Evaluating The Response to Intervention and Culturally Relevant Pedagogy to Address Disproportionality of Culturally and Linguistically Diverse Students in Specialized Education

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ABSTRACT

Disproportionality is defined as a situation whereby a group of individuals is represented in an environment at a percentage that is higher or lower than its representation within a total population. The issue of Disproportionality of culturally and linguistically diverse (CLD) learners in special education and the cause of the overrepresentation continue to be a problem and source of debate in academia. Research indicates the most prevalent factors that contribute to overrepresentation include poverty, testing bias, perceptions of teachers, lack of cultural awareness and poor professional development that address working with CLD learners. (Kreskow, 2013). Response to Intervention (RtI) proactively facilitates culturally and linguistically responsive pedagogy for CLD students. With evidence-based practices, RtI, when infused with culturally responsive pedagogy (CRP), has the bandwidth to significantly reduce overrepresentation in special education programs. The purpose of this paper is to review the existing research and examine RtI through a cultural and linguistic lens and determine its ability to mitigate the overrepresentation of CLD students in specialized education.

*Keywords:* disproportional, Disproportionality, overrepresented, overrepresentation, culturally and linguistically diverse, culturally responsive, intervention, pedagogy, Response to Intervention, African American, Black males, minority, minorities, special education.

Evaluating The Response to Intervention and Culturally Relevant Pedagogy to Address Disproportionality of Culturally and Linguistically Diverse Students in Specialized Education

More than 2 million children of color are receiving special education services in schools across the United States (U.S. Department of Education, 2000). According to the Institute for

Educational Sciences, minority students make up greater than 52% of those served under the Individuals with Disabilities Education Act (IDEA). More than 17% American Indian/Alaska Native, 16% Black, 14% White, 12% Hispanic, and 7% Asian students make up the ethnic composition of students served. (National Center for Education Statistics, 2019). Disproportionality exists when a group of individuals is represented in an environment at a percentage that is higher or lower than its representation within a total population. Failure to implement an effective Response to Intervention (RtI) results in many children in the United States subjectively, inappropriately and at the least prematurely labeled as a student with a learning disability and subsequently academically and socially isolated from their typically performing peers. The problem of overrepresentation is evident when African American students make up only 15% of the public school’s population but 16% of all students served by IDEA.

While the demographic composition of the student population becomes more and more diverse, recent demographic data of the teacher workforce shows the racial composition has remained relatively unchanged for years. A composite of U.S. teachers reflects a composition of 83.5% White monolingual females, 6.9% Hispanic, and 6.7% African American persons (Ortiz, 2012). However, according to Ford (2012), students in “The United States public schools are more racially, ethnically, and linguistically diverse and different than ever before.” The overrepresentation of Hispanic Americans in programs for students with specific learning disabilities and the overrepresentation of African Americans in programs for students with specific learning disabilities, speech and language disabilities, emotional and behavioral disorders and intellectual or developmental disabilities further highlight the Disproportionality of teachers of color to students of color and the need to examine effective RtI and CRP implementation for our CLD students in order to mitigate their overrepresentation in special education.To address the disparities that exist in representation and academic achievement, it is imperative that CLD learners have culturally responsive teachers that can demonstrate competency in their design and delivery of tiered interventions and comprehensive instruction.

Purpose of the Study

The purpose of this literature review is to evaluate the existing research studies on the implementation of RtI and CRP on CLD learners and to evaluate if these interventions are delivered with fidelity, efficacious, and have the potential to mitigate special education referral, identification and subsequently, special education services. Therefore, five research questions guided this study:

RQ1: Are students being classified as having a learning disability without the proper implementation of the three-tiered RtI framework?

RQ2: As it relates to ELL and CLD learners, are emergent readers with a language difference bring classified as having a language-based disability?

**RQ3.** How does RtI affects the special education referral process?

**RQ4.** How do referrals that have not effectively implemented RtI affect Disproportionality of minorities in special education?

**RQ5.** What changes to RTI may reduce Disproportionality of minorities in special education?

Nature of the Study

Historically, RtI is defined as a comprehensive early detection and prevention strategy that identifies struggling students and assists them before they fall behind. RtI systems combine universal screening and high-quality instruction for all students with interventions targeted at struggling students. RtI strategies are used in both reading and math instruction. For reading instruction in the primary grades (K–2), schools screen students at least once yearly to identify students at risk for future reading failure. Students whose screening scores indicate potential difficulties with learning to read are provided with more intensive reading interventions. Student responses to the interventions are then measured to determine whether they have made adequate progress and either (1) no longer need the intervention, (2) continue to need some intervention, or (3) need even more intensive intervention (Institute for Education Science, 2009). In RtI, the levels of interventions are traditionally referred to as tiers. RtI is typically thought of as having three tiers, with the first tier encompassing general classroom instruction. Fuchs, Fuchs, and Vaughn (2008) make the case for the three-tier RtI model. *Tier 1* is explicit, systematic, evidence-based reading instruction, high-quality reading instruction or an instructional program that is generally provided to all students in a particular class. *Tier 2* is classified by interventions that are provided to students who demonstrate problems that arose from progress or benchmark screenings or inadequate progress from general classroom instruction. In Tier 2, the instructional delivery is classified by small group supplemental instruction aimed at building and strengthening foundational skills. Lastly, *Tier 3* interventions are provided to students who have not progressed after sufficient time in a Tier 2 intervention and subsequently require more intensive and often one-on-one intervention. In Tier 3 data and progress monitoring is critical to identify strengths and deficits in instructional acquisition. When students continue to experience difficulty after receiving the progressively intensifying services of RtI, they are evaluated for possible special education services as a result of a learning disability that has negative educational impact.

Currently, RtI is widely used as a framework for providing high quality instruction and interventions that are matched to students' needs, as well as a means of integrating important federal policies. As stated in IDEA 2004, RtI is a ”multi-tiered system of interventions recommended as a means to integrate educational problem-solving across educational levels, consistent with federal legislation and scientific research." including both general and special education. The concept of RtI did not begin with these broad goals; as previously stated RtI was initially conceived as a prevention framework providing early intervention to students at risk of reading failure. Special educators and others soon began to see that RtI frameworks could contribute important information to the identification of specific learning disabilities (SLD). This recognition was eventually encoded in IDEA 2004 (PL. 108-446), permitting RtI as a component of SLD identification. The RtI idea has continued to grow, with application made to not just reading but all academic content areas and behavior. Further, RtI processes extended beyond early identification to annual efforts to identify students at risk of academic or behavioral failure throughout elementary, middle, and high school environments.

As a critical review was done of the 10 identified studies, it was clear that the elementary school-based RtI frameworks had the same purpose—to improve school-wide reading achievement. Each research study showed various tiers of the RtI framework that best fit its context and the available resources.

**RtI in Practice**

With the reauthorization of the Individuals with Disabilities Education Improvement Act (IDIEA), a framework was established to address instances of overidentification for the general population and the disproportionate representation of minority students. Before this reauthorization in 2004, IDEA used an intelligence quotient achievement discrepancy model to identify students with learning disabilities (Yell & Walker, 2010). This approach to intervention was flawed and culminated in a disproportionate number of CLD students being identified for special education services. This *wait to fail* model relied on an extensive period of academic underachievement before interventions were employed, leading to an overwhelming demand for services from students who were multiple grade levels behind typically performing grade-level peers (Fuchs & Fuchs, 2006). This positioned CLD students at a higher risk for misidentification and misplacement in special education. This trend concerned policy makers and ultimately led to alternative procedures in determining special education eligibility.

According to the National Center on Response to Intervention (NCRTI), The goal of RtI is “to minimize the risk for long-term negative learning outcomes by responding quickly and efficiently to documented learning or behavioral problems and ensuring appropriate identification of students with disabilities” (NCRTI, 2010, p.4). With a renewed focus on early intervention, teachers must address the difficulties students are having as early as possible to promote their progress. CLD students may not respond to universal interventions that have shown efficacy for mainstream populations. In order for RtI to be effective, we need to include diverse populations when researching all tiers of instruction (Graves and McConnell, 2014).

**Method**

A comprehensive search of literature of the last fifteen years, 2006-2021, was conducted to find the most current research studies that demonstrated specific interventions within the RtI framework for CLD students. The query was conducted at the George Mason University Library System using the Psych Info and ERIC databases to identify relevant original research articles. Other resources used to aid in the development of this literature review were the Journal of Behavioral Education, Journal of Special Education and other peer-reviewed journals. Research showed that volumes of literature exist on RtI; however, RtI as it relates to the CLD population is sadly an underserved area of research. Sufficient research studies were available for the purposes of this review.

*Search Procedures*

A systematic review of CLD reading interventions in RtI published between 2006-2021, were conducted in June 2021. The above databases were searched for articles including at least one of the following keywords within the article: *culturally linguistically diverse, urban, English Language learner, response to intervention, reading, literacy, and intervention*.

*Inclusion Criteria*

For inclusion, each article met the following criteria: (1) published in a peer-reviewed journal between the years 2006-2021; (2) a reading intervention incorporated in the RtI framework; (3) student population of early intervention ages, grades PK3; and (4) CLD students.

*Coding Conventions and Procedures*

Of the ten reviewed studies, nine of the studies focused on kindergarten to second grade students and one focused on preschool students. The most utilized reading interventions focused on phonological skill acquisition and phonemic awareness, critical domains for building reading competence. The coding conventions that were utilized were (a) author(s); (b)purpose; (c) sample characteristics; (d) data collection; (e) data analysis; (f) findings, and (g) recommendations. The ten coded studies are in **Table 1.**

*Data Synthesis Procedures*

The data was synthesized via intervention, collection means and indicators of literacy skills. The data was analyzed by the length of the study, design and type of trial used. The data collection and data analysis were extrapolated and coded for each of the ten studies and listed in *Table 1*.

**Results**

The first search conducted yielded hundreds of studies that incorporated a full or partial RtI model and literacy interventions; however only ten of those studies met the criteria of a complete RtI model, interventions to CLD early learners and student participants. Of the ten studies that met inclusionary criteria, nine of the populations were solely African American and one study focused specifically on the English Language Learner (ELL) population. The findings and implications are discussed by domain of concentration. *(Table 2)*

*Phonological and Phonemic Awareness*

ERI is an evidence-based early reading program for kindergarten and first grade students. The intervention targets phonological awareness, the alphabetic principle, phonemic awareness, word reading and writing development. It consists of 126 lessons delivered via direct instruction in small groups. Of the ten reviewed studies, four of them focused on phonological and phonemic awareness and utilized ERI to target and improve basic literacy skills. Two of the four studies used single-subject design. In interobserver agreement procedures, all of the researchers reported that the students with reading risk made gains.

These four interventions all delivered instruction in small groups for approximately 30 minutes for 25 days a week over a 5 to 16 week period. All of the studies included students from CLD backgrounds representing more than ten ethnicities. The most unique study was the Gyovai, Cartledge, Kourea, Yurick and Gibson (2009) study where 92% of the population were ELLs, 10 from Somali and 1 from Hispanic backgrounds. The twelfth child was Asian American but not classified as an ELL for this study.

These data did not allow for a determination of ideal amounts of treatment, and it is noteworthy that Lo, Wang, & Haskell (2009), MustiRao & Cartledge (2007) and Yurick, Cartledge, Kourea, & Keyes (2012) discussed providing a constant amount of time during the intervention was challenging. Musti-Rao and Cartledge (2007) stated two of their eight students failed to meet end-of-year goals on a fluency assessment due to variance in treatment. Also, in the Yurick et al. (2012) study, researchers speculated whether the duration and quality of the intervention affected student gains. Not only consistency, but delivery was a factor in the research studies. In Lo, Wang, & Haskell (2009) classroom teachers delivered the interventions, while in other studies, paraprofessionals (Yurick et al., 2012), and graduate assistants (Gyovai et al. (2009), MustiRao & Cartledge (2007) delivered the treatment.

The Yurick study was unique in that they included a comparison group in their study and reported the gap between the comparison and treatment groups began closing throughout the study. A subsequent follow-up study with the same population showed that the treatment group continued its progress and one-third of the treatment group not only closed the gap but also exceeded their comparison peers (Yurick, Cartledge, Singh, Keyes, & Kourea, 2011).

Denton et al. (2013) and Lonigan, Purpura, Wilson, Walker, and Clancy–Menchetti (2013) also focused on phonological skills. These studies included other curriculum within intensive, systematic and individualized small group instruction and obtained large effect sizes in basic reading skills. The studies noted improvement in word reading, decoding, reading fluency and comprehension.

**RtI for CLD Students**

A review of the relevant research studies to assess the extent to which the RtI model has been employed successfully with minority populations places considerable focus on African American students, who historically have been the most consistently and widely identified with special education Disproportionality (Cartledge & Dukes, 2009).

*Early Intervention Implementation for African American Students*

Three of the 10 research studies had intervention populations that were exclusively African American. (Gibson, Carltedge, Keyes, & Yawn, 2014; Lovelace & Stewart, 2009; MustiRao & Cartledge, 2007). As stated previously, African American students predominated this review because they are the one minority group consistently identified for special education Disproportionality, especially in the subjective or mild categories (Cartledge & Dukes, 2009). These findings are functional with good effects, showing the beneficial returns of early interventions for young African American learners. With few exceptions most of the children in these studies were in urban settings and low income. Although encouraging, the small sample sizes and limited number of studies point to the critical need for more research with this population along with largescale efficacy studies.

Musti-Rao and Cartledge (2007) used the ERI supplemental training kit to help seven of the eight African American first graders achieve desired levels of phonological skill. Study results showed convincing evidence of a functional relationship between instruction and student skills. Even though participants continued to receive whole-group instruction in the classroom, it was only when this intervention was implemented that gains for the participants were noted. Gibson et al. (2014) used a supplemental computerized software program, which is also a packaged intervention, to address oral reading fluency (ORF) and comprehension skills for African American first-grade students with reading risk. The researchers focused on ORF and findings confirmed the positive effects of the treatment on subsequent student gains. Lovelace and Stewart (2009) implemented vocabulary instruction using storybooks to improve the word knowledge among African American second grade students. Also a single-subject design, the alternating treatment design revealed that robust vocabulary instruction was effective in producing gains in word knowledge for all participants. The authors attributed this progress to the robust nature of the instruction.

Given the poor outcomes typically associated with CLD students who show risk, it is important to highlight positive research returns. For example, one feature of all of these studies is the intensive instruction. These data repeatedly show that even though the children were receiving comparable instruction in their classrooms, they did not show substantial movement until they were engaged in intensive small group instruction. In one case (Gibson et al., 2014), the instruction was intensified beyond initial prescribed levels to enable students to reach desired goals; in some cases, the students reached end-of-year benchmarks. Orosco and Klingner (2010) also report the importance of intense, well-developed interventions for reading gains among ELLs.

A primary purpose of this literature review was to identify evidence-based ERIs provided to African American students within an RtI framework. After conducting an extensive literature search and finding only three studies that met the specific search criteria, it was evident that research in this area is sparse. Reviews from these three studies indicated that providing ERIs for African American students at risk for reading failure did have beneficial effects on students’ reading gains. Two of the three studies reported using evidence based scripted materials. The common element for all of these studies is that the instruction was intensified, requiring high rates of accurate responding for all learners.

As noted previously in this paper, several authorities proposed the potential of the early intervention of the RtI model to impact positively special education Disproportionality among CLD populations (Donovan & Cross, 2002; Vaughn & Fuchs, 2003). It is further speculated that combining culturally relevant/responsive pedagogy approaches to RtI may prove to be even more advantageous for urban and minority students (Klingner & Edwards, 2006; Paris, 2012). One purpose of the second section of this paper is to examine the extent to which culturally relevant factors, if any, have been applied to evidence-based interventions with enhanced effects. What follows is a discussion of the CRP concept, a review of the professional and empirical literature on CRPRtI, a discussion of practice implications, and conclusions.

**Culturally Responsive Pedagogy**

Stemming from multicultural education, CRP is not limited to students of color but is transformative in nature and calls for radical change in the education of all students. Ladson-Billings, who is one of the most prolific and earliest teachers of CRP and is noted for the term CRP, asserts that the use of CRP educational methods and strategies help to balance the existing asymmetrical power relations within this society (Ladson-Billings & Tate, 1995). CRP honors the linguistic and cultural differences of students of color. In addition, Ladson-Billings (1995) contended that CRP resulted in students who achieved academically, evidenced cultural competence, and were able to understand and critique the existing social order. Within this pedagogy, educators used the children’s culture as a vehicle for learning and it enabled educators to gain greater insight into themselves and the structures for a more equitable society. It teaches through the strength of the students, but there is not a one size fits all for employing CRP within the classroom.

Gay (2000) uses the term “culturally responsive pedagogy” to reinforce and elaborate on the work of Ladson-Billings (1995). Along a similar vein, Gay emphasizes meaningful experiences for the learner and the importance of taking on critical social justice issues. According to Gay (2010), culturally responsive teaching is validating, comprehensive, multidimensional, empowering, transformative, and emancipatory, challenging teachers to esteem their students’ intellectual capacity. Such teaching is characterized by rigor, courage, the ability to build interpersonal relationships with students that encourage engagement, and knowledge of the values, learning styles, legacies, and contributions of various ethnic groups.

Both scholars are prolific in their advocacy for CRP for urban and minority populations, with comparable concepts and examples. Gay (2000, 2010) appears to put more emphasis on preparing educators to implement the practices, while Ladson-Billings (2014) focuses more extensively on student outcomes. Recognizing the overlapping nature and interchangeable use of these terms in the professional literature, for purposes of simplicity and clarity, the term CRP will be used throughout this paper, as we explore CRPRtI interventions for urban and minority populations.

The research literature in this area is very limited. The inclusionary criteria included the terms: *special education, reading, early interventions, urban, CLD, minority, black, English language learners, and African American*. More than 10,000 responses were reported. Applying culturally relevant or culturally responsive to the search criterion yielded zero responses. The question arose as to whether this gap was indicative of little concern for the reading achievement of minority students. One study was found by Orosco & Klingner, 2010, that met the criteria of CRP with an RtI focus. The study setting was an elementary school with a focus on reading in the the primary grades. This qualitative study did not report student outcomes but did examine the application of CRP within an RtI model.

Klingner and Edwards (2006) concluded that the model for effective interventions should include a balance between skills and holistic instruction; teachers knowledgeable in reading and second language instruction; and student centered competency level tasks that engender success as well as challenge students. Moreover, Klingner and Edwards (2006) noted that placing blame on the student for failure was problematic and that academic failure of students is not static: A student at risk in one subject may be considered gifted in another. The notion that literacy begins at home is the driving force behind accommodation: Educators, administrators, and stakeholders can build upon what has been already established within the student’s home environment. Incorporation involves bringing community practices into the classroom and curriculum, validating the community they serve and building mu tual understanding to better meet the needs of the students and their families. Adaptation involves helping students and families develop societal knowledge and values, while still honoring their cultural values, to be competitive within our global society. Klingner and Edwards (2006) concluded this work by advocating CRP across RtI.

Graves and McConnell (2014) also emphasized the importance of CRP within RtI, but unlike Klingner and Edwards (2006), who emphasized a framework or guidelines for implementation, Graves and McConnell (2014) drew upon existing themes within the CRP literature to recommend. They advised, for example, that interventions include family origins, religions, history, and traditions to foster a sense of inclusion and community among the students. They also encouraged educators to emphasize the responsibility that students have for each other, to confront their biases and create caring classrooms, and to have high expectations for student success. Similar to Klingner and Edwards (2006), Graves and McConnell (2014) believed that CRP and RtI can become the basis for supporting reading development of all learners, particularly CLD students who show school risk.

Accordingly, Struck and Vagle (2014) examined the use of students’ stories in literacy instruction in an effort to showcase CRP within a Tier 2 intervention. The authors described an intervention in volving two CLD students: one student from India whose native language was Hindi and one student from Somali with a Somali language. A third native English-speaking White student was also discussed. A key feature of these scripted lessons was to augment them with conversations along with sources of information from the students about their lived experiences. These conversations, observations, and reciprocal teaching activities led the authors to speculate that these were factors that bolstered learning and deepened comprehension. Although lacking in experimental controls, the authors could not draw definitive conclusions about findings but they did advocate the use of CRP within RtI interventions. Such practices would increase access and inclusivity for student populations that would otherwise be marginalized with literacy disengagement.

**Discussion**

All the studies reviewed on RtI with CLD populations all represent supplementary or Tier 2 interventions. Ideally, RtI schools would have strong Tier 1 applications that support 80% of the students within general education settings. The instruction is effective, evidence-based and differentiated according to student need. None of the reviewed studies in the first section of this paper reported school-based RtI models and the interventions were more consistent with a la carte approaches and simply using what is available rather than recommended comprehensive instructional models. The CLD primary-aged students identified for showing reading/special education risk systematically received evidence-based interventions resulting in consistent and convincing gains.

Although inspirational, the findings of the reviewed studies do not provide definitive evidence of the positive impact of RtI on minority Disproportionality. Although there are suggestions of positive returns (Proctor et al., 2012; Sullivan & CastroVillarreal, 2013), for the most part the data are equivocal (Proctor et al., 2012) with a general consensus on the need for well-designed longitudinal studies (Proctor et al., 2012; Sullivan & CastroVillarreal, 2013).

In reviewing the existing literature, these studies leveled off at Tier 2 interventions. They inadequately defined the intervention, inadequately defined the student population, and failed to disaggregate their research findings according to pupil diversity. Interventions and student populations were adequately defined but none of the studies with mixed populations disaggregated the results in terms of diversity. The three studies that exclusively targeted African American students were the exception, but this needs to be viewed cautiously because many urban districts will list Black stu =dents as African American when the students actually have cultural differences such as a background in another country (e.g., Somali or Haiti) and are ELLs.

The relationship between academic underachievement and poverty are well established with recent evidence that the achievement gap between poor children and their affluent peers is increasing (Siegel, 2016). If poor districts are disproportionately burdened with large numbers of students who would benefit from RtI models that are too expensive to implement, it is unlikely that we will see the desired effects of reductions in special education and Disproportionality unless much greater sums are generated beyond 15% of the special education budget authorized in IDEIA 2004.

The role of CRP within RtI models lacks sufficient research. One study was identified that studied CRP within an elementary RtI school and specific outcomes were not reported for the Latino ELLs, teacher inadequacies were rampant and the school failed the students. One critical finding was the obvious need for professional development for school personnel of CLD learners. The negative culture of blame on children and their families is not uncommon when schools are challenged with low-income, culturally diverse, “hard-to-teach” children.

A related problem is that existing research has not clearly determined which instructional models or approaches are best for which groups of students. Lovelace and Stewart (2009), for example, found that their intensive training helped to improve vocabulary development but no added gains resulted from using African American versus Caucasian books. The use of culturally relevant materials did seem to aid some of the children in the fluency studies but more extensive studies are needed for a conclusive statement on the most facilitating reading materials for this population.

**Conclusion**

This literature review examined the recent professional and empirical literature relative to RtI applications within a CRP context. This review solidified the need for more research of urban and CLD populations showing risk for special education. There is a tremendous void in the literature that speaks to CRP RtI interventions that are specifically designed for urban minority and African American learners. The previously noted special education Disproportionality and poorer school outcomes underscore the urgency for CRT evidence-based interventions that are universally employed for this population. In this review, the Tier 2 and Tier 3 interventions reported positive effects for CLD learners but these interventions were not positioned within RtI schools. There was only one controlled study showing the beneficial use of culturally relevant materials and the study of CLD within an RtI school pointed to the tremendous need for professional development for both RtI and CRP. Rather than rethink the push to reduce Disproportionality, policymakers need to greatly multiply efforts to increase resources and the professionalism needed to equip CLD students with fully functioning, evidence-based, culturally relevant, and multitiered schools. These efforts include funding of research projects and service centers to provide guidance for effective practices and applications.

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**Table 2** *Domain of Concentration and Intervention Tool*

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| --- | --- | --- | --- |
| **Study** | **Domain Concentration** | **Intervention Tool** | ***n*** |
| Cartledge et al., 2011 | Phonemic Awareness | ERI | 38 |
| Denton et al., 2013 | Reading Fluency  Phonological Skills | RRI  Reading Naturally | 72 |
| Gibson et al., 2014 | Reading Comprehension, Reading Fluency | ORF | 8 |
| Gyovai et al., 2009 | Phonemic Awareness  Beginning Literacy Skills | ERI | 12 |
| Lo et al., 2009 | Phonemic Awareness  Beginning Literacy Skills | ERI | 47 |
| Lonigan et al., 2013 | Beginning Literacy Skills  Dialogic Reading  Phonological Awareness | Small groups  Multiple T2 interventions | 324 |
| Lovelace & Stewart, 2009 | Vocabulary | Vocabulary Instructional Technique | 5 |
| MustiRao & Cartledge, 2007 | Phonemic Awareness  Phonological Awareness (Alphabetic Principle) | ERI | 7 |
| Wanzek et al., 2014 | Reading Verbal and Print Response | Full RtI model  Multiple interventions | 109 |
| Yurick et al., 2012 | Phonemic Awareness | DIBELS subtests | 38 |