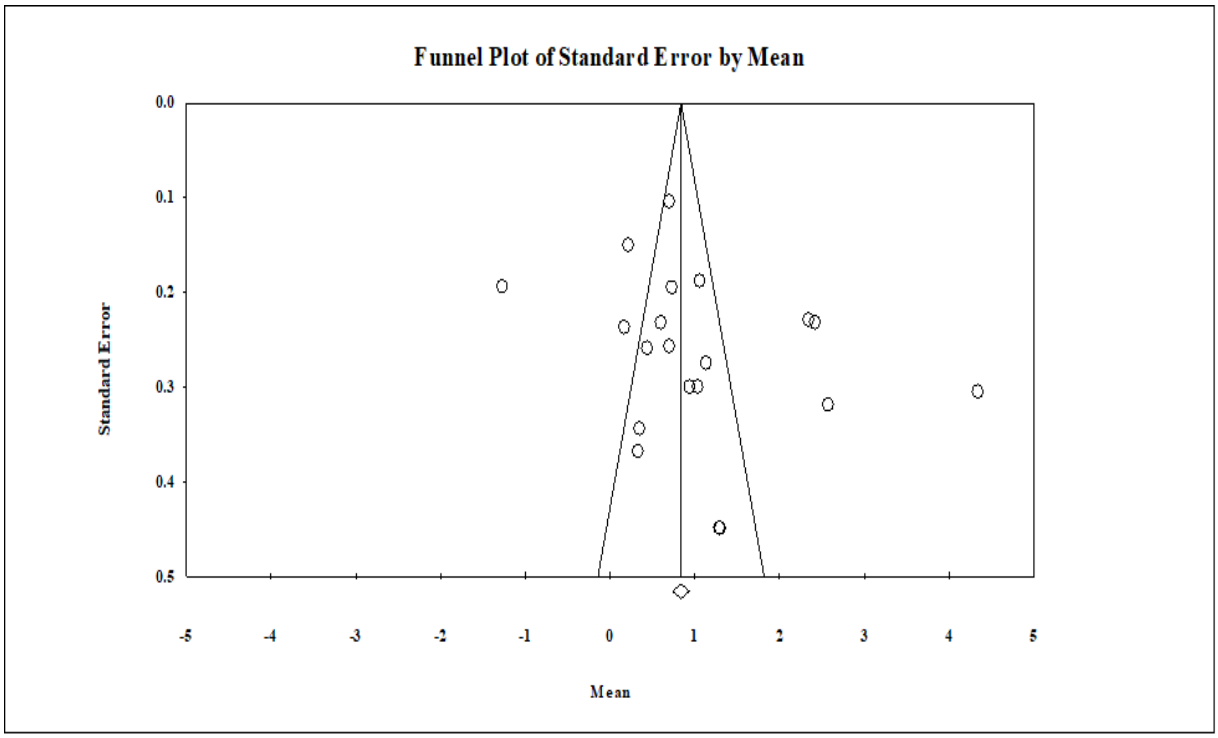

Figure 9

Funnel Plot Depicting Publication Bias

Methodological Rigor

To determine their methodological rigor or quality, I evaluated each study identified from the systematic review using CEC standards. The CEC (2014) standards checklist consists of 24 quality indicators for group studies that assess: context and setting, participants, intervention agents, descriptions of practice, implementation fidelity, internal validity, and outcome measures and data analysis. Each study could receive total possible 8 points; the received score was divided by 8 and then multiplied by 100 to obtain a percentage quality assessment score. Results for the quality assessment are available in Table 6.

Table 6

Quality Assessment of Studies

Author & Year	1.0 Context and setting	2.0 Participants	3.0 Intervention	4.0 Description of practice	5.0 Implementation fidelity	6.0 Internal validity	7.0 Outcome measures/ dependent variables	8.0 Data Analysis	Total Score (Sum of QI Scores)	Total Percent Score (Sum of QI)
Allen & Butler, 1996	1	1	1	1	0	1	0.5	1	6.5	81.25
Bailey & Boykin, 2001	1	1	1	1	0	1	0.5	1	6.5	81.25
Boykin & Cunningham, 2001	1	1	1	1	0	1	0.5	1	6.5	81.25
Boykin et al., 2004	1	1	1	1	0	1	1	1	7	87.50
Clark, 2017	1	1	1	1	0	1	0.5	1	6.5	81.25
Cole & Boykin, 2008	1	1	1	1	0	1	0.5	1	6.5	81.25
Cole et al., 2023	1	1	1	1	0	1	1	1	7	87.50
Cunningham et al., 2017	1	1	1	1	0	1	0.5	1	6.5	81.25

Table 6

Quality Assessment of Studies cont.

Author & Year	1.0 Context and setting	2.0 Participants	3.0 Intervention	4.0 Description of practice	5.0 Implementation fidelity	6.0 Internal validity	7.0 Outcome measures/ dependent variables	8.0 Data Analysis	Total Score (Sum of QI Scores)	Total Percent Score (Sum of QI)
Coleman, 2017	1	1	1	1	0	1	0.5	1	6.5	81.25
Dee & Penner, 2021	1	1	1	1	0	1	0.5	1	6.5	81.25
Dill & Boykin, 2000	1	1	1	1	0	1	1	1	7	87.50
Gbolo & Grier-Reed, 2019	1	1	1	1	0	1	0.5	1	6.5	81.25
Gordon, 2009	1	1	1	1	0	1	0.5	1	6.5	81.25
Ha et al., 2021	1	1	1	1	0	1	1	1	7	87.50
Hurley et al., 2005	1	1	1	1	0	1	0.5	1	6.5	81.25
Mason & Chuang, 2001	1	1	1	1	0	1	0.5	1	6.5	81.25
Mesa et al., 2021	1	1	1	1	0	1	0.5	1	6.5	81.25
Serpell et al., 2006	1	1	1	1	0	1	0.5	1	6.5	81.25
Serpell & Cole, 2008	1	1	1	1	0	1	0.5	1	6.5	81.25

Table 6

Quality of Assessment of Studies cont.

Author & Year	1.0 Context and setting	2.0 Participants	3.0 Intervention	4.0 Description of practice	5.0 Implementation fidelity	6.0 Internal validity	7.0 Outcome measures/ dependent variables	8.0 Data Analysis	Total Score (Sum of QI Scores)	Total Percent Score (Sum of QI)
Walker & Hutchinson, 2021	1	1	1	1	0	1	0.5	1	6.5	81.25

All studies included in this meta-analysis (n = 20) scored over 80%, indicating that they met the majority of the criteria (i.e., six or seven out of eight) outlined in the CEC quality indicator standards to be identified as being "High Quality" studies. Of the studies identified in this meta-analysis, 16 studies had a score of 81.25% and 4 studies had a score of 87.50%. The quality indicator that differentiated these four studies from the remaining studies involved the indicator 7.0: outcome measures/dependent variables receiving a score of "1" due to the reported data on social validity or the impact of the interventions, and/or presence of internal reliability measures such as reporting interrater reliability data. None of the studies identified in this meta-analysis reported information on any implementation or procedural fidelity measures (i.e., Indicator 5.0) that might have been used, thus lowering methodological rigor scores across the board.

According to CEC (2014), to be categorized as an evidence-based practice, there must be two or more group comparison studies of acceptable or high quality with random assignment to groups, demonstration of positive effects, and at least 60 total participants across studies, or 4 or more group comparison studies of high or acceptable quality with non-random assignment to groups demonstration of positive effects and 120 or more total participants across studies.

Additionally, there can be no studies of high or acceptable quality that demonstrate negative effects and no more than one study with neutral or mixed effects for every three high quality studies identified from the literature (CEC, 2014). An evaluation of the 20 included studies that aligned with the CSPAAS framework revealed all studies were high-quality studies. For the 17 studies that reported academic outcomes, five studies involved random assignments to groups. Overall, the 17 academic total demonstrated positive effects with an effect size of $g = 1.01$ (i.e., highly effective) across 1,175 participants. For the 5 behavior studies, none them involved random assignment to groups in their research design. Yet these studies still meet the criteria outlined in CEC (2014) for evidence-based practices due to having at least four or more group studies of high or acceptable quality with non-random assignment to groups that demonstrate positive effects on 120 or more total participants. These studies yielded an effect size of $g = 0.5$ (i.e., moderately effective) for behavioral interventions for over effect size of $g = 0.5$ across 15,435 participants. Thus, both academic and behavior CSPAAS interventions have met the requirement to be categorized as evidence-based practices for African American students.

CHAPTER 5: DISCUSSION

For this dissertation study, I outlined the Culturally Sustaining Pedagogy for African American Students (CSPAAS) theoretical framework and conducted a meta-analysis of intervention studies aligned with at least one component of the framework. The purpose of this dissertation was to investigate the effectiveness of CSPAAS interventions on African American students' academic achievement and behavioral outcomes. Studies searched in this meta-analysis were over a 28-year period from 1995 to 2023 and included only experimental group design studies. During the systematic review stage, I screened over 1,937 articles, yielding 20 studies that met the inclusion criteria for this dissertation study. The 20 studies provided information on the effectiveness of interventions aligned with the CSPAAS framework for over 16,588 African American student participants. I analyzed the 20 studies and calculated individual effect sizes and an overall effect size for academic and behavioral intervention studies. I also evaluated each study using the CEC (2014) quality indicator standards to determine the methodological rigor of each study. Results showed that academic intervention studies aligned with the CSPAAS theoretical framework were found to be highly effective with an effect size of $g = 1.01$, and behavioral intervention studies aligned with the CSPAAS framework were found to be moderately effective with an effect size of $g = 0.5$. Additionally, all 20 studies identified scored over 80% according to the criteria outlined by CEC quality indicators (CEC, 2014) and were considered high-quality studies. Thus, academic and behavioral interventions aligned with the CSPAAS framework have met the requirement to be categorized as being evidence-based. In this chapater, I will provide a discussion of the results organized by research questions, and discuss contributions, limitations, suggestions for future research, and implications for practice.

Research Question 1: What is the effectiveness of culturally sustaining academic interventions aligned with the CSPAAS framework on African American students' academic outcomes?

Based on findings from the current study, academic interventions aligned with the CSPAAS framework were found to be highly effective (g = 1.01). These findings were consistent with the literature on the positive effects of culturally sustaining practices for African American students (Clark, 2017; Coleman et al., 2023; Hayling et al., 2009). Several researchers have identified culturally sustaining practices as being apart of asset pedagogies that center students' unique cultural experiences within the classroom and use them to leverage student motivation and engagement by teaching content in a way that helps students make meaningful connections between themselves, their communities, and academic learning (Gbolo & Grier-Reed, 2019; Paris & Alim, 2014).

Of the 20 studies included in this meta-analysis, a total of 17 studies included academic interventions aligned with the CSPAAS framework. Most of the academic studies (n = 10) identified from the systematic review had interventions that embedded all three components of the CSPAAS framework (i.e., cultural/linguistic social justice perspective, whole child instruction, African American learning preferences). Interventions with all three components had effect sizes that varied greatly (g = 0.22 to g = 2.58), but still have at the very least a small effect (e.g., g = >0.2 small effect). One possible explanation for such a wide range of effects across the academic studies that used all components of the CSPAAS framework could be the types of interventions used in these studies. In the study on the intervention with the highest effect (n= 2.58) (Boykin et al., 2004), researchers investigated the effect of two different learning contexts on African American students ability to read a text and recall information on the text about the

geography of Africa. The two learning contexts were communal or individual. In the communal learning context, students were encouraged to work in small groups of three and help each other understand the text and do well on a short quiz on the text afterwards. Additionally, within this learning context, students were informed that the overall group score was contingent on everyone doing well to enhance student cooperation. In the individual context, students worked independently to read the article and complete the quiz on the African geography. Several of the other studies that investigate the effects of culturally sustaining learning contexts have some of the highest effect sizes reported in this dissertation (e.g., Boykin & Cunningham, 2001; Cole & Boykin, 2008; Dill & Boykin, 2000). Thus, communal learning contexts and cooperative groups were demonstrated to be consistently effective for African American students. These findings are supported in the literature by several researchers who have made connections between cooperative learning and student academic success (Kyndt et al., 2013). For instance, Kyndt et al. (2013) conducted a meta-analysis of studies between the years 1995 and 2012 that investigated the effects of cooperative learning on student academic achievement. It produced over 51 studies demonstrating cooperative or group learning environments having an average effect size of .54 on student achievement. Culture also emerged as a variable for student success in this study, with cooperative learning strategies having a larger positive impact on students from cultural backgrounds that prioritize group dynamics over individual achievement (Kyndt et al., 2013).

In addition to cooperative learning environments that could be associated with both the social justice perspective and African American learning preferences components of the CSPAAS framework, studies with the higher effect sizes had interventions that included curriculum, learning materials or programs centered around African American culture or history.

For instance, Gordon et al.(2009) examined the effects of the Benjamin E. Mayes Institution (BEMI) mentoring program on 61 African American middle school male students. The mentoring program included elements of culturally sustaining practices such as giving students opportunities to work with peers socially, and teaching lessons that incorporated elements of cultural pride linked to Afro-centric ideals around *Kujichagulia* (self-determination), *Ujamaa* (cooperative economics), Uhuru (freedom and social justice), and Maat (truth). Students in this program met with successful black male mentors recruited from local businesses and universities. They attended weekly meetings to learn concepts related to becoming a well-rounded individual in service to one's family and community. These male mentors also provided students with their instruction in core areas for the duration of the program that lasted the entire school year. Students were expected to demonstrate academic excellence as role models and community leaders. Participants in the BEMI program had significantly higher scores in the areas of GPA and end-of-year test scores in math and reading. These results on the effectiveness of programs that utilize a wide range of all components of the CSPAAS model are supported in other studies as well (Cole & Boykin, 2008; Dill & Boykin, 2000).

Whereas interventions using all components of the CSPAAS framework were found to be highly effective, there were seven studies that used interventions aligned only with African American learning preferences that also demonstrated positive impacts on student achievement. Effects for these seven studies ranged from 0.4 to 4.34 revealing variability in degrees of effectiveness for these interventions. Interventions with the highest scores included elements of movement and music (Boykin & Bailey, 2001; Serpell & Cole, 2008) and the communal learning context emerged yet again as a prominent variable connected to positive academic outcomes for

African American students (Cole et al., 2023; Coleman, 2017; Hurley et al., 2005; Serpell et al., 2006).

In the intervention study aligned with only the African American learning preferences that had the highest effect size, researchers (Bailey & Boykin, 2001) examined how levels of task variability could impact African Amerian students' academic performance. In this study, 72 third and fourth grade African American students were directed to complete a set of academic tasks in the areas of reading, math, and picture sequencing in two different learning contexts. One learning context had low task variability, as students were given all of the tasks associated with reading, and then math and so on. In the second learning condition, students were given a random sequence or mix of all tasks. The average scores across all tasks were higher for students in the high task variability condition (M = 5.23, SD = .084), than the low variability condition (M = 4.87, SD = .080).

Additionally, several studies (n = 9) were associated with learning contexts specifically. These studies demonstrated how classroom learning contexts where students worked and interacted in small groups, incorporated movement, music, and high levels of stimuli outperformed students in control groups across a number of content areas (Allen & Butler, 1996; Boykin & Cunningham, 2001; Clark, 2017; Cole & Boykin, 2008). This emerged as a pattern within the academic results of these studies. Specifically, several researchers have corroborated these findings positing that classrooms with high levels of engagement and activity are correlated with higher student achievement. Some of these recommendations can be seen in instruction frameworks such as Universal Design for Learning strategies (King-Sears et al., 2023), where there has been a call for varied instructional methods and multiple ways for students to demonstrate and express their knowledge in content areas (Spooner et al., 2007; Walker et al.,

2017). Such findings echo what researchers have asserted about African American student learning preferences and their potential to positively impact student achievement.

Research Question 2: What is the effectiveness of culturally sustaining behavioral interventions aligned with the CSPAAS framework on African American students' behavioral outcomes?

There were substantially fewer studies identified on the impact of behavioral interventions aligned with the CSPAAS framework with only five group design studies. The average effect size for these studies was 0.5, indicating that these interventions had a moderate size effect on African American students' behavioral outcomes. Effect sizes for behavioral interventions studies varied greatly from 0.18 to 0.93 across a number of different behavioral outcomes, including increased student motivation to participate in school (Bailey & Boykin, 2001; Ha et al., 2021), high school drop out rates (Dee & Penner, 2021), student attendance (Gbolo & Grier, 2019), and social skills (Mason & Chuang, 2001). Studies with higher effect sizes (g = >0.5) were intervention studies that included all components of the CSPAAS framework to affect social emotional learning, and increase self-esteem and leadership skills in African American students (Dee & Penner, 2021; Mason & Chuang, 2001).

There were some studies with behavioral interventions that demonstrated effects on African American student behaviors such as GPAs, student referrals, attendance rates, and learning motivation with relatively lower effects varying from 0.18 to 0.446 (Bailey & Boykin, 2001; Gbolo & Grier-Reed, 2019; Ha et al., 2021). The study with the lowest effect size was found in Ha et al. (2021) who reported on an intervention aligned with all three components of the CSPAAS framework. In their study, they selected students with relatively high levels of autonomous reading motivation to see if the provision of a culturally responsive instructional

summer reading program could help them maintain or increase their motivation to read over the summer. Summer reading loss among students of color has been widely documented (Kim & Quinn, 2013; McDaniel et al., 2017) and attributed to inequitable access to educational resources in these communities such as book deserts where minority students who may come from lower socioeconomic communities may have less access to literary resources (Scholastic, 2019). The relatively small effects observed from students receiving the culturally responsive summer reading intervention might be due to participants already scoring high in these areas and thus making it difficult to show growth in their motivation to read from the beginning of the program to its ending (Ha et al., 2021). In spite of participants already demonstrating high levels of academic motivation, their participation in the culturally responsive summer reading program with features such like the Freedom Schools culturally integrating reading curriculum and connections to students' local communities still allowed them to experience modest increases in their already high levels of reading motivation.

This could be an indication that even when students already exhibit behaviors that can be correlated with successful outcomes, interventions aligned with CSPAAS framework may still be useful in positively influencing behavior. With such a small sample size of studies, however, it is diffficult to draw any significant conclusions (Borenstein, 2009). Certainly, researchers have echoed the need for cultural dimensions to be added to approaches used to help students improve social behavior, including the call for the addition of cultural dynamics within PBIS (Bal, 2018; Sugai et al., 2012). For instance, Bal (2018) reiterates the necessity of incorporating culture into behavior management systems by incorporating practices that bridge differences between student cultures and school cultural norms. However, more research is needed to determine exactly what these cultural dimensions would entail.

Research Question 3: What is the quality of the research conducted on culturally sustaining academic and behavioral interventions aligned with the CSPAAS framework?

Each of the 20 studies included in this meta-analysis was evaluated for the quality of their methodological rigor using the CEC (2014) quality indicator checklist in the areas of: context and setting, participants, intervention, description of practice, implementation fidelity, internal validity, outcome measures, and data analysis. Each study could receive total possible 8 points, and I reported the percentage score (i.e., received score divided by 8 and then multiplied by 100) for each study.

All of the 20 studies included in the meta-analysis obtained scores of over 80%, indicating they were all of high quality. Fifteen of the studies obtained a score of 81.25% and five studies received a higher score of 87.5%. One of the patterns that emerged from the quality assessment data was that none of the studies included in this meta-analysis reported implementation fidelity data, which resulted in a score of 0 for that particular item (i.e., indicator 5.0) on the checklist. Moreover, studies with higher scores of 87.5% were those that provided sufficient data on the social validity of the interventions investigated, which affected the received score for indicator 7.0. The absence of implementation fidelity data has been identified as a major flaw as readers can not properly gauge whether the intervention works due to a lack of information and transparency about how it was delivered (Gresham et al., 2000). It also negatively impacts replication of effects because future researchers may be unsure of how to correctly implement interventions for future studies if no implementation fidelity data are presented (Slaughter et al., 2015). Thus, it is recommended that researchers include implementation fidelity measures and report these data with their findings.

After the evaluation of the quality of a study, the CEC (2014) quality indicator checklist allows researchers to make a decision on interventions and frameworks to be classified in one of the following categories as: (a) an evidence-based practice, (b) a potentially evidence-based practice, (c) mixed effect, (d) insufficient evidence, or (e) negative effect. Based on the criteria outlined by the CEC (2014) quality indicators, all of the studies (n = 20) included were rated as high quality. None of the studies included reported negative effects from the interventions on African American students' academic or behavioral outcomes. Moreover, according to CEC (2014), to be categorized as an evidence-based practice, there must be two or more group comparison studies of acceptable or high quality with random assignment to groups, demonstration of positive effects, and at least 60 total participants across studies. For academic interventions aligned with the CSPAAS framework, there were 17 studies all of which employed experimental group designs with demonstrations of an average positive effect size of g = 1.01 across 1,175 participants. Of these academic studies, five (Clark, 2017; Coleman, 2017; Cole et al., 2023; Dill & Boykin, 2000; Serpell et al., 2006) were randomized experimental studies and the other 12 studies were quasi-experimental studies without random assignment. Thus, academic interventions aligned with CSPAAS framework can be categorized as evidence-based practices for African American students. For behavioral interventions aligned with the CSPAAS framework, there were five studies and all employed quasi-experimental group designs with an average positive effect size of g = 0.5 across 15,435 participants. None of these studies randomly assigned participants in the research design, yet these studies still meet the criteria outlined in CEC (2014) for evidence-based practices due to having at least four or more group studies of high or acceptable quality with non-random assignment to groups that demonstrate positive effects on 120 or more total participants. Thus, behavioral interventions aligned with the

CSPAAS framework can also be categorized as evidence-based practices for African American students.

These findings extend prior reviews on culturally sustaining instruction (Aronson & Laughter, 2016; Dee & Penner, 2017; Morrison et al., 2008), in that prior to this study there were no meta-analytic studies that operationally defined culturally sustaining practices for African American students, systematically reviewed the literature for studies aligned with this theoretical framework, determined its effectiveness statistically, and evaluated the quality of identified studies. Morrison et al. (2008) presented a synthesis of classroom-based research involving elements of culturally sustaining pedagogy where they examined 45 classroom-based research studies starting from 1995 to 2008, and examined how culturally sustaining pedagogy was used in those classrooms to offer examples of its application across multiple class settings. Moreover, Jackson et al. (2010) conducted a systematic review and meta-analysis of culturally sensitive interventions used to affect high risk behaviors in African American youth. However, these reviews either lacked statistical analysis of their findings to establish the intervention effectiveness (Morrison et al., 2008) or did not focus on school-based interventions (Jackson et al., 2010).

Contributions

This dissertation contributes to the literature by extending the work of earlier researchers to provide an operationalized definition of what it means to be culturally sustaining in ways that directly impact African American students and by identifying intervention studies aligned with the definition advanced in the CSPAAS outlined in this dissertation. This study also contributes to the literature by providing statistical analysis of the effectiveness of these interventions reported and providing a synthesis of the overall effectiveness of these interventions.

Furthermore, this meta-analysis provides an assessment of the quality of the research associated with culturally sustaining practices for African American students and holds the promise of informing future researchers and stakeholders about interventions that could positively impact African American student academic and behavioral outcomes.

Limitations and Directions for Future Research

This meta-analysis had several limitations that warrant future research. The first limitation of this study concerned the potential omissions of studies that might have met the inclusion criterion but were not identified. For one, this study did not contact experts for study recommendations during the formal literature search stage. It is possible that authors of the studies included may have works that met the inclusion criteria but were not identified through the use of electronic databases. Similarly, there may be studies that were aligned with the inclusion critiera, but were not identified because they did not have essential keywords in the title or abstracts, and thus were not retrieved during the keyword searches. Future researchers are encouraged to include multiple stages and multiple methods of literature searches to ensure the searches are comprehensive and exhaustive. Future researchers are also advised to carefully select keywords associated with the major themes of their research and include these in their titles and abstracts to make it easier for other researchers to find their studies for future systematic reviews and meta-analyses. Tullu (2019) underscores the importance of researchers properly formulating suitable titles and abstracts with keywords to ensure studies are easy to retrieve from databases.

A second limitation was the exclusion of studies that did not report sufficient information needed to calculate effect sizes. There were several studies (e.g., Carter et al., 2008; Cherfas et al., 2021; Djonko-Moore et al., 2018; Rouland et al., 2014;) that matched the inclusion criteria

for this dissertation, but did not provide information such as the number of participants, the mean average effects, and standard deviations for data sets presented. Because these basic data were necessary to calculate effect sizes (Borenstein, 2009), studies that did not clearly report this information were not included in this meta-analysis. As a result, it might be possible that additional evidence could have been available to support the effects of inteventions aligned with the CSPSSA framework should essential information were reported in these relevant studies. To assist in data analysis, it is recommended that researchers calculate effects and report effects of interventions investigated for group design studies (Sullivan & Feinn, 2012). According to Schafer and Schwarz (2019), majority of studies may report *p*-values, which tell readers whether an intervention has a significant effect on a dependent variable, but fail to measure how much of an effect an intervention may have. At the very least, data should be transparently reported on the number of participants in treatment phases, the mean average effect measures investigated, and information on standard deviations should be reported so effect sizes can be calculated (Schober et al., 2018; Thalheimer & Cook, 2002). Without these data, researchers may be unable to include important studies in systematic reviews and meta-analyses, thus compromising the potential statistical power of a particular intervention.

Thirdly, this study did not investigate possible moderating variables for the positive effects of CSPAAS interventions on academic and behavioral outcomes for African American students. As a result, it is not possible to determine which components of the CSPAAS framework were correlated with the best academic and behavioral outcomes for African American students or were most effective. Moderating variables may include, but not limit to gender, race of teachers, region, treatment doses and duration, family involvement or engagement, and exceptionalities. Future research is warranted to evaluate moderating variables

to further understand specific components that attribute to positive academic and behavioral outcomes for African American students.

One final limitation of this study is the small number of studies obtained from the systematic review of the literature. The results of the systematic review yielded a small amount of studies particularly for behavior interventions, a small amount of multiple effect sizes that varied and a small amount of effects within those studies. The small number of studies necessitated the use of less sophisticated statistical procedures to summarize the overall effect of CSPAAS interventions. There are several limitations to the DerSimonian and Laird random effect model used in this current meta-analysis. One limitation is the potential for confidence intervals to be disrupted and there may be overmanipulation of standard errors as effects from a small amount of studies are averaged (Cornell et al., 2014). Thus, readers are encouraged to use caution in initial interpretation of effect sizes of CSPAAS intervetions. More research is needed to refine our understanding of the efficacy of these interventions. Moreover, future researchers may employ different statistical procedures such as meta-regressions or beta-bonomial models to account for any potential bias effect estimates that may have arised from averaging a small number of effect sizes from a small number of studies (Mathes & Cuss, 2018).

Additional Recommendations for Future Research

There are additional suggestions for future research. First, this meta-analysis included only intervention studies with true experimental or quasi-experimental group design designs. During the screening process for the systematic review, I identified several qualitative studies and experimental studies with single-case designs. Due to the difficulties with synthesizing effect sizes across studies with different research designs, these studies were excluded (Borenstein, 2009). One direction for future research is to conduct another meta-analysis to include studies

that employed single-case research designs and evaluate the effectiveness of interventions aligned with the CSPAAS framework by determining the effect size as well as quality of the studies.

Second, one pattern that emerged during the evaluation of the included studies for methodological rigor was the absence of key important aspects of research design such as social validity data, interrater reliability data, and procedural fidelity data. The absence of these components of methodological rigor negatively impacts the overall quality of the body of research available in this area (CEC, 2014; Snodgrass et al., 2023). This, in turn, could compromise stakeholder and educator confidence in the effectiveness of CSPAAS interventions and their inclusion in educational settings. Researchers investigating the effects of academic and/or behavioral interventions aligned with the CSPAAS framework are advised to use the established quality indicators as guideline when conducting research and to report all key aspects of information and data in their reports.

Lastly, although this meta-analysis contributed to a growing body of research around the effects of asset pedagogical interventions on African American students' academic achievement and social behavior, more research is needed (Sleeter, 2012). The academic studies identified from this meta-analysis vary greatly in the types of interventions used with the majority of studies being conducted in elementary school settings. More research is needed to see if the effects are replicable at the secondary school settings. Additionally, future studies could address a number of factors that may impact the effectiveness of these interventions, such as whether the effects are mitigated by gender, whether teachers' years of experience impact their ability to implement such interventions, and/or whether the race or ethnicity of the teachers affects their

willingness to use interventions aligned with the CSPAAS framework in their own classes among other factors.

Implications for Practice

Findings from this meta-analysis showed that CSPAAS interventions have sufficient evidence supporting their effectiveness on improving African American students' academic and behavioral outcomes as evidence-based practices. Academic interventions were found to be highly effective, whereas behavioral interventions with at least one component of the CSPAAS framework were found to be moderately effective. Knowledge of these interventions holds promise to help teachers build capacity to incorporate culturally sustaining practices in their own classrooms. Implementation of these evidence-based interventions with high fidelity could, in turn, help mitigate harmful systemic effects of discriminatory educational experiences that have negatively impacted African American students' academic and behavioral outcomes in school and beyond.

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APPENDIX A: CEC (2014) QUALITY INDICATORS

Quality Indicator	
1.0. Context and setting. The study describes context or setting.	
1.1. The study describes key features of the context or setting (e.g. type of classroom) curriculum, geographic location, community setting, socioeconomic status, physical layout.	B
2.0. Participants. The study provides enough details on participants to ensure results are generalizable.	
2.1. The study provides details on participant demographics (e.g., gender, age/grade, race/ethnicity).	B
2.2. The study identifies disability or risk status of the participants (e.g., autism spectrum disorder) and how status was identified in the school setting.	B
3.0. Intervention agent. The study provides detailed information regarding the primary interventionist	
3.1. The study outlines the role of the primary interventionist agent (e.g., teacher, researcher, paraprofessional, parent, volunteer, peer tutor, sibling, technological device/computer) and, as relevant to the review, background variables (e.g., race/ethnicity, educational background/licensure).	B
3.2. The study describes any specific training (e.g., amount of training, training to a criterion) or qualifications (e.g., professional credential) required to implement the intervention, and indicates that the interventionist has achieved them.	B
4.0. Description of practice. The study provides sufficient information regarding the critical features of the practice (intervention), such that the practice is clearly understood and can be reasonably replicated.	
4.1. The study describes detailed intervention procedures (e.g., intervention components, instructional behaviors, critical or active elements, manualized or scripted procedures, dosage) and intervention agents' actions (e.g., prompts, verbalizations, physical behaviors, proximity), or cites one or more accessible sources that provide this information.	B
4.2. When relevant, the study describes materials (e.g., manipulatives, worksheets, timers, cues, toys), or cites one or more accessible sources providing this information.	B
5.0. Implementation fidelity. The practice is implemented with fidelity.	
5.1. The study assesses and reports implementation fidelity related to adherence using direct, reliable measures (e.g., observations using a checklist of critical elements of the practice).	B
5.2. The study assesses and reports implementation fidelity related to dosage or exposure using direct, reliable measures (e.g., observations or self-report of the duration, frequency, curriculum coverage of implementation).	B
5.3. As appropriate, the study assesses and reports implementation fidelity (a) regularly throughout implementation of the intervention (e.g., beginning, middle, end of the intervention period), and (b) for each interventionist, each setting, and each participant or other unit of analysis. If either adherence or dosage is assessed	B

and reported, this item applies to the type of fidelity assessed. If neither adherence nor dosage is assessed and reported, this item is not applicable.	
6.0. Internal validity. The independent variable is under the control of experimenter. The study describes the services provided in control and comparison conditions and phases. The research design provides sufficient evidence that the independent variable causes change in the dependent variable or variables. Participants stayed with the study, so attrition is not a significant threat to internal validity.	
6.1. The researcher controls and systematically manipulates the independent variable.	B
6.2. The study describes baseline (single-subject studies) or control/comparison (group comparison studies) conditions, such as the curriculum, instruction, and interventions (e.g., definition, duration, length, frequency, learner: instructor ratio).	B
6.3. Control/comparison-condition or baseline-condition participants have no or extremely limited access to the treatment intervention.	B
6.4. The study clearly describes assignment to groups, which involves participants (or classrooms, schools, or other unit of analysis) being assigned to groups in one of the following ways: (a) randomly; (b) nonrandomly, but the comparison groups are matched very closely to the intervention group (e.g., matched on prior test scores, demographics, a propensity score; see Song & Herman, 2010); (c) nonrandomly, but techniques are used to measure differences and, if meaningful differences are identified—for example, statistically significant difference, difference greater than 5% of a standard deviation (What Works Clearinghouse, 2011)—to statistically control for any differences between groups on relevant pretest scores or demographic characteristics (e.g., statistically adjust for confounding variable through techniques such as ANCOVA or propensity score analysis); or (d) nonrandomly on the basis of a reasonable cutoff point (regression discontinuity design).	G
6.5. The design provides at least three demonstrations of experimental effects at three different times.	S
6.6. For single-subject research designs with a baseline phase (alternating treatment designs do not require a baseline), all baseline phases include at least three data points (except when fewer are justified by study author due to reasons such as measuring severe or dangerous problem behaviors and zero baseline behaviors with no likelihood of improvement without intervention) and establish a pattern that predicts undesirable future performance (e.g., increasing trend in problem behavior, consistently infrequent exhibition of appropriate behavior, highly variable behavior).	S
6.7. The design controls for common threats to internal validity (e.g., ambiguous temporal precedence, history, maturation, diffusion) so plausible, alternative explanations for findings can be reasonably ruled out. Commonly accepted designs such as reversal (ABAB), multiple-baseline, changing criterion, and alternating treatment address this quality indicator when properly designed and executed, although other approaches can be accepted if study authors justify how they ruled out alternative explanations for findings or control for common threats to internal validity.	S
6.8. Overall attrition is low across groups (e.g., < 30% in a 1-year study).	G

6.9. Differential attrition (between groups) is low (e.g., ≤10%) or is controlled for by adjusting for noncompleters (e.g., conducting intent-to-treat analysis).	G
7.0. Outcome measures/dependent variables. Outcome measures are applied appropriately to gauge the effect of the practice on study outcomes. Outcome measures demonstrate adequate psychometrics.	
7.1. Outcomes are socially important (e.g., they constitute or are theoretically or empirically linked to improved quality of life, an important developmental/learning outcome, or both).	B
7.2. The study clearly defines and describes measurement of the dependent variables.	B
7.3. The study reports the effects of the intervention on all measures of the outcome targeted by the review (p levels and effect sizes or data from which effect sizes can be calculated for group comparison studies; graphed data for single-subject studies), not just those for which a positive effect is found.	B
7.4. Frequency and timing of outcome measures are appropriate. For most single-subject studies, a minimum of three data points per phase is necessary if a given phase is to be considered as part of a possible demonstration of experimental effect (except when fewer are justified by study author due to reasons such as measuring severe or dangerous problem behaviors and zero baseline behaviors with no likelihood of improvement without intervention). For alternating treatment designs, at least four repetitions of the alternating sequence are required (e.g., ABABABAB; see Kratochwill et al., 2013).	B
7.5. The study provides evidence of adequate internal reliability, interobserver reliability, test-retest reliability, or parallel-form reliability, as relevant (e.g., score reliability coefficient ≥ .80, interobserver agreement ≥ 80%, kappa ≥ 60%).	B
7.6. The study provides adequate evidence of validity, such as content, construct, criterion (concurrent or predictive), or social validity.	G
8.0. Data Analysis. Data analysis is conducted appropriately. The study reports information on effect size.	
8.1. Data analysis techniques are appropriate for comparing change in performance of two or more groups (e.g., t tests, ANOVAs/MANOVAs, ANCOVAs/MANCOVAs, hierarchical linear modeling, structural equation modeling). If atypical procedures are used, the study provides a rationale justifying the data analysis techniques.	G
8.2. The study provides a single-subject graph clearly representing outcome data across all study phases for each unit of analysis (e.g., individual, classroom, other group of individuals) to enable determination of the effects of the practice. Regardless of whether the study report includes visual or other analyses of data, graphs depicting all relevant dependent variables targeted by the review should be clear enough for reviewers to draw basic conclusions about experimental control using traditional visual analysis techniques (i.e., analysis of mean, level, trend, overlap, consistency of data patterns across phases).	S
8.3. The study reports one or more appropriate effect size statistic (e.g., Cohen's d, Hedge's G, Glass's Δ, η2) for all outcomes relevant to the review being conducted, even if the outcome is not statistically significant, or provides data from which appropriate effect sizes can be calculated.	G

Note. B = group comparison and single-subject research studies; G = group comparison studies; S = single-subject research studies; IDEA = Individuals with Disabilities Education Act
Received from:
EC Mission, (2014). *Council for exceptional children standards for evidence-based practices in special education.* Retrieved from https://cecpioneers.exceptionalchildren.org/sites/default/files/2021-04/EBP_FINAL.pdf

APPENDIX B: CSPAAS FRAMEWORK AND INTERVENTION EXAMPLES

Ladson-Billings (1995)	Gay (1995, 2013)	African American Learning Preferences Research (Boykin, 1983; Hilliard, 1992; Shade, 1982; Willis, 1989)	CSPAAS Dimensions for Current Study	Examples of Academic Interventions Aligned with CSPAAS Components	Examples of Behavior Interventions Aligned with CSPAAS Components
Social Relations	Social Academic empowerment; Transformative Learning; Emancipatory Learning	Social/ Affective	Social Justice Perspective	Ethnic Studies (ES)	Restorative Justice
Self and Others	Engaging Whole Child	Spiritual/ Harmonious	Whole Child Instruction	Service-Learning Projects; Gear UP	Culturally Responsive Social Skills Instruction
Concept of Knowledge	Validating Cultural Expectations; Multidimensional Learning	Expressive Creativity/Non-verbal	African American Learning Preferences	Choice of Assignments/ Assessment Types; Verve	Mindfulness Meditation