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Addressing Racial Disparities Through K-12 School-Based Culturally Relevant Interventions

Abstract

This meta-analysis systematically identified culturally relevant interventions for Black students in K-12 school settings to determine (a) the effect of culturally relevant reading interventions on reading comprehension and reading fluency (b) the effect of culturally relevant behavioral interventions on student behaviors (c) the extent to which culturally relevant interventions impact cultural identity and awareness (d) how cultural identity moderates academic and behavioral outcomes. Twelve studies were identified. Overall, there was a statistically significant combined effect across the twelve studies ($g = 0.96$, $p < 0.05$). There was a statistically significant effect of culturally relevant reading interventions on reading outcomes ($g = 1.174$, $p < 0.05$), a statistically significant effect of culturally relevant behavior interventions on behavior outcomes ($g = 0.889$, $p < 0.05$), and a statistically significant effect of cultural identity interventions on cultural awareness and identity ($g = 0.914$, $p < 0.05$). The primary limitation of this meta-analysis are the mainstream and standardized dependent variables. Future intervention research is needed that utilizes both culturally relevant independent and dependent variables to better support this population.

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Addressing Racial Disparities through K-12 School-Based Culturally Relevant
Interventions

A Dissertation

Presented to

the Faculty of the Morgridge College of Education

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Doctor of Philosophy

by

Dina Malala

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Advisor: Dr. Garrett Roberts

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ABSTRACT

This meta-analysis systematically identified culturally relevant interventions for Black students in K-12 school settings to determine (a) the effect of culturally relevant reading interventions on reading comprehension and reading fluency (b) the effect of culturally relevant behavioral interventions on student behaviors (c) the extent to which culturally relevant interventions impact cultural identity and awareness (d) how cultural identity moderates academic and behavioral outcomes. Twelve studies were identified. Overall, there was a statistically significant combined effect across the twelve studies ($g = 0.96$, $p < 0.05$). There was a statistically significant effect of culturally relevant reading interventions on reading outcomes ($g = 1.174$, $p < 0.05$), a statistically significant effect of culturally relevant behavior interventions on behavior outcomes ($g = 0.889$, $p < 0.05$), and a statistically significant effect of cultural identity interventions on cultural awareness and identity ($g = 0.914$, $p < 0.05$). The primary limitation of this meta-analysis are the mainstream and standardized dependent variables. Future intervention research is needed that utilizes both culturally relevant independent and dependent variables to better support this population.

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CHAPTER ONE: INTRODUCTION

Overview of Research Topic

The United States has a history of placing Black students at an academic disadvantage with a scarcity of educational resources, frequent school pushout and less experienced professionals (Smith et al., 2020). Frequent school pushout has led to disciplinary disparities where students are left unempowered. Furthermore, Black students being pushed out of school poses a risk to literacy development (Proffitt, 2020).

Across the literature, literacy is often defined as decoding, reading fluency, vocabulary, and comprehension. However, literacy development for Black (i.e., African American, African, Afro-Caribbean, Afro-Latinx, Afro-European, Biracial) students is not solely based on skill (e.g., comprehension, fluency,) but empowerment (Ladson-Billings, 2016). Empowerment for Black students includes exercising their democratic citizenship (Tate, 1995), problem solving for social change (Ladson-Billings, 1995a, 1995b; Tate, 1995), and being exposed to positive representations of other Black people who have made significant contributions to society (Davis, 2018) to maintain their cultural identity. Empowerment for Black students can be defined as exposure to culturally relevant content where Black students can see themselves and relate to the content without imagination or assimilation. Unfortunately, empowerment in literacy instruction for Black students is uncommon, often with forms of negative images and themes (King et al., 2019; Wynter-Hoyte & Smith, 2020), leading to documented

disparities (e.g., lower academic performance) in literacy (Proffitt, 2020; Wynter-Hoyte & Smith, 2020).

Defining Culturally Relevant Pedagogy

To avoid simply providing literacy instruction (e.g., decoding, comprehension) and in fact empower students, educators need to utilize culturally relevant (CR) materials and culturally responsive pedagogy (Hammond, 2015). Common ways of defining culturally relevant pedagogy in research have included the combinations high expectations (e.g., productive struggle), care (i.e., concern and interest of one's wellbeing and humanity), understanding the relationship between power and privilege, and cultural competency embedded in the learning experience (Kennedy et al., 2016; Morrison et al., 2008; Thomas & Berry, 2019). Regardless of the definition, all share the overarching theme that culturally relevant pedagogy is critical for the advancement and empowerment of students of color in K-12 schools. Though there are new terms and ideas that have expanded from the framework of Culturally relevant pedagogy (Ladson-Billings, 1995a, 1995b), this study focuses specifically on culturally relevant pedagogy as it was designed with Black learners in mind and this study focuses specifically on Black students.

Consequences of Non-Culturally Relevant Pedagogy

Cross (1996) suggests that Black students initially reject their cultural identity then later pursue it. If students are taught to embrace their cultural identity with high expectations, care, and a developing sociopolitical awareness, empowerment can happen in classrooms. The lack of high expectations, care, developing sociopolitical awareness, and maintaining cultural competency in the classroom leads to non-culturally relevant

pedagogy (Hammond, 2015; Ladson-Billings 1995a, 1995b; Ladson-Billings, 2014). Non-culturally relevant pedagogy (NCR) has serious implications for academic and behavioral outcomes (Proffitt, 2020). Black students have been vulnerable to exclusionary practices and placement, resulting in negative academic and behavioral outcomes (Scullin, 2020) and are three times more likely to experience punitive discipline compared to their peers (Arcia, 2007). If a Black student has a high-incidence disability classification they are at more risk of experiencing punitive discipline or exclusionary placement compared to their peers (e.g., students who do not identify as Black; Bal et al., 2017; Sullivan et al., 2014). Exclusionary placement and discipline have a negative impact on academic performance and prevent the opportunity to have access to instruction with grade level peers (Cartledge et al., 2015; Proffitt, 2020; Steele, 2010). This issue of frequent school pushout through exclusion can begin as early as Black students begin attending school (Wynter-Hoyte & Smith, 2020) and is highlighted in a systematic review of behavioral interventions where Steed and Kranski (2020) found that Black students were overrepresented in young children below the age of six. Black students being an overrepresented population that receive behavioral interventions when they are below the age of six is an indication of a racial disparity that places Black students at an academic, social, and emotional disadvantage.

Statement of Research Problem

Research Problem 1: There is a Documented Disparity in Literacy for Black

Students

The deficit-based narrative (e.g., at-risk, disengaged, low performing) placed on Black

students in academic settings is not only inappropriate, but is oftentimes lacking culturally relevant instruction (Kirkland, 2011). When there is a lack of culturally relevant instruction, it prevents Black students from maintaining their cultural competency and racial identity. To have a balanced worldview and succeed academically, positive self-esteem should be built through instruction that is relevant and relatable (Gray et al., 2019). Bell and Clark (1998) cautioned how critical it is for Black students to develop a healthy racial identity to achieve academic excellence in reading as they found positive effects with Afrocentric themes and characters but negative effects with Eurocentric themes and characters for fourth and fifth grade Black males.

Typically, when Black students do not receive culturally relevant instruction the expectation is to assimilate at the expense of their psychosocial wellbeing (Fine, 1986; Fordham, 1988; Ladson-Billings, 1995a). Assimilation gives the message that who they are and where they come from are not important and that to experience success one must substitute their cultural identity (Fine, 1986; Fordham, 1988; Ladson-Billings, 1995a; Wynter-Hoyte & Smith, 2020) with the dominant (e.g., Eurocentric, western) culture. However, evidence-based literature suggests the exact opposite, collectively stating that culturally relevant instruction can lead to higher achievement, positive behaviors, and inclusivity (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Kennedy et al., 2016; Morales-Chicas et. al, 2019; Morrison et al., 2008; Thomas & Berry, 2019). Furthermore, Bell and Clark (1998) found that culturally relevant reading materials will increase information processing and reading comprehension for Black students, but over twenty years later, these disparities continue due to the lack of implementation of these

materials. The lack of implementation is a variable that leads to the deficit-based narrative for Black students, placing them in exclusionary settings including special education.

Recently, the Office of Special Education and Rehabilitative Services (2019) reported that Black students are still disproportionately referred to special education to address literacy needs. While there have been recommendations and descriptions of culturally responsive practices to prevent this disproportionality and create inclusive spaces (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Kennedy et. al., 2016; Morales-Chicas et al., 2019; Morrison et al., 2008; Steed & Kranski, 2020; Thomas & Berry, 2019), more research is needed in intervention outcomes that address the racial disparities of Black students with low reading performance or at-risk of special education compared to their peers. These interventions should include a culturally relevant reading program or material as the independent variable.

Research Problem 2: There is a Documented Disparity in Discipline for Black Students

Disciplinary disparities for Black students in K-12 schools are due to several variables and factors. These disparities within educational statistics have a covert narrative on Black students that depicts them as criminals and being at-risk for prison (Graves & Aston, 2018; Hurley et al., 2015). This criminalizing narrative often translates into learning environments where instead of implementing culturally relevant support, Black students are further pushed out of the classroom. The Office of Special Education and Rehabilitative Services (2019) notes that Black students continue to have

disproportional exclusionary discipline measures placed against them, but little information has been provided on how this disparity is being addressed.

To date, the literature does not support the regular practice of removing (i.e., suspension, expulsion, restrictive learning environments) students from their class (Simmons-Reed & Cartledge, 2014) as this creates a pipeline to prison and larger academic gaps. Contrarily, the literature supports the implementation of culturally relevant behavioral interventions (Graves & Aston, 2018; Graves et al., 2017) so that Black students can feel empowered, understood, and learn problem solving skills. Culturally relevant interventions can dismantle the school to prison pipeline and bridge opportunity gaps for Black students so that they can thrive, be empowered, and problem solve for social change in communities (Tate, 1995).

It is important to note that that race should not be ignored when examining educational equity and disparity but closely investigated (Alvarez, 2020). Black students represent a small percentage of students within school-age populations yet continuously have the highest amount of special education referrals within high incidence disability classifications and exclusionary discipline (Office of Special Education and Rehabilitative Services, 2019). Furthermore, educational inequities for Black students have included disruption in learning with their peers through punitive discipline or being overidentified (i.e., special education) and located in restrictive environments with less time around their general education peers. When the relationship between race, punitive discipline, overidentification in special education, and misplacement in restrictive settings is closely investigated, practical policies can be created to dismantle oppressive

disciplinary practices for Black students. To closely investigate these variables, more research is needed on culturally relevant behavioral interventions for Black students and the outcomes through statistical data.

Research Problem 3: Culturally Relevant Curriculum and Instruction is Needed to Empower Black Students

Deficit-based narratives in texts (e.g., Black inferiority, inaccurate historical representations) reinforce negative stereotypes (Wood & Jocius, 2013) to people outside of the Black community and are traumatizing to Black children that must read these texts (Wynter-Hoyte & Smith, 2020). Black students receiving passages that have negative stereotypes and representations of their identity while being expected to engage and comply amidst such insults is unjust (Asante, 2017; Du Bois, 1903). These negative stereotypes in passages impact Black students' performance (Cartledge et al., 2015; Steele, 2010) leading to special education referrals or exclusionary discipline. More research is needed on the relationship between culturally relevant passages and reading outcomes for Black students so that Black students can be empowered and included in academic discourse.

Even though recommendations for culturally relevant instruction for Black students have been made for over a century (Du Bois, 1903; Johnson, 2018), many texts provided to Black students consist of negative imagery and themes of Black people or are unrelatable to their personal experiences and interests (Husband & Kang, 2020; Wynter-Hoyte & Smith, 2020). Black students deserve to know that they come from excellence, that many Africans across the diaspora have made outstanding contributions to society

(Du Bois, 1903), and that they can achieve excellence. This also allows students who do not identify as Black to see that greatness isn't only a Eurocentric trait, helps promote diversity and inclusion, and stops the reinforcement of negative stereotypes (Asante, 2017) of Black students to other (e.g., non- Black) students in the classroom.

Collectively, we know that Black students enjoy academic content that is relatable to themselves, their communities, and their families (Bell & Clark, 1998; Bethea, 2012; Clark, 2017; Djonko-Moore et al., 2018; Gray et al., 2019; Pinkard, 2001). However, this knowledge is insufficient if there is no implementation for what is needed (i.e., culturally relevant curriculum and instruction). To experience empowerment, Black students need the implementation of culturally relevant curriculum and instruction in school settings. However, to implement a culturally relevant curriculum, one should know what exists, is evidence-based, and effective. More research is needed to synthesize what already exists and its effectiveness as a starting point for implementation in school settings.

Significance of Research Problem

This issue is of critical importance in education as Black students continue to have academic and disciplinary disparities compared to their peers (Office of Special Education and Rehabilitation Services, 2019). Black students experience excessive disciplinary measures as early as preschool which affects their educational programming (i.e., special education, individualized education plans), resulting in negative reading outcomes (Bowman-Perrott & Lewis, 2008; Lewis et al., 2010; Robinson, 2019; Smith & Harper, 2015). Disciplinary disparities and criminalizing narratives for Black students are the opposite of empowerment and push Black students out of school. The persistent

denial of equitable access to culturally relevant reading passages prevents Black students from making connections and being included (i.e., experience a sense of belonging) in the classroom (Orellana et al., 2011; Plucker & Peters, 2016; Robinson, 2019).

To experience a sense of belonging at school, Black students desire interpersonal, instructional, and institutional opportunities (Gray et al., 2018) that create avenues for academic success. On the contrary, the lack of these opportunities can be detrimental for their academic and career development (Gray et al., 2020). Ladson-Billings (2016) stated that there has been a relationship with literacy and race for centuries and that researchers need to unpack this relationship to fully understand race in scholarship. Without a better understanding of the relationship between literacy and race, Black students will continue to have inequitable learning experiences despite the calls to action for over one hundred years (Banks, 2017; Du Bois, 1903).

Study Purpose

This dissertation study focused on opportunities (or the lack of) provided to Black students to thrive and be empowered in school settings through culturally relevant interventions. The purpose of this study was to systematically identify culturally relevant interventions for Black students in K-12 schools and then investigate the magnitude of effect of these culturally relevant interventions on literacy, behavioral, and cultural identity outcomes. The meta-analysis combined group (i.e., randomized controlled trials [RCT]), quasi-experimental designs [QED], and single case design [SCD] studies.

Research Questions

1. What is the effect of culturally relevant reading interventions on reading comprehension and reading fluency?
2. What is the effect of culturally relevant behavioral interventions on student behaviors?
3. To what extent do culturally relevant interventions impact cultural identity and awareness?
4. How does cultural identity moderate academic and behavioral outcomes?

Strengths and Limitations of the Proposed Study

Meta-analytic conclusions allow researchers, practitioners, and policymakers to view a collective body of evidence within one study. Quantitative data is objective which can further allow changes in policies for Black students to receive equitable learning experiences in K-12 schools. Therefore, calculating the effectiveness of culturally relevant interventions for Black students presents an objective point of view that addresses the underlying social justice issue of opportunity gaps. The limitations of this study is that casual inferences cannot be made through meta-analytic methods and a limited sample of quantitative studies and effect sizes currently available and mainstream dependent variables.

Theoretical Framework

The theoretical framework that guided this systematic literature review is Culturally Relevant Pedagogy (Ladson-Billings, 1995a, 1995b). Culturally Relevant Pedagogy (Ladson-Billings, 1995a, 1995b) was developed due to the negative experiences and disparities for Black students compared to their peers. Culturally

Relevant Pedagogy (Ladson-Billings, 1995a, 1995b) is guided by three tenets: (a) Black students experience academic success, (b) Black students develop or maintain their cultural identity, and (c) Black students develop sociopolitical awareness and critical consciousness which allows them to challenge and inform dominant narratives and ideologies (Ladson-Billings, 1995a, 1995b). Some examples of culturally relevant pedagogy for Black students include using math to address social change through community problem solving (Tate, 1995), using models of scientific achievement from Black scientists (Brown et. al, 2017), and having high expectations with the belief that all Black students can succeed (Howard, 2001) as many of their ancestors have made significant contributions to society (Davis, 2018) in literacy, mathematics, and science.

Ladson-Billings (1995b) introduced the theory of Culturally Relevant Pedagogy with Black learners in mind and argues it is simply good teaching. This framework has been extended to support all learners and provide an inclusive environment but twenty-six years later, there are still significant disparities in academics and exclusionary discipline for Black students compared to their peers. Ladson-Billings (2014) discusses how Culturally Relevant Pedagogy (1995a, 1995b) has been misinterpreted and misused at the expense of Black students, who have yet to receive educational justice, but instead continue to experience oppression (e.g., lack of culturally relevant resources, deficit-based narratives, reinforcement of negative stereotypes, punitive discipline, exclusion) at school. The misinterpretation and misuse of Culturally Relevant Pedagogy (Ladson-Billings, 2014; Ladson-Billings, 1995a, 1995) at the expense of Black students calls for

further examination of the extent to which Black students have received culturally relevant supports.

Table 1. *Study Definitions and Measures*

Framework	Description/ Measure	Overview (s)
Culturally Relevant Pedagogy	Empowering students by using their culture to experience academic success, sociopolitical awareness, and cultural competence.	Ladson-Billings (1994, 1995a, 1995b, 2006, 2014)
Culturally Responsive Pedagogy	Validating students' cultures through teaching and learning for positive student outcomes.	Gay (2010, 2013)

CHAPTER TWO: REVIEW OF THE LITERATURE

Previous Literature Reviews and Culturally Relevant Education in K-12 Schools

In the last decade, there were three syntheses on content area culturally relevant and responsive education in K-12 schools (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Morales-Chicas et al., 2019). The first review (Abdulrahim & Orosco, 2020) analyzed the impact of teachers who were culturally responsive in their classrooms, the second review (Morales-Chicas et al., 2019) identified tools and strategies educators can use in culturally responsive computing education, and the third review (Aronson & Laughter, 2016) investigated equity and social justice across content areas with student outcomes.

Aronson and Laughter (2016) had an inclusion criterion that required culturally relevant pedagogy and a relation to student outcomes (e.g., motivation, achievement, engagement, critical discourse). The authors identified 37 studies and found that learning is more meaningful to students of color when instruction includes problem solving, cultural experiences, and social justice. Morales-Chicas et al. (2019) included studies with K-12 strategies in computing education that discussed culturally relevant topics. Twenty-two studies met their inclusion criteria with findings suggesting that sociopolitical consciousness, heritage culture, vernacular culture, highlighting lived experiences, self-identity, community connections, and personalization, were key

strategies in making computing education culturally relevant. Finally, Abdulrahim and Orosco (2020) aimed to synthesize research on culturally responsive mathematics teaching between 1993-2018. Thirty-five studies met their inclusion criteria that required culturally relevant pedagogy or culturally responsive teaching as the theoretical framework. The authors found that culturally relevant math practices reinforce shared problem solving which allows Black and Latinx students to make personal connections to the content.

All of the syntheses of research previously mentioned suggest that culturally responsive practices create an inclusive and equitable learning experience for students. Common conclusions noted the importance students being able to maintain their cultural identity and critical consciousness. Specific practices included problem solving and building the capacity to challenge oppression, leading to higher order thinking. The findings have suggested that culturally relevant instructional practices will produce greater academic achievement and lower exclusionary disciplinary practices and statistics once implemented. Across these three syntheses, there was limited intervention research driving these findings ($k=3$). Instead, findings were based on studies that used qualitative methods or quantitative research without data to calculate the effect size (e.g., correlational, survey).

Of these three studies, none used a culturally relevant intervention (e.g., intervention with Afrocentric characteristics) for Black students. Quantitative intervention studies have utility because they allow researchers to evaluate the effectiveness of the intervention over a period of time (Terrell, 2018). Therefore, this

current synthesis differs from the previous syntheses as it exclusively investigates the extent to which Black students have received culturally relevant interventions and the impact of these interventions in the literature. Culturally relevant is defined as Black students experiencing academic success, gaining sociopolitical awareness, and maintaining cultural competency through the interventions.

Literature Review Purpose

In this systematic review, I had three goals. For the first goal, I aimed to identify literature that exclusively implemented culturally relevant interventions for Black students. I chose to investigate culturally relevant interventions in all areas (e.g., math, reading, social skills) to inform intervention development. Next, I set out to determine the impact of these interventions on academics, behavior, and cultural identity. Lastly, I aimed determine the extent to which these outcomes varied based on student characteristics (e.g., age, grade, gender, social class, disability) and intervention (e.g., setting). The following research aims guided this systematic review:

1. What is the extent to which the literature includes evidence-based culturally relevant interventions for Black students?
2. What is the impact of these culturally relevant interventions on academics, behavior, and cultural identity?
3. How do these outcomes vary based on student and intervention characteristics?

Literature Review Method

Inclusion Criteria

To identify studies that utilized culturally relevant practices, I completed an electronic database search, hand search, and ancestral review. I chose to begin our search in 1995 because the framework of culturally relevant pedagogy was introduced around this timeframe and end the search in 2020 to capture the most recent empirical literature. Throughout each stage of the systematic review process (see Figure 1), me and a doctoral level student in the college of education independently completed each step. Included articles met following research criteria:

1. The study implements a culturally relevant support for Black students.
2. The study provided enough quantitative data required to calculate an effect size.
3. The study was a group (i.e., QED, RCT) or single case design.
4. The study included an academic, behavioral, or cultural identity outcome.
5. The study takes place in the K-12 school setting (e.g., during school hours, after school, summer school, Saturday school) in the United States or territories.
6. The study was peer-reviewed and published in English.

Electronic Database Search

My electronic database search included the years 1975 to 2021 in Academic Search Complete and Education Resources Information Center (ERIC). The search terms ("Cultur* relevant" OR "cultur* responsive*" OR "critical race" OR "race conscious") AND (black OR "African American") were utilized to conduct our search. 2,568 studies

were excluded during the abstract review resulting in a full text review of 76 studies. During the full text review, 64 studies were excluded due to (a) insufficient quantitative data ($k = 24$) to calculate an effect size or used an ineligible design (e.g., qualitative; $k = 40$). A total of 12 studies met the inclusion criteria during the electronic database search.

Hand Search and Ancestral Review

Two independent reviews were completed in five journals: *Behavioral Disorders*, *Journal of Black Psychology*, *Journal of Negro Education*, *School Psychology Review*, and *Urban Education* as they were the most common journals of the 12 identified studies. The research team sought to identify published articles from the years 2016 to 2021. No additional studies were found. I also conducted an ancestral review (i.e., reference review) of relevant syntheses (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Kennedy et al., 2016; Morales-Chicas et al., 2019; Morrison et al., 2008; Thomas & Berry, 2019). No additional studies were found, resulting in 12 studies meeting the inclusion criteria (Banks et al., 1996; Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Gordon et al., 2009; Hampson et al., 1998; Jones & Lee, 2020; Jones et al., 2018; Robinson-Ervin, 2016; Telesman et al., 2019; Terrell et al., 1980; Thomas et al., 2008).

Coding Procedures

Coding trainings were conducted prior to all independent coding through the following four step procedure. First, I provided article coding training for a doctoral level student in the college of education. Second, I provided training through a think-aloud and direct modeling of how to code one study. Third, we coded a different study individually and

returned to each other to compare results. If there were discrepancies, it was discussed with me until an agreement, or an understanding was reached. Fourth, we determined reliability.

Determining Reliability. To determine reliability, me and a doctoral level student in the college of education should have consistent findings in their code sheet. Two articles were coded as a team with step-by-step instructions. There was a minimum of 90% reliability with me. Following the training session, the rest of the articles were independently double coded by me and a trained coder. After the articles had been coded by me and the trained coder independently, we returned to each other to compare results and there was a minimum of 90% agreement.

Effect Size Calculations

Effect size is the magnitude of the treatment (Borenstein et al., 2009) through the relationship between the independent and dependent variables. To calculate effect sizes, a member of the research team and I independently coded and calculated the magnitude of each treatment using Hedge's g and Tau-U. For single case design studies (SCD), the research team used Tau-U to calculate the effect sizes and for group design studies (i.e., QED, RCT), the research team used Hedges' g to calculate the effect sizes.

Tau-U Effect Size. Tau-U is an effect size calculation that allows researchers to compute without overlap in the phases (e.g., baseline, intervention; Parker et al., 2011). In single

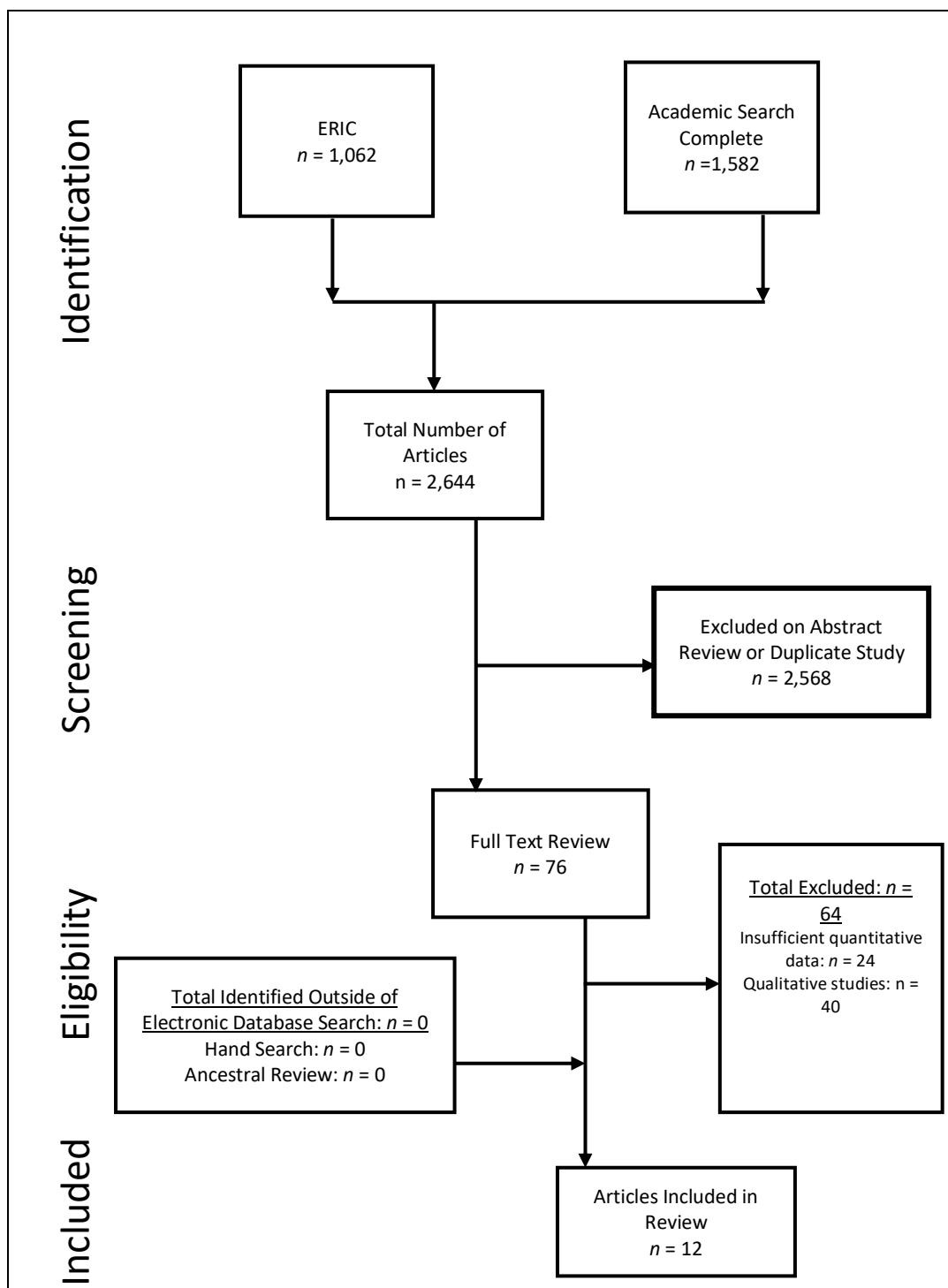


Figure 1. Literature Search Procedure Results

case design research, there are different phases (e.g., baseline, intervention, maintenance, withdrawal) that are dependent on the type of single case design method (e.g., multiple baseline, multiple probe, alternating treatment). Tau-U measures the progress of a participant from the baseline phase (i.e., starting point) to the intervention (i.e., the treatment) to determine if the intervention is effective. To calculate intervention effects, Tau-U incorporates trend and nonoverlap data (Klingbeil et al., 2018).

In this systematic review of literature, all effect sizes were calculated based on the participant and each dependent variable through each phase (e.g., baseline, intervention). This was done because in single case design research, participants are individually monitored on their progress over time, starting with the baseline (i.e., progress without the treatment). SCD studies usually have a smaller number of participants which allows for this type of analysis. Following the independent analysis, coding, and calculations, the trained coder and I had a minimum of 90% agreement for SCD studies. If there were disagreements, they were discussed and recalculated to resolve any discrepancies.

Hedges' g Effect Size. The multiple group design studies were calculated using Hedges' *g*. Hedge's *g* measures how one group (e.g., control, treatment) differs from another. The control group is the group that does not receive the intervention (i.e., treatment) and the treatment group is the group that receives the intervention. Hedges' *g* determines if the intervention is effective based on the calculations of the difference of the mean from standard deviations (Enzmann, 2015). Treatment and comparison groups sample size, posttest means, and standard deviations were used to calculate *g*. For

academic, behavioral, and cultural identity outcomes effect size calculations were standard. The trained coder and I had 100% agreement across all studies within our independent effect size calculations using Hedges' *g*. If there were disagreements, they were discussed and recalculated to resolve any discrepancies.

Literature Review Results

Twelve studies met the inclusion criteria for this systematic review of literature (Banks et al., 1996; Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Gordon et al., 2009; Hampson et al., 1998; Jones & Lee, 2020; Jones et al., 2018; Robinson-Ervin, 2016; Telesman et al., 2019; Terell et al., 1980; Thomas et al., 2008). Three included a reading intervention (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019), five included a social and emotional intervention (Banks et al., 1996; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terell et al., 1980), and four included a cultural identity intervention (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). Additionally, seven studies included students who were receiving or were at-risk of special education services (Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., Telesman et al., 2019; Terell et al., 1980). Six studies used a single case design (Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Telesman et al., 2019), and six studies used a multiple group design (i.e., randomized controlled trial [RCT], quasiexperimental design [QED]) (Banks et al., 1996; Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008; Terell et al., 1980).

Theme 1: Culturally Relevant Intervention Descriptions

The following section provides an overview of the types of reading ($k = 3$), behavioral ($k=5$) and cultural identity interventions ($k = 4$) implemented.

Reading Interventions. For reading interventions, Bennett et al. (2017), Cartledge et al. (2015), and Telesman et al. (2019) used culturally relevant and non-culturally relevant passages with elementary-aged students. All the participants in these three studies were with or at-risk of special education. Bennett et al. (2017) used a multiple probe design, Cartledge et al. (2015) used an alternating treatment design, and Telesman et al. (2019) used a multiple baseline design.

Behavioral Interventions. For behavioral interventions, Banks et al. (1996) used *Afrocentric Beliefs Measure* (ABM) as the comparison condition to general social skills instruction with fourth through ninth grade students, Gladney et al. (2021) used *Culturally Responsive Academic Framework for Teaching Social Skills* (CRAFTSS) with elementary students, Lo et al. (2011) used peer-mediated social skill instruction with a culturally relevant condition with elementary-aged students, Robinson-Ervin et al. (2016) used a culturally responsive computer-based intervention with sixth grade students, and Terrell et al. (1980) used a culturally relevant reward condition with elementary students.

Cultural Identity Intervention. For cultural identity interventions, Gordan et al. (2009) used the *Benjamin E. Mays Institute* (BEMI) with eighth grade students, Jones and Lee (2020) and Jones et. al (2018) used the *Sisters of Nia* curriculum with sixth through eighth grade students, and Thomas et al. (2008) used the *Yes! Program* with ninth and tenth grade students.

Table 2. *Study Characteristics*

Study	Study Design	Type of Support	N	Grade	SWD	Name of Intervention
Bennett et. al (2017)	MP	Reading	10	2	Yes	CR and NCR Passages
Cartledge et. al (2015)	AT	Reading	8	2	Yes	CR and NCR Passages
Telesman et. al (2019)	MBL	Reading	5	1	Yes	CR and NCR Passages
Banks et. al (1996)	RCT	Behavior	T-31; C-33	4- 9	No	Afrocentric Beliefs Measure, Social Skills
Gladney et. al (2021)	MP	Behavior	3	3-4	Yes	CRAFTSS
Lo et. al (2011)	MP	Behavior	7	3 – 5	Yes	Peer-Mediated Social Skill Instruction
Robinson-Ervin et. al (2016)	MP	Behavior	5	6	Yes	Culturally Responsive Computer-Based Intervention
Terell et. al (1980)	RCT	Behavior	T-60; C-60	3-5	Yes	Culturally Relevant Reward Condition
Gordan et. al (2009)	RCT	Cultural Identity	T-29; C-32	8	No	Benjamin E. Mays Institute (BEMI)
Jones and Lee (2020)	QED	Cultural Identity	T-6; C-6	6- 8	No	Sisters of Nia Curriculum
Jones et. al (2018)	QED	Cultural Identity	T-6; C-6	6- 8	No	Sisters of Nia Curriculum
Thomas et. al (2008)	QED	Cultural Identity	T-36; C-38	9- 10	No	Yes! Program

Note. QED – quasi-experimental design; T- treatment; C – comparison; RCT – randomized controlled trial; MBL – multiple baseline; MP - multiple probe; AT – alternating treatment; N/A – not applicable; CR – culturally relevant; NCR - non-culturally relevant; SWD - students with disabilities; K – kindergarten; CRAFTSS – culturally responsive academic framework for teaching social skills.

Theme 2: Impact of Interventions

The literature confirms that the impact of culturally relevant interventions on academics, behavior, and cultural identity, includes an increase in reading performance, increase in positive behaviors, and empowerment and awareness of cultural identity for Black students.

Reading Outcomes. Students who are with or at-risk of reading difficulties that receive culturally relevant texts will read more correct words per minute and have significant growth in reading comprehension than when they read non-culturally relevant texts (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019). All studies with reading outcomes used a single case design.

Correct Words Per Minute. After calculating the effect sizes using Tau-U, the calculations for correct words per minute in Bennett et al. (2017) were large ranging from 0.93 to 1.01 when participants received culturally relevant reading materials compared to 0.36 to 0.84 when participants received non-culturally relevant reading materials. In Cartledge et al. (2015), they used an alternating treatment design and after calculating the effect sizes with Tau-U, the effect sizes ranged from 0.28 to 0.89. Lastly, in Telesman et al. (2019) effect sizes ranged from 0.77 to 0.99 when participants received culturally relevant reading materials compared to 0.48 to 1.07 when participants received non-culturally relevant reading materials. In Telesman et al. (2019) one participant had a larger effect size calculation with non-culturally relevant interventions compared to the culturally relevant intervention. This participant had an effect size of 0.77 in the culturally relevant condition and an effect size of 1.07 in the non-culturally relevant

condition. All other participants had an increase in effect size when receiving non-culturally relevant reading materials.

Correct Responses. After calculating the effect sizes using Tau-U, the calculations for correct responses in Bennett et al. (2017) were 0.85 to 1.02 when participants received culturally relevant reading materials and 0.14 to 0.86 when participants received non-culturally relevant reading materials. The participant who we calculated an effect size of 0.86 when receiving non-culturally relevant reading materials had an increase of an effect size of 1.01 with culturally relevant reading materials, demonstrating the intervention's effectiveness for this participant. In Telesman et al. (2019) the effect size calculations were between 0.4 to 1.05 when participants received culturally relevant reading materials and between 0.13 to 0.96 when participants received non-culturally relevant reading materials. The participant who we calculated an effect size of .96 when receiving non-culturally relevant reading materials had an increase from .96 to 1.05 when receiving culturally relevant reading materials.

Behavior Outcomes. The impact of culturally relevant interventions on behavior demonstrated a co-occurring increase (see Tables 3 and 4) in positive behaviors and cultural identity outcomes (Banks et al., 1996; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al., 1980). The authors (Banks et al., 1996; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al., 1980) collectively suggested preventative strategies for Black students that change the negative trajectories of being overrepresented in behavioral interventions and special education (Graves et al., 2017). Behavioral and cultural identity outcomes were consistent regardless of student

characteristics and intervention. Though, it is important to recognize that the co-occurring increase in positive behaviors and cultural identity outcomes (Banks et al., 1996; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al., 1980) suggests a relationship that should be explored and expanded on in future research.

Cultural Identity Outcomes. Culturally relevant interventions had a positive (see Table 4) impact on cultural identity during and after the intervention trials (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). In all of these studies, participants reported having a higher sense of motivation, understanding of self, racial, and cultural identity, and more motivation to participate in school (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). These findings suggest that the increases in affirmations of Black identity and culture allow Black students to feel empowered in academic settings while acquiring sociopolitical awareness, academic achievement, and maintaining their cultural competence (Gordon et al., 2009; & Lee, 2020; Jones et al., 2018; Thomas et al., 2008).

Theme 3: Outcomes Based on Student Characteristics

Students with or at-risk of Special Education. Seven studies included students who were receiving or were at-risk of special education services (Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Telesman et al., 2019; Terrell et al., 1980). Of these seven studies, three included students who were with or at-risk of reading difficulties (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019) and four included students with or at-risk of behavioral needs (Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al.,

1980). Participants who received culturally relevant intervention demonstrated more growth compared to non-culturally relevant intervention (see Tables 2 and 3).

Elementary Students. Seven studies included a sample of elementary-aged students (Banks et al., 1996; Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Gordon et al., 2009; Lo et al., 2011; Telesman et al., 2019; Terrell et al., 1980). Banks et. al (1996) also included a sample of secondary-aged students. Three studies used a CR reading intervention, three used a CR behavioral intervention, and two used a cultural identity intervention.

Secondary Students. Six studies included a sample of secondary-aged students (Banks et al., 1996; Gordon et al., 2009; Jones & Lee, 2020; Jones et. al, 2018; Robinson-Ervin et al., 2016; Thomas et al., 2008). Banks et al. (1996) also included a sample of elementary-aged students. Two of these studies used a culturally relevant behavioral intervention (Banks et al., 1996; Robinson-Ervin et al., 2016) and four of these studies used a cultural identity intervention (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). None of these studies included an academic (e.g., reading, mathematic) intervention for secondary students.

Theme 4: Outcomes Based on Intervention

Effects by Type of Study Design. For this systematic review of literature review, two types of studies were mentioned in the inclusion criteria: single case design studies and group design studies (e.g., treatment-comparison designs).

Multiple Group Design Studies. There were six studies that used a multiple group design (Banks et al., 1996; Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018;

Thomas et al., 2008; Terell et al., 1980). Two studies used a behavioral intervention (Banks et al., 1996; Terell et al., 1980) and four studies used a cultural identity intervention (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). None of these studies used a reading intervention. Three studies used a randomized controlled trial (RCT) with a treatment and comparison group (Banks et al., 1996; Gordon et al., 2009; Terell et al., 1980) and three studies used a QED with treatment and comparison groups (Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). Effect size calculations were calculated through Hedges' *g*.

Effects by the Type of Intervention. After completing the systematic review of literature with the inclusion criteria previously mentioned, three types of interventions were found: reading, behavioral, and cultural identity.

Reading Interventions. Three studies examined the effects of CR reading interventions on reading comprehension (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019). Two studies examined the effects of CR reading interventions on reading fluency (Cartledge et al., 2015; Telesman et al., 2019). Participants and treatment groups demonstrated medium to large effect sizes ($ES > 0.50$).

Behavioral Interventions. Two studies examined the effects of CR behavioral interventions on social skills (Banks et al., 1996; Lo et al., 2011). Three study examined the effects of a CR behavioral intervention on following adult directions (Gladney et al., 2021; Robinson-Ervin et al., 2016; Terell et al., 1980). Participants and treatment groups demonstrated a range of small to large effect sizes.

Cultural Identity Interventions. Four studies examined the effects of CR interventions on cultural identity (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008). Two studies focused on beliefs about self (Jones & Lee, 2020; Jones et al., 2018). Two studies focused on Afrocentric values and racial identity (Gordon et al., 2009; Thomas et al., 2008). Participants and treatment groups demonstrated a range of small to large effect sizes.

Table 3. *Single Case Design Studies Effect Size Calculations*

Study	DV	Tau-U Effect Size								
		P1	P2	P3	P4	P5	P6	P7	P8	P9
Bennett et al. (2017)	CWPM	1	0.97	0.98	1.01	0.93	0.96	1.01		
	Correct responses	1.02	0.97	0.85	0.96	0.89	0.91	N/A		
	CWPM	0.36	0.66	0.84	0.68	0.49	0.8	0.54	N/A	N/A
	Correct responses	0.59	0.57	0.17	0.64	0.14	0.2	0.86		
Cartledge et al. (2015)	CWPM	0.63	0.89	0.8	0.65	0.67	0.28	0.68	0.65	
Gladney et al. (2021)	Student non-compliance	-0.33	-0.33	N/A						
Lo et al. (2011)	SS	-0.11	0.43	-0.14	-0.3	0.7	0.36	0.68		
	Classroom - Aggression Resolution									
	SS	1	0.91	1.06	1.07	N/A	N/A	N/A		
	Aggression - Aggression Resolution									
	SS	0.73	0.82	1.12	0.85	1.06	0.88	0.88		
	Classroom - Classroom Skills									
	SS	0.17	-0.07	1.3	N/A	N/A	N/A	N/A		
	Aggression - Classroom Skills									
	Classroom-related behavior aggression	0.81	0.81	0.89	0.63	N/A	N/A	N/A		
	Classroom-related behavior in class	0.12	0.79	0.67	0.55	0.92	0.38	0.86		
Robinson-Ervin et al. (2016)	Following adult directions	0.95	1.13	0.95	0.77	1.04	1.01			
	Following adult directions	N/A	N/A	N/A	0.89	1.11	0.92			
Telesman et al. (2019)	CWPM	0.79	0.77	0.99	0.98	0.99				
	CWPM	N/A	1.07	0.87	0.48	0.75				
	Correct responses	0.98	1.01	1.05	0.4	0.99				
	Correct responses	N/A	0.48	0.96	0.13	0.93				

Note. SS - social skills; DV - dependent variable; CWPM - correct words per minute; N/A - not applicable; P-participant.

Table 4. *Multiple Group Design Effect Size Calculations*

Study	Conditions	DV	Hedges' g Effect Size
Banks et. al (1996)	C -Standard T- Afrocentric	Cooperation	0.227556
		Assertiveness	0.282074
		Empathy	0.019332
		Self-control	0.011273
		Anger expression	1.001418
		Trait anger	3.40922
		ABM	0.055318
Gordon et. al (2009)		8th Grade CMT – Reading	0.451994
		8th Grade CMT – Math	1.134134
		GPA - 8th grade	3.402015
		Preencounter	0.921528
		Encounter	0.318108
		Immersion and Emersion	0.492162
		Internalization	0.524038
		6th Grade CMT – Math	1.179463
		6th Grade CMT – Reading	0.513344
		4th Grade CMT – Math	0.08265
Jones and Lee (2020)		4th Grade CMT – Reading	0.293999
		Identification with Academics	0.590878
		Beliefs About Self	0.303579
		Perceived Competence	0.186681
		Introjected Self-regulation	0.34715
		Identified Self-regulation	0.916158
		Intrinsic Self-regulation	0.654122
		Perceived Relatedness	0.34636
		Satisfaction with Self	0.15886
		Engagement	0.278689
Jones et. al (2018)		Ongoing Engagement	0.389536
		Reaction to Challenge	0.141791
		RAPS-TM	0.239783
		Centrality	0.852001
		Private Regard	1.051182

	Humanism	4.222917
	Engagement	0.329739
Thomas et. al (2008)	Multigroup Ethnic Identity	0.930852
	Afrocentric Values	0.824468
	Racism Awareness	0.658734
	Intentions to Liberatory Youth Activism	0.771134
	Liberatory Youth Activism	0.57919
Terell et. al (1980)	Nonreinforcement	0.048021
	Tangible Reinforcement	0.218972
	Traditional Social Reinforcement	0.105759
	CR Social Reinforcement	1.171314

Note. ABM- Afrocentric Beliefs Measure; N- number; DV- dependent variable; CMT - Connecticut Mastery Test; GPA - grade point average; RAPS TM- The Research Assessment Package for Schools Teacher Measure; T – treatment; C- control; CR – culturally relevant.

Discussion of Literature Review

Summary of Findings

In this literature review, I had three research aims. In addressing the first aim, identifying the extent to which the literature includes culturally relevant interventions for Black students, findings suggested that there were no studies that used culturally relevant math interventions, and twelve studies that used reading ($k=3$), behavioral ($k=5$), and cultural identity ($k=4$) interventions. In addressing the second aim, identifying the impact of culturally relevant interventions on academics, behavior, and cultural identity, findings suggest that there is a positive impact when Black students receive culturally relevant interventions. Lastly, in addressing the third aim, identifying how these outcomes vary by student and intervention characteristics, findings suggest that regardless of if a student is in elementary school, secondary school, or receiving or at-risk of special education there will be an increase in reading, positive behaviors, and cultural identity.

All three of the reading intervention studies used a single case design study and effect sizes were calculated using Tau-U. The Tau-U effect sizes suggest that Black students will have an increase in reading comprehension and reading fluency when they receive culturally relevant interventions compared to non-culturally relevant interventions. The sample of the reading intervention studies only included elementary-aged students. More research is need for secondary students. The five behavioral intervention studies included both single case design studies and group design studies. The effect sizes for single case design studies were calculated with Tau-U and the effect sizes for the multiple group design studies were calculated using Hedges' g . Most of the

Tau-U effect sizes were medium to large ($ES > 0.3$) suggesting that Black students will demonstrate an increase in following adult directions and social skills when receiving culturally relevant interventions compared to non-culturally relevant interventions. More research is needed in tier 1 culturally relevant interventions for the entire class or school prior to being referred to tier 2 or tier 3 support. The Hedges' g effect sizes for Banks et. al (1996) varied from small to large. However, participants had the largest Hedges' g effect sizes in the areas of anger expression ($ES = 1.01$) and trait anger ($ES = 3.41$). In Terrell et. al (1980), when participants received the culturally relevant social reinforcement, there was a Hedges' g effect size of 1.17 which suggests a positive impact for Black students. The sample of behavioral intervention studies included both elementary and secondary students. The four cultural identity intervention studies consisted of multiple group design studies. The samples included both elementary and secondary students. Effect sizes were calculated using Hedges' g and ranged from small to large with larger effect sizes that focused on Afrocentric values, centrality, humanism, ethnic identity, and private regard (e.g., how participants feel about being Black).

Limitations and Future Research

Though the findings of this systematic review are meaningful, there were some limitations. Many of the studies included participants who are elementary-aged (i.e., K-5, ages 5-11), which does not present a representation of the potential outcomes of secondary (i.e., grades 6-12, ages 11-21) students. Banks et. al (1996), Gordan et. al (2009), Jones et. al (2020), Jones et. al (2018), Robinson-Ervin et. al (2016), and Thomas et. al (2008) did include a sample of adolescents, but the interventions and measures

varied (e.g., behavioral, cultural identity) and are limited for a 25-year search range. Additionally, none of these studies focused on academic (e.g., literacy skills, numeracy skills) for adolescents and none of the studies included a K-12 culturally relevant math intervention for Black students, presenting a gap in the literature.

Future researchers should consider expanding to calculating the magnitude of effectiveness of culturally relevant interventions to inform education policy and change. Though effect size calculations were completed for single case design and multiple group design studies, they were not combined through a statistical software (e.g., SPSS, *R*) to determine the magnitude of effectiveness when culturally relevant interventions are implemented for Black students. Effect sizes were calculated using Tau-U for single case design studies and Hedges' *g* for multiple group design studies. Calculating the magnitude of effectiveness through one type of calculation will present the collective scientific body of evidence to begin implementation in schools to address the underlying racial opportunity gap for Black students. In addition to calculating effectiveness of culturally relevant interventions, combining SCD and group design studies can present meta-analytic results that include various intervention methodologies to allow scholars to continue to build on this work. Lastly, meta-analytic calculations of single case design and multiple group design studies will allow further understanding of how culturally relevant interventions leads to empowerment (Ladson-Billings, 2016), maintaining cultural competence, building critical consciousness, and increases school achievement.

CHAPTER THREE

Method

This meta-analysis is a contribution to social justice research in education because it extends the findings and analytic methods presented in Chapter 2 and use a novel method of combining SCD and group design studies into a single meta-analysis for this unit of analysis. Meta-analyzing SCD and group design studies provide a global standard and reference of how effective an intervention is for its intended population or need (Losinski et. al, 2014). The purpose of this study was to systematically identify culturally relevant interventions for Black students in K-12 schools and then investigate the magnitude of effect of these culturally relevant interventions on literacy, behavioral, and cultural identity outcomes. After the impact of these interventions were identified, cultural identity was tested as a moderator of the findings. The meta-analysis combined group (i.e., randomized controlled trials [RCT], quasi-experimental designs [QED], and single case design [SCD] studies. The research questions below addressed the purpose of this study.

1. What is the effect of culturally relevant reading interventions on reading comprehension and reading fluency?
2. What is the effect of culturally relevant behavioral interventions on student behaviors?

3. To what extent do culturally relevant interventions impact cultural identity and awareness?
4. How does cultural identity moderate academic and behavioral outcomes?

To answer these research questions, Hedges' g was used. In SCD research, there is no consensus amongst scholars on the best effect size metric (Rodgers & Pustejovsky, 2021; Scruggs & Mastropieri, 2013). Losinski et al. (2014) suggest that in the field of education research, the effect size metric used for SCD studies should compare to the metric used to meta-analyze group design studies (e.g., standard mean difference, percentage of nonoverlapping data). Two common effect size metrics in group design studies are Cohen's d and Hedges' g . Cohen's d is mostly used for larger samples or when the samples (e.g., comparison, treatment) have equal numbers while Hedges' g is used when the samples are smaller or with unequal quantities (Lin & Aloe, 2020). The 12 included studies for this dissertation are unequal which leads to utilizing Hedges' g . Hedges' g is calculated using the mean, standard deviation, and sample size of the control and treatment groups in group design studies. Percentage of nonoverlapping data (PND) can be used as a comparison to g (Losinski et al., 2014).

Research Procedures

This dissertation study used a secondary data analysis. I did not conduct research directly with human subjects; therefore, IRB approval was not required.

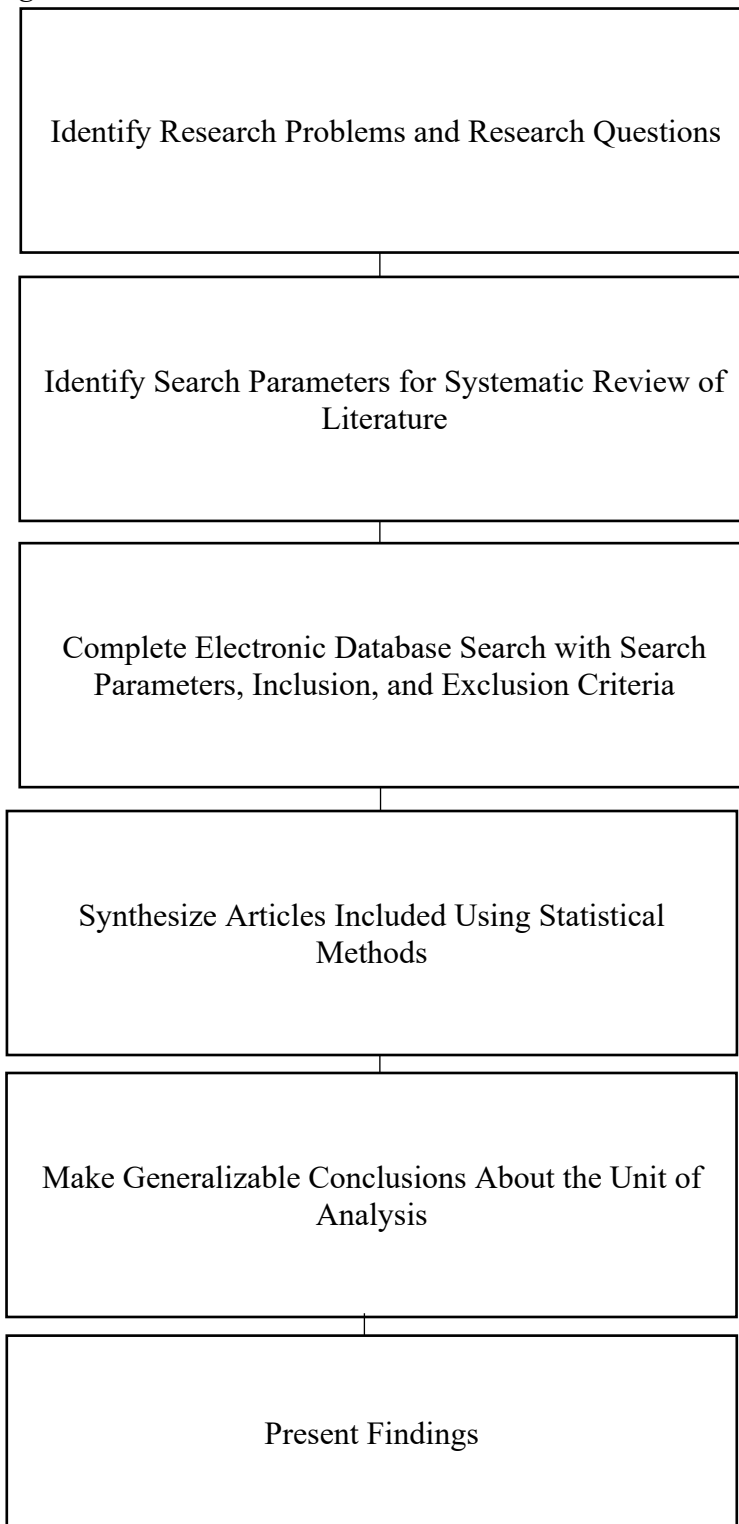
Search Procedure. The literature review in Chapter 2 presents the search procedure, which identified 12 studies with including 381 participants in grades K-12 (i.e., ages 5-21). Table 1 provides the study characteristics of all the identified studies. All identified

studies used a single case design (SCD) or a multiple group design. Furthermore, as seen in Figure 2, three of the six steps were complete (e.g., identifying research problems and questions, identifying search parameters, completing electronic database search with inclusion and exclusion criteria). The remaining part of this dissertation study included synthesizing the studies using statistical procedures, making generalizable conclusions, and then presenting my findings. Since the studies included for this meta-analysis include both single case design and group design studies, the example of conducting a meta-analysis (Losinski et al., 2014) that combines these types of studies was followed.

Analysis. The study variables and g were entered into R using a random effects model. This model was chosen because through it a generalization can be made to a larger population (Losinski et al., 2014; Raudenbush, 2009). The samples in the individual articles and the total sample of the meta-analysis are considered small compared to the overall population of Black school-aged (i.e, grades K-12) students thus generalization is critical. Furthermore, the random effects model has been highly recommended by Hedges et al. (2012) when calculating g in SCD studies (Losinski et al., 2014). Lastly, the random effects model calculates the mean effects and the standard errors. The Q statistic was used to evaluate the heterogeneity of variance. The Q statistic is calculated by dividing the variance from each study.

Cohen (1988) interpreted small effect sizes as an estimate of 0.2, medium effect sizes as an estimate of 0.5, and large effect sizes as an estimate of 0.8 or greater. Effect sizes within the medium to large range demonstrate an effectiveness of the interventions.

Figure 2. *Study Diagram*



Effect size ranges are important for the unit of analysis as there have been historical inequities in K-12 education. It is important to know what is effective and continue developing and implanting effective practices to bridge the opportunity gap. To answer the first research question, what is the effect of culturally relevant interventions on reading comprehension and fluency, the combined effect of the reading intervention studies was calculated, to answer the second research question, what is the effect of culturally relevant interventions on student behaviors, the combined effect of the behavior intervention studies was calculated, to answer the third research question, what is the effect of cultural identity interventions on cultural competency, the combined effect of the cultural identity intervention studies was calculated, and lastly to answer the fourth research question, how does cultural identity moderate academic and behavioral outcomes, I analyzed whether the relationship between independent (i.e., culturally relevant intervention) and dependent variables (i.e., academic, behavioral) depends on this third variable (i.e., cultural identity) for Black students through moderator analysis.

Effect Size Calculation

For the six single case design studies that met the inclusion criteria, the Tau-U effect sizes were transferred into SPSS DHPS effect size macro to calculate the *g*-statistic. The Tau-U effect sizes were calculated with baseline and treatment phase datapoints from the single case design visual analysis. A graphing website (automeris) was used to collect the numerical datapoints in XY values for each single case design study which included the dependent variables and participants. This same data for the six studies was used to ensure accuracy of *g*, which requires datapoints from the baseline and

treatment (Zelinsky & Shadish, 2018). For the six multiple group design studies that met the inclusion criteria, I will aggregate the existing effect sizes with the g -statistics calculated for the SCD studies.

The following steps were completed to calculate the g -statistic of the single case design studies:

1. I inserted the previously mentioned XY data of the SCD studies into DHPS Macro for IBM SPSS.
2. I discovered the effect trend by analyzing the linear interactions on SPSS.
3. I compared the percentage of nonoverlapping data (PND) to the g -statistic that is calculated on SPSS.

The PND is calculated through counting the sum of intervention datapoints that surpass the baseline datapoints and then dividing this number by the total number of intervention datapoints (Losinski et al., 2014). After the single case design and multiple group design studies had their effect sizes in g -statistic, the statistical software R and SPSS, were used to complete the meta-analysis and aggregate the statistical data. Additionally, using R and SPSS, I completed an analyses on random effects model, outliers, and robust variance estimation. The random effects model assumes that the effects of intervention can vary across studies. When 95 percent of the confidence interval is outside of the collective effect, the study is considered an outlier (Card, 2012). To address this, I would have recalculated the meta-analytic results to exclude these outliers (see Chapter 4). The robust variance estimation (RVE) is presented in a forest plot with the name of the study, dependent variable, weight and Hedges's g effect size.

This is important because the dependent effects can be placed in a meta-regression model (Card, 2012) and adjusts standard errors that may lead to dependency in effect sizes (Hedges et al., 2010).

Main Effects

In this dissertation, the independent variables are culturally relevant reading interventions, culturally relevant behavioral interventions, and cultural identity interventions. The dependent variables are reading outcomes, behavioral outcomes, and cultural identity outcomes. The analysis of the main effect determined whether there is statistical significance between the independent and dependent variables. Random-effects models were used to calculate the mean effect size of the included studies. Afterwards, the mean effect of each intervention type (e.g., reading, behavioral, cultural identity) was calculated. This allows for generalizability of culturally relevant interventions for Black students as a whole and within each subcategory or intervention type.

The within study effect sizes will be reported for each intervention type in three tables. The statistics to be included are g , SE, 95 percent confidence interval (95% CI), and p . Furthermore, the outcomes will be reported in three tables: the main effects of culturally relevant reading interventions on reading outcomes, the main effects of culturally relevant behavioral interventions on behavioral outcomes, and the main effects of cultural identity interventions on cultural identity outcomes. The statistics included for the outcomes will be the means, standard errors, 95% CIs, Q , and tau squared.

Moderator Analysis

Moderator analyses are used to determine if dependent variables are impacted by another variable. In this study, academics (e.g., reading) and behavior (e.g., social skills, following adult directions) studies were included only if the study utilized a culturally relevant intervention as the independent variable for Black students. Though cultural identity interventions were also included in this meta-analysis, only Gordon et al. (2009) measured an academic outcome, which was through state examination scores. The academic and behavioral intervention studies will be analyzed through moderator analysis to answer the fourth research question, how does cultural identity moderate academic and behavioral outcomes.

If statistically significant heterogeneity is found, I will run a meta-regression model on SPSS to examine the effect of the tested moderator. The tested moderator of this proposed dissertation is a continuous variable (e.g., cultural identity, African American, Black). In Chapter Two, Table 1 lists additional categories (e.g., intervention type, group size, and grade level). In Chapter Four, an additional table will be presented of the moderator analysis. Components of the table includes the moderator, categories, g , standard errors, 95% CIs, Q , degrees of freedom (df), and p .

Publication Bias

Publication bias can be defined as the tendency of only publishing positive outcomes (Losinski et al., 2014). Furthermore, studies that reject the null hypothesis are more likely to be published (Card, 2012) and this is often ignored in education research (Banks et. al, 2012). To address publication bias and increase confidence in the findings, a scatter plot (e.g., funnel plot) of the effect size of each study that met my inclusion

criteria was created. On the X-Axis (i.e., independent variable) will be the effect size estimates and the Y-Axis (i.e., dependent variable) will have the study's precision (e.g., size). This allows for a measure to evaluate if there is publication bias at the top of the scatter plot (Card, 2012). Asymmetry in the scatterplot demonstrates publication bias. Symmetry in the scatterplot shows that there is no publication bias.

SCD studies have smaller sample sizes compared to group design studies. I proceeded with caution as the scatter plot may present false assumptions (e.g., higher effect sizes in SCD studies leading to a bias). This was done by grouping the SCD studies and determining where they are located on the scatter plot and grouping the group design studies and determining where they are located on the scatter plot. Publication bias was analyzed based on these locations and was reported in the results section of this study through the funnel plot.

Summary

The opportunity gaps in the United States have placed Black students at an academic disadvantage compared to their peers. Furthermore, The Office of Special Education and Rehabilitative Services (2019) reports that Black students are most represented in learning and emotional disabilities and experience higher rates of exclusionary discipline compared to their peers. This underlying social justice issue has been flagged in the early 20th century by prominent scholars Du Bois (1903) and the late 20th century by Ladson-Billings (1995a, 1995b). Despite these calls to action, Black students still face educational inequity in the 21st century.

The systematic review of literature in Chapter Two identified twelve experimental and quasi-experimental design studies that utilized a culturally relevant intervention for Black Students. Preliminary data suggests that Black students will have an increase in reading, positive behaviors, and cultural identity when a culturally relevant intervention is implemented. Twelve studies being identified across a 26-year date range demonstrates a scarcity in education research for this population. Additionally, it may infer a lack of implementation of culturally relevant interventions for Black students resulting in the ongoing disparity. This dissertation synthesizes the existing literature so that other scholars can build on this work for this unit of analysis.

The purpose of this study was to investigate the magnitude of academic and behavioral improvement when culturally relevant interventions are embedded in a classroom. A meta-analysis was used to synthesize evidence-based literature using quantitative methods. This study investigated the magnitude of academic and behavioral improvement for Black students when culturally relevant interventions are implemented and how cultural identity moderates these outcomes. Strengths of this study is that the data is objective and provides a template for scholars who are interested in this topic by presenting a collective conclusion. Limitations of this study are the inferences made from heterogenous studies that meet the inclusion criteria and mainstream dependent variables.

CHAPTER FOUR

Results

Combined Studies Effect Size

A random effects model was used to calculate the mean effect of the included studies. The estimated mean effect size across the twelve studies was $g = 0.96$ ($p < 0.05$, 95% CI [0.622, 1.292]), indicating an overall positive effect of the interventions. The test of heterogeneity in the Q value resulted in $Q = 37.47$. Considerable heterogeneity was supported by the I-squared of 0.67 and Tau-squared of 0.17. Table 5 presents the statistics of the combined studies effect size.

Of the twelve studies included, three included a reading intervention, five included a behavioral intervention, and four included a cultural identity intervention. The effects of the reading, behavioral, and cultural identity interventions are shown in tables 6-8. A random effects model was used to complete this analysis. Furthermore, the overall effect of reading, behavior, and cultural identity interventions was calculated based on the suggestion of Borenstein et al. (2009) on calculating the mean effect and standard error. Figure 3 presents a forest plot for this meta-analysis. The studies are listed in the order of reading, behavior, and cultural identity interventions. Based on the plot, Bennett et al. (2017) holds the most weight (15.79 %) and Terrell et al. (1980) holds the least amount of weight (1.69%). The weight indicates how much influence the individual study had on the overall effect $g = 0.96$ ($p < 0.05$, 95% CI [0.622, 1.292]). Nine studies (Cartledge et

al., 2015; Telesman et al., 2019; Banks et al., 1996; Lo et al., 2011; Robinson-Ervin et al., 2016; Terell et al., 1980; Gordan et al., 2009; Jones and Lee, 2020; Thomas et al., 2008)

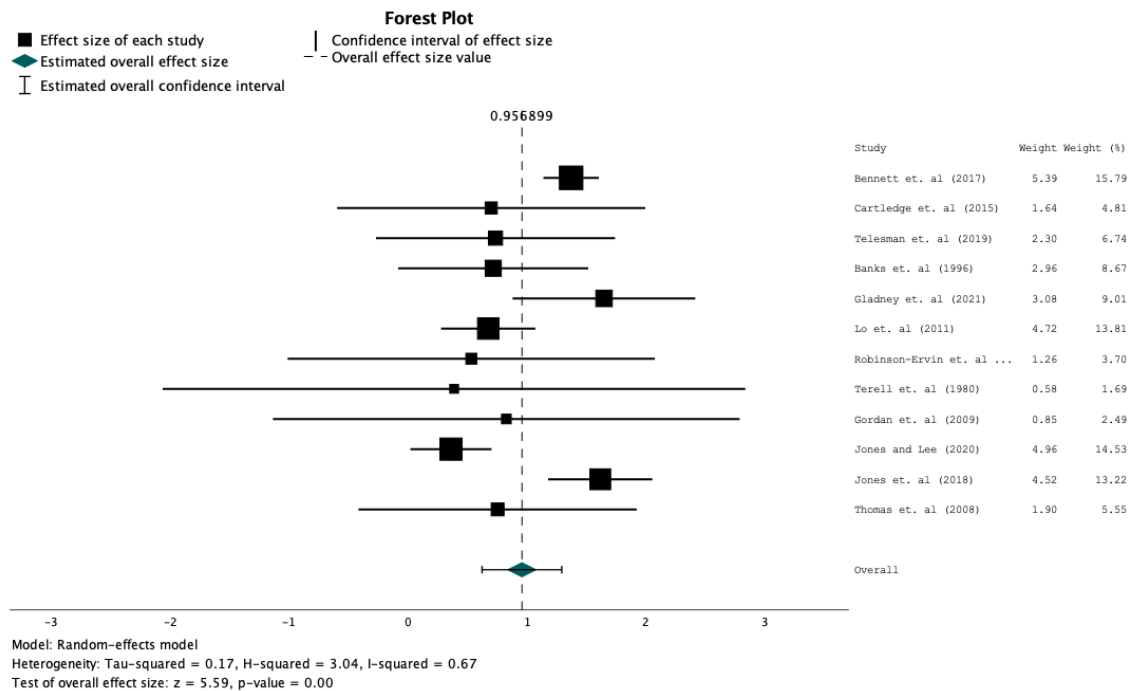


Figure 3. *Forest Plot*

are to the left of 1 (i.e., the confidence interval of effect size) on the horizontal axis. Three studies (Bennett et al., 2017; Gladney et al., 2021; Jones et al., 2018) are to the right of 1 on the horizontal axis. All studies cross the confidence interval of effect size indicating statistical significance. The nine studies to the left (Cartledge et al., 2015; Telesman et al., 2019; Banks et al., 1996; Lo et al., 2011; Robinson-Ervin et al., 2016; Terell et al., 1980; Gordan et al., 2009; Jones and Lee, 2020; Thomas et al., 2008) had individual study effect sizes that are less than the overall effect $g = 0.96$ ($p < 0.05$, 95% CI [0.622, 1.292]). The three studies to the right (Bennett et al., 2017; Gladney et al., 2021; Jones et al., 2018) had individual study effect sizes that are greater than the overall

effect $g = 0.96$ ($p < 0.05$, 95% CI [0.622, 1.292]). Lastly, the forest plot demonstrates heterogeneity as the effect sizes vary with little overlap.

Table 5. *Combined Studies Effect Size*

<i>g</i>	SE	<i>z</i> - value	95% CI	<i>p</i>	I- squared	Tau- squared	<i>Q</i>	df
0.96	0.17	5.592	[0.62, 1.29]	0.00	0.67	0.17	37.47	11

Note. *g* – Hedges’ *g* effect size; SE – standard error; CI – confidence interval; *p* – *p*-value; *Q* – *Q* statistic; df – degrees of freedom.

Effect of Culturally Relevant Reading Interventions on Reading Comprehension and Fluency

Three studies included a culturally relevant reading intervention with reading outcomes (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019). Bennett et al. (2015) had an effect of $g = 1.37$ ($p < 0.05$, 95% CI [1.14, 1.60]), Cartledge et al., (2015) had an effect of $g = 0.70$ ($p = 0.29$, 95% CI [-0.60, 1.99]), and Telesman et al., (2019) had an effect of $g = 0.73$ ($p = 0.15$, 95% CI [-0.27, 1.74]). Cartledge et al. (2015) and Telesman et al. (2019) had *p*-values greater than 0.05 ($p > 0.05$).

Table 6. *Reading Intervention Effect Sizes*

Study	<i>g</i>	SE	95% CI	<i>p</i>
Bennett et al. (2017)	1.37	0.12	[1.14, 1.60]	0.00
Cartledge et al. (2015)	0.70	0.66	[-0.60, 1.99]	0.29
Telesman et al. (2019)	0.73	0.51	[-0.27, 1.74]	0.15
Mean	1.17	0.25	[0.69, 1.66]	0.00

Note. *g* – Hedges’ *g* effect size; SE – standard error; CI – confidence interval; *p* – *p*-value.

The mean effect for reading interventions was $g = 1.17$ ($p < 0.05$, CI 95% [0.69, 1.66]). This indicates statistical significance ($p < 0.05$) across the three reading intervention studies. Furthermore, the mean effect ($g = 1.17$) is a large effect size which demonstrates that when Black students receive culturally relevant reading interventions, positive outcomes are likely.

Effect of Culturally Relevant Behavioral Interventions on Student Behaviors

Five studies included a culturally relevant behavior intervention (Banks et al., 1996; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terell et al., 1980). Banks et al. (1996) had an effect of $g = 0.72$ ($p = 0.08$, 95% CI [-0.08, 1.51]), Gladney et al. (2021) had an effect of $g = 1.65$ ($p = 0.08$, 95% CI [0.88, 2.42]), Lo et al. (2011) had an effect of $g = 0.67$ ($p = 0.00$, 95% CI [0.28, 1.07]), Robinson-Ervin et al. (2016) had an effect of $g = 0.53$ ($p = 0.50$, 95% CI [-1.01, 2.07]), and Terell et al. (1980) had an effect of $g = 0.39$ ($p = 0.76$, 95% CI [-2.06, 2.84]). Robinson-Ervin et al. (2016) and Terell et al. (1980) had p -values greater than 0.05 ($p > 0.05$).

Table 7. *Behavior Intervention Effect Sizes*

Study	<i>g</i>	SE	95% CI	<i>p</i>
Banks et al. (1996)	0.72	0.41	[-0.08, 1.51]	0.08
Gladney et al. (2021)	1.65	0.39	[0.88, 2.42]	0.00
Lo et al. (2011)	0.67	0.20	[0.28, 1.07]	0.00
Robinson-Ervin et al. (2016)	0.53	0.79	[-1.01, 2.07]	0.50
Terell et al. (1980)	0.39	1.25	[-2.06, 2.84]	0.76
Mean	0.89	0.25	[0.41, 1.37]	0.00

Note. g – Hedges’ g effect size; SE – standard error; CI – confidence interval; p – p -value.

The mean effect for culturally relevant behavior intervention studies was $g = 0.89$ ($p = 0.00$, 95% CI [0.41, 1.37]). This indicates statistical significance ($p < 0.05$) across the five behavioral intervention studies. Furthermore, the mean effect ($g = 0.89$) is a large effect size which demonstrates that when Black students receive culturally relevant behavior interventions, positive outcomes are likely.

The Extent Culturally Relevant Interventions Impact Cultural Identity and Awareness

Five studies included a cultural identity intervention (Gordan et al., 2009, Jones and Lee, 2020; Jones et al., 2018; Thomas et al. 2008). Gordan et al. (2009) had an effect of $g = 0.83$ ($p = 0.41$, 95% CI [-1.14, 2.79]), Jones and Lee (2020) had an effect of $g = 0.36$ ($p = 0.04$, 95% CI [0.02, 0.70]), Jones et al. (2018) had an effect of $g = 1.61$ ($p = 0.00$, 95% CI [1.18, 2.05]), and Thomas et al. (2018) had an effect of $g = 0.75$ ($p = 0.21$, 95% CI [-0.42, 1.92]). Gordan et al. (2009) and Thomas et al. (2008) had p-values greater than 0.05 ($p > 0.05$).

The mean effect for culturally relevant behavior intervention studies was $g = 0.91$ ($p = 0.01$, 95% CI [0.18, 1.65]). This indicates statistical significance ($p < 0.05$) across the four cultural identity intervention studies. Furthermore, the mean effect ($g = 0.91$) is a large effect size which demonstrates that when Black students receive cultural identity interventions, positive outcomes on identity and awareness are likely.

Table 8. *Cultural Identity Intervention Effect Sizes*

Study	G	SE	95% CI	p
Gordan et al. (2009)	0.83	1.00	[-1.14, 2.79]	0.41
Jones and Lee (2020)	0.36	0.17	[0.02, 0.70]	0.04
Jones et al. (2018)	1.61	0.22	[1.18, 2.05]	0.00

Thomas et al. (2008)	0.75	0.60	[-0.42, 1.92]	0.21
Mean	0.91	0.37	[0.18, 1.65]	0.01

Note. *g* – Hedges’ *g* effect size; SE – standard error; CI – confidence interval; *p* – p-value.

Moderator Analysis

The moderator (e.g., Black, cultural, racial identity) was represented by eight effect sizes as the academic and behavioral interventions ($k = 8$) were analyzed with the tested moderator. Statistical significance was found with an effect of $g = 1.00$ ($p < 0.05$, 95% CI [0.64, 1.36]). The effect ($g = 1.00$) is a large effect size which indicates that cultural identity moderates academic and behavioral outcomes. When Black students receive culturally relevant reading and behavioral interventions, their cultural awareness is strengthened leading to positive effects in the school setting.

Table 9. *Moderator Analysis*

Moderator	Continuous Variables	<i>g</i>	SE	95% CI	<i>Q</i>	<i>df</i>	<i>p</i>
Intervention Type	Reading	1.17	0.25	[0.69, 1.66]	2.37	2	0.00
	Behavioral	0.89	0.25	[0.41, 1.37]	5.30	4	0.00
Characteristics	Black	1.00	0.18	[0.64, 1.36]	13.85	7	0.00

Note. *g* – Hedges’ *g* effect size; SE – standard error; CI – confidence interval; *p* – p-value; *df* – degrees of freedom;
Q – *Q* statistic.

Table 9 presents a table of the moderator analysis. The variance associated with the moderator analysis ($Q = 13.85$, $df = 7$, $p < 0.01$) also indicates statistical significance. The moderator analysis suggests the impact of cultural identity with culturally relevant instruction for Black students compared to when Black students receive mainstream instruction. A meta-regression was used to complete the moderator analysis.

Publication Bias

A random effects model was used to check publication bias. Publication bias was analyzed through a funnel plot (see Figure 4). The visual inspection of effect sizes through the funnel plot demonstrates whether there is symmetry or asymmetry (e.g., publication bias). The plot also represents the standard error (SE) of the studies to the mean effect size (g).

The funnel plot includes all twelve studies that met the inclusion criteria of this meta-analysis. Of the twelve studies, three studies (Bennett et al., 2017, Jones et al., 2018; Jones and Lee, 2020) were slightly outside of the funnel. Bennett et al. (2017), Jones et al. (2018), and Jones and Lee (2020) all have smaller sample sizes ($n < 13$) which could indicate small study bias. Small study bias can occur when the studies have high variability, leading to being under or over-published.

The visual analysis of the funnel plot indicates symmetry as there is a wide and normal distribution of study variabilities. In this meta-analysis publication bias did not affect the mean effect size. None of the studies in the funnel plot were above zero on the vertical axis. Therefore, I did not need to complete a trim and fill analysis as no asymmetries were found and there were no errors to correct until the plot is symmetric. The funnel plot did not indicate that there are any missing studies within this meta-analysis. The overall positive effect of culturally relevant interventions on reading, behavior, and cultural identity outcomes remains the same ($g = 0.96, p < 0.05$).

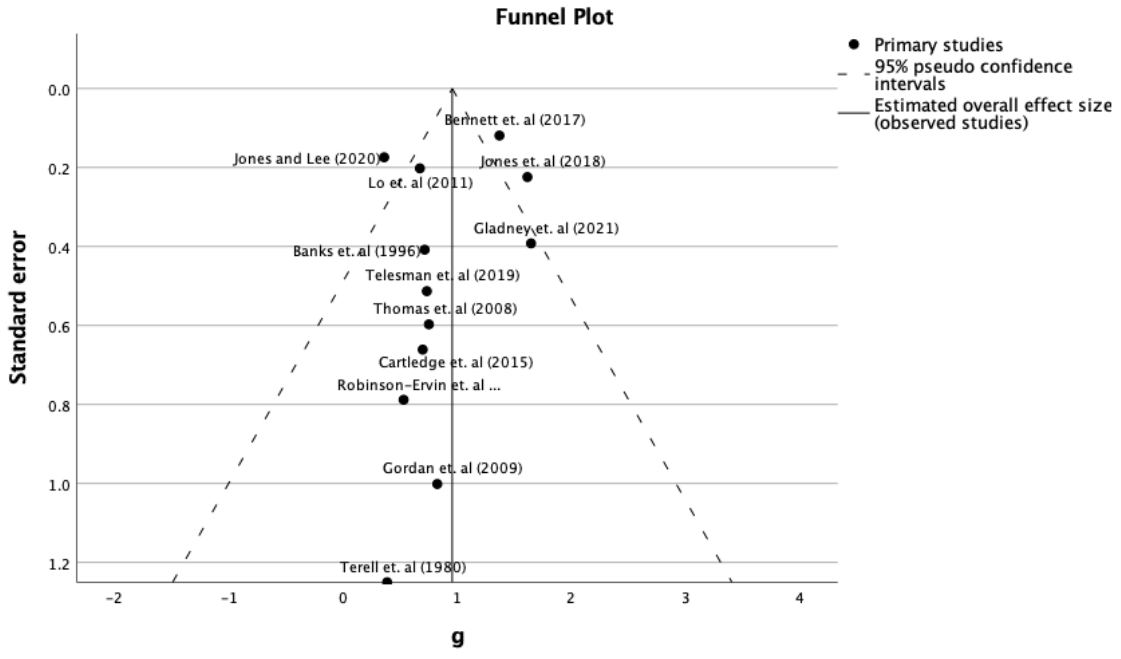


Figure 4. *Funnel Plot*

Summary

The overall effect of the twelve included studies was $g = 0.96$ ($p < 0.05$). The effect of culturally relevant reading interventions on reading outcomes was $g = 1.174$ ($p < 0.05$), the effect of culturally relevant behavior interventions on positive behaviors was $g = 0.889$ ($p < 0.05$), and the effect of cultural identity interventions on cultural identity and awareness was $g = 0.914$ ($p < 0.05$). The overall effect of the twelve included studies and the effects of culturally relevant reading, behavior, and cultural identity interventions indicated statistical significance (see Table 5, Figure 3, Figure 5). When Black students receive culturally relevant instruction, they are likely to experience positive outcomes in the school setting.

The moderator analysis indicated that a strong sense of cultural identity moderates academic and behavioral outcomes. Statistical significance was found with an effect of $g = 1.00$ ($p < 0.05$, 95% CI [0.64, 1.36]). Lastly, the variance associated with the moderator analysis ($Q = 13.85$, $df = 7$, $p < 0.01$) indicated statistical significance.

Publication bias was checked through a random effects model and analyzed with a funnel plot. The funnel plot did not indicate publication bias as the studies were symmetric and none of the studies were above zero on the vertical axis. Trim and fill analysis was not used due to the normal distribution of studies. The publication bias did not indicate that there were any missing studies in this meta-analysis. A Galbraith plot (see Figure 5) was completed to summarize the results of the meta-analysis. On this plot, the z-score is the dependent variable, and the inverse standard error is the independent variable. All studies were within the 95% confidence interval region except Bennett et al. (2017), Jones et al. (2018), and Jones and Lee (2020). These studies are also slightly outside of the funnel (see Figure 4) of the funnel plot.

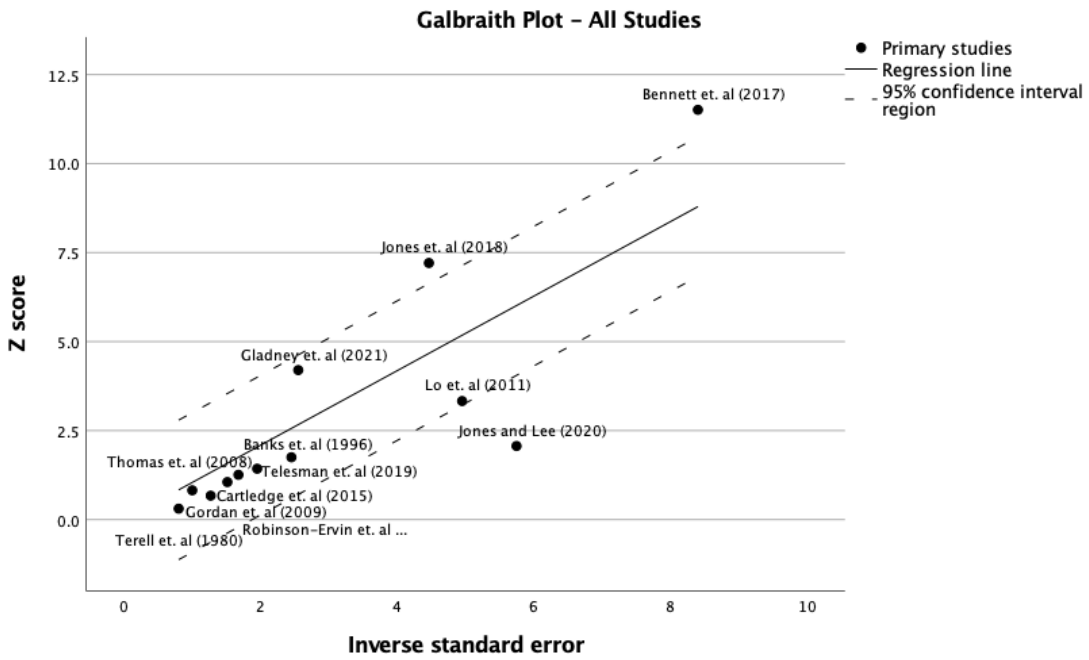


Figure 5. *Galbraith Plot*

CHAPTER FIVE

Discussion

The purpose of this study was to systematically identify culturally relevant interventions for Black students in K-12 schools and then investigate the magnitude of effect of these culturally relevant interventions on literacy, behavioral, and cultural identity outcomes. The following research questions guided this analysis:

1. What is the effect of culturally relevant reading interventions on reading comprehension and reading fluency?
2. What is the effect of culturally relevant behavioral interventions on student behaviors?
3. To what extent do culturally relevant interventions impact cultural identity and awareness?
4. How does cultural identity moderate academic and behavioral outcomes?

Culturally Relevant Reading Interventions

In answering the research questions, I first identified the main effect of culturally relevant reading interventions on reading comprehension and fluency. The overall effect of treatment was statistically significant at $g = 1.174, p < 0.05$. The overall effect of culturally relevant reading interventions suggested that Black students benefit from culturally relevant reading materials and will have better outcomes compared to when they are provided with non-culturally relevant reading materials.

The United States has a history of placing Black students at an academic disadvantage (Smith et al., 2020), there is a documented disparity in literacy for Black students (Office of Special Education and Rehabilitative Services, 2019), and culturally relevant curriculum and instruction is needed for Black students. To better understand the existing literature on culturally relevant curriculum and instruction for Black students, I reviewed research syntheses on culturally relevant education (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Morales-Chicas et al., 2019). Unfortunately, across the syntheses, only three studies utilized intervention research and none of the studies utilized a culturally relevant intervention specifically for Black students. With the knowledge that Black students are disproportionately referred to special education for literacy services (Office of Special Education and Rehabilitative Services, 2019), I investigated existing literature on culturally relevant reading interventions in chapter two through a systematic review of literature. Three reading intervention studies were identified (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019).

Bennett et al. (2017), Cartledge et al. (2015), and Telesman et al. (2019) included participants who were with or at-risk of special education services. After investigating and identifying the existing literature on this topic, I wanted to know the effect of culturally relevant reading interventions on reading outcomes for Black students as the previous syntheses lacked this information. Chapter four presented the effect of culturally relevant reading interventions on reading outcomes for Black students and demonstrated a need not only for implementation in the practice but for more literature for this population. Three studies across a twenty-six-date range can provide limitations in

generalizability. The large effect of culturally relevant reading interventions on reading outcomes for Black students ($g = 1.174, p < 0.05$) while there are documented disparities in literacy for Black students poses questions and further investigations on what is being done to reduce the disparity in literacy for Black students compared to their peers in the special education practice and within intervention research.

Culturally Relevant Behavior Interventions

Second, I identified the main effect of culturally relevant behavior interventions on student behaviors. The overall effect of the treatment was statistically significant at $g = 0.889, p < 0.05$. The overall effect of culturally relevant behavioral interventions suggested that Black students benefit from culturally relevant behavioral supports and will have better outcomes compared to then they are provided with non-culturally relevant behavioral support.

Chapter one mentions that there is a documented disparity in discipline for Black students (Office of Special Education and Rehabilitative Services, 2019), culturally relevant curriculum and instruction is needed for Black students, that special education is covertly used to segregate Black students from their general education peers and how the disparities in discipline create a pipeline to prison. Chapter two mentions three research syntheses on culturally relevant education (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Morales-Chicas et al., 2019). None of the previous syntheses had a culturally relevant behavioral intervention exclusive to Black students, though Black students are disproportionately identified as students with Emotional Disturbance or Other Health Impairment (Office of Special Education and Rehabilitative Services,

2019). Through a systematic review of literature that focused on culturally relevant interventions exclusive to Black students, five studies were identified (Banks et al., 1996; Gladney et al., 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al., 1980). Interestingly, the five studies included demonstrated a co-occurring increase in positive behaviors and cultural identity outcomes (Banks et al., 1996; Gladney et al. 2021; Lo et al., 2011; Robinson-Ervin et al., 2016; Terrell et al., 1980). This led me to want to investigate the effect of culturally relevant behavior interventions on positive behaviors. Due to the co-occurring increase in positive behaviors and cultural identity outcomes in the behavior intervention studies, I also wanted to investigate how cultural identity moderates both behavior and literacy outcomes, as three studies that met my inclusion criteria in chapter two used a culturally relevant reading intervention. I also found it interesting that though the dependent variables of the behavior interventions are mainstream and standardized, participants demonstrated an increase in cultural identity.

Though, it is important to highlight that those who implemented or created the interventions in each of these five studies identified as Black. This will not be the reality of most Black students who receive culturally relevant support and even if the implementor shares a similar cultural identity with students, it cannot be assumed that all values and interpretations of positive behavior are the same. None of the dependent variables in the five behavior intervention studies directly measured cultural identity but the authors mentioned the increase in cultural identity and awareness as they implemented a culturally relevant intervention.

Cultural Identity Interventions

Third, I identified the extent to which culturally relevant interventions impact cultural identity. The overall effect was statistically significant at $g = 0.91, p < 0.05$. This effect ($g = 0.91$) suggested that Black students will have a greater sense of cultural identity in K-12 schools when provided with culturally relevant content compared to when they are not provided with culturally relevant curriculum and instruction.

Chapter one of this dissertation states that one of the research problems is culturally relevant curriculum and instruction is needed to empower Black students. This empowerment comes from positive content related to their cultural identity. The theoretical framework Culturally Relevant Pedagogy has three tenets of academic achievement, sociopolitical awareness, and cultural competency (Ladson-Billings, 1995a, 1995b). To have cultural competency one should be aware of their cultural identity. Therefore, in the systematic review of literature in chapter two, I sought the existing literature with a cultural identity intervention exclusive to Black students. Four studies were identified across a twenty-six-year date range (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008).

My inclusion criteria in the systematic review of literature was broad for the setting of the intervention because my goal was to investigate the existing literature. I included any study that took place in a school setting (e.g., during school hours, after school, summer school, Saturday school). None of the four interventions (Gordon et al., 2009; Jones & Lee, 2020; Jones et al., 2018; Thomas et al., 2008) occurred in the general education classroom. The interventions either took place during lunch, Saturday school, or summer school. After identifying the existing literature, I wanted to investigate the

effect of cultural identity interventions on cultural awareness. The large effect ($g = 0.91$) demonstrates the importance of Black students having a strong cultural identity and the consideration of cultural identity interventions in the general education setting in future research and practice.

Lastly, I identified how cultural identity moderated academic and behavioral outcomes. Statistical significance was found with an effect of $g = 1.00$ ($p = 0.00$, 95% CI [0.64, 1.36]). The variance associated with the moderator analysis ($Q = 13.85$, $df = 7$, $p < 0.01$) indicated statistical significance. The large effect demonstrates the importance in Black students receiving culturally relevant instruction to experience exceptional academic and behavioral outcomes. Chapter one mentions the inequities Black students have historically experienced in K-12 schools, including a scarcity of resources (Smith et al., 2020). The three previous research syntheses did not include any studies that tested cultural identity as a moderator (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Morales-Chicas et al., 2019) and across the three previous syntheses only three studies included an intervention, which none of them had a culturally relevant intervention exclusive to Black students. The results of the moderator analysis suggest that an important resource in K-12 school settings is positive cultural identity content for Black students.

How Cultural Identity Moderates Academics and Behavior

Without positive cultural identity content, the instruction is not culturally relevant as Ladson-Billings (1995a, 1995b) Culturally Relevant Pedagogy framework has a tenet of cultural competence. The moderator analysis confirms why culturally relevant

curriculum and instruction is needed to empower Black students. Furthermore, the moderator analysis suggests that with instruction that promotes cultural competency for Black students, the racial disparities in both literacy and discipline can be addressed and Black students can experience the educational justice that they deserve through meaningful instruction. Du Bois (1903) called for educational justice for Black students but almost 120 years later these disparities haven't fully been addressed to a point where justice is served. Meaningful instruction for Black students is instruction where they can see themselves, their experiences, and relate to the content instead of having to reject their identities and assimilate to succeed (Bell & Clark, 1998; Bethea, 2012; Clark, 2017; Djonko-Moore et al., 2018; Gray et al., 2019; Ladson-Billings, 1995a, 1995b; Pinkard, 2001). The moderator analysis suggests that the third variable (e.g., cultural identity) empowers Black students and that with the positive response to intervention, more intensive support (or covert ways of segregating Black students) such as special education may not be needed for many Black students.

A Discussion on the Research Problems

The first research problem was that there is a documented disparity in literacy for Black students. Though there is a documented disparity, across a twenty-six-year date range only three reading studies met the inclusion criteria for this meta-analysis. The findings of this study support the research problem in that there are few studies despite the disparities and that when Black students receive culturally relevant reading instruction the outcomes are greater compared to nonculturally relevant reading instruction. The Office of Special Education and Rehabilitative Services (2019) has

documented that Black students are placed in special education for literacy services at higher rates compared to their peers but still little work has been done to address this need as demonstrated in this meta-analysis with only three reading studies. In the three reading studies, all students were Black and with or at-risk of receiving special education services. All students demonstrated positive outcomes with the culturally relevant reading materials compared to the nonculturally relevant reading materials. Ladson-Billings (2016) shared that the relationship between race and literacy needs to be unpacked and this meta-analysis contributes to the unpacking of Black students and literacy. With this knowledge, more resources need to be provided to school-based staff to provide equitable learning experiences for Black students that allow them to see themselves and their culture in literacy lessons. The positive findings of this meta-analysis suggest additional research on teacher implementation for this population.

The second research problem was that there is a documented disparity in discipline for Black students. Of all studies included most of them were behavioral interventions. The intent of the interventions was to utilize culturally relevant behavioral support, but the dependent variables were standardized and mainstream. Even with a positive intention in the implementation of the culturally relevant behavioral interventions, the outcomes both directly and indirectly expect Black students to assimilate at the expense of their psychosocial wellbeing (Fine, 1986; Fordham, 1988; Ladson-Billings, 1995a). Outcomes such as trait anger, following adult directions, student compliance, cooperation, and self-control are the same variables that are used to disproportionately place Black students in special education with disability classifications

such as Emotional Disturbance and Other Health Impairment. The Office of Special Education and Rehabilitative Services (2019) has documented that Black students are placed in special education for behavioral support at higher rates than their peers. Even though this meta-analysis suggests positive outcomes, implementing a culturally relevant behavioral intervention with mainstream and standardized outcomes should be proceeded with caution as the same tools that are used to oppress and segregate Black students at disproportional rates compared to their peers cannot be the same tools used for inclusion and dismantling systems of oppression (Lorde, 2003). The findings of this study support the research problem as mainstream dependent variables are not culturally relevant which can be a contributing factor to the overrepresentation of Black students in special education for emotional and behavioral services.

The third research problem was that culturally relevant curriculum and instruction is needed to empower Black students. In the theoretical framework section of this dissertation, it was mentioned that Ladson-Billings (1995a, 1995b) created the framework of culturally relevant pedagogy so that Black students can experience empowerment and equity through academic success, sociopolitical awareness, and cultural competence. The findings of this dissertation support this research problem in that for all studies, the independent variables were utilized to empower Black students. The dependent variables for the behavioral interventions will need to be assessed by future researchers and have culturally sensitive outcomes. This is important as outcomes such as following adult directions, trait anger, and self-control are subjective and could be covertly expecting Black students to assimilate. As previously mentioned in chapter one, one should know

what exists, is evidence-based, and effective. This meta-analysis provides a synthesis of the existing literature and its effectiveness. Additionally, this meta-analysis can serve as a template for scholars who want to expand on this topic and dismantle the systems of oppression in special education referrals and programming for Black students.

A Discussion on the Systematic Review of Literature

Previous literature reviews, chapter two's systematic review of literature, and the results of this meta-analysis suggest that dismantling systems of oppression in special education referrals are lacking in intervention research for Black students. The lack of research in this area despite the documented disparities (Office of Special Education and Rehabilitative Services, 2019) are troubling as this infers that Black students might be mostly held to mainstream (e.g., western) outcomes which ultimately misleadingly overidentifies them in special education programming. To dismantle this system of oppression, more research is needed so that implementation can occur in special education and intervention practices.

Ladson-Billings' (1995a, 1995b) framework of culturally relevant pedagogy is not exclusive to general education. However, academic success, sociopolitical awareness, and cultural competency skills should be accessible to Black students in general education to prevent misplacement and overrepresentation in special education. The results of this meta-analysis can suggest that with culturally relevant interventions there may be a significant number of Black students who would have never been placed in special education to begin with. The response to the interventions had positive effect sizes which suggest that there may not be a need for further exclusion and segregation

away from general education. If the screening processes are culturally sensitive to Black students, it is likely that those who do not need special education services will not be segregated from their peers and those Black students who truly need specialized instruction receive it but in ways that enable academic success, sociopolitical awareness, and cultural competence.

Even with a culturally relevant intervention with culturally relevant outcomes, there may be some Black students who do not demonstrate a positive response to intervention. These are the students who may need specialized instruction in specific areas of need. This meta-analysis included participants who were both with or-at risk of special education services (Banks et al., 1996; Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Gordon et al., 2009; Hampson et al., 1998; Jones & Lee, 2020; Jones et al., 2018; Robinson-Ervin, 2016; Telesman et al., 2019; Terrell et al., 1980; Thomas et al., 2008). Even the participants with special education services had a positive increase in outcomes as seen in Tables 3, 4, and 5 in chapter two's systematic review of literature. This shows that even if a Black student qualifies for special education services based on the response to a culturally relevant intervention, culturally relevant curriculum and instruction is still needed to be empowered and included amongst their general education peers instead of segregated to restrictive settings.

Limitations and Directions for Future Research

While there were several significant findings that emerged throughout this meta-analysis, there were also some empirical limitations. In chapter two, twelve studies met the inclusion criteria. Twelve studies across a twenty-six-year date range are a limited

number of studies to meta-analyze. The limited number of studies make it difficult to have casual inferences and generalizability, especially across twenty-six years. The studies included in previous reviews (Abdulrahim & Orosco, 2020; Aronson & Laughter, 2016; Morales-Chicas et al., 2019) had a larger amount of studies included in their syntheses. Aronson and Laughter (2016) identified 37 studies, Morales-Chicas et al. (2019) identified 22 studies, and Abdulrahim and Orosco (2020) identified 35 studies. This meta-analysis only included 12 studies which suggests a need for more research on culturally relevant interventions for Black students who are the most overrepresented in special education compared to any other cultural or racial group (Office of Special Education and Rehabilitative Services, 2019).

Another limitation is that the sample was not diverse, focusing only on Black K-12 students. Studies with participants who did not identify as Black were excluded from this meta-analysis. The findings of this study can be extended to demographics that are also experiencing disparities. In particular, the variable of cultural identity and positive outcomes suggests importance that should be investigated with a diverse group of students to promote education equity and justice. Lastly, the dependent variables for the reading and behavioral interventions were mainstream (e.g., western) and standardized. This provides limitations in understanding cultural ways of knowing and being for Black students. These dependent variables demonstrate academic success based on mainstream values but limit sociopolitical awareness and cultural competence as the dependent variables in both the reading and behavioral interventions did not measure sociopolitical awareness and cultural competence. In the reading interventions, the outcomes were

focused on correct words per minute and correct responses. In the behavioral interventions, the outcomes were focused on anger, self-control, compliance, following adult directions and variables that are subjective to the implementor. The three tenets of Culturally Relevant Pedagogy (Ladson-Billings, 1995a) are only measured in the cultural identity interventions. For the reading and behavioral interventions, the tenets are only utilized in the intervention phase.

The reading interventions only included elementary-aged students demonstrating a need for literature on supporting secondary-aged students. The lack of culturally relevant reading research for Black students in secondary school settings can be problematic as Black students are overrepresented in special education and exclusionary settings beyond elementary school. More research is needed on how Black students are receiving culturally relevant reading materials that helps them improve literacy skills to be exited out of special education and placed in general education with their peers. Research for secondary-aged students who are with or at-risk of special education services is critical as this not only affects their school-aged experiences but can affect postsecondary experiences. The types of research that should be explored are research around culturally relevant special education literacy services and culturally relevant interventions for middle school and high school students. Interventions would vary based on student need (e.g, fluency skills, comprehension skills) that still places Black students in special education or the intervention phases at the secondary level.

Due to the results of this meta-analysis, it is likely that secondary-aged students who are with or at-risk of special education services will experience positive outcomes

similar to elementary-aged peers in this study (Bennett et al., 2017; Cartledge et al., 2015; Telesman et al., 2019). Single case design, randomized control trials and quasi experimental design research may be the most appropriate since these designs follow individual progress over time and is commonly used in special education and intervention research. Lastly, while the independent variables were culturally relevant, it can be argued that the dependent variables are non-culturally relevant and mainstream (e.g., Eurocentric), leading Black students to assimilate to succeed (Fine, 1986; Fordham, 1988; Ladson-Billings, 1995a). The types of measures that need to be included may require creation and validation from psychologists and other experts who develop interventions but in a culturally sensitive way for Black students.

For the behavioral interventions, dependent variables such as aggression, following adult directions, self-control, and trait anger may reinforce negative stereotypes about Black students as they are overrepresented in behavioral and emotional disability classifications. The behavioral interventions included mainstream, standardized dependent variables that may not be familiar to the ways of being of this population. Furthermore, dependent variables such as following adult directions are subjective to the person implementing the intervention (e.g., school personnel, researcher) and can be misleading if the person implementing the culturally relevant behavioral intervention is unfamiliar with the culture of the sample population. The introduction of this meta-analysis addresses the issue of Black students being placed at an academic disadvantage in school settings and this may include the measures in which they are expected to comply (Smith et al., 2020). Dependent variables that are at the discretion of school

personnel or researchers should be taken with caution as they can incriminate Black students when the implementer doesn't observe the desired behaviors based on their own ways of being and knowing. Culturally relevant variables are needed so that Black students are not required to assimilate.

Future research should include culturally relevant evidence-based tools to create an environment that empowers Black students by holding them to the highest standards without them assimilating or sacrificing their cultural identity to be accepted in the school setting. Additionally, future research should include both independent and dependent variables that are culturally relevant to provide more depth to research on culturally relevant interventions. Collaboration amongst psychologists and other experts in intervention development is needed to create culturally sensitive outcomes for Black K-12 students.

Four studies utilized a cultural identity intervention. The outcomes demonstrated the importance of Black students' experiencing a sense of belonging at school (Gray et al., 2018). Though the interventions took place in the school setting, students received the intervention outside of their general education classes. Future research should include interventions that promote inclusive practices inside the general education classroom. This allows Black students to receive the support and empowerment needed with their peers instead of in an exclusionary setting (Cartledge et al., 2015; Proffitt, 2020; Steele, 2010). A cultural identity intervention does not require small group or 1:1 instruction. All students can benefit from learning about other cultures, power, privilege, and democracy to enhance critical thinking skills and collaboration amongst peers (Asante, 2017).

Cultural identity instruction is needed for all school-aged Black students (Ladson-Billings, 1995a, 1995b). Future research of cultural identity interventions should take place in the classroom as opposed to summer programs or after school programs. The limitation with cultural identity interventions taking place in summer programs, outside of general education, or after school is that it doesn't address the ongoing need for empowerment while receiving core instruction (Ladson-Billings, 2016). Future intervention research should focus on the effect of culturally identity interventions on cultural identity for Black students within the general education classroom in both teacher implementation and student outcomes.

Implications for Practice

The limited amount of research on this topic may correlate to a limited amount of culturally relevant instruction being implemented for Black students based on the documented disparities (Office of Special Education and Rehabilitative Services, 2019) and the outcomes of this meta-analysis. There were only three reading interventions across a twenty-six-year date range and no other studies met the inclusion criteria in other core subjects. This affects the practice because Black students are overidentified in special education amongst high incidence disabilities. For a Black student to be placed in special education, interventions usually take place to exhaust the least restrictive environment. For reading, it can be argued that the dependent variables of correct words per minute and comprehension can be inclusive if the intervention includes culturally relevant reading materials. The results of the meta-analysis suggest this to be true.

On the contrary, the results of the meta-analysis proved that when Black students receive culturally relevant behavior interventions, they will demonstrate more positive behaviors. The results should be taken with caution as they only included five studies across twenty-six-years and the dependent variables aren't as generalizable as the reading and cultural identity variables. The meta-analysis confirms that Black students benefit from culturally relevant behavior interventions, but the dependent variables are subjective at the discretion of the implementor or school culture which can oppress Black students. Black students are overrepresented in emotional and behavioral disability classifications. Reducing racial disparities in special education and exclusion cannot happen if the same tools and measures that have been used to oppress and exclude Black students are also being used to address a disparity (Lorde, 2003). To address this racial disparity, it is critical that researchers develop culturally sensitive behavior intervention outcomes.

One of the concerns around culturally relevant behavior interventions for Black students is that it may lead implementors to believe that if they follow certain steps and Black students don't give the desired result that the student has a disability or needs intensive support in an exclusionary setting. To truly reduce the overrepresentation of Black students with emotional and behavioral disabilities the measures that identify them should be adapted or culturally sensitive. Furthermore, it is important for practitioners to better understand the whole child and whatever challenges they may be facing both inside and outside of the school setting. After better understanding the whole child, appropriate support should be provided before placing a student in an intervention, special education, and exclusionary settings (Gray et al., 2018).

Furthermore, the results of this meta-analysis have implications for both special education and intervention practice. The results of the meta-analysis demonstrated a positive response to intervention. If similar positive responses to culturally relevant interventions occur in the school setting, practitioners can provide appropriate instruction to Black students compared to when Black students only receive non-culturally relevant interventions. This means that if a Black student is suspected to be at-risk of special education but responds positively to culturally relevant interventions, practitioners will need to consider how to support this student in general education.

Overall Study Summary

The United States has a history of providing inequitable education services to Black students (Smith et al., 2020). As a result of the inequities in education, many Black students have been pushed out of school or overidentified in special education (Office of Special Education and Rehabilitative Services, 2019). There have been calls to action to address this issue from scholars such as Du Bois (1903) and Ladson-Billings (1995a, 1995b) but over 120 years and 27 years later, the documented disparities in the Office of Special Education and Rehabilitative Services still exist for Black students.

The purpose of this study was to systematically identify culturally relevant interventions for Black K-12 students and the effect of these interventions. The goal was to identify the effect of culturally relevant reading interventions on reading outcomes, the effect of culturally relevant behavior interventions on behavioral outcomes, the extent to which culturally relevant identity interventions impact cultural awareness, and how cultural identity moderates academic and behavior outcomes. The theoretical framework

that guided this meta-analysis is Culturally Relevant Pedagogy which has three tenets: academic success, sociopolitical awareness, and cultural competence (Ladson-Billings, 1995a, 1995b).

To systematically identify culturally relevant interventions for Black students with the guiding theoretical framework, a literature review purpose and inclusion criteria was determined. Each step of the systematic review was completed with another doctoral student as the second coder for reliability. The results of the systematic review included 12 studies (Banks et al., 1996; Bennett et al., 2017; Cartledge et al., 2015; Gladney et al., 2021; Gordon et al., 2009; Hampson et al., 1998; Jones & Lee, 2020; Jones et al., 2018; Robinson-Ervin, 2016; Telesman et al., 2019; Terrell et al., 1980; Thomas et al., 2008). Of the twelve studies, three included a reading intervention, five included a behavioral intervention, and four included a cultural identity intervention. The inclusion criteria of the systematic review was broad within the academic subjects but reading interventions were the only academic interventions identified. The results of the literature review led me to want to investigate the effect of the culturally relevant interventions on literacy, behavior, and cultural identity outcomes.

A meta-analysis was used to investigate the effect of the culturally relevant interventions on literacy, behavior, and cultural identity outcomes using a random effects model. Overall, there was a statistically significant combined effect across the twelve studies ($g = 0.96$, $p < 0.05$). There was a statistically significant effect of culturally relevant reading interventions on reading outcomes ($g = 1.174$, $p < 0.05$), a statistically significant effect of culturally relevant behavior interventions on behavior outcomes ($g =$

0.889, $p < 0.05$), and a statistically significant effect of cultural identity interventions on cultural awareness and identity ($g = 0.914$, $p < 0.05$). The moderator analysis had statistical significance with an effect of $g = 1.00$ ($p = 0.00$, 95% CI [0.64, 1.36]). The variance associated with the moderator analysis ($Q = 13.85$, $df = 7$, $p < 0.01$) also indicated statistical significance. Publication bias was checked and trim and fill was not needed. The overall effect remains the same ($g = 0.96$, $p < 0.05$).

Limitations of this study are that only twelve studies were identified, which provides further limitations for casual inferences when three studies are reading interventions, five studies are behavioral interventions, and four studies are cultural identity interventions. The dependent variables in the behavior interventions have limitations due to the western approach of standardized variables that are not culturally relevant to this population, thus using the same tools that have overidentified Black students in emotional and behavioral disability classifications and special education services. Lastly, this study excluded participants who did not identify as Black. There may be similar disparities amongst diverse populations, but this study focused on Black students due to the documented disparities reported by the Office of Special Education and Rehabilitative Services (2019).

Strengths of this study are that previous syntheses have not included culturally relevant interventions exclusive to Black students. This meta-analysis serves as a template for scholars who would like to expand on this work or who would like to discover the existing literature in an aggregated form. This meta-analysis provides more insight into special education and intervention research and the documented disparities of

Black students compared to their peers (Office of Special Education and Rehabilitative Services, 2019). When Black students receive culturally relevant instruction, they will experience positive outcomes compared to when they receive non-culturally relevant instruction. This meta-analysis is a contribution to research and allows scholars to build on this so that Black students receive the justice they deserve in special education and intervention practices.

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