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Enhancing Engagement and Achievement: Culturally Responsive Teaching Methods for Marginalized K-12 Students

Roya C. Benjamin
S4646699

Master's program Youth 0-21, Society and Policy
Faculty of Behavioural and Social Sciences
University of Groningen

Abstract

This systematic review explores the integration of culturally responsive pedagogy (CRP) into instructional design to enhance engagement and achievement among K-12 students from marginalized backgrounds. The review covers studies published between 2016 and 2023 and analyzes 13 studies sourced from Web of Science, PsycINFO, and ERIC databases, selected in accordance with PRISMA guidelines. The studies utilize various methodologies, including qualitative, quantitative, and mixed methods. The key results of the studies indicate using culturally relevant texts, integrating students' cultural backgrounds, and engaging families improve student engagement and achievement. The studies vary in their methods of measuring achievement, from standardized tests to classroom observations, highlighting a need for more uniform assessment tools. Limitations in several studies included small sample sizes and lack of control groups, which impacts generalizability of the findings and the ability to establish clear comparisons. There is also a need for ongoing curriculum reform and professional development in CRP that supports broader application, as well as further research on CRP's long-term and impact on students with disabilities.

Introduction

For decades, culturally responsive pedagogy (CRP), also known as culturally relevant teaching, has become more significant as a critical approach to addressing educational inequalities. CRP is a pedagogical framework that empowers students socially, intellectually, politically, and emotionally using cultural references to convey knowledge, skills, and attitudes (Ladson-Billings, 1995). This approach emphasizes the importance of aligning educational practices with students' cultural backgrounds to enhance academic engagement and achievement (Ladson-Billings, 1995; Gay, 2002). In the United States, many iterations of CRP trace their roots to the social and liberation movements of the 1960s and 1970s such as the Civil Rights Movement, Chicano Movement, and the Indigenous Rights Movement (Cherfas et al., 2018). In New Zealand, some Indigenous Māori pedagogical principles have been used to ensure the safe, secure, and effective transmission of knowledge and expertise across generations (Glynn et al., 2010).

Ladson-Billings, (1995) mentions that incorporating culturally responsive pedagogy promotes equity and inclusion, empowers students, enhances academic achievement, fosters critical thinking, builds cultural competence, promotes social justice, and prepares students for a life within a diverse society. Culturally responsive pedagogy aims to acknowledge the significance of students' experiences and culture in the educational setting, especially students from marginalized communities (Capper, 2021). In practice, this means adapting teaching practices, strategies, and materials to reflect students' diversity. For example, in a predominantly Black classroom, using culturally relevant texts to boost student engagement and motivation in reading, as demonstrated by Capper (2021). Novels with African American protagonists were found to increase students' interest and connect them to the material. This is especially important for a marginalized student population that has historically faced many disparities

within the American education system. Hence, incorporating culturally responsible pedagogy enhances their academic outcomes.

Similarly, Indigenous teachers in the Swedish part of Sápmi sought to transform mathematics education by incorporating Sámi culture-based activities, as discussed in Nutti (2010), demonstrating the applicability of CRP in supporting indigenous students, even within specific subject areas. Matthews and López (2019) demonstrated how CRP can also honor heritage and language within the classrooms of Latino students of Mexican descent. This study, along with the other studies mentioned (Capper, 2021; Nutti, 2010), provide great insights into the impact of CRP. However, they lack information detailing specific strategies and methods necessary for effectively incorporating culturally responsive pedagogy into instructional design.

While culturally responsive practices are seen as ideal for marginalized students (Capper, 2021), some scholars have found that many interpretations lack context and not enough focus is placed on the link between culturally responsive pedagogy and student outcomes, thus hindering its considerations among policymakers (Sleeter, 2012 as cited in López, 2016). The literature on culturally responsive pedagogy or culturally relevant teaching often places focus on teachers' professional development, training, or cultural competencies (Gay, 2002; Capper, 2021). There remains a need for comprehensive analysis of specific strategies that effectively integrate these practices into instructional design, particularly in ways that enhance student engagement and achievement (Ladson-Billings, 1995; Lim et al., 2019).

The aim of this systematic review is to address this gap by identifying and analyzing strategies and methods that effectively incorporate culturally responsive pedagogy into instructional design. More specifically, the following research question will be answered: What effective strategies enhance student engagement and achievement in K-12 education through

culturally responsive pedagogy for marginalized communities? The insights from this review can inform efforts to create more inclusive educational environments that support the needs and experiences of all students.

Historical and Theoretical Background

CRP challenges traditional educational practices by addressing critical issues, such as equity, inclusivity, power imbalances, racism, cultural relevance, and historical atrocities (Gay, 2002).

The origins of CRP in the United States can be traced back to a rich history of educational, social, and liberation movements of the 1960s and 1970s, where consistent pushes for equity, equality, and access to education, were driven by empowerment, self-determination, and cultural pride among marginalized groups (Cherfas et al., 2018). The educational discourse by these movements challenged the idea of "colorblindness" and highlighted the impact of racism and systemic inequalities in society, facilitating a deeper understanding of apparent power dynamics and social injustices in educational settings (Cherfas et al., 2018).

In a similar way, the historical context of education in other regions of the world, such as South Africa, provides additional awareness of the importance of addressing systematic inequalities through educational reform. Flint et al. (2018) addressed the impact of the apartheid on education. During the apartheid, systemic inequality and segregation in educational settings affected marginalized groups, especially those in rural areas, forcing them to face the brunt of the discriminatory policies and limited access to quality educational resources. At the end of the apartheid, the county overhauled the education system, including the way teachers were trained and the adoption of an outcome-based curriculum model (Flint et al., 2018).

Rural and historically Black training colleges were either shut down or displaced, causing a barrier to access to quality teacher training for many prospective teachers. With the adoption of a new curriculum, teachers were expected to work with limited training and resources, leading to gaps in educational outcomes for marginalized students (Flint et al., 2018). This underscores the importance of adopting pedagogical approaches that are responsive to the needs of diverse learners and address the historic inequalities perpetuated by discriminatory policies.

Policy frameworks play a large role in shaping the implementation and sustainability of CRP in educational settings. National policies such as the No Child Left Behind Act in the United States led to rigid skill-based programs instead of content-based curricula that incorporate CRP (Penny-James, 2012). Penny-James (2012) asserts that these policies often overlook the cultural and linguistic diversity of students, further perpetuating disparities between white students and students of color.

The historical roots and contextual factors of CRP underscore its transformative potential and address critical issues that exist in and around educational settings. Moving forward, it is imperative to continue to explore and implement CRP that caters to diverse needs of students.

Relevance

Teachers who align their classroom practices and environments with culturally responsive principles are better suited to validate their student's identities and experiences, encourage them to critically analyze the world around them, maintain equitable relationships, and support their academic success by making educational content more meaningful and accessible ((Ladson-Billings, 1995; Gay, 2002; Lim et al., 2019; Capper, 2021). Educational policies tend to limit creativity and flexibility by prioritizing standardized testing or national curriculum standards that only serve to prepare students for further studies in a

mainstream education system (Gay, 2002; Nutti, 2013), leading to underachievement of marginalized groups, limited representation, and a lack of adequate training and support (Gay, 2002; Glynn et al., 2010).

Understanding how to properly implement effective culturally responsive strategies benefits all students by enriching the learning experience and educational environment (Gay, 2002; Capper, 2021). Therefore, this review aims to bridge existing gaps in literature and provides educators and policymakers with actionable insights to foster inclusive educational environments.

Methodology

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) Statement, to aid in the appropriate reporting of synthesis methods and ensure that research is accurately and transparently reported (Sarkis-Onofre et al., 2021). In this review, primary databases Web of Science, PsycINFO, and ERIC were used to gather a comprehensive collection of literature. These databases were selected for their extensive coverage of research in education and social sciences.

To systematically identify the relevant literature available, a search strategy was developed using a combination of keywords and search term synonyms, documented in Table 1.

Table 1.
Database Keywords and Term Synonyms

Category Keywords	Search Term Synonyms
Culturally Responsive Pedagogy	'cultural* responsive pedagog*', 'cultural* relevant pedagog*', 'cultural* relevant teach*', 'culturally inclus* pedagog*', 'culturally sensit*'
Instructional Design	'instructional design', 'learning design'
Student Outcomes	'student engag*', 'student achievement'

Search Strategy

While the study focuses on marginalized students in primary and secondary grades, keywords pertaining to this were not included in the search string for two specific reasons. First, the nature of CRP inherently involves addressing the needs of marginalized groups. The search terms did not include specific keywords related to different marginalized groups, aiming to

ensure inclusivity and minimize the risk of unintentional oversight. Second, grade information

was deferred to the screening phase to allow for a more detailed evaluation of relevant studies.

This approach enabled capturing studies where grade levels might not have been explicitly

mentioned in the title, abstract, or listed as keywords, ensuring that studies referencing terms

such as "grade 7", "first grade", or "year 1" were not overlooked.

The Web of Science search terms included a topic search (TS) to ensure more

comprehensive results. The search string for ERIC and PsycINFO databases were sufficient

without doing so, as the default search parameters captured relevant and specific literature results

without needing to broaden parameters. (see Table 2).

The first search was performed in April 2024 and the second in May 2024.

Table 2
Summary of Database Searches and Results

| Database	Search String	Results
Web of Science	TS=(cultural* responsive pedagog* OR cultural* relevant pedagog* OR cultural* relevant teach* OR culturally inclus* pedagog* or culturally sensit*) AND TS=(instruct* design or "learning design") AND TS=(student engag* or student achievement)	84
ERIC	(culturally responsive pedagog* OR culturally relevant pedagog* OR culturally relevant teach*) AND (instructional design OR learning design) AND (student engag* OR student achievement)	14
PsycINFO	(culturally responsive pedagog* OR culturally relevant pedagog* OR culturally relevant teach*) AND (instructional design OR learning design) AND (student engag* OR student achievement)	3

Selection Process

To ensure the inclusion of recent relevant studies, the eligibility criteria for this

systematic review considered literature published within the last 10 years, dating back to 2014.

Only studies in English were included. The research focused on primary and secondary school

students (K-12), particularly targeting students from marginalized groups including but not limited to English Language Learners (ELLs), ethnic minority students, students with disabilities, or those from low-socioeconomic backgrounds. Studies were excluded if they were not peer-reviewed, focused on adult learners, or only discussed culturally responsive professional development or training without mentioning specific interventions that detail student outcomes.

Using the search string listed in Table 2, the Web of Science search produced $n=84$ results. The search was then refined to filter results by date, including only results from 2014 to 2024, resulting in $n=74$ articles. Further refinement filtered articles that were not in English, resulting in $n=70$ articles, eliminating articles published in Spanish, Afrikaans, Italian and Chinese. A title scan resulted in $n=45$ eligible titles, then $n=24$ eligible for full text reading. The ERIC database search string resulted in $n=14$ articles. After filtering results to the desired date range and specifying the selection of articles and dissertations, $n=11$ articles were selected for title screening. Following the title screening for ERIC, $n=5$ results remained for the abstract scan and were selected for full text reading as well. The PsycINFO database search resulted in $n=3$ articles, and all $n=3$ articles were eligible for a full text reading. After the full-text reading, a total of $n=13$ articles were included in the systematic review. These studies were selected based on their alignment with the defined inclusion criteria and focused on CRP and its impact on student engagement and achievement among marginalized populations in primary and secondary grades. Excluded articles did not directly focus on students in primary or secondary settings but were specific to higher education. Others emphasized strategies solely for parents and families or addressed professional development implications without a follow-up on student outcomes (Figure 1).

Figure 1: PRISMA Flowchart
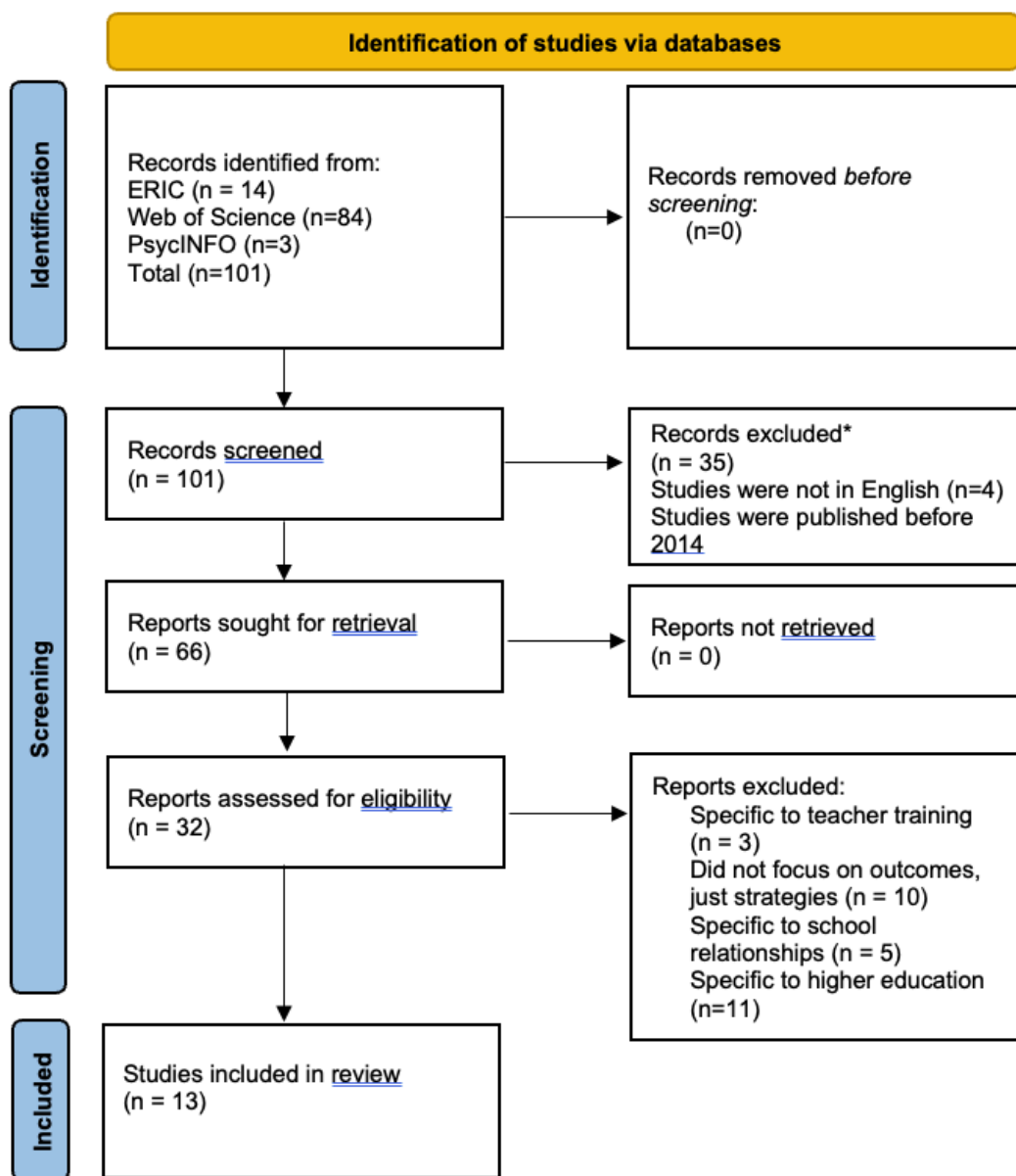
Quality Assessment

A quality assessment of the selected studies was conducted with risk of bias tools

appropriate to their respective study designs to ensure reliability and validity of the findings in

this review. The assessment tools included the Risk of Bias in Non-randomized Studies of

Interventions (ROBINS-I), Mixed Methods Appraisal Tool (MMAT), Critical Appraisal Skills Programme (CASP), and Joanna Briggs Institute (JBI). The assessments revealed the strengths and weaknesses of the studies, clarity of research aims, appropriate study designs, and effective data collection and analysis methods.

Analytical Strategy

In this systematic review, the data extraction process involved identifying key concepts, keywords, and themes from the selected literature related to effective strategies use to incorporate CRP into instructional design in K-12 classrooms. ATLAS.ti was used to facilitate the process, enabling a thorough analysis of how these strategies impact marginalized communities and contribute to enhancing student academic achievement and engagement. Each study was imported into ATLAS.ti, where codes were created based on recurring concepts and insights from the literature.

Thematic analysis was then conducted using the extracted data to identify and code the recurring themes and patterns that emphasized the CRP strategies. For example, the excerpt from "A whole new world opened up: the impact of place and space-based professional development on one rural South Africa primary school" (Flint et al., 2018),

"Teachers reported higher levels of children's engagement and motivation to read and write when they included technology and culturally relevant texts. We suggest that teachers' stories of their adaptations of project ideas provide evidence of how their practices shifted from traditional non-elite practices to more intentional and generative (Flint et al., 2018)*."*

In this example, the codes used were instructional design, tech integration, and student outcomes. In this excerpt, it is clear that a strategy like technology integration and the use of culturally relevant texts can enhance student engagement and achievement.

The codes were divided into distinct categories (see Table 3) and were defined as follow:

1. Contextual Factors – contextual factors that influence the implementation and impact of CRP.

o Environmental influences: the factors related to the physical and social environment of schools and community, including resources available and infrastructure.

o Policy Restrictions and Considerations: educational policy or guidelines affecting CRP implementation.

o Historic Influences: the historical elements that shape current educational practices.

2. Challenges – difficulties and barriers faced when implementing CRP.

o School challenges: any issues within the school environment such as inadequate resources, lack of administrative support.

o Student challenges: any difficulties faced by students including socioeconomic disparities or language barriers.

o Teacher challenges: any obstacles encountered by teachers such as limited professional development opportunities or resistance to CRP practices.

3. Instructional Design – the strategies/methods used for planning and delivering instruction.

o Culturally Responsive Pedagogy (CRP): teaching practices that incorporate students' cultural backgrounds and experiences to enhance relevance and effectiveness.

o General Instructional Design: broad strategies for lesson planning and teaching

o Technology Integration: the incorporation of digital tools and resources

4. Evaluation – the evaluation tools or methods used to measure the impact of CRP on student outcomes.

5. Relationships- various observed dynamics including student-teacher relationships and community engagement influenced by the integration of CRP practices.

6. Teacher Input/Outcomes – feedback, insights, and perspectives from educators on their experiences implementing CRP.

7. Successful Implementation – elements and strategies that contributed to successful implementation such as support structures, professional development,

8. Student outcomes- measurable results reflecting the impact of CRP.

    o Student Achievement: improvements in grades and test scores across various subject areas.

    o Student Engagement: engagement assessed by participation rates, attendances, observational responses, surveys, and questionnaires.

Table 3
Atlas.ti Coding Groups

Main Category	Subcategories
Contextual Factors	Environment Policy Restrictions or Considerations Historic Influences
Challenges	School Challenges Students Challenges Teachers Challenges
Cultural Relevant Themes	-
Data Collection	-
Evaluation	-
Instructional Design	Culturally Relevant Curriculum Instructional Design General Tech Integration
Marginalized Groups	-
Relationships	-
Teacher Input/Outcomes	-
Successful Implementation	-
Student Outcomes	Student Achievement Student Engagement

Results

This section summarizes the results of the selected studies. First presented is a general summary of the articles along with their study characteristics and key learnings (see Table 3). The results are presented in sections consistent with the research aims, where the analyzed strategies are discussed in relation to the recurring themes identified during the coding process.

General Summary of the Studies

In table 3 the study titles are the primary identifiers followed by study designs, key details including sample size, study duration, and a focus on culturally responsive themes and student outcomes. The review encompasses a range of study designs including qualitative, quantitative, and mixed method approaches to examine culturally responsive practices within education. There were two studies that did not include clear or specific information regarding the sample sizes and detailed outcome, but overall, they highlighted the multidimensional nature of implementing CRP.

Table 3
Summary of Results

Author	Study Design	Sample	Duration	CRP Theme	Marginalized Community	Instructional Design	Student Outcome
Calvit & Ford, 2023	Conceptual study	42 students in 4th and 5th grade	~ 1 year	CRP incorporated in social studies curriculum	Students from low-income backgrounds	Teaching meaningful topics: leveraging student backgrounds as assets and promoting critical consciousness through discourse on social and political issues affecting marginalized communities.	Teaching meaningful topics: leveraging student backgrounds as assets and promoting critical consciousness through discourse on social and political issues affecting marginalized communities.

Cantrell et al., 2022	Mixed-methods - quantitative analysis, qualitative analysis	21 K-8 teachers	4-day summer workshop, followed by year-long study on PD impact on reading achievement, 10 coaching sessions and 4 follow-up workshops	CRP themes in PD	Students from historically underserved and underrepresented	Instructional design of PD programs including strategies such as creating equitable partnerships with families, supporting vocabulary scaffolding speaking and writing skills, promoting critical consciousness activities in the classroom	Designing PD program strategies include equitable family partnerships, vocabulary scaffolding, speaking, and writing skill support, and integrating critical consciousness activities in classrooms.
Clark, 2017	1st study – Quasi-experimental 2nd study – archival data	Not specified	10-week afterschool reading program	Culturally relevant text	African American struggling readers	Culturally relevant texts integrating into group reading instruction - texts written or illustrated by individuals with similar cultural backgrounds as students	Greater comprehension growth and higher growth in contextual word recognition
Fallon et al., 2021	Mixed Methods	Ranging from 4 participants to 4,600, with an average of 782	Various periods - many between 1-3 years	CRP to support racially and ethnically minoritized youth to create inclusive environments and family partnerships	Students facing disparities in academic expectations, access to quality instruction, and representation in gifted programs - specifically Black, Latino, and Native students	Integrations of culturally relevant content and practices into literacy and science instruction	Improved student achievement in literacy and science for 4th grade students, CRP fostered greater student engagement motivation and participation in learning activities.
Flint et al., 2018	Qualitative dominant mixed methods	Student sample not specified- estimated student population of approximately 400 students with about 200 in foundation grades	~ 3 years	Integrating students' cultural backgrounds, experiences, and perspectives through teaching practices, personalized instruction, and community engagement	Students from rural South African primary school	Incorporating culturally relevant materials, student-authored texts, and community building practices	Increased student engagement, enhanced literacy skills, fostered sense of community within the classroom
Gray et al., 2020	Mixed-methods sequential explanatory research design	105 student participants with 4 participating teachers in a public middle school, 99 students submitted consent forms to participate	9-week instructional unit, 2 teacher professional development workshops, 6 observations per teacher	Connecting students to their ancestral heritage in STEM education	Black and Latino students	Using Afrocentric Praxis of Teaching for Freedom model - highlighting historical figures of color, acknowledging students' life experience, and promoting them to make connections between learning and societal impact	Activities perceived as communal learning opportunities demonstrated higher levels of behavioral engagement, greater student participation leading to deeper understanding of material and increased interest in STEM fields
Kieran & Anderson, 2018	Qualitative research study	Not provided- study focus was on theoretical and strategies for integrating Universal Design for Learning and Culturally	Not provided	Addressing diverse backgrounds, perspectives, and cultural elements into teaching practices	Various groups - students with disabilities, English language learners, low-income families	Incorporating culturally responsive themes into lesson planning, designing assignments allowing students to construct their learning,	UDL lead to increased engagement, academic success, and overall well-being

Author	Research Type	Sample	Duration	Focus	Population	Strategies	Outcomes
	Relevant Teaching					mindfulness of student cultural backgrounds, experiences, and perspectives when designing instruction.	
López, 2016	Quantitative research	244 students and 16 teachers	Not specifically mentioned	Not specifically mentioned	Latino students	Integrating class materials that reflect the contributions made by individuals with shared cultural heritage, promoting development of home language alongside English, promoting critical awareness in the classroom	Higher levels of student engagement and academic success where bilingualism was promoted
F. López et al.,2022	Explanatory sequential design, incorporating qualitative and quantitative analyses	220 participants, 216 after excluding non-Latino students	One academic year, with surveys administered in fall and spring. 6.5 hours of professional development 3 times over the year	Inclusion and emphasis on Mexican culture	Mexican students	Intentional selection of texts and topics that reflect student experience,	Deeper engagement and interest in learning about system of oppression, higher engagement in these courses compared to traditional English classes
Manuel et al., 2023	Comparative case study	5 secondary math and science teachers	Not specified	Integration of CRP with engineering design processes in classrooms	Students historically underrepresented in STEM - Black and Latino students	Incorporating CRP into STEM instructional to address needs of marginalized students, incorporating culturally and family backgrounds into projects, community mapping activities to gain insights into student experiences outside of school	An increase in engagement and achievement, enhanced self-esteem, establishment of positive teacher-student relationships through trust-building
O'Brien et al., 2023	Qualitative research	22 first grade student participants	4-week interdisciplinary unit	Integration of CRP within the instructional framework of Connected Teaching and Learning	Culturally and linguistically diverse background in high-poverty urban areas- highlighting English language learners including Spanish, Somali, and Arabic speakers	Implementing the Connected Teaching and Learning framework and creating in-school instruction with students' lived experiences	Enhanced engagement and achievement through the idea of "co-evolution" and "reciprocity" by creating an inclusive environment that honors the interconnected nature of cognitive, social, and cultural systems
Portes et al., 2017	Randomized controlled trial	1,521 student participants in primary school, specifically 3rd and 5th grade, teachers from 22 schools and 14 school districts	2 years	CRP through Instructional Conversations (IC)	Bilingual learners and Latino English Language Learners	Implementation of IC approach as part of the Center for Research on Excellence and Diversity Education pedagogical framework, taking learners' social capital and cultural backgrounds into account	Positive outcomes in English Language Arts and other subject areas, advantages in ELA, reading, science, social studies, and math.

Powell et al., 2016)	Concurrent triangulation mixed methods	27 elementary school teachers from 4 different schools, academic achievement data collected from 456 students	One academic year with 6.5 hours of professional development, 2 full days elements of CRIOP, 50.4 hours of classroom-based support for teachers	Using Culturally Responsive Instruction Observation Protocol (CRIOP)	Students from underrepresented populations including	Incorporating students' cultural backgrounds into lessons, utilizing students home languages as a resource instruction, peer collaborations, focus on academic language acquisition	Higher achievement in reading and mathematics, greater gains meeting state standards, increased classroom participation, positive racial and ethnic attitudes

Of the 13 studies, n=12 were conducted within the United States, and one in South Africa (Flint et al., 2018). Among these, 12 studies were conducted within traditional K-12 classrooms in rural or urban schools. One study took place at a university literacy center, where observations were carried out by undergraduate students as part of their upper-level practicum (Clark, 2017).

The review includes studies that encompass different focuses on the marginalized groups, with n=6 studies centered around the outcomes of Black, Latino, and Native students. N=4 studies were centered around general underrepresented/underserved and low-income populations, and n=2 studies focused on the outcomes of students from culturally and linguistically diverse populations.

With different research designs, the studies used various outcome measurements and instruments to determine the impact of CRP practices on engagement and achievement in K-12 classrooms. Studies used surveys to help determine teacher perception of the CRP implementation (Manuel et al., 2023) and student engagement levels (Gray et al., 2020). N=4 studies utilized standardized assessments to measure student achievements (Portes et al., 2017; F. López et al. 2022; Powell et al., 2016), with one standardized assessment using an adaptive computerized assessment tool to measure growth in reading and language overtime (Cantrell et al., 2022) and test scores used to facilitate grade comparison for the primary outcome measures (Portes et al., 2017). Studies incorporated student participation in measurement by employing teacher & student interviews (Calvit & Ford, 2023), focus groups, and questionnaires to measure

student engagement (F. López et al. 2022). The interviews provided insights on student engagement and curriculum effectiveness. Student-centered focus groups provided opportunities for students to freely voice opinions and provide insights on their level of engagement, experiences, and perceptions (Gray et al., 2020). Classroom observations also helped evaluate student engagement (Flint et al., 2018). Video recordings were used to capture the dynamics of interactions and coded transcripts helped to determine student participation levels (O'Brien et al., 2023). Of the 13 studies, one employed a control group to evaluate student progress, as well as the use of archival data to compare reading gains (Clark, 2017). One study did not specify instruments as it focused mainly on frameworks and pedagogical strategies (Kieran & Anderson, 2018).

CRP in Instructional Design

A core focus of this review is exploring and analyzing various strategies for implementing CRP in instructional design, particularly for marginalized students. By incorporating CRP into instructional design, educators can create learning environments that are more equitable and engaging for all students. At the heart of CRP is the recognition that students' cultural backgrounds influence their learning experiences. This section presents the key findings from the analysis of studies, focusing on how different CRP strategies support marginalized students. The results show how CRP can be implemented in various subject areas for students who are Black, Latino, Native, low-income, as well as culturally and linguistically diverse.

Racial/Ethnic Groups

In the analysis of the n=6 studies focused specifically on racial and ethnic groups, a consistent theme found was the emphasis of integrating students' cultural backgrounds and

experiences into the curriculum. Manuel et al., (2023) and Gray et al. (2020) connected the lived experiences of students into the class material and content, as well as highlighted cultural knowledge to enhance outcomes and critical thinking (López, 2016; F. López et al., 2022).

Another effective strategy was the use of culturally relevant texts to boost engagement and achievement. Clark (2017) studied the impact of relevant texts on the reading comprehension among African American students. Gray et al. (2020) incorporated culturally relevant content into lesson planning to help foster stronger connections to the class material. Similarly, Fallon et al. (2021) emphasized integrating students' ancestral heritage into course material, by presenting students with material that leveraged their own funds of knowledge and experiences that helped to deepen their understanding of instruction and connect to broader community contexts (Lopez, 2016).

Low-Income, Underserved, and Underrepresented Populations

Of the 13 studies, *n*=5 studies by Powell et al. (2016), Calvit & Ford (2023), Flint et al. (2018), Cantrell et al. (2022), and Kieran & Anderson (2018) focused on students from low-income, underserved, and underrepresented communities. They identified strategies that boosted student engagement and achievement through family collaboration and community engagement. Inviting families to be a part of the educational process helped bridge gaps between students' home and school life, making their learning experience much more relevant and accessible (Powell et al., 2016; Cantrell et al., 2022). This approach created more inclusive and supportive learning environments and boosted student engagement.

Promoting critical consciousness was another recurring theme in studies for this population. Students engaged in discussions around social dilemmas and community-based learning encouraged them to think critically about the content and develop a sense of agency in

their education (Calvit & Ford, 2023; Kieran & Anderson, 2018). This strategy was effective in fostering a more aware and engaged student body.

For schools in more rural or low-income communities, multimodal texts and technology were key strategies to engage students from underserved populations. Using different forms of media, applications, and interactive digital literacy tools motivated students, increased class participation and led to improved academic outcomes (Flint et al., 2018; Calvit & Ford, 2023). This approach also allowed educators to create more personalized, flexible and culturally relevant learning experiences.

Culturally and Linguistically Diverse Students

Two studies directed their observations of culturally and linguistically diverse students by connecting instruction to students' lived experiences and cultural backgrounds. Much like Calvit & Ford, (2023) and Kieran & Anderson (2018), these studies incorporated specific models and frameworks. The Instructional Conversation (IC) model fostered meaningful and culturally affirming conversations among students and promoted higher-order thinking by contextualizing learning in ways that resonated with students' cultural and linguistic backgrounds (Portes et al., 2017). Similar to the Flint et al., 2018 study, which used multimodal texts reflecting student's cultural experiences to enhance engagement and content accessibility, O'Brien et al. (2023) also explicitly taught vocabulary relevant to the content. This approach, guided by the Connected Teaching and Learning (CLT) framework, integrated reasoning strategies into lessons, prompting them to articulate their thoughts using the newly acquired vocabulary. With a deeper understanding of content, students became more confident in participating, and retained more material (O'Brien et al., 2023).

Student Outcomes

Student Engagement

The selected studies highlighted that CRP enhances student engagement across various educational contexts. Manuel et al. (2023) reported that the use of the Engineering Design Process (EDP) significantly increased student engagement during the project-based learning, especially among students who typically showed less interest in standard classroom activities. Similarly, Clark (2017) found that students who read culturally relevant texts exclusively demonstrated higher levels of engagement and comprehension compared to their peers who read non-culturally relevant materials or used them intermittently. Gray et al. (2020) supports these findings by showing that communal learning opportunities tailored to the cultural backgrounds of Black and Latino students led to deeper engagement with the educational content, as shown by the evidence of increased recall to cultural connections. Additionally, F. López et al. (2022) documented an increase in student curiosity and motivation within ethnic study courses that incorporated culturally relevant content and highlighted substantial improvement in engagement throughout the school year.

Manuel et al. (2023) noted a critical limitation, that while engagement was notably high during specific projects, it did not always continue after the projects were finished, suggesting that while CRP and hands-on projects can enhance engagement, the strategies must be consistent to maintain long-term interest.

Student Achievement

In most of the selected studies, achievement outcomes linked to engagement were impacted by the implementation of CRP. Lopez (2016) provided evidence that Latino students whose teachers implemented culturally responsive teaching strategies, achieved significantly

higher reading scores. This emphasizes the connection between effective CRP practices and improved academic performance. Flint et al. (2018) also found that a shift in literacy instruction towards more generative approaches led to enhanced student achievement in reading. Powell et al. (2016) demonstrated that students in classrooms where culturally responsive instruction was highly implemented had better achievement scores in reading and math. This finding is supported by Cantrell et al. (2022), where professional development in CRP led to significant growth in students' reading achievement, measured by the Measures of Academic Progress (MAP) assessment.

Portes et al. (2017) and O'Brien et al. (2023) both focus on specific instructional models and standardized tests to measure achievement. Portes et al. (2017) evaluated the (IC) model's impact on English Language Learners (ELLs) and found improvement in academic performance, including on test scores. O'Brien et al. (2023) reported that the implementation of CLT strategies led to increased vocabulary and reasoning skills, reflecting improvement in academic achievement through enhanced engagement.

The results of the review reveal that CRP significantly enhances student engagement and achievement across different educational settings and subject areas. However, methods used to assess student achievement varied widely, from observations of engagement to using test scores, showing that multiple methods may be needed to fully understand broad educational outcomes.

Discussion

The review aimed to identify effective strategies for integrating culturally responsive pedagogy in instructional design to boost engagement and achievement among marginalized groups in K-12 classrooms. By systematically reviewing a range of studies, this review analyzed various strategies implemented across different educational settings, grade levels, and marginalized communities. There is a wide range of literature on CRP practices and CRP relating to student achievement but while they often emphasize the importance of culturally responsive teacher training and professional development frameworks for achieving successful outcomes, they lack detailed explanations of how these strategies were applied in practice. This review sought to address this gap by focusing on specific actionable strategies that effectively integrate CRP into classroom instruction.

Ladson-Billings (1995) and Gay (2002) both encouraged the incorporation of cultural references into teaching to boost academic outcomes and foster more inclusive learning environments for many years. The results from the studies showed that including student cultural backgrounds and culturally relevant texts in class reading assignments, activities, discussions, and curriculum material can enhance engagement and achievement (Clark, 2017; Gray et al., 2020; Manuel et al., 2023; O'Brien et al., 2023). Capper (2021) demonstrated that using novels with African American protagonists in predominantly Black classrooms increased students' interests but also deeply connected them to the learning material. Furthermore, the studies show that honoring students' backgrounds and heritage can further enhance academic success. Teachers who are critically aware of this and actively incorporate these practices contribute to more inclusive learning environments (F. López et al. 2018).

Implementing CRP is also very adaptable and allows for diverse strategies that resonate with different cultural and educational contexts. Indigenous Māori pedagogical practices ensure effective transmission of knowledge across generations (Glynn et al., 2010) and Indigenous Sámi educators incorporate traditional themes and practices into activities to create deeper connections to materials (Nutti, 2010). In both communities, these are ways to promote curriculum development that reflects their history and perspectives, but also validates students' cultural identities. Sámi families and communities engage with educators to gain more insight into cultural backgrounds, so that practices align with the values and expectations of the community, fostering a sense of belonging and support for students. Positive outcomes of similar collaborations are discussed in Powell et al. (2016). Engaging family in the education process created strong support systems for students. Including families and recognizing students' cultural backgrounds helped them feel valued and respected and helped students feel more eager to participate (Powell et al., 2016; Cantrell et al., 2023).

Many educators throughout the studies embrace various multimodal learning approaches. The integration of technology in several studies further shows the potential CRP has to make learning more inclusive. Incorporating digital tools helps educators provide diverse learning materials, making education more accessible and adaptable, especially in diverse classrooms where strict one-size-fits-all approaches fall short, as expressed by Penny-James (2012). As part of a multiyear initiative, providing a rural school with digital tools and technology gave educators a chance to expose students to more culturally relevant materials, increase their digital literacy, and foster a sense of ownership over their learning as they were able to create their own stories and texts using these tools (Flint et al., 2018). By incorporating an additional tool for students, it enhanced their access to educational resources and learning opportunities. In the case

of Calvit & Ford (2023), providing low-income students with Chromebooks sought to ensure that these students could engage with the curriculum effectively, participate in remote learning and access online materials that would support their academic success, which can bridge the gap between digital divide and reduce educational disparities (Ladson-Billings, 1995; Capper, 2021).

Limitations

Common limitations observed throughout the selected studies were concerns of generalizability, study design, reliability, and the long-term impact of CRP interventions. Many studies were conducted over short durations, restricting the ability to observe long-term effects of the interventions (Powell et al., 2016; Flint et al., 2018; Gray et al., 2020; Manuel et al., 2023; O'Brien et al., 2023). Studies working within one school or in one school district expressed the potential limitation in applicability of results to broader populations or different educational settings (Manuel et al., 2023; Gray et al., 2020). Additionally, relying on small sample sizes, as noted in Fallon et al., (2021), Manuel et al., (2023), and O'Brien et al. (2023), further restricts the ability to generalize findings in other contexts, especially when the demographic characteristics of participants do not reflect the broader student population.

Another apparent limitation found was a lack of control group throughout many studies, making it difficult to attribute the observed outcomes solely to the tested interventions. For example, Manuel et al. (2023), Flint et al. (2018), and Fallon et al. (2021) emphasized that without a control group it was challenging to determine whether improvements in student engagement or achievement were directly due to the implementation of culturally responsive practices or any external forces. Self-reported data seen in Gray et al. (2020), Manuel et al. (2023), and F. López et al. (2018), introduces potential bias as the participant responses may be influenced by social desirability or personal perceptions thereby skewing the accuracy of results.

Unique to the Calvit & Ford (2020) study, was that some students from low-income backgrounds faced obstacles with the technology use due to the virtual learning environment. To address this challenge, the district provided Chromebooks to every student; however, many low-income families still encountered issues with internet connectivity.

Despite the limitations, the results of the selected studies are still valuable in addressing a critical gap in existing literature concerning effective implementation of CRP for marginalized groups in K-12 classrooms. The limitations of some of the studies may affect the scope of findings but the results still provide a nuanced understanding of strategies that educators can employ to tailor their classroom instruction to the unique cultural and educational needs for diverse student populations.

Review Limitations

The screening and coding of the studies were conducted by a single reviewer, which could introduce the risk of bias and increase the likelihood of errors. To mitigate this risk and enhance inter-rater reliability, the supervisor reviewed the exclusion of three articles. While only peer-reviewed articles were included in the review to ensure quality, valuable insights from grey literature may have been excluded.

Risk of Bias

The 13 selected studies for this review underwent quality assessment using risk of bias tools appropriate to their study designs, displayed in Table 4. Some studies showed moderate risk of bias, for reasons such as unclear sample representation, potential bias in generalizability, potential bias due to recruitment strategies, and lack of control groups. Strengths found in the selected studies included clear aims, appropriate research designs, sufficient data collection and comprehensive analysis methods. The decision to include these studies was justified by the

valuable insights, substantial evidence, and diverse perspectives into the research topic and aim.

The studies were assessed with the following tools: Risk of Bias In Non-randomized Studies of

Interventions (ROBINS-I), Mixed Methods Appraisal Tool (MMAT), Critical Appraisal Skills

Programme (CASP), and Joanna Briggs Institute (JBI).

Table 4

Risk Assessment Table

Study	Design	Risk of Bias Tool	Key Findings	Overall
Calvit & Ford, 2023	Conceptual Study	N/A	Strengths: innovate, strong framework Concerns: Researcher interests and involvement	N/A – assessments not applicable
Cantrell et al., 2022	Qualitative Research	CASP Qualitative	Strengths: clear aims, methodology, design, and data collection Concerns: Recruitment strategy, researcher participant relationship, ethical considerations	Moderate
Clark, 2017	Quasi-experimental	ROBINS-I	Strengths: accurate intervention classifications, consistent measurement methods Concerns: genre not controlled, randomization challenges due to attrition, sampling bias due to focus on urban schools	High
Fallon et al., 2021	Mixed Methods	MMAT	Strengths: research clarity, quality assessment Concerns: lack of integration details, potential bias with coding manual	Moderate
Flint et al., 2018	Mixed Method	MMAT	Strengths: comprehensive framework covering community, tech, and relationships Concerns: Limited discussion qualitative limitations generalizability	Low
Gray et al., 2020	Mixed Methods S	MMAT	Strengths: method allows for comprehensive understanding of impact, effective integration of data Concerns: validity concerns, generalizability concerns, potential bias in self-reported data	Low
Kieran & Anderson, 2018	Qualitative Research	CASP for Qualitative Research	Strengths: clear research aim, valuable insights Concerns: lack of methodological details, limited ethical considerations	High
López, 2016	Quantitative Research	ROBINS-I	Strengths: use of standardized formative reading assessments, systematic data collection Concerns: potential selection bias due to low participation rates, limited control group details	Moderate
F. López et al., 2022	Mixed Methods	MMAT	Strengths: attention to cultural relevance in settings, in-depth data collection Concerns: potential sampling bias due to focus on urban schools, lack of control group	Moderate
Manuel et al., 2023	Comparative Case Study	CASP for Case Studies	Strengths: clear aims, suitable design, strong ethical considerations Concerns: lack of clarity in recruitment strategy	Moderate to High Quality
O'Brien et al., 2023	Qualitative Research	CASP for Qualitative Research	Strengths: clear statement of aims, rigorous data analysis Concerns: lack of information for recruitment	Valuable Research
Portes et al., 2017	Quasi-Experimental	CASP	Strengths: strong study aims, well described randomized process, clearly stated findings Concerns: lack of information on potential bias, uncertain sample justification	Moderate
Powell et al., 2016)	Mixed Methods	MMAT	Strengths: clear aims, effective integration of different research designs Concerns: unclear sample representation	Moderate

Conclusion

Culturally responsive pedagogy proves to be a transformative approach in education, enhancing student engagement and achievement. More meaningful environments can be created by bridging gaps between home-to-school environments, fostering partnerships among family and community members, and integrating students' cultural backgrounds and experiences. The different studies included in this review demonstrate that integrating CRP into educational instructional design significantly boosts both student engagement and their academic achievement. Key strategies identified throughout included the use of culturally relevant texts, community and family engagements, and the use of multimodal instructional approaches that resonate well with students and reflected their lived experiences. When educators tailor their practices to reflect the cultural diversity of their classrooms they help their students form deeper connections to the educational content and assist in promote high-order thinking and critical engagement among students from marginalized communities.

Despite the limitations presented in some of the selected studies, the positive outcomes present flexible CRP implementation strategies that are beneficial to educators, especially those who are challenged by rigid standardized curricula and strict policies. This underscores the need to advocate for policies that support more flexible and culturally responsive instructional practices.

The results presented throughout the review contribute valuable information on how practical and effective CRP integration can be in classroom instruction. The results also offer numerous actionable steps in guidance for educators and policymakers who are striving to create more inclusive and equitable learning environments for all students.

Recommendations

Most studies in the review were conducted in the United States. Broadening the scope of CRP research could expand findings in different geographical areas but also in various socioeconomic contexts. This research could also be beneficial for educators to learn from, as the findings may cater to students from specific geographic areas and backgrounds.

The scope of the research addressed students from marginalized groups including but not limited to English language learners, ethnic minority students, students with disabilities, or those from low-socioeconomic backgrounds. None of the studies explicitly mentioned or focused on students with disabilities. Future research should focus on this group to ensure that practices are truly accessible to all students.

Institutions typically have weekly planning sessions or even daily meetings with learning groups. Proposing to dedicate time within these meetings to explore potential ways to incorporate CRP practices could help teachers reframe their classroom instruction while still following national or district standards. Schools could also use this allotted time for additional professional development and provide teachers with the opportunity to work together and share insights with each other for support and improvement in educational practices.

To ensure the access to technology is seamless from school to home it's important that any devices given to students provide resources that can be accessed offline so that any connectivity issues do not hinder a student from participating in any tech-based activities.

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